

*Amendment to the Water Quality Control Plan to incorporate a
Policy for Addressing Levels of Chloride in Discharges of Wastewaters*

Attachment A

**Publicly-owned Treatment Plants Subject to a Variance from
Chloride Limits Based on Existing Water Quality Objectives**

<u>Publicly-owned Treatment Plant</u>	<u>Operator</u>
Saugus Water Reclamation Plant 26200 Springbrook Road, Saugus	County Sanitation Districts of Los Angeles County
Valencia Water Reclamation Plant 26185 The Old Road, Valencia	County Sanitation Districts of Los Angeles County
Santa Paula Wastewater Reclamation Facility 905 Corporate Street, Santa Paula	City of Santa Paula & Ventura Regional Sanitation District
City of Simi Valley Water Quality Control Facility 600 West Los Angeles Avenue, Simi Valley	City of Simi Valley
Moorpark Wastewater Treatment Plant 9550 Los Angeles Avenue, Moorpark	Ventura County Waterworks, District No. 1
Camrosa Wastewater Treatment Plant Lewis Road & Potrero Road, Camarillo	Ventura County Regional Sanitation District & Camrosa County Water District
Hill Canyon Wastewater Treatment Plant 9600 Santa Rosa Road, Camarillo	City of Thousand Oaks
Olsen Road Water Reclamation Plant 2025 Olsen Road, Thousand Oaks	City of Thousand Oaks
Camarillo Sanitary District Water Reclamation Plant 150 East Howard Road, Camarillo	Camarillo Sanitary District

Changes to Chapter One, Page 1-23

Imported Water Supply, Drought, and Salinity Loading Issues

Chloride concentrations in supply waters imported into the Region are periodically affected by drought. Moreover, baseline concentrations of chloride in supply waters imported into the Region are higher than they were in 1975, when the Regional Board set water quality objectives for chloride based upon background concentrations of chloride in the Region's waterbodies. The higher chloride concentrations in imported waters appear to be the result of impairments and/or intensifying demands for and utilization of water resources in watersheds from which the supply waters are imported.

During the most recent period of drought starting in the late 1980s, water supplies imported into the Los Angeles Region from northern California often had higher than normal concentrations of chlorides which, in turn, often resulted in waste discharges that exceeded chloride limitations. To provide a measure of relief to dischargers who were unable to meet chloride limitations primarily due to supply waters, the drought and/or water conservation measures, the Regional Board adopted Resolution No. 90-04, entitled *Effects of Drought Induced Water Supply Changes and Water Conservation Measures on Compliance with Waste Discharge Requirements within the Los Angeles Region (Drought Policy)*. This policy, which was adopted on March 26, 1990, temporarily raised chloride limitations to in response to chloride increases in the water supply for a period of three years. Under this policy, chloride limitations were temporarily set at the lesser of (i) 250 mg/L or (ii) the supply concentration plus 85 mg/L. As chloride concentrations did not return to pre-drought levels, the Regional Board extended the Drought Policy for an 18-month period starting in June 1993, and extended the policy again for a 24-month period starting in February 1995.

Although the drought ended in 1993, water supplies in storage still contained higher than normal levels of chlorides. Accordingly, on June 14, 1993 the Regional Board extended these temporary chloride limitations for 18 months. The Regional Board realizes that there may be a need for a longer term solution to these water supply issues, and will address these issues as part of the next Triennial Review.

In order to develop a long-term solution to chloride compliance problems while still protecting beneficial uses, the Regional Board worked with a group of technical experts representing a variety of interests, including: water supply, reclamation, and wastewater management; environmental protection; and water softener industry interests. This group, together with the Regional Board, developed a Policy for Addressing Levels of Chloride in Discharges of Wastewaters (Chloride Policy) to replace the short-term Drought Policy. The Chloride Policy, which the Regional Board adopted on January 27, 1997, permanently reset chloride limits for certain surface waters and also acknowledged the need to assess and manage salinity loading over the long term. The water quality objectives for chloride were reset at the lesser of (i) levels necessary to fully protect beneficial uses, or (ii) baseline levels of chloride in water supply plus a chloride loading factor. To address salinity loading issues, the Chloride Policy (i) includes requirements for monitoring and assessment of sources of salinity, (ii) encourages consumer education on water hardness issues and water quality problems associated with water softening processes, and (iii) encourages water

supply and wastewater treatment agencies to shift to less chlorine-intensive processes to achieve treatment and disinfection of supply waters and wastewaters, to the extent that such shifts are cost-effective and consistent with water quality and reclamation objectives.

Due to concerns expressed about the potential for future adverse impacts to agricultural resources in Ventura County, water quality objectives for chloride in the Santa Clara River and Calleguas Creek watersheds were not revised under the Chloride Policy. However, in the Santa Clara River watershed, water quality objectives for chloride will be reconsidered for revision within three years following final approval by the US EPA of the Chloride Policy. This will occur prior to renewal of National Pollutant Discharge Elimination System (NPDES) permits, scheduled for the year 2001 in the Santa Clara River watershed and 2003 in the Calleguas Creek watershed. In any future revisions to water quality objectives for chloride in the Santa Clara River and Calleguas Creek watersheds, the Regional Board will consider chloride levels in supply waters (including fluctuations that may be due to drought conditions), reasonable loading factors during beneficial use and disinfection of supply waters and wastewaters, methods to control chloride loading, and the associated costs and effectiveness of the various loading control methods.

Water quality objectives for chloride were not changed for the headwaters of the Region's major stream systems. Likewise, water quality objectives for chloride in ground waters were not changed due to concerns over degradation of ground waters stored in the Region's basins. In accordance with the State Board's Antidegradation Policy, water quality objectives currently in effect will continue to protect the naturally-high quality of such surface and ground waters.

The new water quality objectives were incorporated into Table 3-8 Water Quality Objectives for Selected Constituents in Inland Surface Waters. Regional Board Resolution No. 97-0X, Policy for Addressing Levels of Chloride in Discharges of Wastewater, is included in Chapter 5 (page xx).

Changes to Chapter 2

See replacement figures on pages 3, 4, 5, and 6 of this document.

REACH BOUNDARIES
 (marked by dotted lines)

SANTA CLARA RIVER

1. Between Highway 101 Bridge and Santa Clara River Estuary
2. Between Freeman Diversion "Dam" near Salicoy and Highway 101 Bridge
3. Between A Street, Fillmore and Freeman Diversion "Dam" near Salicoy
4. Between Blue Cut gaging station (approx. 1 mile west of LA/Ventura county line) and A Street, Fillmore
5. Between West Pier Highway 99 and Blue Cut gaging station
6. Between Bouquet Canyon Road Bridge and West Point Highway 99
7. Between Lang gaging station and Bouquet Canyon Road Bridge
8. Above Lang gaging station
9. SANTA PAULA CREEK above Santa Paula Water Works Diversion Dam
10. SESPE CREEK above gaging station, 500' downstream from Little Sespe Creek
11. PIRU CREEK above gaging station below Santa Felicia Dam

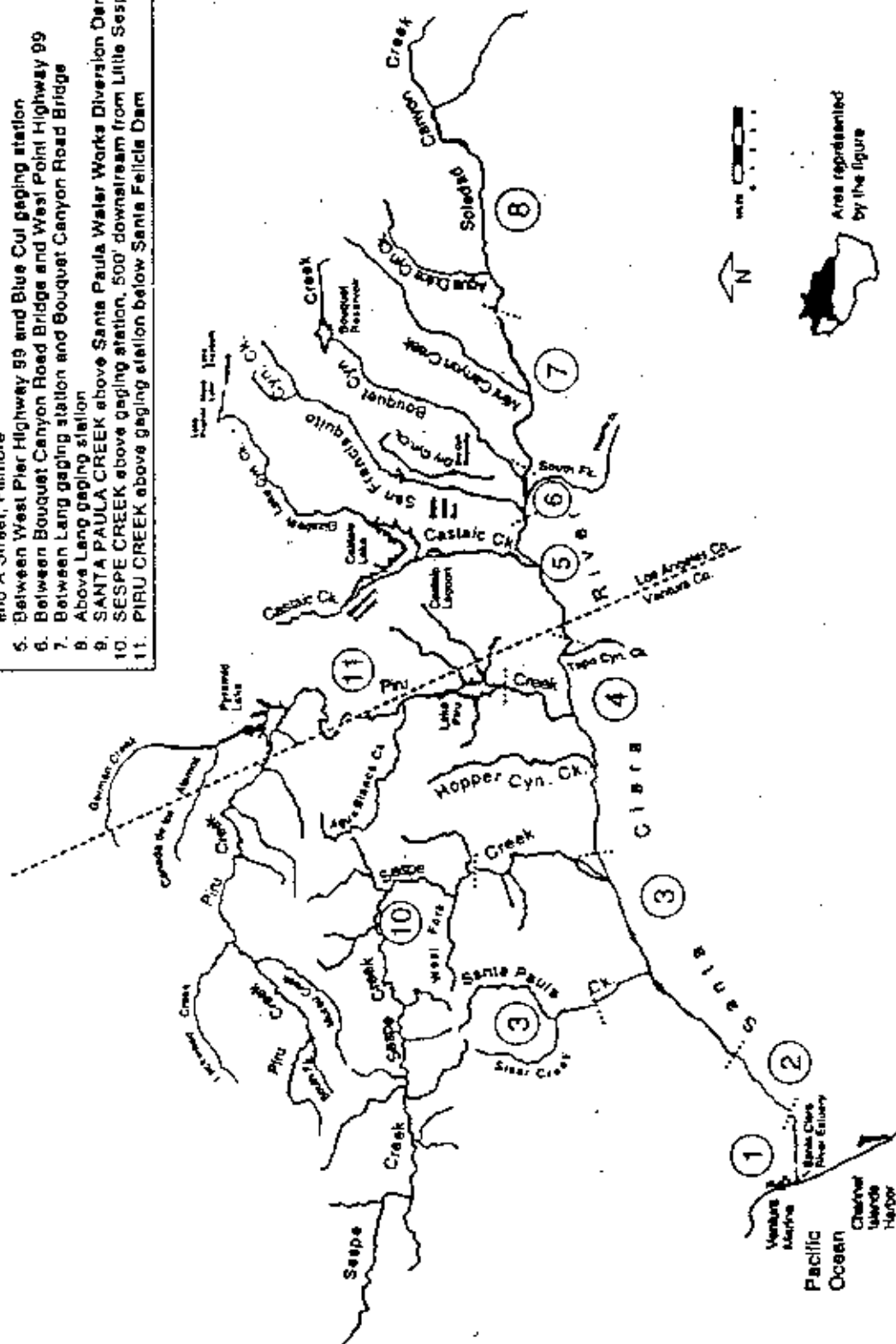


Fig 2-3. Major surface waters of the Santa Clara River watershed.

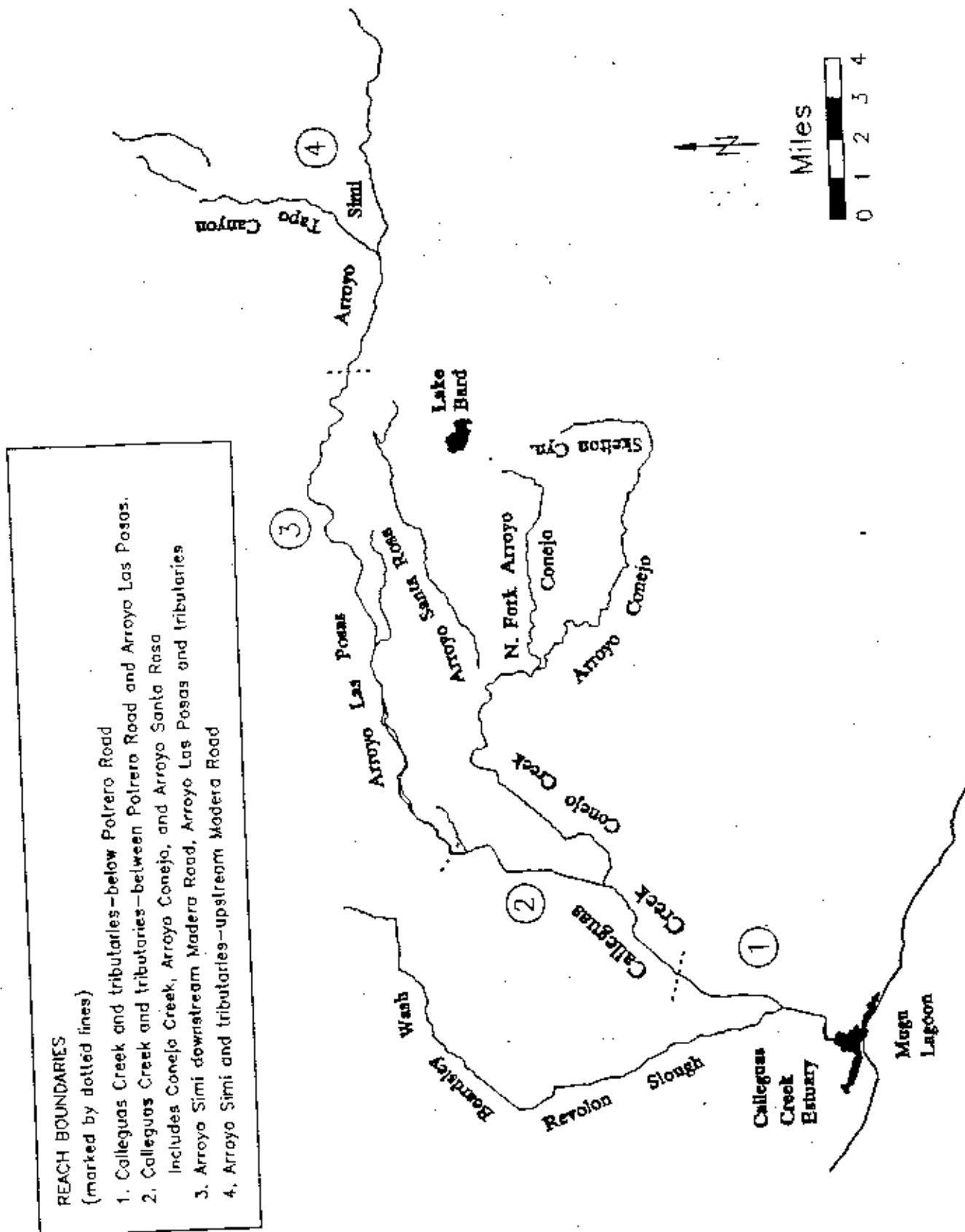


Figure 2-4. Major surface waters of the Calleguas-Conejo Creek watershed.

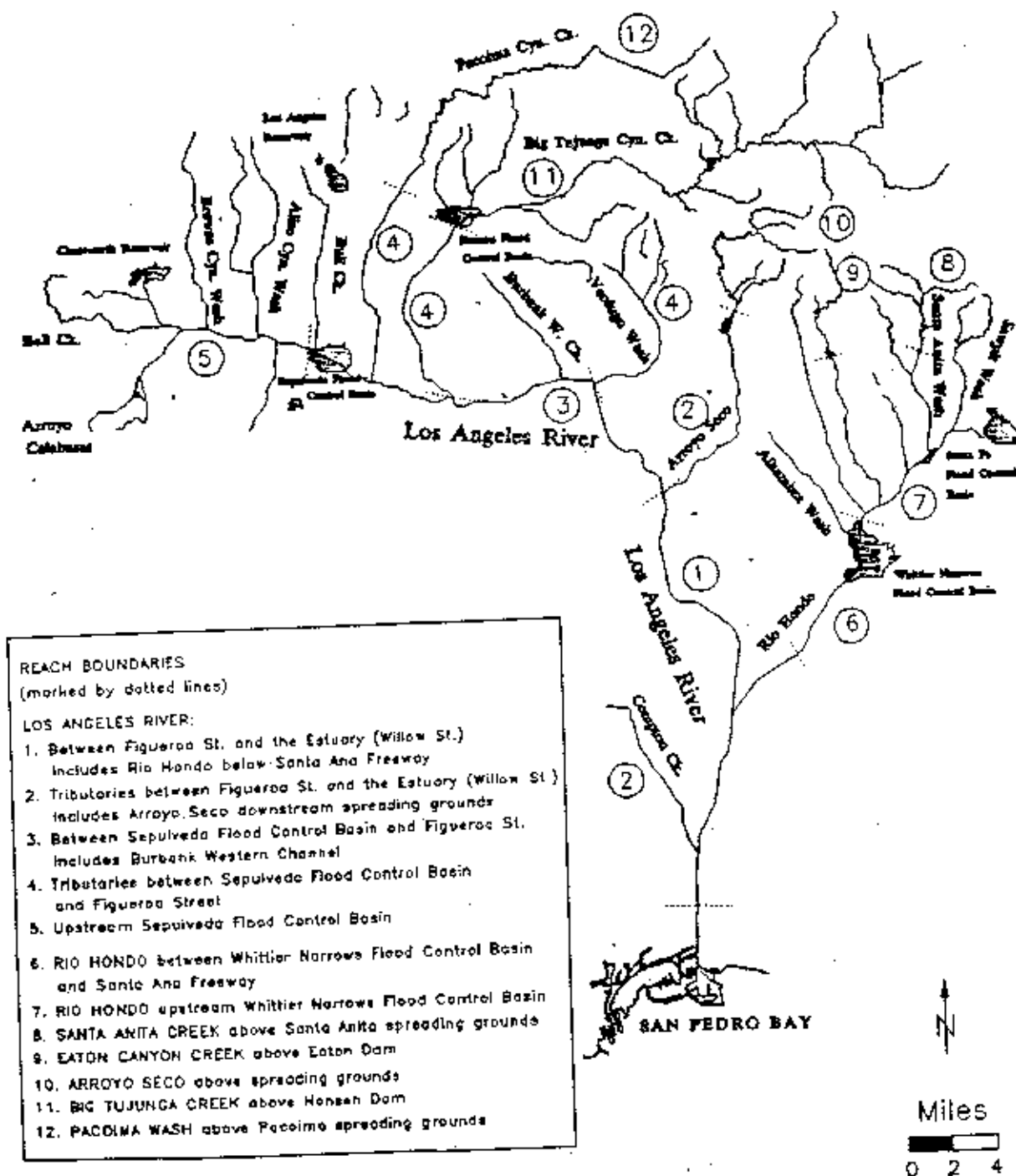


Figure 2-8. Major surface waters of the Los Angeles River watershed.

CEWQCB-LA

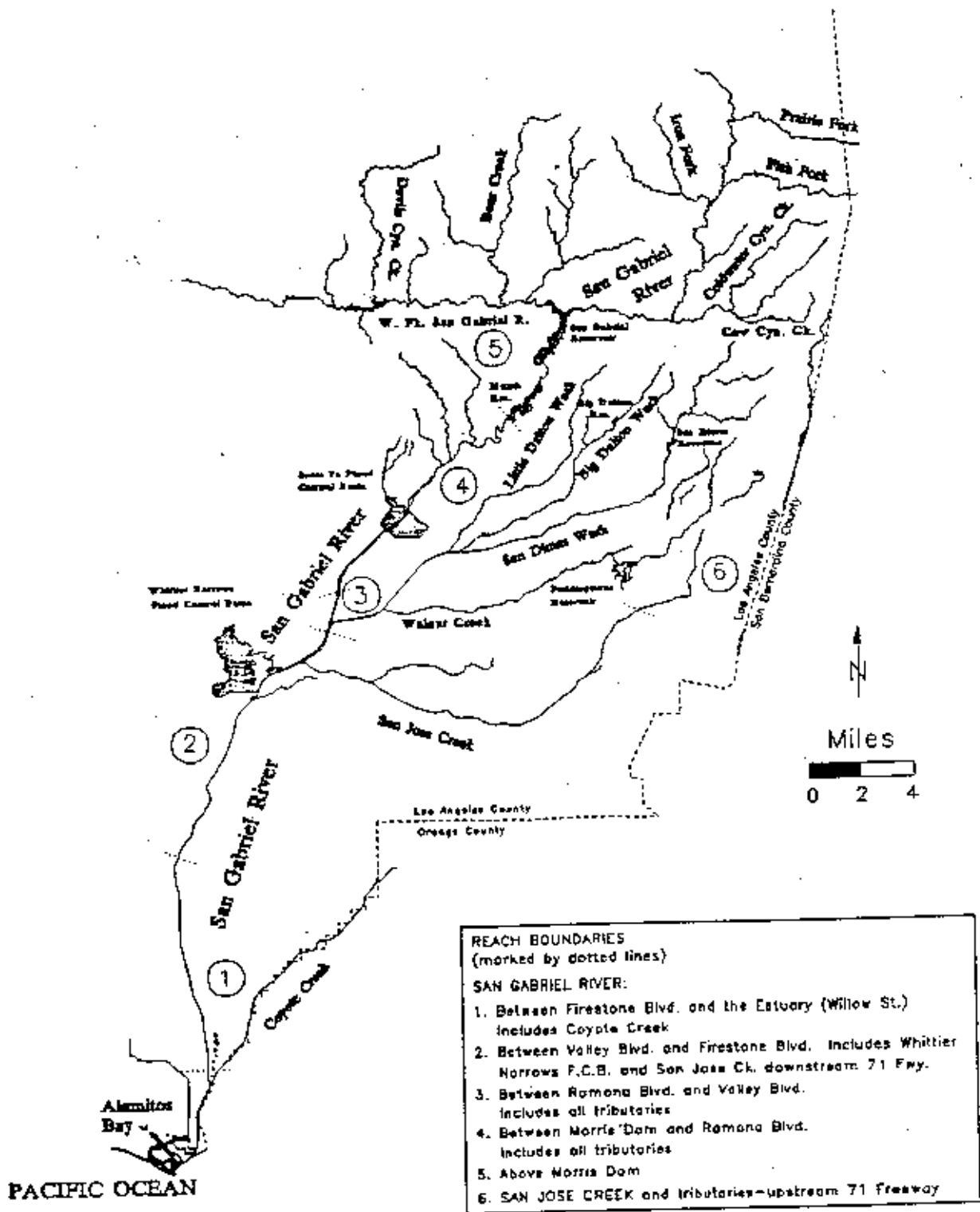


Figure 2-9. Major surface waters of the San Gabriel River watershed.

Changes to Chapter 3

See below for addition to page 3-11, **Mineral Quality**.

As explained in Chapter 2 (page xx), many dischargers started to experience compliance problems with chloride limits in the late 1980s, largely due to chloride levels in supply waters imported into the Region. In order to provide a long-term solution to chloride compliance problems while continuing to protect beneficial uses, the Regional Board adopted Resolution No. 97-0X: Policy for Addressing Levels of Chloride in Discharges of Wastewater (Chapter 5, page xx). This Chloride Policy revised water quality objectives in selected surface waters based upon chloride levels in supply waters imported into the Region plus a loading factor. The policy also set forth measures to address salinity loading throughout the Region.

Due to concerns expressed about the potential for future adverse impacts to agricultural resources in Ventura County, water quality objectives for chloride in the Santa Clara River and Calleguas Creek watersheds were not revised under the Chloride Policy in 1997. However, the Regional Board has granted variances (interim relief) from surface water chloride limits in NPDES permits that are based on existing water quality objectives in the Santa Clara River and Calleguas Creek watersheds. Variances were granted to the following Publicly-owned Treatment Plants: Saugus Water Reclamation Plant, Valencia Water Reclamation Plant, Santa Paula Wastewater Reclamation Facility, City of Simi Valley Water Quality Control Facility, Moorpark Wastewater Treatment Plant, Camrosa Wastewater Treatment Plant, Olsen Road Water Reclamation Plant, Hill Canyon Wastewater Treatment Plant, and Camarillo Sanitary District Water Reclamation Plant. Under the variances, these existing dischargers will be subject to interim limits specified below:

Waterbody Segments for which Existing Dischargers Are Subject to Interim Chloride Limits	Interim Limit
Santa Clara River--between Bouquet Canyon Road Bridge and West Pier Highway 99	190 mg/L
Santa Clara River--between West Pier Highway 99 and Blue Cut gaging station	130 mg/L
Santa Clara River--between Blue Cut gaging station and A Street (Fillmore)	190 mg/L
Arroyo Simi and tributaries--upstream Madera Road	160 mg/L
Arroyo Simi--downstream Madera Road, Arroyo Las Posas, and tributaries	190 mg/L
Calleguas Creek and tributaries--between Potrero Road and Arroyo Las Posas (including Conejo Creek, Arroyo Conejo, and Arroyo Santa Rosa)	190 mg/L

The Regional Board does not anticipate that the variance period for interim relief will need to extend for more than three years following final approval of the Chloride Policy and associated amendment to the Basin Plan. The variance period for interim relief will extend to three years following final approval of the Chloride Policy and associated amendment to the Basin Plan--actual date to be filled in. During this period, the Regional Board expects that the group of local agencies, municipalities, representatives of the agricultural community, and other interested parties which have commented upon this policy will work together to (i) clarify water quality objectives needed to protect waters used for irrigation in the Santa Clara River and Calleguas Creek watersheds, (ii) assess significant sources of chloride loading, and (iii) contingent upon results of the chloride loading assessment, identify cost-effective ways to protect beneficial uses of waters in the Santa Clara and Calleguas Creek watersheds.

At the end of the variance period, the Regional Board may reconsider revisions to water quality objectives for chloride in the Santa Clara River and Calleguas Creek watersheds. Future revisions of water quality objectives will consider chloride levels in supply waters (including fluctuations that may be due to future drought conditions), reasonable loading factors during beneficial use and treatment of supply waters and wastewaters, methods to control chloride loading, and the associated costs and effectiveness of the various loading control methods. A preliminary schedule and set of major tasks for accomplishing these goals is set forth in Table 3-X. Should these issues not be resolved within the three-year variance period, the Regional Board intends to renew the variance.

Table 3-X. Schedule for Chloride Loading Analyses—Santa Clara River and Calleguas Creek Watersheds¹

Major Tasks and Questions to be Answered	Participants	Targeted Completion ²
Irrigation Standards Research: What are the appropriate chloride standards for agriculture in the Santa Clara and Calleguas Creek watersheds?	Regional Board, agricultural representatives, water suppliers, and other concerned parties	July 1997
Source Identification: What are the sources of chloride? How can mass loadings from the identified sources be quantified?	Regional Board, water suppliers, POTWs, and other concerned parties	October 1997
Quantification: What is the mass loading of chloride from each identified source, and levels of confidence in data? What are the chloride loading trends?	Regional Board, water suppliers, POTWs, and other concerned parties	October 1998
Conclusions: What are appropriate water quality objectives for chloride? What are the significant sources of chloride? What are the impacts of chloride levels in upstream discharges on downstream beneficial uses?	Regional Board, agricultural representatives, water suppliers, POTWs, and other concerned parties	Jan 1999
Development of chloride control measures: What reasonable measures can be expected to achieve water quality objectives?	Regional Board, agricultural representatives, water suppliers, POTWs, and other concerned parties	March 1999
Consensus on management/control measures: Will concerned parties agree to implement appropriate measures that will achieve water quality objectives for chloride?	Regional Board, agricultural representatives, water suppliers, POTWs, and other concerned parties	August 1999
Consideration of revisions to water quality objectives for chloride.	Regional Board, with public review	October 1999

¹The scope of the analyses may be broadened to address loading concerns for other saline constituents, such as sodium and total dissolved solids. However, such efforts will not delay analyses concerning chloride objectives and impacts.

²Targeted dates are estimates. If practical, tasks will be completed sooner than indicated on this schedule.

Table 3-8. Water Quality Objectives for Selected Constituents in Inland Surface Waters¹.

Reaches are in upstream to downstream order.

WATERSHED/STREAM REACH ^b	TDS (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Boron ^c (mg/L)	Nitrogen ^d (mg/L)	SAR ^e (mg/L)
Miscellaneous Ventura Coastal Streams	no waterbody specific objectives ^f					
Ventura River Watershed:						
Above Camino Cielo Road	700	300	50	1.0	5	5
Between Camino Cielo Road and Casitas Vista Road	800	300	50	1.0	5	5
Between Casitas Vista Road and confluence with Weldon Canyon	1000	300	60	1.0	5	5
Between confluence with Weldon Canyon and Main Street	1500	500	300	1.5	10	5
Between Main St. and Ventura River Estuary	no waterbody specific objectives ^f					
Santa Clara River Watershed:						
Above Lang gaging station	500	100	50	0.5	5	5
Between Lang gaging station and Bouquet Canyon Road Bridge	800	150	100	1.0	5	5
Between Bouquet Canyon Road Bridge and West Pier Highway 99	1000	300	100	1.5	10	5
Between West Pier Highway 99 and Blue Cut gaging station	1000	400	100	1.5	5	10
Between Blue Cut gaging station and A Street, Fillmore	1300	600	100	1.5	5	5
Between A Street, Fillmore and Freeman Diversion "Dam" near Saticoy	1300	650	80	1.5	5	5
Between Freeman Diversion "Dam" near Saticoy and Highway 101 Bridge	1200	600	150	1.5	-	-
Between Highway 101 Bridge and Santa Clara River Estuary	no waterbody specific objectives ^f					
Santa Paula Creek above Santa Paula Water Works Diversion Dam	600	250	45	1.0	5	5
Sespe Creek above gaging station, 500' downstream from Little Sespe Creek	800	320	60	1.5	5	5
Piru Creek above gaging station below Santa Felicia Dam	800	400	60	1.0	5	5

Table 3-8. Water Quality Objectives for Selected Constituents in Inland Surface Waters^a (cont.)
 Reaches are in upstream to downstream order.

WATERSHED/STREAM REACH ^b	TDS (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Boron ^c (mg/L)	Nitrogen ^d (mg/L)	SAR ^e (mg/L)
Calleguas Creek Watershed:						
Arroyo San and tributaries upstream Madera Road	850	250	150	1.0	10	f
Arroyo San downstream Madera Road, Arroyo Las Posas, and tributaries	850	250	150	1.0	10	f
Calleguas Creek and tributaries between Potrero Road and Arroyo Las Posas, includes Concho Creek, Arroyo Concho, and Arroyo Santa Rosa	850	250	150	1.0	10	f
Below Potrero Road	no waterbody specific objectives ^f					
Miscellaneous Los Angeles County Coastal Streams	no waterbody specific objectives ^f					
Malibu Creek Watershed	2000	500	500	2.0	10	-
Ballona Creek Watershed	no waterbody specific objectives ^f					
Dominguez Channel Watershed	no waterbody specific objectives ^f					
Los Angeles River Watershed:						
Los Angeles River and tributaries upstream Sepulveda Flood Control Basin	950	300	150	g	8	g
Los Angeles River between Sepulveda Flood Control Basin and Figueroa Street, includes Burbank Western Channel only	950	300	150 180	g	8	g
Other tributaries to Los Angeles River between Sepulveda Flood Control Basin and Figueroa Street	950	300	150	g	8	g
Los Angeles River between Figueroa Street and Los Angeles River Estuary (Willow Street), includes Rio Hondo below Santa Ana Freeway only	1500	350	150 180	g	8	g
Other tributaries to Los Angeles River between Figueroa Street and Los Angeles River Estuary, includes Arroyo Seco downstream spreading grounds	1500	350	150	g	8	g
Rio Hondo between Whittier Narrows Flood Control Basin and Santa Ana Freeway	750	300	150 180	g	8	g
Rio Hondo upstream Whittier Narrows Flood Control Basin	750	300	150	g	8	g
Santa Anita Creek above Santa Anita spreading grounds	250	30	10	g	f	g

Table 3-8. Water Quality Objectives for Selected Constituents in Inland Surface Waters* (cont.)

Reaches are in upstream to downstream order.

WATERSHED/STREAM REACH*	TDS (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Boron ^e (mg/L)	Nitrogen ^d (mg/L)	SAR ^e (mg/L)
Los Angeles River Watershed (cont.):						
Eaton Canyon Creek above Eaton Dam	250	30	10	g	f	g
Arroyo Seco above spreading grounds	300	40	15	g	f	g
Big Tujunga Creek above Hansen Dam	350	50	20	g	f	g
Pacoima Wash above Pacoima spreading grounds	250	30	10	g	f	g
San Gabriel River Watershed:						
San Gabriel River above Morris Dam	250	30	10	0.6	2	2
San Gabriel River between Morris Dam and Ramona Blvd.	450	100	100	0.6	8	g
San Gabriel River and tributaries between Ramona Blvd. and Valley Blvd.	750	300	150	1.0	8	g
San Gabriel River between Valley Blvd. and Firestone Blvd. Includes Whittier Narrows Flood Control Basin and San Jose Creek downstream of Freeway only.	750	300	150-180	1.0	8	g
San Jose Creek and tributaries upstream of Freeway	750	300	150	1.0	8	g
San Gabriel River between Firestone Blvd. and San Gabriel River Estuary (downstream from Willow Street). Includes Coyote Creek.	no waterbody specific objectives ^f					
All other minor San Gabriel Mountain streams tributary to San Gabriel Valley ^f	300	40	15	g	f	g
Island Watercourses:						
Anacapa Island	no waterbody specific objectives ^f					
San Nicolas Island	no waterbody specific objectives ^f					
Santa Barbara Island	no waterbody specific objectives ^f					
Santa Catalina Island	no waterbody specific objectives ^f					
San Clemente Island	no waterbody specific objectives ^f					

Table 3-8. Water Quality Objectives for Selected Constituents in Inland Surface Waters* (cont.)

Reaches are in upstream to downstream order.

WATERSHED/STREAM REACH ^b	TDS (mg/L)	Sulfate (mg/L)	Chloride (mg/L)	Boron ^c (mg/L)	Nitrogen ^d (mg/L)	SAR ^e (mg/L)
Other Watercourses:						
San Antonio Creek ^f	225	25	6	—	—	—
Chino Creek ^f	—	—	—	—	—	—

- As part of the State's continuing planning process, data will continue to be collected to support the development of numerical water quality objectives for waterbodies and constituents where sufficient information is presently unavailable. Any new recommendations for water quality objectives will be brought before the Regional Board in the future.
- All references to watersheds, streams and reaches include all tributaries. Water quality objectives are applied to all waters tributary to those specifically listed in the table. See Figures 2-1 to 2-10 for locations.
- Where naturally occurring boron results in concentrations higher than the stated objective, a site-specific objective may be determined on a case-by-case basis.
- Nitrate-nitrogen plus nitrite-nitrogen (NO₃-N + NO₂-N). The lack of adequate nitrogen data for all streams precluded the establishment of numerical objectives for all streams.
- Sodium adsorption ratio (SAR) predicts the degree to which irrigation water tends to enter into cation-exchange reactions in soil.

$$SAR = Na+ / ((Ca++ + Mg++) / 2)^{1/2}$$

- Site-specific objectives have not been determined for these reaches at this time. These areas are often impaired (by high levels of minerals) and there is not sufficient historic data to designate objectives based on natural background conditions. The following table illustrates the mineral or nutrient quality necessary to protect different categories of beneficial uses and will be used as a guideline for establishing effluent limits in these cases. Protection of the most sensitive beneficial use(s) would be the determining criteria for the selection of effluent limits.

Recommended objective (mg/L)	Beneficial Use Categories				
	MUN (Drinking Water Standards) ¹	PROC	AGR	AQ LIFE*(Frshwtr)	GWR
TDS	500 (USEPA secondary MCL)	60-1500 ^{2,3}	450-2000 ^{2,3,6}		Limits based on appropriate groundwater basin objectives and/or beneficial uses
Chloride	250 (USEPA secondary MCL)	20-1000 ^{2,3}	100-355 ^{2,3,6}	230 (4 day ave, continuous conc) ⁴	
Sulfate	400-500 (USEPA proposed MCL)	20-300 ^{2,3}	350-600 ^{2,3}		
Boron			0.5-4.0 ^{2,6}		
Nitrogen	10 (USEPA MCL)				

References: 1) USEPA CFR § 141 et seq., 2) McKee and Wolf, 1963, 3) Ayers and Westcot, 1985, 4) USEPA, 1988, 5) Water Pollution Control Federation, 1989, 6) USEPA, 1973, 7) USEPA 1980, 8) Ayers, 1977.

* Aquatic life includes a variety of Beneficial Uses including WARM, COLD, SPWN, MIGR and RARE.

- Agricultural supply is not a beneficial use of the surface water in the specified reach.
- Rio Hondo spreading grounds are located above the Santa Ana Freeway.
- The stated objectives apply to all other surface streams originating within the San Gabriel Mountains and extend from their headwaters to the canyon mouth.
- These watercourses are primarily located in the Santa Ana Region. The water quality objectives for these streams have been established by Santa Ana Region. Dashed lines indicate that numerical objectives have not been established, however, narrative objectives shall apply. Refer to the Santa Ana Region Basin Plan for more details.

Changes to Chapter Five, Page 5-8

Regional Board Resolutions

The Los Angeles Regional Board has adopted many resolutions over the years. The following are summaries of the resolutions that are most important to the Regional Board's implementation of the Basin Plan and are herein incorporated by reference:

Resolution No. 90-04, Adopted March 26, 1990.

~~"Effects of Drought Induced Water Supply Changes and Water Conservation Measures on Compliance with Waste Discharge Requirements within the Los Angeles Region." This policy temporarily raised chloride limitations in Waste Discharge Requirements to match chloride increases in the water supply for a period of 3 years. Specifically, chloride limitations were temporarily set at the lesser of (i) 250 mg/L or (ii) the supply concentration plus 85 mg/L.~~

Resolution No. 97-x, Adopted January 27, 1997.

~~"Policy for Addressing Levels of Chloride in Discharges of Wastewaters" (see page 5-x)~~
~~New water quality objectives for chloride, based upon baseline levels of chloride in supply waters imported into the Los Angeles Region plus a loading factor, were established for several reaches of surface waterbodies. Additionally, the policy sets forth long-term measures to address salinity loading issues. This policy replaced Resolution No. 90-04, "Effects of Drought Induced Water Supply Changes and Water Conservation Measures on Compliance with Waste Discharge Requirements within the Los Angeles Region" (Drought Policy).~~

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LOS ANGELES REGIONAL BOARD
WATER QUALITY CONTROL DIVISION