STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD MEETING

In the Matter of the Petitions of the Department of Fish and Game for Review of Orders No. 75-49 (NPDES Permit No. CA0055531), No. 75-45 (NPDES Permit No. CA0056294) and No. 75-46 (NPDES Permit No. CA0056359) of the California Regional Water Quality Control Board, Los Angeles Region. Our Files No. A-109, A-108 and A-106.	Order No. WQ 78-7

BY THE BOARD:

On April 21, 1975, the California Regional Water Quality Control Board, Los Angeles Region (Regional Board), adopted Orders providing waste discharge requirements for the following waste treatment plants:

- --The City of Burbank, Order No. 75-49 (and 77-104) (NPDES Permit No. CA0055531)[1/];
- --Hill Canyon Plant, The City of Thousand Oaks, Order No. 75-45 (NPDES Permit No. CA0056294); and
- --Olson Road Plant, The City of Thousand Oaks, Order No. 75-46 (NPDES Permit No. CA0056359).

Filing separate petitions on May 19, 1975, the Department of Fish and Game (petitioner) petitioned the State Water

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1. Order No. 75-49 was subsequently updated by Order No. 77-104 on June 27, 1977, and the Department of Fish and Game requested that its objections to the original order be made applicable to Order No. 77-104.

Resources Control Board (State Board) for review of the foregoing orders. Inasmuch as the petitions raise similar issues, we will address the petitions as a group rather than individually.

I. BACKGROUND

The City of Burbank (Burbank) operates a wastewater reclamation plant having a six million gallon per day (MGD) design capacity. This reclamation plant provides activated sludge treatment for a portion of Burbank's waste and the remainder of the waste is piped to the City of Los Angeles' Hyperion Plant for treatment and disposal. About 1.4 MGD of wastes treated at the reclamation plant are used for cooling tower make-up in Burbank's power plant. Burbank discharges treated effluent to Burbank Wash consisting of 30,000 gpd of excess water delivered to the power plant and 3.4 MGD of effluent from the reclamation plant. Burbank Wash is tributary to the Los Angeles River and 30 miles upstream, approximately, from the Ocean. The beneficial uses of the receiving waters of the Los Angeles River include groundwater recharge, limited contact and non-water contact recreation, and limited warm-water fish and wildlife habitat.[2/] Urban development has greatly altered the natural characteristics of the Los Angeles River. Much of the Channel is lined with concrete and the existence of aquatic life appears to be very limited.

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2. Water Quality Control Plan Report, Los Angeles River Basin (4B), Part I, Chapter 2, pages I-2-6 and 7, Table 2-3, as amended 1976.

The Hill Canyon Sewage Treatment Plant currently discharges about 5.25 MGD of treated effluent from a conventional activated sludge plant to the North Fork of Arroyo Conejo Creek. Effluent from the plant and any other creek flow percolates, normally, into the groundwater basin of the Santa Rosa Valley. Nevertheless, during extended wet weather periods the effluent may reach Mugu Lagoon through the Callequas-Conejo Creeks. The beneficial uses of Conejo Creek include intermittent cold freshwater habitat, wildlife habitat, and contact and non-water contact recreation. The beneficial uses of lower Callequas Creek include cold freshwater habitat, wildlife habitat, non-contact water recreation and intermittent contact water recreation. Mugu Lagoon's beneficial uses include habitat for wildlife, habitat for the endangered Clapper Rail, non-water contact recreation and saline and marine habitat.[3/]

The Olson Road Wastewater Reclamation Plant consists of two package activated sludge units which treat currently about 90,000 gallons of wastewater per day. During the irrigation season, the treated effluent is utilized at the nearby Sunset Golf Course and during periods of wet weather the effluent flows through a channel to the Tierra Rejada Valley where surface waters percolate, usually, to groundwaters. During extended wet weather periods the effluent may reach Mugu Lagoon via the Conejo-Callequas Creeks. (The beneficial uses of these waters were identified in the proceeding paragraph.)

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3. Water Quality Control Plan Report, Santa Clara River Basin (4A), Part I, Section, Chapter 2, Table 2-3.

Effluent Limitation A.3 of the three petitioned orders prohibits the discharge of certain constituents in the effluent in excess of stated concentrations.[4] These are:

Constituent	Maximum Concentration Limit (mg/l)
Copper	1.0
Lead	0.05
Nickel	0.2
Zinc	5.0
Cyanide	0.2

II. CONTENTIONS AND FINDINGS

The contentions of the petition and our findings relative thereto are as follows:

1. Contention: The petitioner asserts that the adoption of the orders was improper because effluent Limitation A.3 permits the discharge of Copper, Lead, Nickel, Zinc and Cyanide in concentrations toxic to aquatic life.

Findings: The California Water Code requires the Regional Board to consider the beneficial uses to be protected when prescribing waste discharge requirements.[5] The petitioner argues essentially that the concentration limitations established for Copper, Lead, Nickel,

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4. See Effluent Limitation A.3 in Orders Nos. 75-49, 75-45, 75-46 and 77-104. In Order No. 77-104 the Regional Board reissued requirements for the Burbank facility. The only change made in the values set forth above by Order No. 77-104 was to relax the maximum concentration of Nickel to 0.3 mg/l from 0.2 mg/l.

5. Section 13263(a), Article 4, Chapter 4, Division 7, California Water Code.

Zinc and Cyanide by Effluent Limitation A.3 will not protect the beneficial aquatic uses identified for the receiving waters. If Effluent Limtation A.3 were the only provision in these orders protecting the beneficial aquatic uses we would share the petitioner's concern. The concentrations of heavy metals causing acute toxicity in fish and aquatic life have been studied in numerous investigations. While all of the studies have not resulted in uniform agreement on values for each of the heavy metal series, certain conclusions can be drawn. For instance, in Water Quality Criteria, McKee and Wolf summarize the results of numerous tests for acute toxicity on fish and other aquatic life.6/ The limitations in the orders for Copper, Zinc and Cyanide definitely exceed commonly accepted limits for acute toxicity for fish and aquatic life.7/ While concentrations causing chronic toxicity are lower than concentrations causing acute toxicity, there is little quantitative data available on chronic toxicity.

These orders, nevertheless, contain other limitations which directly or indirectly protect the beneficial aquatic uses. All orders provide: (1) that the discharge shall not cause a violation of applicable water quality standards for receiving waters; and (2) that the wastes discharged shall not cause receiving waters

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6. Water Quality Criteria, second edition (1963), edited by McKee, and Wolf, Publication No. 3-A, California State Water Resources Control Board.

7. See Water Quality Control Criteria, pp. 169-171, 206-208, 222-224, 294-297 and 175-176.

The Burbank Order provides:

> "After July 1, 1978, the toxicity of the effluent shall be such that the average survival in undiluted effluent for any three (3) consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test producing less than 70% survival."9/

We believe the language of the toxicity provision provided in the Burbank Order is a sounder approach. The standard bioassay provided for in the City of Thousand Oaks Order does not provide sufficiently for deaths which may occur because of inconsistencies in the test fish and problems which can arise in the transportation and storage of test fish. The toxicity provision for Order No. 77-104 (Burbank) does not become effective until July 1, 1978. This provision should be revised to make it effective immediately.

We find that the toxicity provision of the orders for the City of Thousand Oaks should be the same as provided in Order No. 77-104. Further, we find that Effluent Limitation A.3 does not protect aquatic beneficial uses and should be removed inasmuch as other provisions of the orders, particularly the toxicity provision, assure protection of the aquatic beneficial use. Finally, we find that the monitoring programs issued by the Regional Board Executive Officer in connection with the permits in question should continue to require monitoring for all of the constituents currently included in the monitoring requirements, including heavy metals and cyanide.

2. Contention: The petitioner maintained in its original petition that Effluent Limitation A.12, of Order No. 75-49, providing that "...a minimum of 90 percent of the test organisms

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9. Effluent Limitation A.13, Order No. 77-104.

in a standard bioassay shall survive in undiluted effluent at least 50 percent of the time, and 70 percent shall survive at least 90 percent of the time..." should be more stringent.

Findings: When Order No. 77-104 was adopted to update Burbank's requirements (see footnote 1, above) the toxicity bioassay requirement was made more stringent. The Department has recently advised the State Board that it has no objection to the revised bioassay requirement. Therefore, this contention is moot.

III. CONCLUSIONS

After review of the entire record, and for the reasons heretofore expressed, we have reached the following conclusions:

1. The Water Quality Control Plan identified freshwater habitat as a beneficial use of the waters receiving the Hill Canyon, Olson Road and Burbank discharges. The concentrations of Copper, Lead, Nickel Zinc and Cyanide permitted in the discharges by Effluent Limitation A.3 exceed commonly accepted limits of acute toxicity for fish and aquatic life, will not protect the freshwater habitat beneficial use and should be deleted.
2. The standard toxicity bioassay provided by Order No. 77-104 employs a statistical approach and specifies survival rates which are not inappropriate. Effluent Limitation A.13 in Order No. 77-104 should be made effective immediately. Effluent Limitation A.12 in Orders Nos. 75-45 and 75-46 should be the same as Effluent Limitation A.13 in Order No. 77-104.

III. ORDER

IT IS, THEREFORE, ORDERED that Orders Nos. 75-45 (Hill Canyon Plant), 75-46 (Olson Road Plant) and Nos. 75-49 and 77-104 (Burbank) are remanded to the Regional Board for deletion of the heavy metal and cyanide concentration limits in Effluent Limitation A.3 and for revision of the standard toxicity bioassay provisions in accordance with this Order and that the monitoring programs issued by the Regional Board executive Officer for the plants in question shall be consistent with this order.

Dated: MAR 16 1978

John E. Bryson, Chairman

W. Don Maughan, Vice-Chairman

W. W. Adams, Member

to contain any substance in concentrations toxic to human, animal, plant or fish life. Water quality standards include specific objectives for the protection of aquatic life. Additionally, the orders for the City of Burbank and for the Hill Canyon Treatment Plant contain provisions limiting the concentration of residual chlorine in the wastewater discharged. Of most importance, all three orders include a requirement for testing the toxicity of the undiluted effluent on test organisms in a standard bioassay. It should be noted that the particular toxicity values summarized in Water Quality Criteria are the product of a survey of published toxicity values derived from bioassays run by many different persons. We believe that testing the quality of these discharges with a standard bioassay is a more direct and practical approach for determining whether these discharges will protect the beneficial aquatic uses than reliance upon values derived from bioassays. This is true, particularly, in the instance of the City of Burbank's discharge to receiving waters having only limited warm-water fish and wildlife habitat and with regard to the discharges of the City of Thousand Oaks which only reach valued aquatic habitats during wet weather periods providing dilution to the discharged wastewater.

The Regional Board's Orders for the Hill Canyon and Olson Road Plants provide that "the toxicity of the effluent shall be such that at least 90 percent of test organisms in a standard bioassay shall survive in undiluted effluent."[8/]

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8. Effluent Limitation A.12, Order Nos. 74-45 and 75-46.