

STATE OF CALIFORNIA  
STATE WATER RESOURCES CONTROL BOARD

In the Matter of the Petitions  
of the California Department of  
Fish and Game and the Atlantic  
Richfield Company for Review of  
Order No. 75-52 (NPDES Permit  
No. CA0000680) of the California  
Regional Water Quality Control  
Board, Los Angeles Region. Our  
File Nos. A-110(a) and A-110(b).

WQ 77-28

BY THE BOARD:

On April 21, 1975, the California Regional Water Quality Control Board, Los Angeles Region (Regional Board), adopted Order No. 75-52 (NPDES Permit No. CA0000680) establishing waste discharge requirements for the Atlantic Richfield Company (Company), Watson refinery in Carson, California. On May 20, 1975, the State Water Resources Control Board (State Board) received a petition for review of Order No. 75-52 filed by the California Department of Fish and Game (Department). In addition, on May 21, 1975, the State Board received another petition for review of Order No. 75-52 filed by the Company. Since these two petitions relate to the same waste discharge requirements on the Company's Watson refinery, and are, consequently, legally and factually related, the State Board herein consolidates the proceedings and will consider these two petitions together in this Order.<sup>1/</sup>

---

1. Section 2054, Subchapter 6, Chapter 3, Title 23, California Administrative Code.

## Background

Atlantic Richfield Company operates the Watson refinery, a petroleum refinery located at 1801 East Sepulveda Boulevard, Carson, California. The company discharges up to 4.74 million gallons per day (MGD) of wastewater to Dominguez Channel, a water of the United States, near Sepulveda Boulevard and Alameda Street within the tidal prism. The wastewater consists of process wastes, boiler blowdown, and storm runoff. Normal dry weather discharge is up to 0.35 MGD and contains only nonprocess wastes consisting of boiler blowdown.

Process wastes are normally passed through primary oil-water separators, two conventional API oil-water separators in series, a neutralizing tank, a flocculation tank, and an air flotation unit, and are then discharged to the community sewer system. Since the refinery drain system cannot segregate rainfall runoff from process wastes, when a rainstorm exceeds 0.1 inch the combined treated rainfall-process wastes are diverted to a lined 50 million gallon holding reservoir. The wastes in the reservoir are passed through an activated carbon adsorption plant and discharged to Dominguez Channel. The refinery processes include crude desalting, atmospheric distillation, vacuum distillation, chemical treating, super-fractionation, thermal cracking, catalytic cracking, hydrocracking, catalytic reforming, delayed coking, petrochemical production, hydrotreating, raw material and product storage, gasoline blending, and sulfur recovery.

## Contentions and Findings

1. Contention: The Department contends that this waste discharge is subject to the Water Quality Control Policy for

the Enclosed Bays and Estuaries of California (Bays and Estuaries Policy) and that the discharge should, therefore, be eliminated at the earliest practicable date.

Findings: It appears that most of the wastewater discharged from the Company's refinery is not "industrial process waters" of the type prohibited under the Bays and Estuaries Policy. However, since process wastewater is discharged to the Dominguez Channel comingled with rainfall runoff during wet weather the question of whether or not the Dominguez Channel is a bay or estuary protected pursuant to the Bays and Estuaries Policy does arise.

Responding to a similar contention by the Department, State Board Order No. WQ 77-18 (In the Matter of the Petitions of Texaco, Inc., and the Department of Fish and Game), p. 11, stated:

"The Dominguez Channel constitutes a man-made stormwater conveyance facility, having only very limited mixing of fresh and salt water. It has few beneficial uses of a classic estuary and lacks the existence of an estuarine habitat. It does not fall within the definition of a "bay" as included in footnote 1 of the Policy...in that there are no headlands or harbor works which enclose the opening of the Channel. Therefore, we find that the Channel is not a bay or estuary protected by the Bays and Estuaries Policy. It is clear, however, that the beneficial uses of the Channel and the waters of the Los Angeles-Long Beach Harbor must be protected by the application of waste discharge requirements consistent with water quality objectives to protect those uses."

\* \* \*

The foregoing position taken by the State Board is directly applicable to this contention. This contention is without merit.

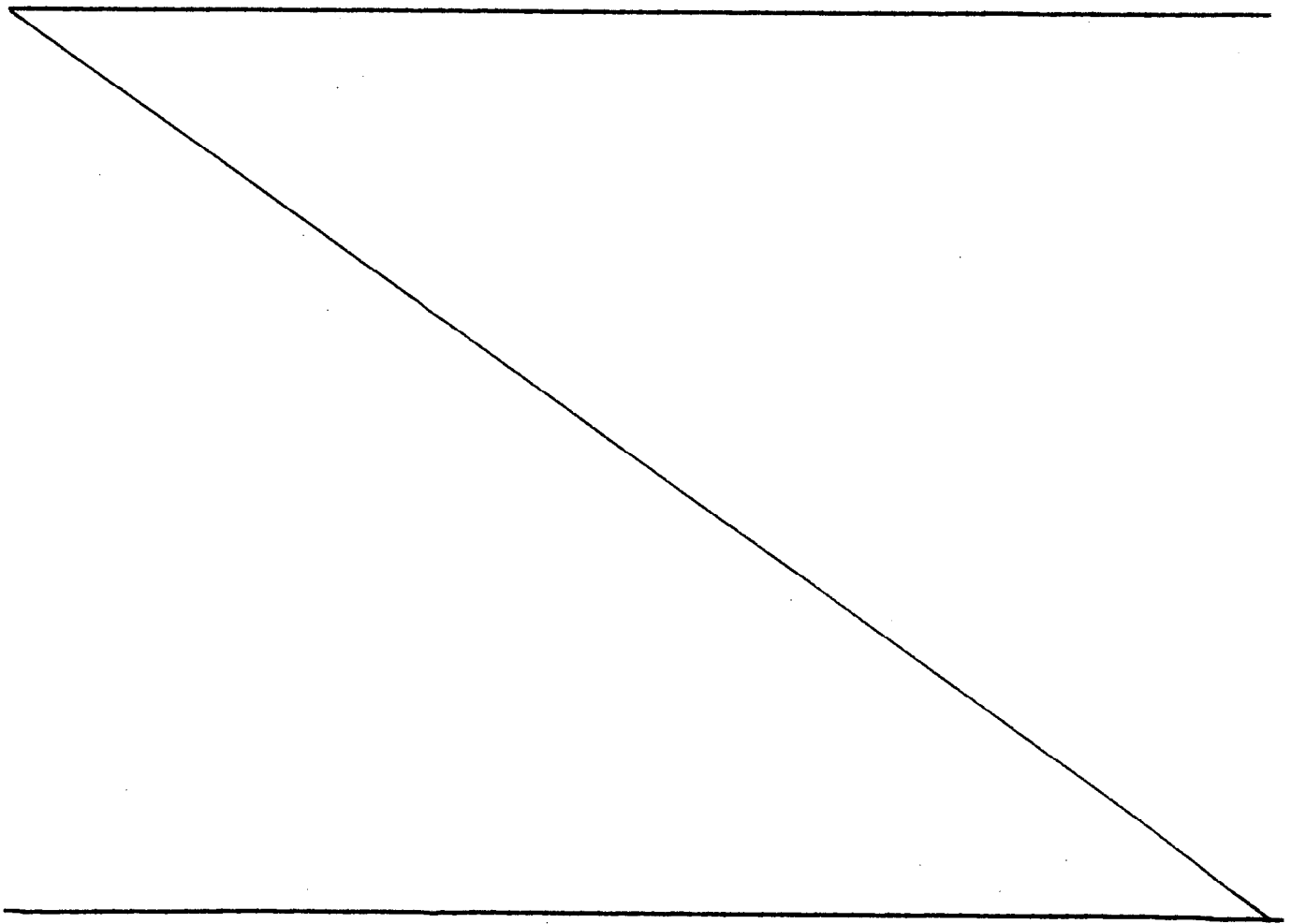
2. Contention: The Department contends that the permit should contain concentration limitations for COD, oil and grease, ammonia nitrogen and suspended solids and that an effluent toxicity limitation should be imposed.

Findings: Order No. 75-52 contains mass emission rates for BOD, COD, oil and grease, ammonia nitrogen and suspended solids but does not contain concentration limits for these waste constituents.

Evidence regarding BOD levels in the Dominguez Channel as discussed in detail in State Board Order No. 77-18, cited above, indicates that depressed levels of dissolved oxygen in the Dominguez Channel are due to high mass loading of oxygen demanding waste rather than the concentration of oxygen demanding wastes in individual discharges. The Department did not contend in its original petition that the mass emission rate prescribed by Order No. 75-52 was inappropriate, however, later evidence submitted by the Department indicates that the Dominguez Channel is not meeting the water quality objectives for dissolved oxygen specified for it in the applicable Basin Plan.

There is no evidence at this time that the discharge under consideration here, or any discharge, is the cause of the depressed dissolved oxygen levels in the channel. We find that the Regional Board should undertake, in conjunction with the Department, a thorough analysis of the cause of the dissolved oxygen problem in the Channel and should, if the analysis indicates that it is necessary, revise all permits for discharges to the Dominguez Channel to insure that the Channel's dissolved oxygen objective is met.

As we also stated in Order No. 77-18, concentration limits are appropriate for facilities, such as this one, which have highly variable waste flows due to the mixing of stormwater and other dischargers. Therefore, the Regional Board should prescribe reasonable concentration limits for BOD to insure efficient operation and treatment based upon data collected during periods when the treatment plant is being operated efficiently. Should the Company prepare and propose to implement a specific plan for water conservation, the degree of water conservation proposed should be taken into account by the Regional Board in setting its requirements.



Chemical oxygen demand (COD) is a measure of the oxygen equivalent required to oxidize the organic matter in a waste sample under specific conditions of oxidizing agent, temperature, and time. This test is different from biochemical oxygen demand (BOD<sub>5</sub>) in that, biological assimilability of waste substances is not considered in the COD test. Nevertheless, BOD is used as a substitute for the COD test in many instances since both are a measure of the oxygen demand exerted by the waste. Therefore, so long as concentration limits are prescribed for BOD<sub>5</sub> no concentration limits need be included in the permit for COD.

Order No. 75-52 contains no concentration limit for oil and grease, ammonia nitrogen, or suspended solids. These parameters are contained in the Ocean Plan and imposed on dischargers to the Los Angeles Harbor. We find no reason for the elimination of the concentration limits for these parameters in this case. Moreover, to impose less stringent limits than those prescribed by the Regional Board to similar discharges to ocean and Los Angeles Inner and Outer Harbors would encourage discharge to the Dominguez Channel which is more vulnerable to adverse effects than the ocean or Los Angeles Inner and Outer Harbors due to its lower dilution capacity and lower flushing capability. Providing encouragement to discharge to such waters is not the intent of this Board. Therefore, concentration limits should be included for oil and grease, ammonia nitrogen and suspended solids.

Order No. 75-52 does not include an effluent toxicity limit. When these requirements are modified as stated above, the requirements will be essentially similar to those contained in the Ocean Plan. The Ocean Plan limits were established with the intent of minimizing acute and chronic toxicity. If the discharge is in compliance with such limits, the discharge should not pose a significant threat to fish and aquatic life. The Board finds that no appreciable benefit would be gained by imposing costly toxicity bioassay tests for the effluent and, therefore, finds this contention without merit.

3. Contention: The Company contends that the final chromium limitations are too stringent.

Findings: Order No. 75-52 limits the discharge of total chromium in excess of 0.01 mg/l daily maximum and 0.005 mg/l monthly average. These concentration limits are similar to those prescribed for ocean discharges in the Ocean Plan.

This discharge to the Dominguez Channel is not covered by the Ocean Plan, but to impose less restrictive limits would encourage discharge to the Channel which is more vulnerable to adverse effects than the ocean due to its lower dilution capacity and lower flushing capacity. Responding to the same contention by Texaco, Inc., State Board Order No. 77-18, page 6, states:

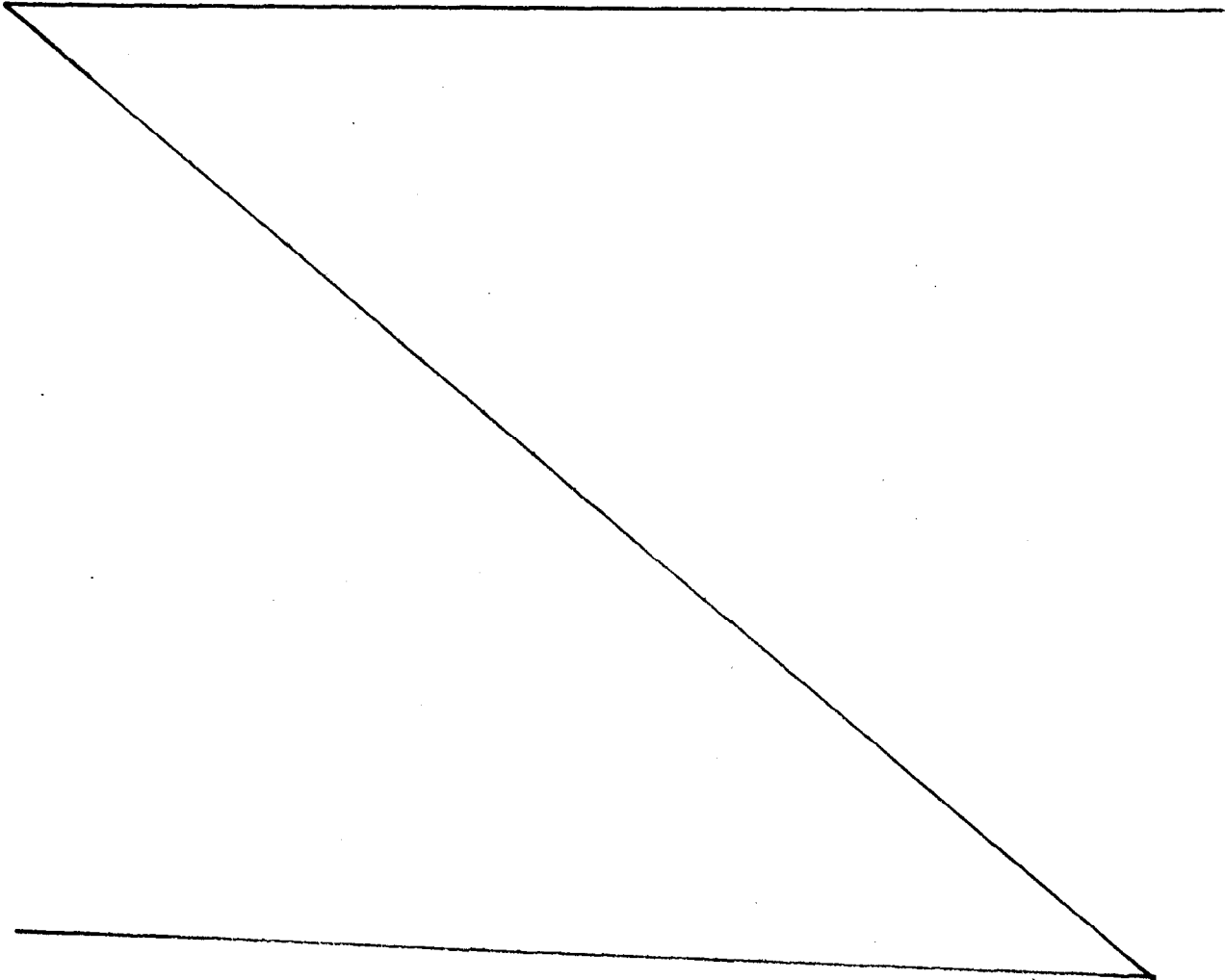
"We are aware of the difficulties involved in complying with Ocean Plan limits for chromium and it is possible that this limit will be changed as a result of the Ocean Plan review before the Table B limits become effective. Further, as the effective date of the subject chromium limit is the same as the effective date of Table B of the Ocean Plan (July 1, 1978) we find that Texaco should be given the same opportunity as has been afforded other

dischargers to request an extension of the implementation date beyond July 1, 1978, but not exceeding July 1, 1983. (See State Board Resolution 74-5.) Furthermore, Order No. 75-90 expires on June 30, 1978, thus, Texaco should have adequate opportunity to seek such an extension."

Order No. 75-52 also expires on June 30, 1978, thus, the foregoing position is directly applicable to this contention. We find that the Company should also be given the opportunity to seek such an extension at some time prior to June 30, 1978.

#### Conclusions

After review of the record and for the reasons heretofore expressed, we reach the following conclusions:



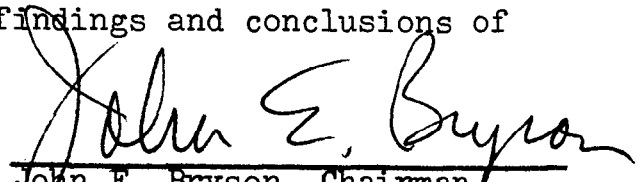


1. The limitations for BOD, oil and grease, ammonia nitrogen and suspended solids should be revised in accordance with Finding No. 2.
2. In all other respects Order No. 75-52 is appropriate and proper.

Order

IT IS HEREBY ORDERED that the California Regional Water Quality Control Board, Los Angeles Region, shall review and revise Order No. 75-52 consistent with the findings and conclusions of this order.

Dated: NOV 17 1977

  
\_\_\_\_\_  
John E. Bryson, Chairman

  
\_\_\_\_\_  
W. Don Maughan, Vice-Chairman

  
\_\_\_\_\_  
W. W. Adams, Member