STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD

In the Matter of the Petitions of CHINO BASIN MUNICIPAL WATER DISTRICT for Review of Orders Nos. 85-1 and 85-141, for Regional Plants Nos. 2 and 1, California Regional Water Quality Control Board, Santa Ana Region. NPDES Permit Nos. CA0105287 and CA0105279. Our Files Nos. A-374 and A-413.	ORDER NO. WQ 86-6

BY THE BOARD:

On January 11, 1985, the California Regional Water Quality Control Board, Santa Ana Region (Regional Board) adopted Order No. 85-1, waste discharge requirements for Chino Basin Municipal Water District (Chino Basin), Regional Plant No. 2 (NPDES Permit No. CA0105287). On February 7, 1985, Chino Basin filed this appeal (our File No. A-374). On October 11, 1985, the Regional Board adopted Order No. 85-141, waste discharge requirements for Chino Basin's Regional Plant No. 1 (NPDES Permit No. CA0105279). Another appeal was filed by Chino Basin on October 28, 1985 (our File No. A-413). We have consolidated these two appeals. Although time for formal disposition of our file No. A-374 has now expired, pursuant to Title 23, California Administrative Code, Section 2052(d), we have chosen to review the Regional Board action on our own motion (Water Code Section 13320).

I. BACKGROUND

A. The Santa Ana River Generally

Salts and minerals are a major threat to waters of the Santa Ana Region. Waters of the Santa Ana River are used several times before reaching the ocean. Each use of the water adds an increment of dissolved minerals or salts (usually reported as Total Filterable Residue or TFR). Salts may be added to the water as it is used, or the concentration may be increased through evaporation. Salts are exported from the system principally by natural discharges to the ocean. Additionally, the Santa Ana River Interceptor (SARI) and the Chino Basin Non-Reclaimable Line (NRL) are important in exporting brines and keeping them out of the region's ground and surface waters.

At present, approximately 91,000 tons of salt are being added to the waters of the Upper Basin of the Santa Ana River each year. This overall tonnage is projected to decrease gradually with actual balance of imports and exports of salts being achieved about the year 2020. However, TFR will continue to increase in certain specific ground water basins, such as the Chino II subbasin, which have already been identified as having no assimilative capacity.

The quality of the total flow of the Santa Ana River is based on three factors: storm flow, base flow and nontributary flow. Storm flow is composed of rainfall and surface runoff in the Upper Basin (or above Prado Dam). Most storms occur during the winter rainy season (December through April). Base flow consists of wastewater discharges (i.e., treated sewage effluent discharged to the river in the Upper Basin), rising ground water, and other nonpoint source discharges. Nontributary flow is the least important of the three factors and generally consists of imported water released in the Upper Basins, which then recharges ground water in the lower basin.

Releases from the Upper Basin of the Santa Ana River are controlled by a Watermaster operating under a court order. Prado Dam, a U. S. Army Corps of Engineers flood control facility, divides the lower and upper Santa Ana Basins (and also divides Reach 2 below the dam and Reach 3 above the dam). The dam includes a subsurface ground water barrier, which forces all ground and surface waters from the upper basin through the dam or over the spillway. Consequently, the dam is an ideal place to measure flows and monitor water quality. Monitoring is done by the Department of Water Resources, U. S. Geological Survey (USGS) and the Regional Board.

In normal rainfall years, most of the total flow of the river percolates into the ground water downstream of Prado Dam. Accordingly, compliance with the Basin Plan TFR objective for Reach 2 is based on a five-year moving average of the annual TFR content of total flow. Use of this moving average allows the effects of wet and dry years to be smoothed out over the five-year period. It is important to note that the purpose of this objective is to protect the ground water recharge in Reach 2.

The quantity and quality of base flow is most consistent during the month of August, as storm flows, nontributary flows and nonpoint source discharges are at a minimum and there is usually no water impounded behind Prado Dam. The major component of base flow in August (as much as 95 percent) is municipal wastewater. In order to determine whether the water quality and quantity objectives for base flow in Reach 3 are being met, the Regional Board collects samples during August of each year.

The Regional Board has set water quality objectives for each Reach of the Santa Ana River. The Basin Plan sets the following water quality objectives for Reachs 2 and 3:

Santa Ana River	TFR mg/l	Hardness mg/l	Sodium mg/l	Chloride mg/l	Total Nitrogen (Filtered) mg/l	Sulfate mg/l	Boron mg/l
Reach 2 - 60-Month Average	650	-	-	-	-	-	-
Reach 3 - August Samples	700	350	110	140	10	150	0.75

Some of these water quality objectives are being violated or in danger of being violated, so the Regional Board calculated maximum acceptable wasteloads for some constituents. Each of the controllable wastewater discharges (i.e., direct discharges to the river pursuant to an NPDES permit) has been allocated a portion of total TFR and nitrogen load to the river. These allocations are expressed as effluent limitations in individual waste discharge requirements. The allocations use a best efforts approach, and take into account the water supply to the service area, the location of the service area in the basin, a reasonable source control program, plant performance, reclamation and/or direct reuse, downstream uses of the wastewater, effects on the receiving ground water basin, and stream enhancement.

To summarize, the Basin Plan has set an objective of 700 mg/l TFR at Prado Dam for Reach 3. To meet this number, the Regional Board has established wasteload allocations for each municipal discharger in the Reach. Compliance with the objective is measured in August, when most of the river flow is effluent. All of the flow from the Reach 3 basin goes over through Prado Dam to Reach 2.

By contrast, the TFR objective for Reach 2 is set at 650 mg/l. The intent of this objective is to protect the ground water recharge occurring in Reach 2. The Basin Plan expresses the objective in a 60-month average, in order to minimize annual fluctuation.

B. Chino Basin Municipal Water District

Chino Basin Municipal Water District (hereafter Chino Basin or District) operates two plants which are the subjects of this order, Regional Plants 1 and 2. The District currently discharges approximately 19.5 million gallons per day (mgd) of tertiary treated municipal wastewater from Regional Plant No. 1 to Cucamonga Creek, which is tributary to Reach 3 of the Santa Ana River and to Prado Lake, which is tributary to Chino Creek. These discharges overlie the Chino ground water subbasins. Approximately 3.4 mgd of tertiary treated wastewater is also supplied to reclaimed wastewater users which overlie the Chino ground water subbasins. The present design capacity of Regional Plant No. 1 is 29.5 mgd. The District plans to expand treatment capacity to 36 mgd within the next five years.

The District discharges approximately 3.8 mgd of treated wastes from Regional Plant No. 2 to Chino Creek, a tributary to the Santa Ana River. While the present design capacity is 6.7 mgd, the District plans to expand the plant to 8.0 mgd. Because of the proximity of the discharge point to the Prado Flood Control Basin and the Santa Ana River, it is not likely that the discharge will have a significant effect on the particular Chino ground water subbasin which the discharge overlies.

Wasteload allocations (effluent limitations) for the two plants (expressed as milligrams per liter) are as follows:

Facility	TFR	Nitrate	Ammonia	Total Nitrogen
RP1	515	12	10	22
RP2	610	8	13	21

These values are reflected in the corresponding waste discharge requirements for RP1 and RP2 (Santa Ana Regional Board Order Nos. 85-141 and 85-1, respectively). Compliance is determined on a 4-month moving average. This would allow some months to exceed the wasteload allocation.

The effluent quality from both RP1 and RP2 is strongly dependent on the quality of the source water used for water supply. Therefore, effluent limitations for constituents which are only slightly affected by the conventional wastewater treatment processes (e.g., TFR, sodium, chloride, sulfate, etc.) have the effect of limiting Chino Basin's choice of source water.

In the past, Chino Basin has been offered the opportunity to participate in the "in-lieu" program of the Metropolitan Water District. The "in lieu" program allows Chino Basin to import and use lower quality, less expensive Colorado River water. This program is typically open for participation between January and April. Use of Colorado River water results in noncompliance with some of the effluent limitations.

We reviewed, in response to earlier Chino Basin appeals, the NPDES permits for these two plants both in 1979 and also in 1982, when the Regional Board adopted the two predecessor NPDES permits. Among the issues we considered on appeal in 1982 was whether compliance with the TFR and mineral effluent limitations should be based on a 12-month average. The District claimed at that time that the 4-month average established by the Regional Board

prohibited the District from participating in the in-lieu program. At that time, we held (in our Order No. WQ 82-5) in pertinent part:

> "4. The 4-month averaging period for Total Filtrable Residue and the individual mineral constituents for both Regional Plants One and Two should not be enforced when the discharger is participating in a program which substitutes Colorado River water for other supplies. At such times a 12-month running average should be used."

II. CONTENTION AND FINDING

Contention: Only one issue is raised by the petitioner. The recent Regional Board orders for Regional Plants Nos. 1 and 2 call for a 4-month average for TFR and individual mineral effluent limitations. Chino Basin has appealed, contending that such action is contrary to State Board Order No. WQ 82-5, which requires the Regional Board to use a 12-month averaging procedure when the District is participating in the in-lieu program.

Finding: We agree. We required the Regional Board to use a 12-month average in 1982 under certain circumstances, and reaffirm this decision. Although we are somewhat dismayed at having to repeat ourselves on the same issue, we will review our rationale as to why we require the 12-month average to be used. To reiterate for the sake of emphasis and as discussed in Order No. WQ 82-5, we direct that the 4-month average compliance be modified to a 12-month averaging period when Colorado River water is being used for the following reasons:

1. The 4-month compliance requirement would hinder the District's ability to participate in the Colorado River water in-lieu program. While a

short-term compliance requirement may be appropriate where there are significant seasonal variations in effluent quality, we need to consider other statewide policies. We note the strong policy in favor of conjunctive water use, particularly when such a program will not cause water quality objectives to be violated.

2. Any water quality degradation which would result from modification of the 4-month compliance requirement would be, at the most, minimal. Petitioner will still be constrained by the Basin Plan's wasteload allocation of the amount of high TFR water which may be used.

3. The District appears to be the only public entity in the upper Santa Ana watershed able to participate in the in-lieu program.

4. The in-lieu program will apparently be temporary.

The Regional Board imposed a 4-month averaging period, despite Order No. WQ 82-5, based on its belief that a shorter averaging period would allow greater enforcement flexibility. The Regional Board is concerned that a larger fluctuation in monthly effluent quality may occur and enforcement may be more difficult.

We do not agree. We note that the model which was used to derive the Basin Plan objectives essentially used an infinite averaging period. Since we accept the Basin Plan objective, any averaging period shorter than infinity should result in compliance.

We note further that the reason the TFR objective was set is to maintain a high quality water for downstream aquifer recharge. Most aquifers are insensitive to short-term fluctuations in recharge water quality. Aquifer water quality usually represents a long-term average of recharge from all sources.

The Regional Board also is concerned over large fluctuations in monthly effluent quality if a long averaging period is used. It is true that any averaging period could allow a discharger to discharge high quality water most months and then discharge very low quality water for the remaining month(s). The low quality months can be progressively lower as the period becomes longer. However, we note that the objective, which is designed to protect beneficial uses, must still be met. Further, peaks of this type can easily be controlled by imposing a monthly maximum value.

The Regional Board raised the issue of what to do the month after the in-lieu program ends. We suggest the Regional Board use the 12-month average (perhaps in conjunction with a monthly maximum discussed above) continuously for any plant which participates in the in-lieu program.

Accordingly, we believe the situation to be essentially the same as when we reviewed the issue in 1982. There is still a need to allow a longer averaging period when in-lieu water is used. Such a longer averaging period will still protect water quality and meet the established objectives.

III. SUMMARY AND CONCLUSION

We encourage conjunctive use programs. As we previously held in Order No. WQ 82-5, to allow the petitioner to participate in the in-lieu program, we direct the Regional Board to use a 12-month averaging procedure for Chino Basin discharges when participating in a program which substitutes Colorado River water for other supplies.

IV. ORDER

IT IS HEREBY ORDERED THAT:

1. The Regional Board shall modify Regional Board Orders Nos. 85-1 and 85-141 accordingly.

CERTIFICATION

The undersigned, Executive Director of the State Water Resources Control 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 March 20, 1986.

Aye: Darlene E. Ruiz
E. H. Finster
Eliseo Samaniego
Danny Walsh

No: None

Absent: Raymond V. Stone

Abstain: None

Raymond Walsh

Raymond Walsh
Interim Executive Director