STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of the Petition of the ENVIRONMENTAL HEALTH COALITION For Review of Orders Nos. 87-47 (NPDES Permit No. CA0107867), 87-48 (NPDES Permit No. CA0108006), and 87-65 (NPDES Permit No. CA0108332) of the California Regional Water Quality Control Board, San Diego Region. Our File No. A-484.	ORDER NO. WQ 88- 4

BY THE BOARD:

On May 4, 1987, the California Regional Water Quality Control Board, San Diego Region (Regional Board) adopted four National Pollutant Discharge Elimination System (NPDES) permits which regulate discharges from ship repair facilities into San Diego Bay. Two of the orders renewed permits for discharge by Navy Public Works Center Graving Dock (No. 87-47) and by Bay City Marine, Inc. (No. 87-49). Order No. 87-65 established a new NPDES permit for Continental Maritime of San Diego.[1]

On June 3, 1987, two timely petitions were received from the Environmental Health Coalition seeking review of these orders on two grounds. The two petitions have been treated as one.

I. BACKGROUND

All three dischargers are in the business of cleaning, constructing, and repairing boats. The pollutants these boatyards generate consist of

[1] The fourth order, No. 87-48, for Triple "A" Floating Drydock will not be considered in this order as the discharger has ceased operation and the NPDES permit was rescinded by the Regional Board in Order No. 87-127.

sandblasting abrasives, dry paint, primer, marine fouling organisms, washwater, oil, and grease. The dry paint and primer contain antifouling agents to inhibit the growth of marine fouling organisms and to limit corrosion. Antifouling paints contain toxic materials such as copper, lead, zinc, chromium, mercury, arsenic, and tin. These and other pollutants are discharged to San Diego Bay by wind, tidal action, rainfall runoff, and miscellaneous water flows in the work area.

The Navy Public Works Center Graving Dock facility consists of a basin that can be isolated from the Bay by a gate. Even so, as the gate is not watertight, over 300,000 gallons of water per day must be removed by dewatering pumps. The other facilities do not pump water directly into the Bay.

II. CONTENTIONS AND FINDINGS

1. Contention: The Regional Board should have set discharge limits on and monitoring requirements for tributyltin (TBT) for these dischargers.

Findings: Provisions regulating TBT should be included in the NPDES permits to protect the beneficial uses of San Diego Bay.

Discussion: TBT antifouling paints are applied primarily to boat hulls, but they are also used on docks, buoys, crab pots, fish nets, and other structures that are in prolonged contact with water. The paint is applied to inhibit the growth of barnacles, tubeworms, seaweed, and other fouling organisms. TBT pollution results from leaching from painted surfaces and from improper disposal of paint chips and spent abrasives. Commercial vessels use 60 percent of TBT while recreational boats use about 33 percent. (The U. S. Navy is proposing to convert its entire fleet to TBT paints because of the

better performance these paints give over the copper-based alternative.) TBT is the subject of recent state legislation and regulations proposed by the Department of Food and Agriculture as well as pending rules and laws at the federal level.

TBT compounds exist in a number of forms, but they are all chemically characterized by a tin atom connected to three butyl units. Low concentrations of inorganic forms of tin appear to cause negligible toxicological effects in humans or animals. However, when carbon groups, such as butyl units, are added to tin, there is an increase in fat solubility, ability to penetrate biological membranes, and consequently, toxicity. TBT degrades by successive elimination of butyl units from TBT to dibutyltin, monobutyltin, and finally, inorganic tin. This process may take from a few days to several years. As it decomposes, it becomes less toxic.

The purpose of TBT is, of course, to prevent the growth of small plant and animal forms on the hulls of boats. It is extremely toxic in the aquatic environment where it may easily bioaccumulate in fish, bivalves, and crustaceans. Significant effects on various aquatic species occur in the range of 20 to 200 parts per trillion (ppt). As a result of the available toxicity information, EPA has developed ambient aquatic quality advisories for TBT. The advisories recommend that, if measured or estimated ambient concentration exceeds 26 ppt in fresh water or 10 ppt in salt water, a regulatory response is appropriate.

Surveys by Goldberg, et al., from Scripps Institute of Oceanography (1986), of California's coastal waters have found TBT values ranging from 20 to 590 ppt in marina waters with lower figures in harbors and on the coast. In those marinas where TBT values exceed 100 ppt, the researchers noted an absence

of native organisms, especially molluscs. The highest levels of TBT were consistently found in San Diego Bay marinas with a maximum and average concentration of 590 ppt and 230 ppt, respectively. Most of the San Diego Bay samples taken outside of the marina areas exceeded the 10 ppt EPA aquatic life advisory. Oyster transplant experiments conducted in San Diego Bay have shown shell deformities indicative of TBT pollution.

The beneficial uses of San Diego Bay include navigation, industrial service supply, water contact recreation, non-contact water recreation, commercial and sport fishing, saline water habitat, preservation of rare and endangered species, marine habitat, fish migration, and shellfish harvesting. Water quality objectives established to protect these beneficial uses are also found in the water quality control plan (Basin Plan). While the Basin Plan contains no specific objectives for TBT, the general guidelines for toxicity and pesticide objectives should apply. The water is to be "free of toxic substances" in toxic concentrations and "no pesticide shall be present" in harmful concentrations. The concentrations of TBT which are found in and around San Diego Bay violate these basin plan objectives. Consequently, it is appropriate to regulate, through effluent limits and monitoring, TBT in discharges known or suspected to contain TBT.[2]

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[2] While we find that TBT should be monitored and controlled in these discharge permits, we note that the most probable substantial TBT source to San Diego Bay is leaching from ship hulls. Other regulatory efforts are addressing this problem. In response to concerns over the toxicity of TBT, the Department of Food and Agriculture (DFA) has designated antifouling paints which contain TBT as restricted materials. DFA has restricted the use of such paints to aluminum vessel hulls and to commercial and recreational vessel hulls 82 feet or more in length. These restrictions will reduce but not eliminate TBT use. Other efforts to address the TBT problem include regulation of TBT content in paint, regulation of TBT release rates, a requirement that hulls painted with

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The exact effluent limits and monitoring requirements are for the Regional Board to determine. At a minimum, TBT sediment monitoring should be added to the NPDES permits. Results from such monitoring can be used to evaluate the effectiveness of the best management plans contained in the permits. In addition, because of the volume of water being pumped from the Navy Public Works Center Graving Dock to the San Diego Bay, TBT effluent limits and effluent monitoring should be added to the numerical pollutant limits and monitoring requirements for other constituents already included in this permit. The Regional Board should determine a reasonable TBT effluent limit for the Navy Public Works Center Graving Dock plant based on the 10 ppt ambient water aquatic life advisory issued by EPA.

2. Contention: The issuance of a new NPDES permit to a boatyard within the San Diego Bay is contrary to the requirements of the Water Quality Control Policy for the Enclosed Bays and Estuaries of California.

Finding: The Enclosed Bays and Estuaries Policy forbids new discharges of municipal wastewaters and industrial process waters unless they are properly treated and discharged. The definition of "industrial process waters" does not cover the type of discharge found in these boatyards. There is no reason to deny the permit based on the Policy.

Discussion: The Enclosed Bays and Estuaries Policy was adopted by the Board on May 16, 1974. The purpose of the Policy was "to provide water quality principles and guidelines to prevent water quality degradation and to

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[2] (FOOTNOTE CONTINUED)

TBT paint be scraped in drydock and a prohibition on the use of TBT antifouling paints. A combination of efforts, including our action today, is appropriate to address the concerns over the effects of TBT.

protect the beneficial uses of waters of enclosed bays and estuaries". The policy, by its own terms, "does not apply to wastes from vessels or land runoff except as specifically indicated for siltation and combined sewer flows".

The Policy provided for the phasing out of existing discharges which created unreasonable effects on beneficial uses and the prohibition of comparable new sources. Among the things to be prohibited or phased out was "industrial process water". The phrase is not defined in the policy, although some guidance on its application is given in one of the footnotes:

> "[2] For the purpose of this policy, treated ballast waters and innocuous nonmunicipal wastewater such as clear brines, washwater, and pool drains are not necessarily considered industrial process wastes, and may be allowed by Regional Boards under discharge requirements that provide protection to the beneficial uses of the receiving water."

While this footnote provides some guidance in understanding what was meant by "industrial process water", by itself, it does not paint a clear picture. However, read in conjunction with the statement of purpose, it makes sense to construe "industrial process water" as a discharge which is a byproduct or integral part of an industrial process. Storm water and other flows which are incidental to the operation of a business such as a boatyard, should not be covered.

Thus, in the matter at hand, it makes no sense to call a discharge caused by wind, tidal action, rainfall runoff, and other miscellaneous water flows in the work area "industrial process water". We will not do so. Limits placed in the NPDES permit should adequately protect the Bay from runoff.

III. CONCLUSION

The contention of the petitioner that there should be further regulation of and monitoring for TBT in San Diego Bay is well taken. Such

actions should be implemented by the Regional Board with regard to the three NPDES orders discussed above. The other contention of the petitioner, that the Enclosed Bays and Estuaries Policy should be read to prohibit the granting of waste discharge requirements to the new boatyard, is not justified by a careful reading of that Policy. The type of runoff found in this case does not qualify as "industrial process water".

IV. ORDER

The Regional Board is ordered to review and revise Orders Nos. 87-47, 87-49, and 87-65 in light of this discussion.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held on June 16, 1988.

AYE: W. Don Maughan
Darlene E. Ruiz
Danny Walsh
Edwin H. Finster
Eliseo M. Samaniego

NO: None

ABSENT: None

ABSTAIN: None

Maureen Marche'
Administrative Assistant to the Board