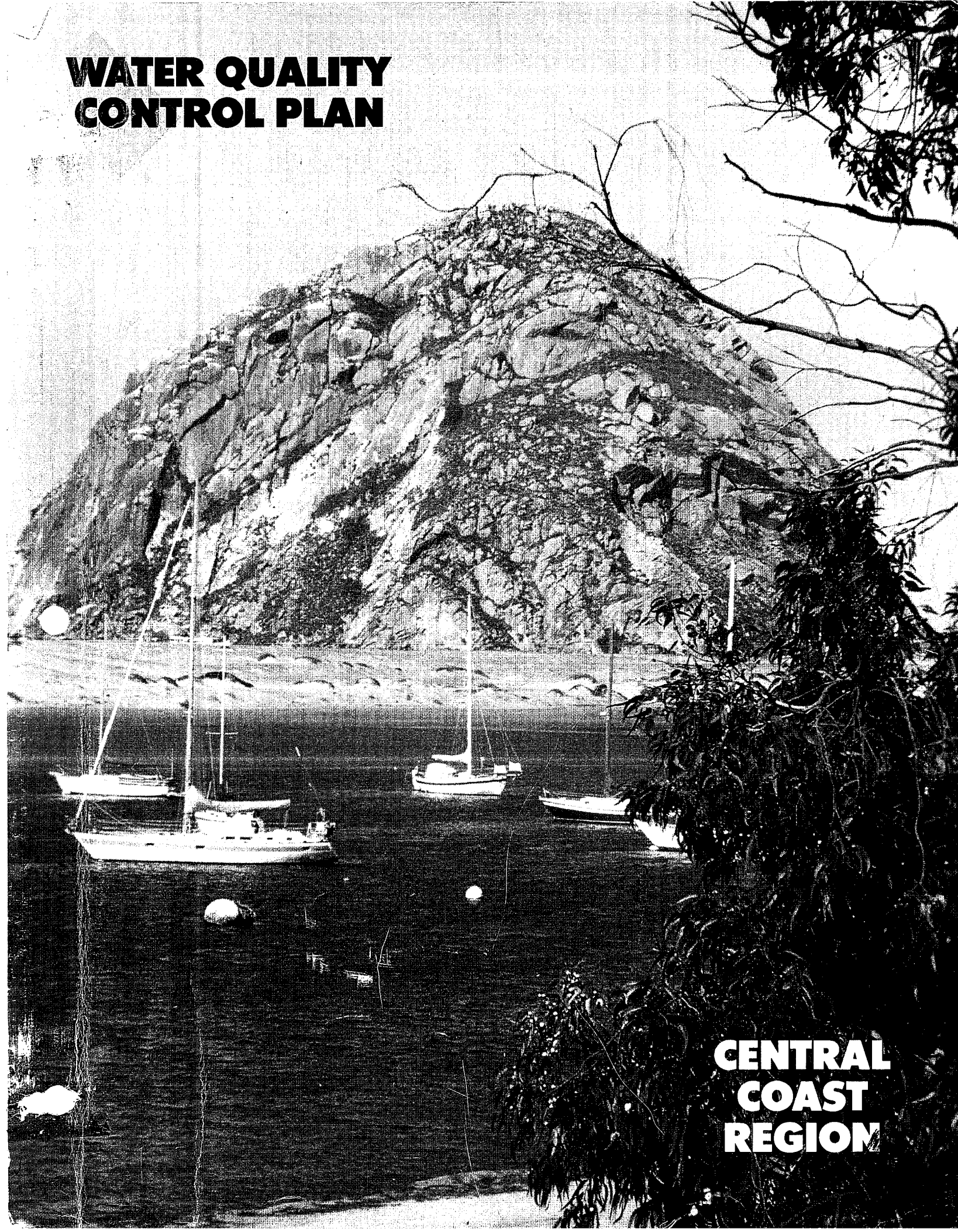


WATER QUALITY CONTROL PLAN



**CENTRAL
COAST
REGION**

WATER QUALITY CONTROL PLAN

CENTRAL COAST BASIN

STATE WATER RESOURCES CONTROL BOARD

REGIONAL WATER QUALITY CONTROL BOARD

CENTRAL COAST REGION

REGION 3

STATE OF CALIFORNIA

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

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STATE OF CALIFORNIA

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION**

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CHAPTER 1. INTRODUCTION

FUNCTION OF THE WATER QUALITY CONTROL PLAN (BASIN PLAN)

The objective of this Water Quality Control Plan for the Central Coastal Basin, or Basin Plan, is to show how the quality of the surface and ground waters in the Central Coast Region should be managed to provide the highest water quality reasonably possible. Water uses and water benefits vary. Water quality is an important factor in determining use and benefit. For example, drinking water has to be of higher quality than the water used to irrigate pastures. Both are legitimate uses, but the quality requirements for irrigation are different from those for domestic use. The plan recognizes such variations.

This Basin Plan lists the various water uses (Beneficial Uses, Chapter 2). Second, it describes the water quality which must be maintained to allow those uses (Water Quality Objectives, Chapter 3). Federal terminology is somewhat different, in that beneficial uses and water quality objectives are combined and the combination is called Water Quality Standards. Chapter 4, the Implementation Plan, then describes the programs, projects and other actions which are necessary to achieve the standards established in this plan. Chapter 5, Plans and Policies, summarizes State Water Resources Control Board (State Board) and Regional Water Quality Control Board (Regional Board) plans and policies to protect water

quality. Chapter 6 describes statewide surveillance and monitoring programs as well as regional surveillance and monitoring programs.

The Regional Board implements the Basin Plan by issuing and enforcing waste discharge requirements to individuals, communities, or businesses whose waste discharges can affect water quality. These requirements can be either State Waste Discharge Requirements for discharges to land, or federally delegated National Pollutant Discharge Elimination System (NPDES) permits for discharges to surface water. Methods of treatment are not specified. When such discharges are managed so that: 1) they meet these requirements; 2) water quality objectives are met; and, 3) beneficial uses are protected, water quality is controlled.

The Basin Plan is also implemented by encouraging water users to improve the quality of their water supplies, particularly where the wastewater they discharge is likely to be reused. Public works or other projects which can affect water quality are reviewed and their impacts identified. Proposals which implement or help achieve the goals of the Basin Plan are supported; the Regional Board makes water quality control recommendations for other projects.

LEGAL BASIS AND AUTHORITY

California's Porter-Cologne Water Quality Control Act (1969), which became Division 7 ("Water Quality") of the State Water Code, establishes the responsibilities and authorities of the nine Regional Water Quality Control Boards (previously called Water Pollution Control Boards) and the State Water Resources Control Board (SWRCB). The Porter-Cologne Act names these Boards "...the principal state agencies with primary responsibility for the coordination and control of water quality" (Section 13001). Each Regional Board is directed to "...formulate and adopt water quality control plans for all areas within the region." A water quality control plan for the waters of an area is defined as having three components: beneficial uses which are to be protected, water quality objectives which protect those uses, and an implementation plan which accomplishes those objectives (Section 13050). Further, "such plans shall be periodically reviewed and may be revised" (13240). The Federal Clean Water Act (Public Law 92-500, as amended) provides for the delegation of certain responsibilities in water quality control and water quality planning to the states. Where the Environmental Protection Agency (EPA) and the SWRCB have agreed to such delegation, the Regional Boards implement portions of the Clean Water Act, such as the NPDES program and toxic substance control programs.

The Porter-Cologne and Clean Water Acts also describe how enforcement of waste discharge regulations is to be carried out. Enforcement tools available to the Board range from simple letters to the discharger, through formal Board order, and direct penalty assessments, to judicial abatement for civil and/or criminal penalties. Legally noticed public hearings are required for most actions, but some enforcement actions (e.g., Cleanup or Abatement Orders) have been delegated to staff to allow for a quicker response than regularly scheduled board meetings can provide.

THE CENTRAL COASTAL REGION

One of nine Regional Water Quality Control Boards in California, the Central Coast Regional Board has jurisdiction over a 300-mile long by 40-mile wide section of the state's central coast. Its geographic area encompasses all of Santa Cruz, San Benito, Monterey, San Luis Obispo, and Santa Barbara Counties as well as the southern one-third of Santa Clara County, and small portions of San Mateo, Kern, and Ventura Counties. Included in the region are urban areas such as the Monterey Peninsula and the Santa Barbara coastal plain; prime agricultural lands as the Salinas, Santa Maria and Lompoc Valleys; National Forest lands, extremely wet areas like the Santa Cruz mountains; and arid areas like the Car-

rizo Plain. Figure 1-1 shows the Central Coast Regional boundary. Some physical characteristics of the Region are listed below:

CENTRAL COAST REGION ¹		
<u>CHARACTERISTICS</u>	<u>NUMBER</u>	<u>MEASURE</u>
Area of Region	-	11,274 square miles
Streams	Unknown	2,360 miles
Lakes	99	25,040 acres
Ground Water Basins	53	3,559 square miles
Mainland Coast	-	378 miles
Wetlands and Estuaries	59	8,387 acres
Areas of Special Biological Significance	9	235,825 acres

¹ Water Quality Assessment for Water Years 1986 and 1987, Water Quality Monitoring Report No. 88-1 Water Quality, Division of Water Quality, State Water Resources Control Board, July, 1988.

Topographic features are dominated by a rugged seacoast and three parallel ranges of the Southern Coast Mountains. Ridges and peaks of these mountains, the Diablo, Gabilan and Santa Lucia Ranges, reach to 5,800 feet. Between these ranges are the broad valleys of the San Benito and Salinas Rivers. These Southern Coast Ranges abut the west to east trending Santa Ynez Mountains of the Transverse Ranges that parallel the southern exposed terraces of the Santa Barbara Coast.

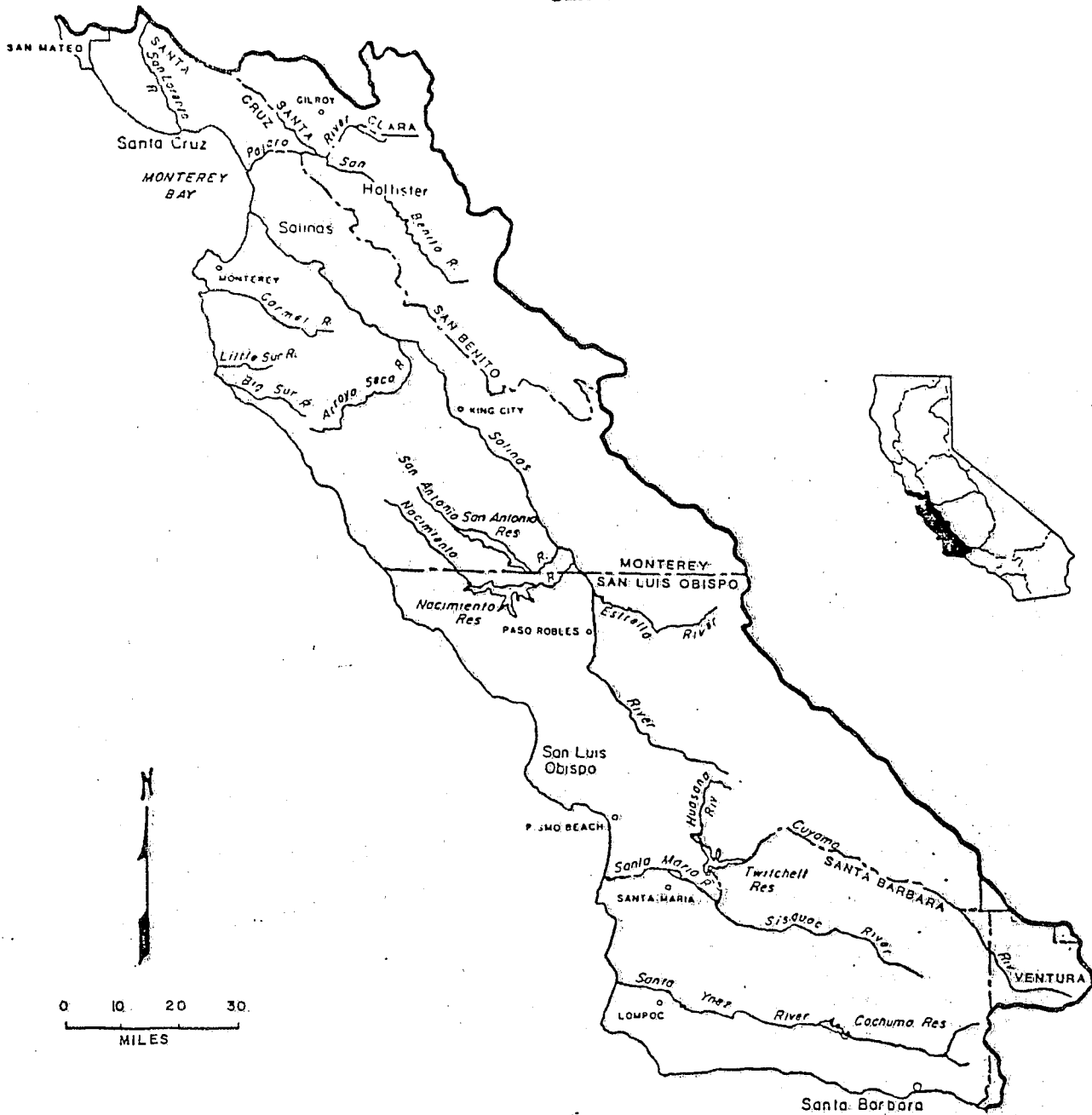
This coastal area includes urbanized and agricultural areas along Monterey Bay, the rugged Big Sur Coast, Morro Bay with its famous rock, the sandy clam beds of Pismo Beach, and a varied coastline south to Point Conception and eastward along the terraces and recreational beaches which line the Santa Barbara Channel. The inland valleys and cities reflect

an agricultural, oil, and tourism economy, as well as the early history of California expressed in the architectural styles of the famous Spanish missions which are found throughout this region.

The trend of the mountain ranges, relative to onshore air-mass movement, imparts a marked climatic contrast between seacoast, exposed summits, and interior basins. Variations in terrain, climate, and vegetation account for a multitude of different landscapes. Seacliffs, sea stacks, white beaches, cypress groves, and redwood forests along the coastal strand contrast with the dry interior landscape of small sagebrush, short grass, and low chaparral.

In times past, the beaches and ocean waters offshore have been prolific producers of clams, crustaceans, and important sport and commercial fish. Past fishing pressure and disruption of habitat have reduced fishery resources; protective controls are now in effect. Terrestrial wildlife includes a wide range of valley and upland species including the more common raccoon, quail, bear, and deer. Rare, endangered, or unique species include various shore birds, the Morro Bay Kangaroo rat, the European boar, and the California condor. The Sespe Condor Range serves as a sanctuary for this impressive bird.

FIGURE 1-1
CENTRAL COAST - REGION 3



Historically, the economic and cultural activities in the basin have been agrarian. Livestock grazing persists, but it has been combined with hay cultivation in the valleys. Irrigation, with pumped local ground water, is very significant in intermountain valleys throughout the basin. Mild winters result in long growing seasons and continuous cultivation of many vegetable crops in parts of this basin.

While agriculture and related food processing activities are major industries in the region, oil production, tourism, and manufacturing contribute heavily to its economy. The northern part of the region has experienced a significant influx of electronic manufacturing industry, and the southern part is being heavily influenced by expanded off-shore oil exploration and production.

The Central Coast Region has three times the volume of average annual precipitation (12,090,000 acre-feet) as the Los Angeles region, but one-seventh the population (1.2 million versus 8 million). The North Coast Region receives 52 million acre-feet of precipitation on the average with a population of 460,000. These three regions demonstrate the range of California's water and population distribution imbalance:

<u>Region</u>	<u>Annual Average Precipitation (Ac. Ft.) per Person</u>
North Coast	113.0
Central Coast	9.9
Los Angeles	0.56

Although this table shows the Central Coast is somewhat in the

middle of the state's water-versus-population distribution, the region is considered arid for the most part. An exception is the Santa Cruz Mountain area with its relatively high average precipitation.

Total population of the region is estimated to be 1.22 million people. San Luis Obispo County continues to grow more rapidly than other large counties in the region. The population of San Luis Obispo County has doubled since 1970:

CENTRAL COAST REGION POPULATION

<u>County</u>	<u>1970</u>	<u>1988</u>
Santa Cruz	124,000	225,400
Santa Clara (South)	29,000	65,800
San Benito	18,000	34,100
Monterey	249,000	346,100
San Luis Obispo	107,000	204,300
Santa Barbara	<u>265,000</u>	<u>345,000</u>
Total ¹	792,000	1,220,700

¹Table does not include relatively small populations of portions of Ventura, Kern, and San Mateo Counties that are within the Central Coast Region.

Adequate quality water for many beneficial uses in the Central Coastal Basin is in short supply. Water rationing for domestic purposes is seriously considered and sometimes implemented during water shortages. The use of water by the human population and its activities is increasing in the basin. Water mining and seawater intrusion have resulted in some locations. Consequently, the competition for waters of adequate quality will become more intense in the future.

Water quality problems most frequently encountered in the Central Coastal Basin pertain to excessive salinity or hardness of local ground waters. Ground water basins containing 1000 mg/l Total Dissolved Solids (TDS) or higher are found near Hollister, the Lower Forebay of the Salinas Sub-basin, the Carrizo Plain, the Santa Maria and Cuyama Valleys, San Antonio Creek Valley, Lompoc and Santa Rita Basins of the Santa Ynez River Valley, and Goleta and Santa Barbara. The Carrizo Plain ground waters are most highly mineralized--averaging over 5,000 mg/l TDS. Increasing nitrate concentrations is a growing problem in the Salinas River Basin, Los Osos Creek Basin, the Santa Maria Valley, and near Arroyo Grande. Surface water problems are less frequently evident, although bacteriological contamination of coastal waters has been a problem in Morro Bay and South Santa Barbara County. Eutrophication occurs in Pajaro River and Llagas Creek, Salinas River below Spreckels, and in the lower reaches of San Luis Obispo Creek. Some streams in the basin are naturally highly mineralized and contribute to the excessive salinity of local ground waters; examples include Pancho Rico Creek in the Salinas River Sub-basin, and the Cuyama River in the Santa Maria Sub-basin. Both surface waters contain in excess of 1000 mg/l TDS.

THE REGIONAL BOARD

The Regional Board consists of nine members appointed by the Governor for staggered four-year terms. Members must reside or

maintain a place of business within the region and must be associated with or have special knowledge of specific activities related to the control of water quality. Members of the Board conduct their business at regular meetings and public hearings at which public participation is encouraged.

All duties and responsibilities of the Regional Board are directed at providing reasonable protection and enhancement of the quality of all waters in the Region, both surface and underground. The programs by which these duties and responsibilities are carried out include:

- Preparing new or revised policies addressing region-wide water quality concerns;
- Adopting, monitoring compliance with, and enforcing waste discharge requirements and NPDES permits;
- Providing recommendations to the State Board on financial assistance programs, proposals for water diversion, budget development, and other statewide programs and policies;
- Coordinating with other public agencies which are concerned with water quality control; and
- Informing and involving the public on water quality issues.

HISTORY OF BASIN PLANNING AND THE BASIN PLAN

Prior to 1970, the Regional Board did not have an active water quality planning function. Water quality problems in surface streams and ground water were responded to by setting controls on discharges. Those discharge controls generally consisted of limiting the allowable increases in Total Dissolved Solids (TDS) concentrations and certain other parameters. Normally, the only additional requirement specified by the Board was that the discharge could not create a nuisance or pollution.

At the request of the Federal Water Quality Administration, predecessor to the EPA (and successor to the Federal Water Pollution Control Administration), the so-called 1967 Standards were developed and published. These standards applied to coastal and estuarine waters.

By 1970, the Regional Board was actively involved in the formulation of plans to meet established water quality objectives. The Federal Clean Water Act and the Porter-Cologne Act, requiring basinwide planning in order to qualify for state and federal funding, plus the National Pollution Discharge Elimination System (NPDES), which empowers the states to set discharge standards, placed new tools in the hands of the Regional Boards and encouraged the development of new approaches to water quality management.

The first single plan for this region was the 1971 Interim Water

Quality Control Plan. It represented significant progress in that the 1967 Standards were incorporated and standards were designated for fresh water streams as well.

Following adoption of the 1971 Interim Plan, the State Board developed and adopted the Ocean Plan and the Thermal Plan. The Regional Board expanded objectives for municipal and domestic water supplies. Chemical objectives for the San Lorenzo River Subbasin were made more stringent. Incorporation of these State Board plans and Regional Board revisions produced the Revised Interim Water Quality Control Plan of 1973.

Work then began in earnest on a complete Water Quality Control Plan, the 1975 Basin Plan, which has been the foundation of the Regional Board's planning operations since its adoption in 1975. Basin Plans were being developed statewide at that time under the direction of the State Water Resources Control Board (SWRCB). In this region, the prime contractors for basin planning were Brown and Caldwell Consulting Engineers; Water Resources Engineers, Inc.; and Yoder, Trottnner, Orlob and Associates. Water quality objectives were based largely on existing water quality.

After adoption of the 1975 Basin Plan, some thirty-eight amendments were made to the Basin Plan. Management of those amendments became cumbersome and led to the need for a Basin Plan reprint which

included all current amendments. This document is intended to fulfill that need.

TRIENNIAL REVIEW AND BASIN PLAN AMENDMENT PROCEDURE

The Federal Clean Water Act (Section 303(c)) requires states to hold public hearings for review of water quality standards at least once every three years. Water quality standards consist of beneficial use designations and water quality criteria (objectives) necessary to protect those uses. The Porter-Cologne Water Quality Control Act requires the entire Basin Plan to be reviewed periodically. While a major part of the review process consists of identifying potential problems, an important part of the review is the reaffirmation of those portions of the plan where no potential problems are identified.

At the conclusion of the triennial review public hearing, Regional Board staff prepares a priority list of potential problems to the Basin Plan that may result in amendments. Placing a potential problem on the priority list will only require Regional Board staff investigation of the need for an amendment. It does not necessarily mean a revision of the water quality control plan will be made.

Other items completed after the public hearing include:

- Detailed Workplans of each issue

- Regional Board identification of issues that can be completed within existing resource allocations over a three-year period
- List of issues requiring additional resources to complete.

Once the triennial review process is complete, Regional Board staff begin investigating the issues in order of rank. After each investigation, staff determines the need for a Basin Plan amendment.

Basin Plan amendments can also occur for issues not identified during the triennial review. Amendments can occur for urgent issues to reflect new legislation.

Basin Plan amendment hearings are advertised in the public notice section of a newspaper circulated in areas affected by the amendment. Persons interested in a particular issue can also notify the Regional Board staff of their interest in being notified of hearings on that topic.

Basin Plan amendments do not become effective until approved by the State Board. Surface water standards also require the approval of the Environmental Protection Agency to become effective.

CONTINUING PLANNING

The Basin Plan is a flexible tool which must be reviewed and revised regularly for it to adapt to changing conditions. "Continuing planning" allows this to occur. The following section prioritizes Regional Board tasks and resources. This ranked list is referred to as the "Triennial Review List" and is shown in Table 4-1.

Items listed were ranked in order of priority by the Regional Board on May 6, 1988 and July 8, 1988. Each item is followed by an estimate of staff time needed to complete the item (actual time and duration). For those items requiring contract funding, estimated contract needs are identified following the description of each item. Resolution of these items may result in future Basin Plan amendments.

Table 1-1. 1988 Triennial Review Priority List

<u>Task</u>	<u>Estimated Time Staff Resources (Staff Years and Duration)</u>	<u>Task</u>	<u>Estimated Time Staff Resources (Staff Years and Duration)</u>
1. Adopt water quality limited segments*	0.02 SY	15. Develop Upper Salinas Valley ground water salt management plan	
2. Reprint Basin Plan*	0.2 SY 1 year	Contract \$ = 30,000	0.4 SY 1 year
3. Incorporate Proposition 65 criteria as developed by State Board	0.2 SY 6 months	16. Adopt amendments for water bodies affected by toxics as required by Clean Water Act	0.2 SY
4. Determine water quality monitoring needs*	0.4 SY	17. Develop toxic control strategy	0.3 SY
5. Establish nutrient objectives for Pajaro River and Llagas Creek	0.3 SY 20 months	18. a. Develop beneficial uses for additional needed water bodies	0.2 SY
Contract \$ = 40,000		b. Add "Preservation of Areas of Special Biological Significant" (BIOL) beneficial use to needed water bodies	0.05 SY
6. Establish nutrient objectives for San Luis Obispo Creek	0.3 SY 20 months	19. Determine need for septic tank prohibition in Prunedale, San Lucas, Los Olivos, Ballard and other needed areas	1.0 SY
Contract \$ = 10,000		20. Establish septic tank sludge policy	0.2 SY
7. Establish additional toxic pollutant objectives as developed by the State Water Resources Control Board	0.1 SY 5 years	21. Establish residual repositories policy	0.3 SY
8. Reevaluate Santa Maria Basin ground water quality objectives (including Nipomo Mesa and Valley)	0.3 SY 2 years	22. Establish Gilroy, Morgan Hill, San Martin ground water management plan	0.4 SY 8 months
Contract \$ = 20,000		23. Establish nonpoint source runoff policy for sensitive watersheds (i.e. Elkhorn Slough)	0.5 SY 1 year
9. Reevaluate discharge prohibition to Santa Maria River below Highway One Bridge	0.2 SY 2 years	24. Establish agriculture/pesticide runoff policy	0.2 SY
Contract \$ = 20,000		25. Establish greenhouse operations policy	0.1 SY
10. Reevaluate Lompoc Plain Boron objective*	0.03 SY	26. Evaluate erosion/sedimentation problems in Santa Cruz County	0.4 SY
11. Incorporate State Board Ground Water Strategy and Develop Regional Ground Water Strategy	0.3 SY 3 years	27. Reevaluate vessel discharge policy	0.2 SY
12. Reevaluate San Lorenzo River nitrate objective	0.4 SY 2 years	28. Reevaluate Santa Ynez ground water basin objective	0.3 SY 6 months
Contract \$ = \$30,000		29. Provide guidance for effluent limits in areas with high background concentrations (e.g. ground water nitrate exceeds objectives)	0.2 SY
13. Review on-site sewage disposal prohibition in San Lorenzo Valley Class I & II areas	0.2 SY		
14. Review beneficial uses for: Santa Barbara Harbor (shellfish), Goleta Slough (migration and spawning), San Luis Obispo Creek (municipal water supply), Lower Salinas River (all)	0.7 SY		

Table 1-1. 1988 Triennial Review Priority List

<u>Task</u>	<u>Estimated Time Staff Resources (Staff Years and Duration)</u>	<u>Task</u>	<u>Estimated Time Staff Resources (Staff Years and Duration)</u>
30. Establish suitable criteria for Waste Discharge Requirements (e.g. standardize rainfall event used to evaluate capacity)	0.2 SY	47. Update landfill policy to incorporate new state standards*	0.05 SY
31. Provide guidance for regulation of point source discharges in the vicinity of significant nonpoint source discharges	0.2 SY	48. Update dairy waste policy to incorporate new state standards*	0.05 SY
32. Review un-ionized ammonia objective for receiving waters	0.4 SY	49. Delete Mission Canyon and Los Alamos prohibition areas*	0.05 SY
33. Reevaluate nonpoint source controls for urban and rural runoff	0.3 SY	* These tasks accomplished by adoption of this Basin Plan	
34. Establish storm water discharge policy	0.5 SY		
35. Review cumulative impact of Monterey Bay discharges. Determine need for policy	0.4 SY		
36. Establish policy for discharge of high temperature waters to ground water	0.2 SY		
37. Incorporate revised ground water basin boundary maps*	0.2 SY		
38. Review cumulative impact of future on-site disposal on Nipomo Mesa/Valley. Reevaluation of the Nipomo prohibition boundaries	0.4 SY		
39. Establish oil drilling mud policy	0.2 SY		
40. Establish Morro Basin ground water objectives	0.5 SY		
41. Establish ground water objectives for San Benito Basin	0.5 SY		
Contract \$ = 40,000	2 years		
42. Establish ground water objectives for Price Canyon-Edna Valley Watershed	0.3 SY		
Contract \$ = \$20,000	18 months		
43. Establish off-shore oil policy	0.1 SY		
44. Establish reclamation/conservation policy	0.05 SY		
45. Evaluate need for sewerage Hidden Glen area of Scotts Valley	0.2 SY		
46. Review water contact recreation for San Miguel, Santa Rosa, and Santa Cruz Island	0.05 SY		

November 17, 1989



CHAPTER 2. PRESENT AND POTENTIAL BENEFICIAL USES

State policy for water quality control in California is directed toward achieving the highest water quality consistent with maximum benefit to the people of the State. Therefore, all water resources must be protected from pollution and nuisance that may occur as a result of waste discharges.

Establishing the beneficial uses to be protected in the Central Coastal Basin is a cornerstone of this comprehensive plan. Once uses are recognized, compatible water quality standards can be established as well as the level of treatment necessary to maintain the standards and ensure the continuance of the beneficial uses. This chapter will examine and identify historical, present, and potential beneficial uses in the Basin.

The remainder of this chapter summarizes current beneficial uses, describes anticipated future water demands characterizing future or potential water users, and lists the present and potential beneficial uses in tabular form.

PRESENT AND POTENTIAL BENEFICIAL USES

Beneficial uses are presented for inland surface waters by 13 sub-basins in Table 2-1. Beneficial uses for inland surface waters are arranged by hydrologic unit. A map showing hydrologic units is

shown as Figure 2-1. Beneficial uses of coastal waters are shown in Table 2-2.

Surface water bodies within the Region that do not have beneficial uses designated for them in Table 2-1 are assigned Municipal and Domestic Water Supply (MUN) designations in accordance with the provisions of State Water Resources Control Board Resolution 88-63 (Appendix A-1) which is by reference, a part of this Plan. These MUN designations in no way affect the presence or absence of other beneficial use designations in these water bodies.

Ground water throughout the Central Coastal Basin, except for that found in the Soda Lake Sub-basin, is suitable for agricultural water supply, municipal and domestic water supply, and industrial use. Ground water basins are listed in Table 2-3. A map showing these ground water basins is displayed in Figure 2-2.

BENEFICIAL USE DEFINITIONS

Beneficial uses for surface and ground waters are divided into the twenty standard categories listed below. One of the principal purposes of this standardization is to facilitate establishment of both qualitative and numerical water quality objectives that will be compatible on a statewide basis.

TABLE 2-1. Existing and Anticipated Uses of Inland Surface Waters^a

Sub-Basin and Watercourse	MUN ^b	AGR	PROC	IND	GWR	REC-1	REC-2	WILD	COLD	WARM	MIGR	SPWN
Big Basin Hydrologic Unit												
Gazos Creek		E			E	E	E	E	E		E	E
Green Oaks Creek					E	A	E	E		E		E
Waddell Creek	E	E		E	E	E	E	E	E		E	E
Scott Creek	E	E		E	E	E	E	E	E		E	E
Little Creek	I	I		I	I	I	E	E	I			
Big Creek	I	I		I	I	I	E	E	I			
Mill Creek	I	I		I	I	I	E	E	I			
San Vicente Creek	E			E	E	E	E	E	E		E	E
Liddel Creek, E. Branch	I	I		I		E	E		I			
Laguna Creek	E	E		E	E	E	E	E	E		E	E
Majors Creek	I	I		I	I	E	E		I			
Baldwin Creek					E	E	E	E				
Younger's Lagoon					E	E	E	E		E		E
Antonelli Pond					E	E	E	E		E		E
Neary's Lagoon ^c							E	E		E		
San Lorenzo River	E	E		E	E	E	E	E	E		E	E
Branciforte Creek	E	E		E	E	E	E	E	E		E	E
Carbonera Creek	E	E		E	E	A	E	E	E			
Bean Creek	E	E		E	E	E	E	E	E		E	E
Zayante Creek	E	E		E	E	E	E	E	E		E	E
Lompico Creek	E	E		E	E	E	E	E	E			
Fall Creek	E	E		E	E	E	E	E	E		E	E
Newell Creek	E	E		E	E	E	E	E	E			
Loch Lomand Res.	E	E		E	E	E	E	E	E	I		
Boulder Creek	E	E			E	E	E	E	E		E	E
Bear Creek	E	E			E	E	E	E	E		E	E
Doyle Gulch	I	I		I	I	I	E	E	I			
Schwan Lake						E	E	E				E
Corcoran Lagoon ^c							E	E		E		E
Moran Lake						A	E	E		E		E
Soquel Creek	E	E		E	E	E	E	E	E		E	E
Hinckley Creek	I	I		I	I	I	E	E	I			
Aptos Creek	E	E		E	E	E	E	E	E		E	E
Pajaro River Hydrologic Unit												
Watsonville Slough ^c							E	E		I		
Drew, Kelley, Pinto and Tyman Lakes					E	E	E	E		E		E
Pajaro River	I	I		E	I	I	E	E	I		I	E
Corralitos Creek	E	E		E		E	E	E	E	E	E	E
Brown's Creek	E	E		E		E	E	E	E	E	E	E
Pescadero Creek	A	E		E		E	E	E	E	E	E	E
Uvas Creek	E	E		E	E	E	E	E	I	E	I	E
Bodfish Creek	E	E		E	E	E	E	E	E	E		
Uvas Reservoir				E	E	E	E	E	E	E		E
Llagas Creek	E	E		E	E	E	E	E	I	E	I	E
Chesbro Reservoir		E		E	E	E	E	E	E	E		E
San Benito River		I		E	I	I	E	E	E	E		E
Tres Pinos Creek	I	I		E	I	I	E	E	E	E		E
Hernandez Reservoir	E	E		E	E	E	E	E	E	E		E
Tequescito Slough ^d					E	E	E	E		I		
Pacheco Creek	I	I		I	I	I	E	E	I	I	I	I
Pacheco Lake		E		E	E	E	E	E	E	E		E

^a See Figure 1-1 for general location. This table lists selected streams and water bodies. It is not a complete inventory for the Central Coast Region. Unlisted streams and water bodies have implied beneficial use designations for protection of both recreation and aquatic life.

^b In accordance with State Water Resources Control Board Resolution 88-63

^c Wetland

^d Ephemeral stream, no public access

NOTES: E = Existing beneficial water use
A = Anticipated beneficial water use
I = Beneficial water use in a watercourse with intermittent flow characteristics. Use is concurrent with flow.

TABLE 2-1. Existing and Anticipated Uses of Inland Surface Waters^a

Sub-Basin and Watercourse	MUN ^b	AGR	PROC	IND	GWR	REC-1	REC-2	WILD	COLD	WARM	MIGR	SPWN
Carmel River Hydrologic Unit												
Carmel River	I	I		I	I	I	E	E	I		I	I
Tularcitos Creek	I	I			I	I	E	E		I		
San Clemente Reservoir ^e	E							E	E		E	E
San Clemente Creek	I	I			I	I	E	E		I		
Cachagua Creek	I	I	I	I	I	I	E	E	I	I	I	I
Los Padres Reservoir ^e	E						E	E	E		E	E
Santa Lucia Hydrologic Unit												
San Jose Creek	I	I			I	I	E	E		I		
Palo Colorado Canyon	I	I			I	I	E	E		I		
Little Sur River	E				E	E	E	E	E		E	E
Big Sur River					E	E	E	E	E		E	E
Linekiln Creek	E	E			E	E	E	E	E		E	E
San Corpoforo Creek	I	I			I	I	E	E	I	I	I	I
Arroyo de la Cruz Creek	I	I		I	I	I	E	E	I	I	I	I
Burnett Creek	I	I			I	I	E	E		I		
Salinas Hydrologic Unit												
Laguna del Rey						A	E	E		E		
El Estero Lake ^f							E	E	E ^g	E		
Gabilan Creek		I			I	I	E	E		I		I
Alisal Creek		I			I	I	E	E		I		I
Salinas River, downstream of Spreckels Gage ^h						I	I	E		I	I	
Salinas River, Spreckels Gage to Chualar		A	A	A	I	I	I	E	I	I	I	
Salinas River, Chualar to Nacimiento River		A	A	A	E	E	E	E	I	E	I	
Arroyo Seco	I	I		I	I	I	E	E	I		I	I
The Lakes							E	E		E		E
Santa Lucia Creek	I	I			I	I	E	E		I		
Tassajara Creek	E	E			E	E	E	E		E		
San Lorenzo Creek		I			I	I	E	E		I		I
Pancho Rico Creek ^f	I	I			I	I	E	E		I		I
San Antonio River	I	I		I	I	I	E	E	I	I	I	I
San Antonio Reservoir	E	E			E	E	E	E		I	I	I
Nacimiento River	E	E		E	E	E	E	E	I	E	E	E
Nacimiento Reservoir	A	E			E	E	E	E	E	E		E
Las Tablas Creek	I	I			I	I	E	E		I		I
Salinas River, Nacimineto River to headwaters		I	I		E	E	I	E	E	I	I	
San Marcos Creek	I	I			I	I	E	E		I		
Santa Rita Creek	I	I		I	I	I	E	E		I		
Atascadero Lake							E	E		E		E
Santa Margarita Lake	E	I		E	I	E	E	E	E	E		E
Estero Bay Hydrologic Unit												
Pico Creek	I	I			I	I	E	E	I	I	I	I
San Simeon Creek	I	I		I	I	I	E	E	I	I	I	I
Steiner Creek	I	I			I	I	E	E		I		
Santa Rosa Creek	I	I		I	I	I	E	E	I	I	I	I
Cayucos Creek	I	I			I	I	E	E	I	I	I	I
Old Creek, downstream ^f					I	I	E	E		I		
Whale Rock Reservoir	E	E	E	E	E	A	A	E	E	E		E

^a See Figure 1-1 for general location. This table lists selected streams and water bodies. It is not a complete inventory for the Central Coast Region. Unlisted streams and water bodies have implied beneficial use designations for protection of both recreation and aquatic life.

^b In accordance with State Water Resources Control Board Resolution 88-63

^e No public access

^f Shallow; waterfowl habitat precludes water contact

^g Seasonal

^h Marine habitat (MAR) exists intermittently in Salinas Lagoon

ⁱ Dry most of year; swift, dangerous flows in winter

^j From Whale Rock Reservoir

NOTES: E = Existing beneficial water use
 A = Anticipated beneficial water use
 I = Beneficial water use in a watercourse with intermittent flow characteristics. Use is concurrent with flow.

TABLE 2-1. Existing and Anticipated Uses of Inland Surface Waters^a

Sub-Basin and Watercourse	MUN ^b	AGR	PROC	IND	GWR	REC-1	REC-2	WILD	COLD	WARM	MIGR	SPWN
Estero Bay Hydrologic Unit (cont.)												
Old Creek, upstream ^l	I	I	I	I	I	I	E	E	I	I		
Toro Creek	I	I			I	I	E	E	I	I	I	I
Morro Creek	I	I			I	I	E	E	I	I	I	I
Chorro Creek	I	I			I	I	E	E	I	I	I	I
Los Osos Creek	A	E			A	E	E	E	E	E	E	E
Laguna Lake					E	E	E	E		E		E
San Luis Obispo Creek		I			I	I	E	E	I	I	I	I
Pismo Creek	E	E		E	E	E	E	E	E	E	E	E
Arroyo Grande Creek, downstream ^k	E	E		E	E	E	E	E		E	E	
Lopez Reservoir	E	E	E	E	E	E	E	E	E	E		
Arroyo Grande Creek, upstream ^k	I	I	I	I	I	I	E	E	I	I	I	I
Oceano Lagoon						E	E	E		E		E
Dunes Lakes ^g							E	E		E		E
Carrizo Plain Hydrologic Unit												
San Diego Creek ^l					I		E	E		I		
Soda Lake ^m				I			E	E		I		
Santa Maria Hydrologic Unit												
Osos Flaco Lake						E	E	E		E		E
Santa Maria River	I	I		I	I	I	E	E		I	I	
Cuyama River, downstream ⁿ	I	I			I	I	E	E		I		
Twitchell Reservoir ^o					I		E	E		I		
Huasna River	I	I			I	I	E	E		I		
Alamo Creek		I			I	I	E	E		I		
Cuyama River, upstream ⁿ			I	I	I	E	I	I	E	E		I
Sisquoc River, downstream ^p	E			E	E	E	E	E	E	E	E	E
Sisquoc River, upstream ^p	E				E	E	E	E	E	E	E	E
San Antonio Hydrologic Unit												
San Antonio Creek	I	I			I	I	E	E	I	I		
Santa Ynez Hydrologic Unit												
Santa Ynez River downstream ^q	I	I			I	I	E	E		I	I	I
Lompoc Canyon	I	I		I	I	I	E	E		I		
Oak Canyon	I	I		I	I	I	E	E		I		
Salsipuedes Creek	E	E		E	E	E	E	E	I	I	I	I
El Jaro Creek	I	I		I	I	I	E	E	E	E	E	E
Santa Rita Creek	I	I		I	I	I	E	E		I		
Alamo Pintado Creek	I	I		I	I	I	E	E		I		
Cachuma Reservoir	E	E	E	E	E	E	E	E	E	E		
Santa Cruz Creek	E	E		E	E	E	E	E	E	E	E	E
Santa Ynez River upstream ^q	I	I	I	I	I	I	E	E	I	I		I
Gibraltar Reservoir	E	E	E	E	E	E	E	E	E	E		
Indian Creek	I	I		I	I	I	E	E	I	I		I
Mono Creek	I	I		I	I	I	E	E	I	I		I
Agua Caliente Canyon	I	I		I	I	I	E	E		I		
Jameson Lake	E	E	E		E	E	E	E	E	E		

^a See Figure 1-1 for general location. This table lists selected streams and water bodies. It is not a complete inventory for the Central Coast Region. Unlisted streams and water bodies have implied beneficial use designations for protection of both recreation and aquatic life.

^b In accordance with State Water Resources Control Board Resolution 88-63

^e No public access

^j From Whale Rock Reservoir

^k From Lopez Reservoir

^l Natural turbidity and mineral content precludes REC-1

^m Shallow; natural turbidity and mineral content precludes REC-1; Soda Lake is also a saline water habitat

ⁿ From Twitchell Reservoir

^o Dry most of the year; no public access

^p San Rafael wilderness boundary

^q From Cachuma Reservoir

NOTES: E = Existing beneficial water use

A = Anticipated beneficial water use

I = Beneficial water use in a watercourse with intermittent flow characteristics. Use is concurrent with flow.

TABLE 2-1. Existing and Anticipated Uses of Inland Surface Waters^a

Sub-Basin and Watercourse	MUN ^b	AGR	PROC	IND	GWR	REC-1	REC-2	WILD	COLD	WARM	MIGR	SPWN
South Coast Hydrologic Unit												
Tecolote Creek					I	I	E	E	I	I		I
Glen Anne Creek	I	I			I	I	E	E		I		
Devereaux Ranch Lagoon						E	E	E		E		
Goleta Point Marsh						E	E	E		E		
Atascadero Creek	I	I			I	I	E	E		I	I	I
San Jose Creek	I	I			I	I	E	E	I	I	I	I
San Antonio Creek	I	I			I	I	E	E	I	I		I
Franklin Creek ^c					I		E	E		I		
Santa Monica Creek ^c									I ^s	I		
Carpinteria Creek					I	I	E	E	I	I		I
Rincon Creek	I	I			I	I	E	E	I	I		I
Estrella River Hydrologic Unit												
Estrella River	I	I			I	I	E	E		I		I

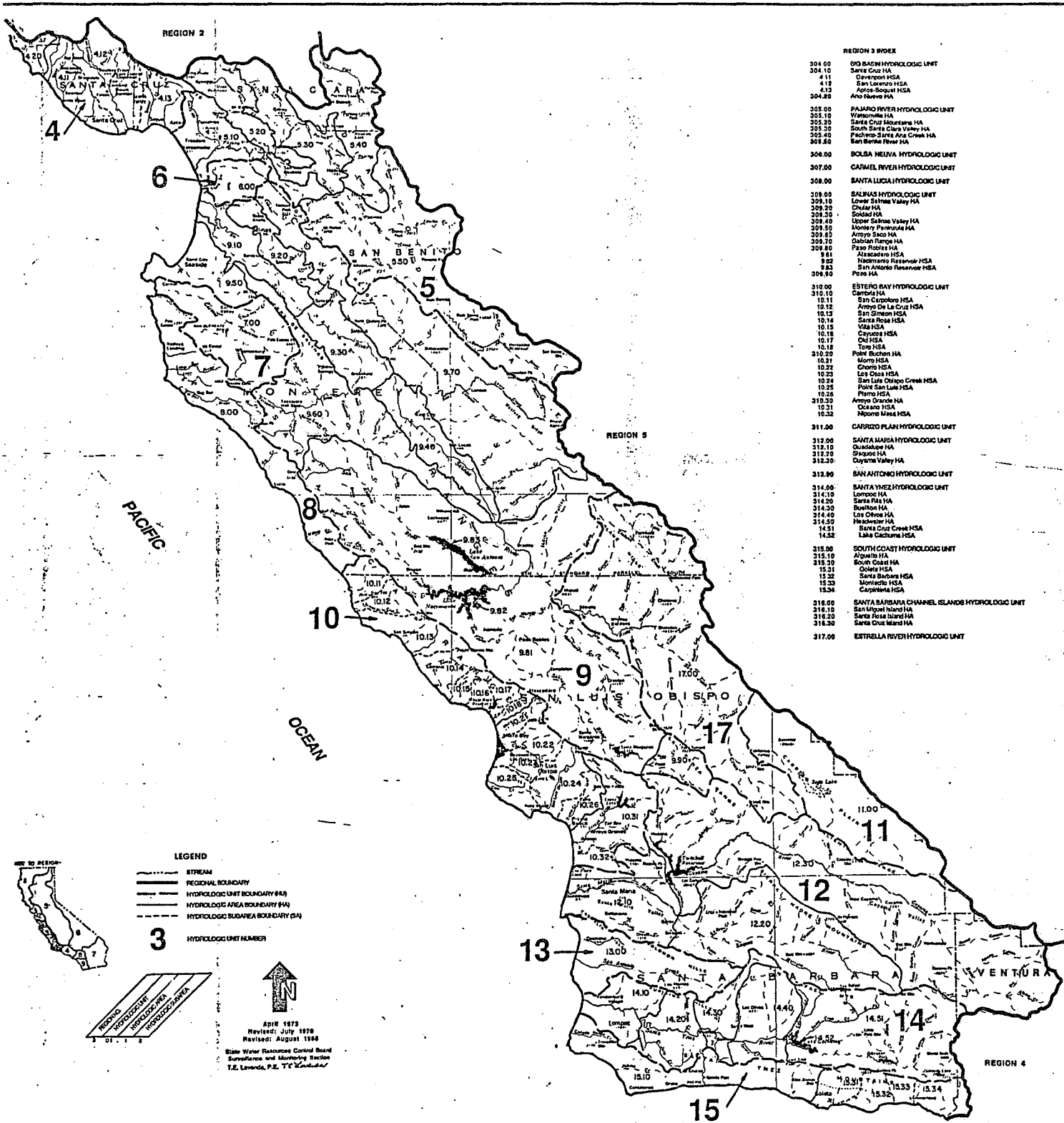
^a See Figure 1-1 for general location. This table lists selected streams and water bodies. It is not a complete inventory for the Central Coast Region. Unlisted streams and water bodies have implied beneficial use designations for protection of both recreation and aquatic life.

^b In accordance with State Water Resources Control Board Resolution 88-63

^c No public access; flood control channel hazardous

^s In headwaters

NOTES: E = Existing beneficial water use
 A = Anticipated beneficial water use
 I = Beneficial water use in a watercourse with intermittent flow characteristics. Use is concurrent with flow.



REGION 3 INDEX

304.00	SIO BASIN HYDROLOGIC UNIT
304.10	Santa Cruz HA
4.11	Davenport HSA
4.13	Acres-Bouquet HSA
304.80	Año Nuevo HA
305.00	PALMARO RIVER HYDROLOGIC UNIT
305.10	Winnemuccia HA
305.20	Santa Cruz Mountains HA
305.30	South Santa Clara Valley HA
305.40	Pacheco-Santa Ana Creek HA
305.80	San Benito HA
306.00	BOLSA NEIVA HYDROLOGIC UNIT
307.00	CARMEL RIVER HYDROLOGIC UNIT
308.00	SANTA LUCIA HYDROLOGIC UNIT
308.00	SALINAS HYDROLOGIC UNIT
309.10	Lower Salinas Valley HA
309.20	Chualar HA
309.30	Soldado HA
309.40	Upper Salinas Valley HA
309.50	Monterey Peninsula HA
309.80	Arroyo Seco HA
309.70	Cajalmar HA
309.80	Paso Robles HA
981	Atascadero HSA
982	Nipomo Reservoir HSA
983	San Antonio Reservoir HSA
309.90	Pismo HA
310.00	ESTERO BAY HYDROLOGIC UNIT
310.10	Carlsbad HA
10.11	San Carpintero HSA
10.12	Arroyo De La Cruz HSA
10.13	San Simeon HSA
10.14	Santa Rosa HSA
10.15	Vina HSA
10.16	Cajonada HSA
10.17	Cajon HSA
10.18	Toro HSA
310.20	Paper Bluff HA
10.21	Morro HSA
10.22	Clarno HSA
10.23	Loy Chico HSA
10.24	San Luis Obispo Creek HSA
10.25	Pure San Luis HSA
10.26	Pismo HSA
310.30	Arroyo Grande HA
10.31	Cajon HSA
10.32	Nipomo Mesa HSA
311.00	CARRIZO PLAIN HYDROLOGIC UNIT
312.00	SANTA MARIA HYDROLOGIC UNIT
312.10	Guadalupe HA
312.20	Shingee HA
312.30	Dayama Valley HA
313.00	SAN ANTONIO HYDROLOGIC UNIT
314.00	SANTA YNEZ HYDROLOGIC UNIT
314.10	Lompoc HA
314.20	Santa Ynez HA
314.30	Buellton HA
314.40	Los Olivos HA
314.50	Headwater HA
14.31	Santa Cruz Creek HSA
14.32	Lake Cachuma HSA
315.00	SOUTH COAST HYDROLOGIC UNIT
315.10	Alpique HA
315.20	South Coast HA
15.21	Colma HSA
15.22	Santa Barbara HSA
15.23	Monterey HSA
15.24	Carpinteria HSA
316.00	SANTA BARBARA CHANNEL ISLANDS HYDROLOGIC UNIT
316.10	San Miguel Island HA
316.20	Santa Rosa Island HA
316.30	Santa Cruz Island HA
317.00	ESTRELLA RIVER HYDROLOGIC UNIT

FIGURE 2-1. CENTRAL COAST HYDROLOGIC PLANNING AREA

State of California
 REGIONAL WATER QUALITY CONTROL BOARD
 Central Coast Region (3)
 CENTRAL COAST HYDROLOGIC BASIN PLANNING AREA (CC)

Scale: 1:100,000



TABLE 2-2. Existing and Anticipated Uses of Coastal Waters^a

Coastal Water	REC-1	REC-2	IND	NAV	MAR	SHELL	COMM	RARE	ASBS	WILD
Pescadero Pt. to Pt. Ano Nuevo	E	E	E	E	E	E	E	E		E
Pt. Ano Nuevo to Soquel Pt.	E	E	E	E	E	E	E			E
Pt. Ano Nuevo and Island	E	E			E	E		E	E	E
Santa Cruz Harbor	E	E	E	E	E		E			E
San Lorenzo Estuary	E	E		E	E	E	E			E
Soquel Pt. to Salinas River	E	E	E	E	E	E	E	E		E
Elkhorn Slough ^b	E	E			E	E	E	E		E
Moss Landing Harbor	E	E	E	E	E	E ^c	E	E		E
Salinas River to Pt. Pinos	E	E	E	E	E	E	E			E
Monterey Harbor	A	E	E	E	E	E	A	E		E
Pacific Grove Marine Gardens	E	E			E	E	E	E	E	E
Hopkins Marine Life Refuge	E	E			E		E	E	E	E
Pt. Pinos to Pt. Piedras Blancas	E	E		E	E		E	E		E
Carmel Bay	E	E			E		E	E	E	E
Pt. Lobos State Reserve	E	E			E		E	E	E	E
Pt. Sur	E	E			E	E	E			E
Pfeiffer-Burns State Park	E	E			E		E	E	E	E
Salmon Creek	E	E			E				E	E
Pt. Piedras Blancas to Pt. Estero	E	E		E	E	E	E	E		E
Estero Bay	E	E	E	E	E	E	E	E		E
Morro Bay	E	E	E	E	E	E	E	E		E
Pt. Buchon to Pt. San Luis	E	E	E	E	E	E	E			E
Pt. San Luis to Pt. Sal	E	E	E	E	E	E	E	E		E
Pt. Sal to Pt. Arguello	E	E		E	E	E	E			E
Pt. Arguello to Coal Oil Pt.	E	E	E	E	E	E	E			
Coal Oil Pt. to Rincon Pt.	E	E	E	E	E	E	E	E		E
Goleta Slough	E	E			E	E		E		E
Santa Barbara Harbor	E	E	E	E	E		E			
Beach Parks	E	E		E	E					
San Miguel Island	E	E		E	E	E	E	E	E	E
Santa Rosa Island	E	E		E	E	E	E		E	E
Santa Cruz Island	E	E		E	E	E	E	E	E	E
El Estero	E	E			E	E	E	E		E

^a This table lists selected coastal segments. It is not a complete inventory for the Central Coast Region. Unlisted water bodies have implied beneficial use designations for protection of both recreation and aquatic life.

^b Elkhorn Slough has been designated an ecological reserve by the California Department of Fish and Game, and recognized as a National Estuary Sanctuary by the Federal Government.

^c Clamming is an existing beneficial use in the North Harbor and on the south side of the entrance channel to Elkhorn Slough (north of the Pacific Gas and Electric Cooling Water Intake). Presently, no shellfishing use occurs south of the Pacific Gas and Electric Intake.

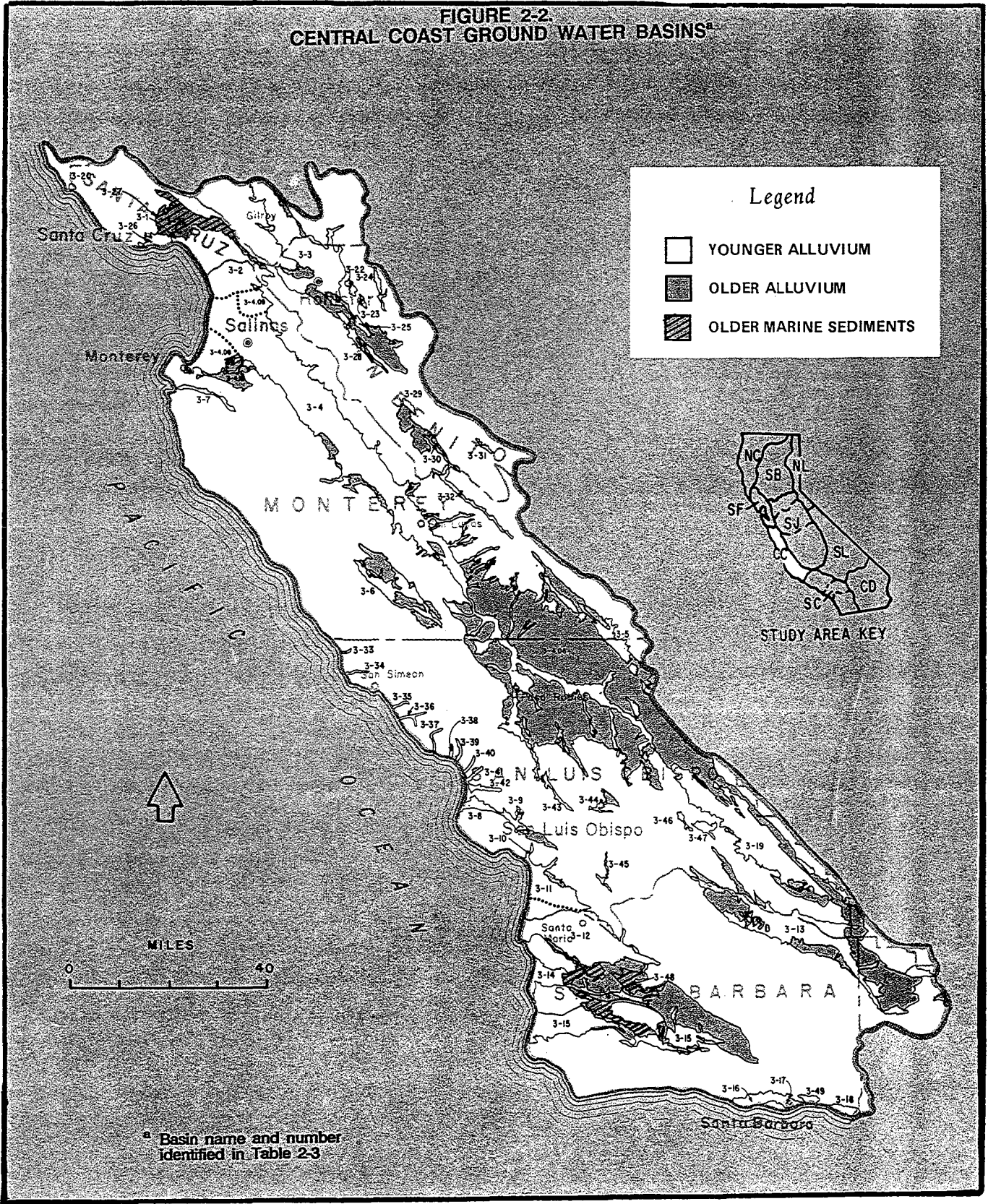
NOTES: E = Existing beneficial water use
A = Anticipated beneficial water use

TABLE 2-3. Central Coastal Ground Water Basins^a

<u>Name</u>	<u>County</u>
Ano Nuevo Area (3-20)	San Mateo
Arroyo de la Cruz Valley (3-43)	San Luis Obispo
Arroyo Grande Valley-Nipoma Mesa Area (3-11)	San Luis Obispo
Big Spring Area (3-47)	San Luis Obispo
Bitter Water Valley (3-30)	San Benito
Careaga Sand Highlands (3-48)	Santa Barbara
Carmel Valley (3-7)	Monterey
Carpinteria Basin (3-18)	Santa Barbara
Carrizo Plain (3-19)	San Luis Obispo
Cayucos Valley (3-38)	San Luis Obispo
Cholame Valley (3-5)	Monterey, San Luis Obispo
Chorro Valley (3-42)	San Luis Obispo
Corral de Tierra Area (3-4.10)	Monterey
Cuyama Valley (3-13)	Kern, San Luis Obispo, Santa Barbara, Ventura
Dry Lake Valley (3-29)	San Benito
Gilroy-Hollister Valley (3-3)	San Benito, Santa Clara
Goleta Basin (3-16)	Santa Barbara
Hernandez Valley (3-31)	San Benito
Huasna Valley (3-45)	San Luis Obispo
Langley Area (3-4.09)	Monterey
Lockwood Valley (3-6)	Monterey
Los Osos Valley (3-8)	San Luis Obispo
Montecito Area (3-49)	Santa Barbara
Morro Valley (3-41)	San Luis Obispo
Old Valley (3-39)	San Luis Obispo
Pajaro Valley (3-2)	Monterey, Santa Cruz
Paso Robles Basin (3-4.06)	Monterey, San Luis Obispo
Peach Tree Valley (3-32)	San Benito
Pismo Creek Valley (3-10)	San Luis Obispo
Pozo Valley (3-44)	San Luis Obispo
Quien Sabe Valley (3-24)	San Benito
Rafael Valley (3-46)	San Luis Obispo
Rinconada Valley (3-43)	San Luis Obispo
Salinas Valley (3-4)	Monterey
San Antonio Creek Valley (3-14)	Santa Barbara
San Benito River Valley (3-28)	San Benito
San Carpofovo Valley (3-33)	San Luis Obispo
San Luis Obispo Valley (3-9)	San Luis Obispo
San Simeon Valley (3-35)	San Luis Obispo
Santa Ana Valley (3-22)	San Benito
Santa Barbara Basin (3-17)	Santa Barbara
Santa Cruz Purisima Formation Highlands (3-21)	Santa Cruz
Santa Maria River Valley (3-12)	San Luis Obispo, Santa Barbara
Santa Rosa Valley (3-36)	San Luis Obispo
Santa Ynez River Valley (3-15)	Santa Barbara
Scotts Valley (3-27)	Santa Cruz
Seaside Area (3-4.08)	Monterey
Soquel Valley (3-1)	Santa Cruz
Toro Valley (3-40)	San Luis Obispo
Trés Pinos Creek Valley (3-25)	San Benito
Upper Santa Ana Valley (3-23)	San Benito
Villa Valley (3-37)	San Luis Obispo
West Santa Cruz Terrace (3-26)	Santa Cruz

^a Basin number locations identified on Figure 2-2.

FIGURE 2-2.
CENTRAL COAST GROUND WATER BASINS^a



^a Basin name and number identified in Table 2-3

Municipal and Domestic Supply (MUN) - Includes usual uses in community or military water systems and domestic uses from individual water supply systems.

Agricultural Supply (AGR) - Includes crops, orchard and pasture irrigation, stock watering, support of vegetation for range grazing, and all uses in support of farming and ranching operations.

Industrial Process Supply (PROC) - Includes process water supply and all uses related to the manufacturing of products.

Industrial Service Supply (IND) - Includes uses that do not depend primarily on water quality such as mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization.

Ground Water Recharge (GWR) - Natural or artificial recharge for future extraction for beneficial uses and to maintain salt balance or halt salt water intrusion into fresh water aquifers.

Navigation (NAV) - Includes commercial and naval shipping.

Water Contact Recreation (REC-1) - Includes all recreational uses involving actual body contact with water, such as swimming, wading, waterskiing, skindiving, surfing, sail boarding, jet skiing, sport fishing, uses in therapeutic spas, and other uses where ingestion of water is reasonably possible.

Non-Contact Water Recreation (REC-2) - Recreational uses that involve the presence of water but do not require contact with

water, such as picnicking, sunbathing, hiking, beachcombing, camping, pleasure boating, tide-pool and marine life study, hunting, and aesthetic enjoyment in conjunction with the above activities as well as sight-seeing.

Ocean Commercial and Sport Fishing (COMM) - The commercial collection of various types of fish and shellfish, including those taken for bait purposes, and sport fishing in oceans, bays, estuaries, and similar non-fresh water areas.

Warm Fresh Water Habitat (WARM) - Provides a warm water habitat to sustain aquatic resources associated with a warm water environment.

Cold Fresh Water Habitat (COLD) - Provides a cold water habitat to sustain aquatic resources associated with a cold water environment.

Preservation of Areas of Special Biological Significance (BIOL) - Includes marine life refuges, ecological reserves, and designated areas of special biological significance, such as areas where kelp propagation and maintenance are features of the marine environment requiring special protection.

Saline Water Habitat (SAL) - Provides an inland saline water habitat for aquatic life resources. Soda Lake is a saline habitat typical of desert lakes in inland sinks.

Wildlife Habitat (WILD) - Provides a water supply and vegetative habitat for the maintenance of wildlife.

Preservation of Rare and Endangered Species (RARE) - Provides an aquatic habitat necessary, at least in part, for the survival of certain species.

Marine Habitat (MAR) - Provides for the preservation of the marine ecosystem including the propagation and sustenance of fish, shellfish, marine mammals, waterfowl, and vegetation such as kelp.

Fish Migration (MIGR) - Provides a migration route and temporary aquatic environment for anadromous or other fish species.

Fish Spawning (SPWN) - Provides a high quality aquatic habitat especially suitable for fish spawning.

Shellfish Harvesting (SHELL) - The collection of shellfish such as clams, oysters, mussels, abalone, shrimp, crab, and lobster for either commercial or sport purposes.

Areas of Special Biological Significance (ASBS) - are those areas designated by the State Water Resources Control Board as requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable.

The following areas have been designated Areas of Special Biological Significance in the Central Coastal Basin:

1. Ano Nuevo Point and Island, San Mateo County
2. Pacific Grove Marine Gardens Fish Refuge and Hopkins Marine Life Refuge, Monterey County

3. Point Lobos Ecological Reserve, Monterey County
4. Carmel Bay, Monterey County
5. Julia Pfeiffer Burns Underwater Park, Monterey County
6. Ocean area surrounding the mouth of Salmon Creek, Monterey County
7. Channel Islands, Santa Barbara County - San Miguel, Santa Rosa, Santa Cruz

An ASBS designation implies the following requirements:

Discharge of elevated temperature wastes in a manner that would alter water quality conditions from those occurring naturally will be prohibited.

Discharge of discrete, point source sewage or industrial process wastes in a manner that would alter water quality conditions from those occurring naturally will be prohibited.

Discharge of waste from non-point sources, including but not limited to storm water runoff, silt, and urban runoff, will be controlled to the extent practicable. In control programs for waste from nonpoint sources, Regional Boards will give high priority to areas tributary to ASBS.

Further information concerning ASBS areas can be found by reviewing Regional Board Policies in Chapter 5.

CHAPTER 3. WATER QUALITY OBJECTIVES

Section 13241, Division 7 of the California Water Code specifies that each Regional Water Quality Control Board shall establish water quality objectives which, in the Regional Board's judgment, are necessary for the reasonable protection of beneficial uses and for the prevention of nuisance.

Section 303 of the 1972 Amendments to the Federal Water Pollution Control Act requires the State to submit to the Administrator of the U.S. Environmental Protection Agency for his approval, all new or revised water quality standards which are established for surface and ocean waters. Under federal terminology, water quality standards consist of beneficial uses enumerated in Chapter 2 and water quality objectives contained in this chapter.

Water quality objectives contained herein are designed to satisfy all state and federal requirements.

As new information becomes available, the Regional Board will review the appropriateness of objectives contained herein. These objectives are subject to public hearing at least once during each three-year period following adoption of this plan for the purpose of review and modification as appropriate.

CONSIDERATIONS IN SELECTING WATER QUALITY OBJECTIVES

The aforementioned 1972 Amendments to the Federal Water Pol-

lution Control Act declare that a national goal is elimination of discharge of pollutants into navigable waters.

A prerequisite to water quality control planning is the establishment of a base or reference point. The base in this instance was various general and specific water quality criteria previously found acceptable for particular beneficial uses or selected sources of waste. Current technical guidelines, available historical data, and enforcement feasibility were given full consideration in formulating water quality objectives.

A distinction is made here between the terms "water quality objectives" and "water quality standards". Water quality objectives have been adopted by the state and, when applicable, extended as federal water quality standards. Water quality standards, previously mentioned in this chapter's introduction, pertain to navigable waters and become legally enforceable criteria when accepted by the EPA Regional Administrator.

Point and nonpoint water pollution sources described herein have the same meaning as defined in the Federal Water Pollution Control Act. Point sources are waste loads from identifiable sources such as municipal discharges, industrial discharges, vessels, controllable storm waters, fish hatchery discharges, confined animal operations, and agricultural drains. Nonpoint sources are waste loads resulting from land use practices where

wastes are not collected and disposed of in any readily identifiable manner. Examples include: urban drainage, agricultural runoff, road construction activities, mining, grassland management, logging and other harvest activities, and natural sources such as effects of fire, flood, and landslide. The distinction between point sources and diffuse sources is not always clear but generally applies to the practicality of waste load control.

Water quality objectives for the Central Coastal Basin satisfy state and federal requirements to protect waters for the beneficial uses in Chapter 2 and are consistent with all existing statewide plans and policies.

WATER QUALITY OBJECTIVES

The water quality objectives which follow supersede and replace those contained in the 1967 Water Quality Control Policies; the Interim Water Quality Control Plan for the Central Coastal Basin adopted by the Regional Board in 1971, including all existing revisions; and the Water Quality Control Plan Report for the Central Coastal Basin, adopted by the Regional Board in 1974.

Controllable water quality shall conform to the water quality objectives contained herein. When other conditions cause degradation of water quality beyond the levels or limits established as water quality objectives, controllable conditions shall not cause further degradation of water quality.

Controllable water quality conditions are those actions or circumstances resulting from man's activities that may influence the quality of the waters of the State and that may be reasonably controlled.

Water quality objectives are considered to be necessary to protect those present and probable future beneficial uses enumerated in Chapter 2 of this plan and to protect existing high quality waters of the State. These objectives will be achieved primarily through the establishment of waste discharge requirements and through implementation of this water quality control plan.

In setting waste discharge requirements, the Regional Board will consider the potential impact on beneficial uses within the area of influence of the discharge, the existing quality of receiving waters, and the appropriate water quality objectives. The Regional Board will make a finding of beneficial uses to be protected and establish waste discharge requirements to protect those uses and to meet water quality objectives.

Several water quality objectives listed herein originate from the California Code of Regulations, Title 22. If Title 22 concentrations are amended, Basin Plan objectives are automatically amended to correspond with the new regulations.

ANTI-DEGRADATION POLICY

Wherever the existing quality of water is better than the quality

of water established herein as objectives, such existing quality shall be maintained unless otherwise provided by the provisions of the State Water Resources Control Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California," including any revisions thereto. A copy of this policy is included in the "Plans and Policies Appendix."

OBJECTIVES FOR OCEAN WATERS

The provisions of the State Board's "Water Quality Control Plan for Ocean Waters of California" (Ocean Plan), "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California" (Thermal Plan), and any revisions thereto shall apply in their entirety to affected waters of the basin. The Ocean and Thermal Plans shall also apply in their entirety to Monterey Bay and Carmel Bay. Copies of these plans are included verbatim in the Appendix.

In addition to provisions of the Ocean Plan and Thermal Plan, the following objectives shall also apply to all ocean waters, including Monterey and Carmel Bays:

Dissolved Oxygen

The mean annual dissolved oxygen concentration shall not be less than 7.0 mg/l, nor shall the minimum dissolved oxygen concentration be reduced below 5.0 mg/l at any time.

pH

The pH value shall not be depressed below 7.0, nor raised above 8.5.

Radioactivity

Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life; or result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal, or aquatic life.

OBJECTIVES FOR ALL INLAND SURFACE WATERS, ENCLOSED BAYS, AND ESTUARIES

General Objectives

The following objectives apply to all inland surface waters, enclosed bays, and estuaries of the basin;

Color

Waters shall be free of coloration that causes nuisance or adversely affects beneficial uses. Coloration attributable to materials of waste origin shall not be greater than 15 units or 10 percent above natural background color, whichever is greater.

Tastes and Odors

Waters shall not contain taste or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of

aquatic origin, that cause nuisance, or that adversely affect beneficial uses.

Floating Material

Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.

Suspended Material

Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.

Settleable Material

Waters shall not contain settleable material in concentrations that result in deposition of material that causes nuisance or adversely affects beneficial uses.

Oil and Grease

Waters shall not contain oils, greases, waxes, or other similar materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses.

Biostimulatory Substances

Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses.

Sediment

The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

Turbidity

Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses.

Increase in turbidity attributable to controllable water quality factors shall not exceed the following limits:

1. Where natural turbidity is between 0 and 50 JTU, increases shall not exceed 20 percent.
2. Where natural turbidity is between 50 and 100 JTU, increases shall not exceed 10 JTU.
3. Where natural turbidity is greater than 100 JTU, increases shall not exceed 10 percent.

Allowable zones of dilution within which higher concentrations will be tolerated will be defined for each discharge in discharge permits.

pH

For waters not mentioned by a specific beneficial use, the pH shall not be depressed below 7.0 or raised above 8.5.

Dissolved Oxygen

For waters not mentioned by a specific beneficial use, dissolved oxygen concentration shall

not be reduced below 5.0 mg/l at any time. Median values should not fall below 85 percent saturation as a result of controllable water quality conditions.

Temperature

Temperature objectives for Enclosed Bays and Estuaries are as specified in the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California" including any revisions thereto. A copy of this plan is included in the "Plans and Policies Appendix."

Natural receiving water temperature of intrastate waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses.

Toxicity

All waters shall be maintained free of toxic substances in concentrations which are toxic to, or which produce detrimental physiological responses in, human, plant, animal, or aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, bioassays of appropriate duration, or other appropriate methods as specified by the Regional Board.

Survival of aquatic life in surface waters subjected to a waste discharge or other controllable water quality conditions, shall not be less than that for the

same water body in areas unaffected by the waste discharge or, when necessary, for other control water that is consistent with the requirements for "experimental water" as described in Standard Methods for the Examination of Water and Wastewater, latest edition. As a minimum, compliance with this objective shall be evaluated with a 96-hour bioassay.

In addition, effluent limits based upon acute bioassays of effluents will be prescribed where appropriate, additional numerical receiving water objectives for specific toxicants will be established as sufficient data become available, and source control of toxic substances is encouraged.

The discharge of wastes shall not cause concentrations of unionized ammonia (NH₃) to exceed 0.025 mg/l (as N) in receiving waters.

Pesticides

No individual pesticide or combination of pesticides shall reach concentrations that adversely affect beneficial uses. There shall be no increase in pesticide concentrations found in bottom sediments or aquatic life.

For waters where existing concentrations are presently non-detectable or where beneficial uses would be impaired by concentrations in excess of non-detectable levels, total identifiable chlorinated hydrocarbon pesticides shall not be present at concentrations detectable within the accuracy of analytical methods prescribed in Standard Methods for the Examination of

Water and Wastewater, latest edition, or other equivalent methods approved by the Executive Officer.

Chemical Constituents

Where wastewater effluents are returned to land for irrigation uses, regulatory controls shall be consistent with Title 22 of the California Code of Regulations and other relevant local controls.

Other Organics

Waters shall not contain organic substances in concentrations greater than the following:

MBAS	0.2 mg/l
Phenols	0.1 mg/l
PCB's	0.3 ug/l
Phthalate Esters	0.002 ug/l

Radioactivity

Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life; or result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal, or aquatic life.

Municipal and Domestic Supply (MUN)

pH

The pH shall neither be depressed below 6.5 nor raised above 8.3.

Organic Chemicals

Waters shall not contain concentrations of pesticides or herbicides in excess of the limiting

concentrations set forth in California Code of Regulations, Title 22, Chapter 15, Article 5.5, Section 64444.5, Table 5 and listed in Table 3-1.

Chemical Constituents

Waters shall not contain concentrations of chemical constituents in excess of the limits specified in California Code of Regulations, Title 22, Article 4, Chapter 15, Section 64435, Tables 2 and 3 as listed in Table 3-2.

Phenol

Waters shall not contain phenol concentrations in excess of 1.0 ug/l.

Radioactivity

Waters shall not contain concentrations of radionuclides in excess of the limits specified in California Code of Regulations, Title 22, Chapter 15, Article 5, Sections 64441 and 64443, Table 4.

Agricultural Supply (AGR)

pH

The pH shall neither be depressed below 6.5 nor raised above 8.3.

Dissolved Oxygen

Dissolved oxygen concentration shall not be reduced below 2.0 mg/l at any time.

Chemical Constituents

Waters shall not contain concentrations of chemical constituents in amounts which adversely affects the agricultural beneficial

Table 3-1. Organic Concentrations Not to be Exceeded
in Domestic or Municipal Supply

Constituent	Maximum Contaminant Level, mg/l
(a) Chlorinated Hydrocarbons	
Endrin	0.0002
Lindane	0.004
Methoxychlor	0.1
Toxaphene	0.005
(b) Chlorophenoxys	
2,4-D	0.1
2,4,5-TP Silvex	0.01
(c) Synthetics	
Atrazine	0.003
Bentazone	0.018
Benzene	0.001
Carbon Tetrachloride	0.0005
Dibromochloropropane	0.0002
1,4-Dichlorobenzene	0.005
1,2-Dichloroethane	0.0005
1,1-Dichloroethylene	0.006
1,3-Dichloropropene	0.0005
Ethylbenzene	0.680
Ethylene Dibromide	0.00002
Molinate	0.02
Monochlorobenzene	0.030
Simazine	0.010
1,1,2,2-Tetrachloroethane	0.001
Tetrachloroethylene	0.005
Thiobencarb	0.07
1,1,1-Trichloroethane	0.200
1,1,2-Trichloroethane	0.032
Trichloroethylene	0.005
Vinyl Chloride	0.0005
*Xylenes	1.750

* MCL is for either a single isomer or the sum of the isomers.

Table 3-2. Inorganic and Fluoride Concentrations Not to be Exceeded in Domestic or Municipal Supply

Constituent	<u>Limiting Concentration mg/l</u>			Maximum Contaminant Level
	Lower	Optimum	Upper	
Fluoride*				
53.7 and below	0.9	1.2	1.7	2.4
53.8 to 58.3	0.8	1.1	1.5	2.2
58.4 to 63.8	0.8	1.0	1.3	2.0
63.9 to 70.6	0.7	0.9	1.2	1.8
70.7 to 79.2	0.7	0.8	1.0	1.6
79.3 to 90.5	0.6	0.7	0.8	1.4
Inorganic Chemicals				
Aluminum				1
Arsenic				0.05
Barium				1
Cadmium				0.010
Chromium				0.05
Lead				0.05
Mercury				0.002
Nitrate (as NO ₃)				45
Selenium				0.01
Silver				0.05

* Annual Average of Maximum Daily Air Temperature, °F based on temperature data obtained for a minimum of five years.

Table 3-3. Guidelines for Interpretation of Quality of Water for Irrigation^a

Problem and Related Constituent	Water Quality Guidelines		
	No Problem	Increasing problems	Severe
Salinity ^b			
EC of irrigation water, mmho/cm	<0.75	0.75 - 3.0	>3.0
Permeability			
EC of irrigation water, mmho/cm	>0.5	<0.5	<0.2
SAR, adjusted ^c	<6.0	6.0 - 9.0	>9.0
Specific ion toxicity ^d			
From root absorption			
Sodium (evaluate by adjusted SAR)	<3	3.0 - 9.0	>9.0
Chloride			
me/l	<4	4.0 - 10	>10
mg/l	<142	142 - 355	>355
Boron, mg/l	<0.5	0.5 - 2.0	2.0 - 10.0
From foliar absorption ^e (sprinklers)			
Sodium			
me/l	<3.0	>3.0	-
mg/l	<69	>69	-
Chloride			
me/l	<3.0	>3.0	-
mg/l	<106	>106	-
Miscellaneous ^f			
NH ₄ - N, mg/l for sensitive crops	<5	5 - 30	>30
NO ₃ - N, " " " "	"	"	"
HCO ₃ (only with overhead sprinklers)			
me/l	<1.5	1.5 - 8.5	>8.5
mg/l	<90	90 - 520	>520
pH	Normal range	6.5 - 8.4	-

a Interpretations are based on possible effects of constituents on crops and/or soils. Guidelines are flexible and should be modified when warranted by local experience or special conditions of crop, soil, and method of irrigation.

b Assumes water for crop plus needed water for leaching requirement (LR) will be applied. Crops vary in tolerance to salinity. Refer to tables for crop tolerance and LR. The mmho/cm x 640 = approximate total dissolved solids (TDS) in mg/l or ppm; mmho x 1,000 = micromhos.

c Adjusted SAR (sodium adsorption ratio) is calculated from a modified equation developed by U.S. Salinity Laboratory to include added effects of precipitation and dissolution of calcium in soils and related to CO₃ + HCO₃ concentrations.

To evaluate sodium (permeability) hazard:

$$\text{Adjusted SAR} = \text{Na} / \left[\frac{1}{2} (\text{Ca} + \text{Mg}) \right]^{1/2} [1 + (8.4 - \text{pHc})]$$

Refer to Appendix A-20 for calculation assistance.

SAR can be reduced if necessary by adding gypsum. Amount of gypsum required (GR) to reduce a hazardous SAR to any desired SAR (SAR desired) can be calculated as follows:

$$\text{GR} = \left[\frac{2 (\text{Na})^2}{\text{SAR}^2 \text{ desired}} - (\text{Ca} + \text{Mg}) \right] 234$$

Note: Na and Ca + Mg should be in me/l. GR will be in lbs. of 100 percent gypsum per acre foot of applied water.

d Most tree crops and woody ornamentals are sensitive to sodium and chloride (use values shown). Most annual crops are not sensitive (use salinity tolerance tables). For boron sensitivity, refer to boron tolerance tables.

e Leaf areas wet by sprinklers (rotating heads) may show a leaf burn due to sodium or chloride absorption under low humidity/high evaporation conditions. (Evaporation increases ion concentration in water films on leaves between rotations of sprinkler heads.)

f Excess N may affect production or quality of certain crops; e.g., sugar beets, citrus, avocados, apricots, etc. (1 mg/l NO₃ - N = 2.72 lbs. N/acre foot of applied water.) HCO₃ with overhead sprinkler irrigation may cause a white carbonate deposit to form on fruit and leaves.

use. Interpretation of adverse effect shall be as derived from the University of California Agricultural Extension Service guidelines provided in Table 3-3.

In addition, waters used for irrigation and livestock watering shall not exceed concentrations listed for those used in Table 3-4. Salt concentrations for irrigation waters shall be controlled through implementation of the anti-degradation policy to the effect that mineral constituents of currently or potentially usable waters shall not be increased. It is emphasized that no controllable water quality factor shall degrade the quality of any ground water resource or adversely affect long-term soil productivity.

Where wastewater effluents are returned to land for irrigation uses, regulatory controls shall be consistent with Title 22 of the California Code of Regulations and with relevant controls for local irrigation sources.

Water Contact Recreation (REC-1)

pH

The pH shall neither be depressed below 6.5 nor raised above 8.3.

Bacteria

Fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 200/100 ml, nor shall more than ten percent of total samples during any 30-day period exceed 400/100 ml.

Non-Contact Water Recreation (REC-2)

pH

The pH shall neither be depressed below 6.5 nor raised above 8.3.
Bacteria

Fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 2000/100 ml, nor shall more than ten percent of samples collected during any 30-day period exceed 4000/100 ml.

Cold Freshwater Habitat (COLD)

pH

Waters shall not be depressed below 7.0 or raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters.

Dissolved Oxygen

The dissolved oxygen concentration shall not be reduced below 7.0 mg/l at any time.

Temperature

At no time or place shall the temperature be increased by more than 5°F above natural receiving water temperature.

Chemical Constituents

Waters shall not contain concentrations of chemical constituents known to be deleterious to fish or wildlife in excess of the limits listed in Table 3-5.

Table 3-4. Water Quality Objectives for Agricultural Water Use

ELEMENT	Maximum Concentration (mg/l) ^a	
	Irrigation supply ^b	Livestock watering
Aluminum	5.0	5.0
Arsenic	0.1	0.2
Beryllium	0.1	-
Boron	0.75	5.0
Cadmium	0.01	0.05
Chromium	0.10	1.0
Cobalt	0.05	1.0
Copper	0.2	0.5
Fluoride	1.0	2.0
Iron	5.0	-
Lead	5.0	0.1 ^c
Lithium	2.5 ^d	-
Manganese	0.2	-
Mercury	-	0.01
Molybdenum	0.01	0.5
Nickel	0.2	-
Nitrate + Nitrite	-	100
Nitrite	-	10
Selenium	0.02	0.05
Vanadium	0.1	0.10
Zinc	2.0	25

- a. Values based primarily on "Water Quality Criteria 1972" National Academy of Sciences-National Academy of Engineers, Environmental Study Board, ad hoc Committee on Water Quality Criteria furnished as recommended guidelines by University of California Agriculture Extension Service, January 7, 1974; maximum values are to be considered as 90 percentile values not to be exceeded.
- b. Values provided will normally not adversely affect plants or soils; no data available for mercury, silver, tin, titanium, and tungsten.
- c. Lead is accumulative and problems may begin at threshold value (0.05 mg/l).
- d. Recommended maximum concentration for irrigation citrus is 0.075 mg/l.

Table 3-5 Toxic Metal Concentrations not to be Exceeded
in Aquatic Life Habitats, mg/l^{a,b}

FRESHWATER (COLD, WARM)		
METAL	HARD	SOFT
	(>100 MG/l CaCO3)	(<100 MG/l CaCO3)
Cadmium ^c	.03	.004
Chromium	.05	.05
Copper	.03	.01
Lead	.03	.03
Mercury ^d	.0002	.0002
Nickel ^e	.4	.1
Zinc	.2	.004

- a. Based on limiting values recommended in the National Academy of Sciences-National Academy of Engineers "Water Quality Criteria 1972." Values are 90 percentile values except as noted in qualifying note "d."
- b. Revision of Table 3-5 is currently in progress by the Regional Board.
- c. Lower cadmium values not to be exceeded for crustaceans and waters designated SPWN are 0.003 mg/l in hard water and 0.0004 mg/l in soft water.
- d. Total mercury values should not exceed 0.05 ug/l as an average value; maximum acceptable concentration of total mercury in any aquatic organism is a total B.O.D. burden of 0.5 ug/l wet weight.
- e. Value cited as objective pertains to nickel salts (not pure metallic nickel).

Warm Freshwater Habitat (WARM)

pH

Waters shall not be depressed below 7.0 or raised above 8.5.

Changes in normal ambient pH levels shall not exceed 0.5 in fresh waters.

Dissolved Oxygen

The dissolved oxygen concentration shall not be reduced below 5.0 mg/l at any time.

Temperature

At no time or place shall the temperature of any water be increased by more than 5°F above natural receiving temperature.

Chemical Constituents

Waters shall not contain concentrations of chemical constituents known to be deleterious to fish or wildlife in excess of the limits listed in Table 3-5.

Fish Spawning (SPWN)

Cadmium

Cadmium shall not exceed .003 mg/l in hard water or .0004 mg/l in soft water at any time. (Hard water is defined as water exceeding 100 mg/l CaCO₃.)

Dissolved Oxygen

The dissolved oxygen concentration shall not be reduced below 7.0 mg/l at any time.

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Marine Habitat (MAR)

pH

pH shall not be depressed below 7.0 or raised above 8.5.

Changes in normal ambient pH levels shall not exceed 0.2 units.

Dissolved Oxygen

The dissolved oxygen concentration shall not be reduced below 7.0 mg/l at any time.

Chemical Constituents

Waters shall not contain concentrations of chemical constituents known to be deleterious to fish or wildlife in excess of limits listed in Table 3-6.

Table 3-6. Toxic Metal Concentrations Not to be Exceeded in Marine Habitats, mg/l^a

METAL	MARINE (MAR)
Cadmium	.0002
Chromium	.05
Copper	.01
Lead	.01
Mercury ^c	.0001
Nickel ^d	.002
Zinc	.02

- Based on limiting values recommended in the National Academy of Sciences-National Academy of Engineers "Water Quality Criteria 1972." Values are 90 percentile values except as noted in qualifying note "b."
- Revision of Table 3-6 is currently in progress by the Regional Board.
- Total mercury values should not exceed 0.05 ug/l as an average value; maximum acceptable concentration of total mercury in any aquatic organism is a total B.O.D. burden of 0.05 ug/l net weight.
- Value cited as objective pertains to nickel salts (not pure metallic nickel).

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Shellfish Harvesting (SHELL)

Chromium

The maximum permissible value for waters designated SHELL shall be 0.01 mg/l.

Bacteria

At all areas where shellfish may be harvested for human consumption, the median total coliform concentration throughout the water column for any 30-day period shall not exceed 70/100 ml, nor shall more than ten percent of the samples collected during any 30-day period exceed 230/100 ml for a five-tube decimal dilution test or 330/100 ml when a three-tube decimal dilution test is used.

WATER QUALITY OBJECTIVES FOR SPECIFIC INLAND SURFACE WATERS, ENCLOSED BAYS AND ESTUARIES

Certain water quality objectives have been established for selected surface waters; these objectives are intended to serve as a water quality baseline for evaluating water quality management in the basin. Median values, shown in Table 3-7 for surface waters, are based on available data.

It must be recognized that the median values indicated in Table 3-7 are values representing gross areas of a water body. Specific water quality objectives for a particular area may not be directly related to the objectives indicated. Therefore, application of these objectives must be based upon consideration of the surface and ground water quality naturally present; i.e., waste discharge requirements must ad-

here to the previously stated objectives and issuance of requirements must be tempered by consideration of beneficial uses within the immediate influence of the discharge, the existing quality of receiving waters, and water quality objectives. Consideration of beneficial uses includes: (1) a specific enumeration of all beneficial uses potentially to be affected by the waste discharge, (2) a determination of the relative importance of competing beneficial uses, and (3) impact of the discharge on existing beneficial uses. The Regional Board will make a judgment as to the priority of dominant use and minimize the impact on competing uses while not allowing the discharge to violate receiving water quality objectives.

As part of the State's continuing planning process, data will be collected and numerical water quality objectives will be developed for those mineral and nutrient constituents where sufficient information is presently not available for the establishment of such objectives.

A specific monthly mean objective for Nitrate (as NO_3) of 0.25 mg/l shall apply to both the upper and lower San Lorenzo River to protect beneficial uses from adverse biostimulatory effects. Specific biostimulant objectives for other surface waters will be added to this section in tabular form once they are determined from further studies.

Table 3-7. Surface Water Quality Objectives, mg/l^a

Sub-Basin/Sub-Area	TDS	Cl	SO ₄	B	Na
Santa Ynez					
Cachuma Reservoir	600	20	220	0.4	50
Solvang	700	50	250	0.4	60
Lompoc	1000	100	350	0.4	100
Santa Maria					
Cuyama River (Near Garey)	900	50	400	0.3	70
Sisquoc River (Near Garey)	600	20	250	0.2	50
Estero Bay					
Santa Rosa Creek	500	50	80	0.2	50
Chorro Creek	500	50	50	0.2	50
San Luis Obispo Creek	650	100	100	0.2	50
Arroyo Grande Creek	800	50	200	0.2	50
Salinas River					
Salinas River					
Above Bradley	250	20	100	0.2	20
Above Spreckles	600	80	125	0.2	70
Gabilan Tributary	300	50	50	0.2	50
Diablo Tributary	1200	80	700	0.5	150
Nacimiento River	200	20	50	0.2	20
San Antonio River	250	20	80	0.2	20
Carmel River					
Carmel River	200	20	50	0.2	20
Monterey Coastal					
Big Sur River	200	20	20	0.2	20
Pajaro River					
at Chittenden	1000	250	250	1.0	200
San Benito River	1400	200	350	1.0	250
Llagas Creek	200	10	20	0.2	20
Big Basin					
Boulder Creek	150	10	10	0.2	20
Zayante Creek	500	50	100	0.2	40
San Lorenzo River					
Above Bear Creek	400	60	80	0.2	50
At Tait Street Check Dam	250	30	60	0.2	25

a Objectives shown are annual mean values. Objectives are based on preservation of existing quality or water quality enhancement believed attainable following control of point sources.

OBJECTIVES FOR GROUND WATER

General Objectives

The following objectives apply to all ground waters of the basin.

Tastes and Odors

Ground waters shall not contain taste or odor-producing substances in concentrations that adversely affect beneficial uses.

Radioactivity

Radionuclides shall not be present in concentrations that are deleterious to human, plant, animal, or aquatic life; or result in the accumulation of radionuclides in the food web to an extent which presents a hazard to human, plant, animal or aquatic life.

Municipal and Domestic Supply (MUN)

Bacteria

The median concentration of coliform organisms over any seven-day period shall be less than 2.2/100 ml.

Organic Chemicals

Waters shall not contain concentrations of pesticides or herbicides in excess of the limiting concentrations set forth in California Code of Regulations, Title 22, Chapter 15, Article 5.5, Section 64444.5, Table 5 and listed in Table 3-1.

Chemical Constituents

Ground waters shall not contain concentrations of chemical constituents in excess of the limits specified in California Code of Regulations, Title 22, Chapter 15, Article 4, Section 64435, Tables 2 and 3.

Radioactivity

Ground waters shall not contain concentrations of radionuclides in excess of the limits specified in California Code of Regulations, Title 22, Chapter 15, Article 5, Section 64443, Table 4.

Agricultural Supply (AGR)

Ground waters shall not contain concentrations of chemical constituents in amounts that adversely affect such beneficial use. Interpretation of adverse effect shall be as derived from the University of California Agricultural Extension Service guidelines provided in Table 3-3.

In addition, water used for irrigation and livestock watering shall not exceed the concentrations listed for these uses in Table 3-4. No controllable water quality factor shall degrade the quality of any ground water resource or adversely affect long-term soil productivity. The salinity control aspects of ground water management will account for effects from all sources.

OBJECTIVES FOR SPECIFIC GROUND WATERS

Certain water quality objectives have been established for selec-

ted ground waters; these objectives are intended to serve as a water quality baseline for evaluating water quality management in the basin. The median values for ground waters are shown in Table 3-8.

The restrictions specified for Table 3-7 are applicable to the values indicated in Table 3-8; i.e., the values are at best representative of gross areas only. Ground waters in the Upper Valley of the Salinas River Sub-basin have average Total Dissolved Solids (TDS) concentrations that range from 300 mg/l to over 3000 mg/l. Therefore, application of these objectives must be consistent with the objectives previously stated in this chapter and synchronously reflect the actual ground water quality naturally present. The Regional Board must afford full consideration to (1) present and probable future beneficial uses affected by the waste discharge, (2) competing beneficial uses, (3) degree of impact on existing beneficial uses, (4) receiving water quality, and (5) water quality objectives, before adjudging priority of dominant use and promulgating waste discharge requirements.

As part of the State's continuing planning process, data will be collected and numerical water quality objectives will be developed for those mineral constituents where sufficient information is presently not available for the establishment of such objectives.

Table 3-8. Median Ground Water Objectives, mg/l^a

Sub-basin/Sub-Area	TDS	Cl	SO ₄	B	Na	N _b
South Coast						
Goleta	1000	150	250	0.2	150	5
Santa Barbara	700	50	150	0.2	100	5
Carpinteria	700	100	150	0.2	100	7
Santa Ynez						
Santa Ynez	600	50	10	0.5	20	1
Santa Rita	1500	150	700	0.5	100	1
Lompoc Plain	1250	250	500	0.5	250	2
Lompoc Upland	600	150	100	0.5	100	2
Lompoc Terrace	750	210	100	0.3	130	1
San Antonio Creek	600	150	150	0.2	100	5
Santa Maria ^c						
Upper Guadalupe	1000 ^d	165	500 ^d	0.5	230	6 ^e
Lower Guadalupe	1000 ^d	85	500 ^d	0.2	90	9 ^e
Lower Nipomo Mesa	710	95	250	0.15	90	25 ^e
Orcutt	740	65	300	0.1	65	10 ^e
Santa Maria	1000 ^d	90	510	0.2	105	35 ^e
Cuyama Valley	1500	80	-	0.4	-	5
Soda Lake	f	f	f	f	f	f
Estero Bay						
Santa Rosa	700	100	80	0.2	50	5
Chorro	1000	250	100	0.2	50	5
San Luis Obispo	900	200	100	0.2	50	5
Arroyo Grande	800	100	200	0.2	50	10
Salinas River						
Upper Valley	600	150	150	0.5	70	5
Upper Forebay	800	100	250	0.5	100	5
Lower Forebay	1500	250	850	0.5	150	8
180 foot Aquifer	1500	250	600	0.5	250	1
400 foot Aquifer	400	50	100	0.2	50	1
Pajaro River						
Hollister	1200	150	250	1.0	200	5
Tres Pinos	1000	150	250	1.0	150	5
Llagas	300	20	50	0.2	20	5
Big Basin						
Near Felton	100	20	10	0.2	10	1
Near Boulder Creek	250	30	50	0.2	20	5

a Objectives shown are median values based on data averages over the referenced study period; objectives are based on preservation of existing quality or water quality enhancement believed attainable following control of point sources.

b Measured as Nitrogen

c Basis for objectives is in the "Water Quality Objectives for the Santa Maria Ground Water Basin Revised Staff Report, May, 1985" and February, 1986, Staff Report.

d These are maximum objectives in accordance with Title 22 of the Code of Regulations.

e Expressed as NO₃-N

f Ground water basin currently exceeds usable mineral quality.

CHAPTER 4. IMPLEMENTATION PLAN

The actions intended to protect beneficial uses and water quality of the Central Coast Basin are presented in this chapter under three categories: (1) Regional Water Quality Control Board goals, (2) point source control measures, and (3) nonpoint source control measures. Water bodies considered to be water quality limited segments and the implication of such a designation is also discussed.

This chapter is organized in the following manner:

- A. Regional Water Quality Control Board Goals
- B. Point Source Measures
 - 1. Effluent Limits
 - a. Stream Disposal
 - b. Estuarine Disposal
 - c. Ocean Disposal
 - d. Land Disposal
 - e. Reclamation and Reuse
 - f. Pretreatment Programs
 - g. Sludge Processing and Disposal
 - 2. Municipal Wastewater Management Plans (arranged by hydrologic sub-area)
 - 3. Industrial Wastewater Management
 - 4. Solid Waste Management

- C. Nonpoint Source Measures
 - 1. Urban Runoff Management
 - 2. Agricultural Water and Wastewater Management
 - 3. Individual Sewage Disposal Systems
 - 4. Land Disturbance Activities
- D. Water Quality Limited Segments

REGIONAL WATER QUALITY CONTROL BOARD GOALS

To insure that the water resources of the Central Coastal Basin are preserved for future generations of Californians, the California Regional Water Quality Control Board, Central Coast Region, determined it was desirable to establish certain planning goals. These goals pertain to utilization of the basin's water resources and guidelines for control of waste discharges, as follows:

- 1. Protect and enhance all basin waters, surface and underground, fresh and saline, for present and anticipated beneficial uses, including aquatic environmental values.
- 2. The quality of all surface waters shall allow unrestricted recreational use.
- 3. Manage municipal and industrial wastewater disposal as part of an integrated system of fresh water supplies to achieve

maximum benefit of fresh water resources for present and future beneficial uses and to achieve harmony with the natural environment.

4. Achieve maximum effective use of fresh waters through reclamation and recycling.

5. Continually improve waste treatment systems and processes to assure consistent high quality effluents based on best economically achievable technology.

6. Reduce and prevent accelerated (man-caused) erosion to the level necessary to restore and protect beneficial uses of receiving waters now significantly impaired or threatened with impairment by sediment.

POINT SOURCE MEASURES

Water quality control plans to regulate point source wasteloads in the Central Coastal Basin have been developed to insure protection of beneficial uses of water described in Chapter 2, as well as water quality objectives and anti-degradation policies described in Chapter 3. In addition, effluent limits, applicable to various disposal modes, and waste discharge prohibitions, described in this chapter, influenced plan selection. Point source wastes can be generated by residential, commercial, industrial, agricultural, certain recreational activities, and by solid waste disposal practices. Other wastes are considered under the category of nonpoint source wasteloads and are discussed in

appropriate sections of this chapter.

EFFLUENT LIMITS

Effluent limitations for disposal of treated point source wastes are based on water quality objectives for the area of effluent disposal and applicable state and federal policies and effluent limits. Water quality objectives and policies are based on beneficial uses established for receiving waters. Decisions in treatment process selection are discussed for four general disposal modes considered - stream disposal, estuarine disposal, ocean disposal, and land disposal. There is no discussion provided for disposal to lakes or confined sloughs since these water bodies are protected by discharge prohibitions. Separate discussions of treatment for wastewater reclamation and reuse and sludge processing and disposal are also provided.

Management Principles and Regional Board Policies contained in Chapter 5 should be reviewed for further information concerning discharge to surface waters.

STREAM DISPOSAL

Most streams in the Central Coastal Basin are ephemeral in character. During summer months, there is little or no flow in stream channels. In several instances, flow during the dry season is composed of irrigation runoff or, in a very few cases, wastewater treatment plant effluent. Usually, these flows in-

filtrate into the stream bed a short distance downstream of discharges. In such instances, the concept of receiving water assimilative capacity has little meaning. Disposal of wastewater in ephemeral streams must be accomplished in a manner that safeguards public health and prevents nuisance conditions. Where possible, discharges should be beneficial as stream flow augmentation. When recharge of a useful ground water basin occurs through stream channel recharge, impacts on ground water quality must be considered.

There are a few streams in the basin which flow on a year-round basis and support an inland fishery. Disposal of wastewaters to such streams requires that essentially all oxygen demanding substances and toxicity be removed.

Principal factors governing treatment process selection for stream disposal are federal effluent limits, state public health regulations, and water quality requirements for beneficial use protection. As a minimum, secondary treatment, as defined by the Environmental Protection Agency (EPA), is required in all cases. Where rapid percolation occurs, conventional secondary treatment is currently adequate. EPA guidelines for best practicable treatment would also apply in these cases. Where water contact recreational use is to be protected, the California Department of Health Services (DOHS) recommends coagulation, filtration, and disinfection providing a median coliform MPN of 2.2/100 ml. Detoxification is required where fishery protection is a concern. Detoxification would in-

clude effluent limits for identified toxicants, pursuant to Section 307 of the Federal Water Pollution Control Act. Source control of specific toxicants may be necessary to comply with the Act.

ESTUARINE DISPOSAL

Water quality objectives applying to estuaries are contained in Chapter 3.

Receiving waters considered estuaries are one of two groups: (1) shallow waters of an open bay, and (2) confined tidal estuaries or lagoons. Flushing action is usually present in a shallow open bay and natural dispersion and dilution is available on a limited scale. In confined waters, flushing action is limited or nonexistent except during high stream inflow or storms. Since these shorelines frequently are heavily developed and waters are extensively used, requirements for wastewater disposal into such areas are the most stringent of any for marine receiving waters. The "Water Quality Control Policy for Enclosed Bays and Estuaries of California," adopted by the State Water Resources Control Board, prohibits discharge of waste to most enclosed bays and estuaries in the state, unless the discharge will enhance water quality.

Water quality objectives in Chapter 3 prevent discharges that could raise natural nutrient levels to an extent that nuisance algal blooms or other aquatic growths occur. Excessive eutrophication in coastal estuaries of California often is

characterized by floating and stranded mats of green marine seaweeds Enteromorpha and Ulva. These algae generally grow on mud or other substrates in estuarine water and can produce nuisance conditions along shorelines. These algae have a high sulfur content and emit foul smelling hydrogen sulfide and mercaptans during decomposition. Caution should be given in determining control measures for estuaries, as many of the seasonal algal growths that occur on mud flats are natural and may not be significantly affected by waste discharges in the watershed. Where eutrophication problems are apparent, secondary treatment with denitrification, or phosphorus removal and disinfection should be provided prior to discharge.

OCEAN DISPOSAL

Water quality objectives applicable to ocean waters are contained in Chapter 3.

Federal guidelines for secondary treatment apply to ocean discharges. The State Water Resources Control Board's Water Quality Control Plan for Ocean Waters of California (Ocean Plan) establishes effluent limits achievable by alternative processes, such as advanced primary treatment. The Ocean Plan contains water quality objectives, requirements for effluent quality and management of waste discharges, and discharge prohibitions (including Areas of Special Biological Significance). Effluent quality requirements establish limitations for grease and oil, solids, turbidity, pH, and toxicity. Limits are also estab-

lished for heavy metals, chlorine residual, various chlorinated pesticides, PCBs, toxaphene and radioactivity outside the zone of initial dilution.

For municipal discharges, the Clean Water Act allows waiver of secondary treatment standards on a case-by-case basis. Secondary treatment waivers are further discussed as they apply to specific discharges in the following section on Municipal Wastewater Management. If full secondary treatment is required but funding is inadequate, treatment levels should be achieved through staged construction. Ocean Plan objectives can be achieved as an interim measure. Secondary treatment must be added later if a waiver is not issued, or if receiving water monitoring indicates additional treatment is necessary to protect ocean waters. Industrial wastewater management is discussed later in this chapter.

LAND DISPOSAL

Land disposal is regulated by California Code of Regulations, Title 23, Chapter 15. These regulations establish waste and site classifications and waste management requirements for waste treatment, storage, or disposal in landfills, surface impoundments, waste piles, and land treatment facilities. Chapter 15 requirements are minimum standards for proper management. Regional Boards may impose more stringent requirements to accommodate regional and site-specific conditions.

Principal factors affecting treatment process selection for land disposal are the nature of soils and ground waters in the disposal areas and, where irrigation is involved, the nature of crops. Wastewater characteristics of particular concern are total salt content, nitrate, boron, pathogenic organisms, and toxic chemicals. Where percolation alone is considered, the nature of underlying ground waters is of particular concern. Treatment processes should be tailored to insure that local ground waters are not degraded.

Nitrate removal is required in many cases where percolation is to usable ground water basins. Percolation basins operated in alternating wet and dry cycles can provide significant nitrogen removal through nitrification/denitrification processes in the soil column. Finer textured soils are more effective than coarse soils. Nitrate removal would not necessarily be required, and secondary treatment may be adequate where recharge is for other purposes such as prevention of seawater intrusion or where soil percolation constraints do not require further treatment. Monitoring in the immediate vicinity of the disposal site is required in either case. Where the need for nitrate removal is not clear, removal could be considered at a possible future stage depending on monitoring results. Where well controlled irrigation is practiced, nitrate problems in the dry season will be controlled. Vegetative uptake will utilize soluble nitrates which would otherwise move into ground water under a percolation operation. Demin-

eralization techniques or source control of total dissolved solids may be necessary in some inland areas where ground waters have been or may be degraded. Presence of excessive salinity, boron, or sodium could be a basis for rejection of crop irrigation with effluent.

State Health Department regulations, described in Title 22 of the California Code of Regulations, stipulate disinfection levels required for specific crops. In some cases, such as pasture for milking animals, the California Code of Regulations requires oxidation with disinfection to a median number of coliform organisms of 23 MPN/100 ml. Environmental Protection Agency guidelines for secondary treatment do not apply to land disposal cases. However, municipal treatment facilities must provide effective solids removal and some soluble organics removal for percolation bed operations and for reduction of nuisance in wastewater effluent irrigation operations. Disinfection requirements are dictated by the disposal method. Oxidation ponds may be cost-effective in some remote locations and may be equivalent to secondary treatment.

RECLAMATION AND REUSE

Water shortages in California are resulting in increased demand for reclamation. Reclamation and reuse is encouraged where feasible and beneficial. Where practicable, land disposal by spray irrigation shall be accomplished by proper reclamation techniques rather than by over-irrigation. This will aid

water shortages and maximize nutrient removal.

Treatment process selection for reclamation of wastewater is dependent upon the intended reuse. Where irrigation reuse or ground water recharge is intended, treatment requirements will depend on conditions described under land disposal. Clearly, the nature of the crop to be irrigated, soil percolation, and water characteristics are important considerations. Title 22 of the California Code of Regulations provides wastewater reclamation criteria to regulate specific uses of reclaimed water. Where reuse is extended to water contact recreation, secondary treatment with coagulation, filtration, and disinfection is required. Where golf course irrigation is practiced, this level of treatment minus coagulation and filtration may be adequate. More stringent measures may be necessary with increased risk of public exposure (for example, residents adjacent to fairways). However, where more complete reclamation is envisioned, such as creation of recreational lakes for fishing, swimming, and water skiing, nutrient removal may also be required to minimize algae growths and to encourage fish propagation. Comparable treatment may also be needed for industrial water supplies used for cooling and uses where algae growth in transfer channels or cooling towers is of concern. Nitrogen removal and demineralization processes may also be necessary for selected reclamation projects as discussed under land disposal.

To meet the increased demand for reclamation, existing regulations contained in the California Code of Regulations, Title 22, are being expanded. California Code of Regulations, Title 22, are hereby incorporated as applicable reclamation requirements.

Dual water systems may be feasible in some instances. Reclaimed wastewater should be investigated as an alternative water source for toilets.

Management Principles contained in Chapter 5 should be reviewed for further reclamation information. This section is located after the "Recommended State Water Resources Control Board Actions" section.

PRETREATMENT PROGRAMS

State and Federal regulations require certain municipalities to develop and administer pretreatment programs to control the discharge of industrial wastes to the treatment plant. All municipal plants discharging to navigable waters with design flows greater than 5.0 mgd are required to develop and implement a pretreatment program. Other municipalities may be required to develop a pretreatment program if circumstances warrant such a program. The Environmental Protection Agency has established specific industrial subcategories of industries which discharge certain quantities or concentrations of pollutants to municipal systems. Pretreatment is required to meet effluent standards established for each industrial category. The objec-

tives of a pretreatment program are to: (1) prevent introduction of pollutants into publicly-owned treatment works which will interfere with treatment operations and/or use or disposal of municipal sludge, (2) prevent introduction of pollutants into publicly owned treatment works which will pass through treatment works or be incompatible with treatment techniques, (3) increase feasibility of recycling and reclaiming municipal and industrial wastewaters and sludges, and (4) enforce applicable EPA Categorical Standards.

A pretreatment program must include: (1) a local pretreatment ordinance, (2) a use permit system, (3) a program of monitoring and inspection to insure compliance with the ordinance and use permit, and (4) an enforcement program sufficient to obtain compliance with provisions of the ordinance or use permit. Pretreatment programs are further discussed as they apply to specific dischargers in the section on Municipal Wastewater Management.

Municipalities required to comply with Federal pretreatment regulations in the Central Coast Region are:

City of Santa Cruz,
Cities of Gilroy/Morgan Hill,
City of Watsonville,
Monterey Regional Wastewater
Treatment Plant,
City of Salinas Industrial Plant,
City of San Luis Obispo,
City of Santa Maria,
City of Lompoc, and
City of Santa Barbara

SLUDGE PROCESSING AND DISPOSAL

Sludge treatment and disposal is usually the most difficult aspect of wastewater treatment. Biological sludges have a higher nutrient content than primary treatment sludges and are thus more desirable as a soil conditioner, but handling problems are compounded. Chemical precipitation will produce a greater quantity of sludge that is composed of inorganic material. Such sludges may be digested but require greater digestion tank capacity than is necessary for biological sludges. The large inorganic content of chemical precipitation sludges may also render them less desirable as a soil conditioner. Polymers are widely used to increase settling and thickening efficiencies, and to reduce chemical sludge handling problems. Increasing power costs have made sludge energy recovery projects economically attractive.

Burial of digested sludge or incinerated residues, often mixed with garbage and other solid wastes, has been a common method of disposal. Dewatering is generally economically desirable to reduce weight, volume, and transport costs and is often required because of moisture limitations in landfills. Soil conditioning as a means of digested sludge disposal and of returning humus material and nutrients to the soil has been practiced in many parts of the world for many years. Liquid sludge, heat-dried sludge, dewatered sludge, and composted sludge have all been used successfully as soil conditioners. Some means of steri-

lizing the sludge (such as heat drying or wet combustion) is usually required prior to unrestricted sale to the public. Experience has shown that demand for such a product is generally limited or seasonal and that some disposal method is necessary.

Examples of disposal of liquid or dewatered digested sludge as a soil conditioner are numerous. Some treatment plants have contracts with local farmers for the use of digested sludge in agriculture. This practice is widespread in Great Britain and is becoming more popular in the United States. Dewatered and air-dried sludge cake has also been used in many major city parks. Some municipal sludges are digested, composted, packaged, and sold commercially as soil amendments. Most communities in the Central Coastal Basin dispose of sludge in liquid or dewatered form on land fill, dump sites, or on local farms. Continuation of this practice is recommended where beneficial uses of soil and water are not adversely affected. Wastewater heavy metals tend to concentrate in sludge. Proper application rates are required to avoid unacceptable metal concentrations in the soil (cadmium is of particular concern).

Many of the world's major coastal cities have discharged sludge to the ocean for years. This practice has in some cases resulted in detrimental conditions while in others, significant impacts have not been shown. The federal government and many state governments have banned the use of federal and state monies in any system that returns sludge to

the receiving waters. Some states have banned the practice outright. California's Ocean Plan prohibits discharge of municipal and industrial waste sludge directly to the ocean, or into a waste stream that discharges to the ocean. The contention of the regulatory agency is that return of the sludge negates the purpose of the wastewater treatment process. Though controversial, this legal ban has led to land disposal and reclamation, or to incineration, depending on local conditions. Land is more readily available for sludge disposal or use on agricultural land in the Central Coastal Basin than in more intensively urbanized areas of California.

Currently, the Board can regulate handling and disposal of sludge pursuant to Chapter 15 of Title 23, California Code of Regulations and California Department of Health Services (DOHS) Standards for hazardous waste management. The EPA has promulgated a policy of promoting those municipal sludge management practices that provide for the beneficial use of sludge while maintaining or improving environmental quality and protecting public health. The EPA has also proposed a rule which requires states to develop a program to assure that use and disposal of sewage sludges are compatible with federal sludge use and disposal criteria which are being developed by EPA.

MUNICIPAL WASTEWATER MANAGEMENT

Municipal wastewater conveyance, treatment, and disposal facilities recommended for the Central Coastal Basin are described in the following pages. Recommended plans for municipal facilities are described in geographic sequence by hydrographic units. Hydrographic units are identified in Chapter 2, Figure 2-1. Numbers in parentheses throughout the chapter refer to design capacity unless otherwise stated. Pretreatment programs and modifications to secondary treatment are discussed as part of the recommended plan where applicable. Further discussion of these topics can be found under the subheadings "Ocean Disposal" and "Pretreatment Programs" at the beginning of this chapter.

Further specific municipal management information can be found in the Management Principles section of Chapter 5. General municipal wastewater management information is also included in the State Water Resources Control Board Plans and Policies section, Discharge Prohibitions section, Control Actions section and Regional Board Policies section.

BIG BASIN HYDROLOGIC UNIT

The Big Basin Hydrologic Unit includes discharges from the City of Santa Cruz and the City of Scotts Valley, in addition to unsewered areas and several small waste dischargers. Table 4-1 displays summarized Big Basin Hydrologic Unit dischargers.

The City of Santa Cruz operates a wastewater collection, primary treatment, and ocean disposal system with a capacity of 21 mgd. Sewerage service is provided to the City of Santa Cruz, Santa Cruz County Sanitation District (SCCSD), and the City of Scotts Valley. The SCCSD serves East Cliff, Capitola, Aptos, and Seacliff areas. The recommended plan for the City is to upgrade the existing treatment plant at Neary's Lagoon to secondary level treatment. A new outfall was completed in 1988. The new outfall is 12,250 feet long terminating in 100 feet of water about one mile offshore. It replaces a 2,000 foot outfall which was a source of many complaints due to its proximity to the shore water-contact recreation area.

Mitigation measures to offset environmental impacts to Neary's Lagoon and an adjacent park must be resolved before the plant can proceed. The City has implemented a pretreatment program affecting the City of Santa Cruz, and Santa Cruz County Sanitation District.

Wastewaters from sewered areas of the City of Scotts Valley are transported to Scotts Valley's secondary treatment plant. Effluent is transported through a land outfall to the City of Santa Cruz marine outfall for disposal to the Pacific Ocean. A recommended plan for Scotts Valley includes: (1) increasing wastewater treatment capacity from 0.65 mgd to 0.95 mgd, (2) providing reclaimed water to Pasatiempo Golf Course and other green belt areas for irrigation purposes, and (3) transporting

Table 4-1. Big Basin Hydrologic Unit Summarized Municipal Dischargers

Davenport County Sanitation District
California Department of Parks and Recreation - Big Basin State Park
California Department of Forestry - Ben Lomond Conservation Facility
City of Santa Cruz
City of Scotts Valley
Santa Cruz County Service Area No. 7 - Boulder Creek Golf and Country Club
Santa Cruz County Service Area No. 10 - Rolling Woods Subdivision
San Lorenzo Valley Water District - Bear Creek Estates
Big Basin Woods
Santa Cruz County Service Area No. 5 - Sand Dollar Beach and Canon del Sol
Santa Cruz County Service Area No. 20 - Trestle Beach
Individual Septic Tank Systems

excess wastewater through the Scotts Valley land outfall to the City of Santa Cruz ocean outfall. An alternative plan is to transport raw wastewater through the Scotts Valley land outfall to the Santa Cruz wastewater treatment plant for treatment and disposal through the ocean outfall. Local water agencies (Scotts Valley Water District and San Lorenzo Valley Water District) may benefit from reclamation efforts and should be involved in reuse planning.

Davenport County Sanitation District (DCSD) was created in 1979 to provide sewer and water services to the Davenport-Newtown area located on the coast north of Santa Cruz. Davenport-Newtown area has interceptors and an aerated wastewater lagoon on property owned by Lone Star Industries. Disposal is through evaporation/percolation and industrial reuse. DCSD is responsible for waste-

water collection, treatment, and disposal.

The State Department of Parks and Recreation is responsible for Big Basin State Park facilities (.04 mgd). Discharge provides stream-flow augmentation. The wastewater treatment plant includes secondary treatment with sand filtration and coagulation. This stream discharge qualifies as an acceptable wastewater reclamation project. The discharge is upstream from a popular swimming hole, so this plan emphasizes the need to enhance water quality and protect beneficial uses in Waddell Creek. The Department of Parks and Recreation must correct wastewater system deficiencies in order to protect public health and the beneficial uses of Waddell Creek and tributaries.

The recommended plan for the Ben Lomond Conservation Facility is to retain the existing septic tank, evaporation/percolation ponds, and spray field. Existing facilities are adequate so long as operation and maintenance are effective.

Wastewater management in San Lorenzo Valley (SLV) is provided by three community treatment and disposal facilities (Bear Creek Estates, Big Basin Woods, and Boulder Creek Golf and Country Club). Remaining areas are served by individually owned septic tank and soil absorption systems. Bear Creek Estates uses septic tank treatment with disposal to a soil absorption system. This facility is the responsibility of San Lorenzo Valley Water District and Bear Creek Estates.

The recommended plan for Big Basin Woods Subdivision is to retain the existing extended aeration treatment facility with leachfield disposal, presently operating at approximately ten percent of total capacity (.35 mgd). Flow from County Service Area No. 7 has been diverted to Big Basin Woods' leachfield during equipment repair periods. Leachfield capacity is adequate to serve both Big Basin Woods and CSA No. 7. Existing facilities are adequate so long as operation and maintenance are effective. This plan will be implemented by Big Basin Sanitation Company, Big Basin Woods Subdivision, and the San Lorenzo Valley Water District.

The recommended plan for Boulder Creek Golf and Country Club is to retain the existing activated sludge treatment facility with

leachfield disposal and add filtration for golf course irrigation. Existing facilities are adequate so long as operation and maintenance are effective. Operation and maintenance of the system is the responsibility of the Santa Cruz County Department of Public Works. This plan will be implemented by Santa Cruz County Service Area No. 7 through Santa Cruz County Department of Public Works and San Lorenzo Valley Water District.

Rolling Woods Subdivision, Santa Cruz County Service Area No. 10, provides treatment with a redwood bark biofilter and disposes treated effluent through percolation pits. This facility should be replaced with an interceptor that would convey wastes to the City of Santa Cruz for treatment and disposal.

Individually owned septic tank leachfield systems in the San Lorenzo Valley are being studied closely to identify problem areas and determine the suitability of these problem areas for the continued use of septic systems. Alternatives will be proposed and evaluated to reduce septic system problems and to respond to this Plan's discharge prohibition in certain areas of the valley. Specific design criteria for conventional and modified septic systems will be developed as part of on-going county studies.

Dischargers in the Aptos-Soquel area include Santa Cruz County Service Area No. 5 (Sand Dollar Beach and Canon del Sol), SCCSA No. 20 (Trestle Beach), and Monterey Bay Academy. Flows from Aptos and East Cliff are con-

veyed through interceptors and pumping stations for treatment at the City of Santa Cruz Wastewater Treatment Plant.

The recommended plan for SCCSA No. 5 is to retain the existing extended aeration package treatment plant and disposal to seepage pits. Wastewater treatment and disposal at Canon del Sol will be by the same methods as Sand Dollar Beach. Facilities will be adequate so long as operation and maintenance are effective. This plan will be implemented by SCCSA No. 5 through Santa Cruz County Department of Public Works.

Wastewater treatment at Trestle Beach (SCCSA No. 20) will be provided by an extended aeration package treatment plant with disposal to seepage pits. This plan will be implemented by SCCSA No. 20 through the Santa Cruz County Department of Public Works. It is recommended that CSA No. 5 and No. 20 be connected to regional collection systems when service is extended to adjacent areas.

The recommended plan for the Monterey Bay Academy is to retain the existing settling pond with disposal to a series of evaporation-percolation ponds.

PAJARO RIVER HYDROLOGIC UNIT

Summarized municipal dischargers in the Pajaro River Hydrologic Unit include the City of Gilroy/Morgan Hill, City of Hollister, City of San Juan Bautista and the City of Watsonville. Table 4-2 displays dischargers summarized for the Pajaro River Hydrologic Unit.

The Gilroy area includes the unsewered San Martin area and the City of Gilroy's advanced primary treatment and land disposal facilities serving the Cities of Gilroy and Morgan Hill. The Cities are currently attempting to develop facilities to resolve disposal capacity deficiencies. Primary treatment provided via two oxidation ponds with surface aeration. Effluent disposal is to a series of evaporation/percolation ponds. Wastewater reclamation facilities were constructed in 1977 to alleviate water shortages during drought conditions. When reclamation facilities are in use (seasonally), primary effluent is provided further treatment in an aeration pond. Effluent is then screened, chlorinated, and pumped through nine miles of distribution pipe to various users (for irrigation purposes). The reclamation system's economics have not been favorable. Industrial flows of 6.3 mgd are treated and disposed of in a separate series of sedimentation, oxidation, and percolation ponds.

The recommended plan for the Gilroy-Morgan Hill wastewater treatment facilities is to continue geohydrological assessments to determine impacts of continued effluent disposal by percolation at the Gilroy site. If beneficial uses of surface and ground waters are not adequately protected, other treatment and/or disposal methods must be used. Disposal will continue to be by percolation, evaporation and reclamation. Before a discharge to surface waters is considered, the City

Table 4-2. Pajaro River Hydrologic Unit Summarized Municipal Dischargers

Unsewered San Martin
City of Gilroy/Morgan Hill
San Benito County Facilities
Sunnyslope County Water District
Tres Pinos County Water District
City of Hollister
City of San Juan Bautista
City of Watsonville

will be required to evaluate feasible land disposal options. If current percolation practices are not causing receiving water problems, feasibility of existing disposal area expansion should be considered. The Cities are also evaluating stream disposal. Currently, the Cities of Gilroy and Morgan Hill are responsible for collection, treatment, and disposal of wastewater. They are also responsible for operating the wastewater reclamation facilities. Santa Clara Valley Water District is responsible for administrative tasks for the reclamation system. In addition, the Cities of Gilroy and Morgan Hill have implemented a pretreatment program since 1983.

Individual on-site systems are used for sewage disposal in the San Martin area. Twenty percent of the area's wells exceed the nitrate drinking water objective. This is a significant problem since this area serves as the sole recharge area for the Santa Clara Valley. Methods of providing a water supply that is free of excessive nitrate concentration should be investigated and implemented. Nitrate loadings from various sources should be calculated for the area to deter-

mine the contribution from various sources. The need for on-site system restrictions should be determined.

Small discharges (less than 0.10 mgd) in the Hollister area include flows from San Benito County Facilities, Sunnyslope County Water District, and Tres Pinos County Water District. City of Hollister wastewater is treated at the City of Hollister Wastewater Treatment Facilities (1.2 mgd). San Juan Bautista wastewater is treated at the City of San Juan Bautista Wastewater Treatment Facilities (0.15 mgd).

The recommended plan for Tres Pinos is to retain the existing evaporation/percolation ponds. The recommended plan for San Benito County Hospital Facilities and Sunnyslope County Water District is to study the feasibility of constructing interceptors to the Hollister facilities or consolidating into a single subregional system. Existing facilities consisting of aerated pond treatment followed by land disposal to evaporation/percolation ponds may be maintained if project level studies determine this to be the more fea-

sible method of wastewater treatment and disposal. Sunny-slope County Water District owns and operates a wastewater treatment and disposal system serving approximately 300 homes in Ridge-mark Estates subdivision located approximately 2-1/2 miles southeast of Hollister. Wastewater is treated in two aerated ponds and disposed of in evaporation/percolation ponds. Effluent may be used in the future to irrigate a golf course.

The recommended plan for the City of Hollister is to retain the existing advanced primary treatment facilities and percolation ponds which started operating in 1979. The Hollister industrial system is to be maintained separately to receive seasonal flows from the spinach and tomato processing operations. The recommended plan for the City of San Juan Bautista is development of a land disposal system. The City currently discharges secondary effluent to a drainage ditch tributary to Pajaro River.

Land disposal of wastewaters in the Hollister region must be monitored carefully to assure ground water quality is protected. Source control of salt must be stressed to reduce effluent salinity to levels acceptable for disposal to local ground waters.

Wastewaters in the Watsonville area are transported to regional treatment facilities in the City of Watsonville with a design capacity of 13.4 mgd. Collection, primary treatment, and disposal to Monterey Bay are provided for the City of Watsonville, and the

local sewerage entities of Freedom County Sanitation District, Pajaro County Sanitation District and Salsipuedes Sanitary District. The City submitted an application to EPA for waiver of secondary treatment requirements and the Regional Board has approved a waiver permit. Project level studies determined ocean disposal to be the most feasible method of waste disposal. Ocean outfall improvements and a phased approach to secondary treatment are included in Watsonville's Clean Water Grant Project. If a waiver from secondary treatment is granted, the project will provide advanced primary treatment. Local sewerage entities retain ownership and direct responsibility for wastewater collection and transport systems up to the point of discharge to interceptors owned and operated by Watsonville. The City is implementing a pretreatment program and the Regional Board has approved a waiver permit.

CARMEL RIVER HYDROLOGIC UNIT

Summarized municipal dischargers in the Carmel River Hydrologic Unit include Carmel Sanitary District. Table 4-3 displays dischargers summarized for the Carmel River Hydrologic Unit.

The Carmel Sanitary District operates a secondary wastewater treatment plant with ocean disposal serving Carmel-by-the-Sea, Del Monte Forest, and a few adjacent areas. The outfall system terminates within a portion of Carmel Bay that is designated an Area of Special Biological Significance (ASBS). The District

Table 4-3. Carmel River Hydrologic Unit Summarized Municipal Dischargers

Carmel Sanitary District
Carmel Valley Sanitation District
 Village Green
 White Oaks
 Carmel Valley Ranch
Carmel Highlands Inn
Carmel Sanitary Association

is developing a reclamation project for irrigation of Monterey Peninsula Golf Courses. A high concentration of golf courses in a water short area makes reclamation particularly desirable and attractive.

Carmel Valley Sanitation District operates three facilities in Carmel Valley. These include community septic tank/subsurface disposal systems at Village Green and White Oaks and a tertiary type treatment plant with golf course reclamation at Carmel Valley Ranch. No changes are recommended unless public health or water quality problems develop. Should the need arise for specific septic system maintenance in Carmel Valley, local agencies should be considered for management responsibilities.

Comprehensive studies to determine the feasibility of establishing separate treatment plants have been completed for the Carmel Valley area. These studies conclude that on-site septic systems should remain operational until further ground water monitoring data shows sewers are necessary. Wastewater treatment and reuse on the Carmel Valley Ranch Golf Course provides an optimal

way of managing waste generated in the area.

Carmel Highlands wastewaters should continue to be treated in on-site wastewater systems except at the Highlands Inn and the Carmel Highlands Sanitary Association. Both of these systems will continue to discharge treated secondary quality effluent to the Pacific Ocean.

SANTA LUCIA HYDROLOGIC UNIT

The U.S. Navy's Point Sur wastewater facilities and the State Department of Parks and Recreation Pfeiffer Big Sur State Park facilities are the only significant facilities in this hydrologic unit. Ocean discharge from the U. S. Navy is being discontinued and is being replaced with a subsurface land disposal system. The subsurface land disposal system at Pfeiffer Big Sur State Park also seems adequate. If expansion to this facility is considered or if ground or surface water degradation from this discharge is detected, other means of disposal, such as reclamation, are recommended.

SALINAS RIVER HYDROLOGIC UNIT

The extensive Salinas River Hydrologic Unit includes the Monterey Peninsula and southern coastal area of Monterey Bay, the City of Salinas, agricultural and small urban centers of the Salinas Valley, and recreational developments in the upper watersheds. Major dischargers in the Salinas River Hydrologic Unit include the Monterey Regional Water Pollution Agency (MRWPCA). Table 4-4 displays dischargers summarized below for the Salinas River Hydrologic Unit.

The recommended plan for the Monterey Peninsula-Salinas area calls for consolidation of Monterey Peninsula, Salinas, Castroville, and other Monterey Bay municipal wastewater flows into a regional wastewater treatment plant and outfall. Discharge is to central Monterey Bay outside the prohibition zone described in Chapter 5 "Discharge Prohibitions" under "Waters Subject to Tidal Action." Upon completion of the regional plant, wastewater treatment plants in Monterey, Salinas (2), Castroville, and Fort Ord will be taken out of service. The Monterey Regional Water Pollution Control Agency (MRWPCA) was established to manage and implement regional consolidation.

It is recommended MRWPCA implement wastewater reclamation. MRWPCA plans to provide reclaimed water to the Castroville Irrigation Project which involves irrigating food crops in the Castroville area with water reclaimed at the regional plant blended with water diverted from the Salinas River.

New major residential developments proposed within the service area of the Regional Project should connect to the regional system unless studies can show that water quality and public health concerns can be properly mitigated. Sewerage feasibility studies and aerial ground water studies should continue in this sub-basin to assure that adequate sewage treatment and disposal capabilities are maintained for both existing and proposed development.

Recommended plans for Salinas Valley communities, the U. S. Army's Fort Hunter Liggett, the California Army National Guard's Camp Roberts, and recreational areas in the upper watershed involve separate wastewater treatment and disposal facilities.

Dischargers along the Salinas River, should remain as separate treatment facilities with land disposal to evaporation/percolation systems and land application (irrigation) systems where possible. Disposal should be managed to provide maximum nitrogen reduction (e.g., through crop irrigation or wet and dry cycle percolation). Facility expansions shall include means for nitrogen reduction. Shallow ground water monitoring at these facilities will determine if additional improvements are necessary. King City should consider expanding its service area to include Pine Canyon if development continues in that area.

The City of Paso Robles owns and operates a secondary treatment plant (4.9 mgd) utilizing trickling filtration followed by oxi-

Table 4-4. Salinas River Hydrologic Unit Summarized Municipal Dischargers

Monterey Regional Water Pollution Control Agency (MRWPCA)
U. S. Army Fort Hunter Liggett
California Army National Guard - Camp Roberts
King City
City of Paso Robles
City of Atascadero
San Luis Obispo County Service Area No. 7A Oak Shores
San Luis Obispo County Service Area No. 19 Heritage Ranch
Development

dation ponds. Disposal is by evaporation and percolation from the oxidation ponds and by discharging from the last pond to the Salinas River channel. Use of reclaimed water should be investigated and implemented, if feasible. A reduction of inorganic salt in the effluent would increase its desirability to potential users. A report, "Water Quality in the Paso Robles Area," published by the California Department of Water Resources in 1981 made water quality control recommendations, including a recommendation for more stringent control of total dissolved solids and sodium in the City's wastewater treatment plant discharge. A Regional Board Salt Balance Study is planned to further define the need and methods of salt reduction.

The City of Paso Robles also owns and operates the wastewater facility serving the California Youth Authority and Paso Robles Airport Wastewater treatment plant (0.10 mgd). Disposal is to a series of oxidation-percolation ponds located adjacent to Huerfano Creek. Wastewater reclamation uses should be investigated. An effluent pump exists at the

plant in case wastewater reclamation potential develops. The City is planning an interceptor sewer to eliminate this facility and provide all treatment and disposal at its main City facility.

The City of Atascadero (1.67 mgd) owns and operates a wastewater collection, treatment, and disposal system serving part of the City. Pond treatment is provided followed by land disposal to percolation ponds and by irrigation of a golf course. San Luis Obispo County Health Department has documented public health problems and water quality problems arising from failing on-site sewage disposal systems in areas within the City. The City was sewered in the most significant problem areas, but additional sewerage is needed.

Dischargers in the Nacimiento Reservoir area include San Luis Obispo County Service Area No. 7A, Oak Shores Development (0.1 mgd); and, San Luis Obispo County Service Area No. 19, Heritage Ranch Development (0.40 mgd). Wastewater facilities for the Oak Shores Development consist of two aerated treatment ponds

and spray disposal. Part of the collection system is located below the spillway elevation of Nacimiento Reservoir. This has been a source of excessive infiltration in the past and the problem has been corrected. This area should be watched closely as reservoir level rises and wastewater flows increase to insure infiltration and/or exfiltration do not reoccur. Major expansion of wastewater facilities is expected in the future. As the development grows, new disposal facilities should be relocated well away from Nacimiento Lake.

Wastewater at Heritage Ranch is treated in aerated lagoons at the development. Discharge is to a holding pond, filtered, and then discharged to a drainageway located outside the Nacimiento Reservoir watershed.

Camp Roberts is a U. S. Army installation that is leased by the California National Guard as a major training site. Wastewater flows that vary from 3000 gpd in winter to nearly 1.0 mgd in summer are treated to secondary levels prior to disposal in a series of percolation/evaporation ponds located near the Salinas River. The facility was upgraded in 1980 and there are no additional recommendations.

Dischargers in the San Antonio Reservoir watershed include Monterey County's Department of Parks and Recreation and the U.S. Army's Fort Hunter Liggett. There are no recommended changes to facilities operated by the Monterey County Department of Parks and Recreation. The U.S. Army, Fort Hunter Liggett operates waste-

water treatment facilities located adjacent to the San Antonio River. The recommended plan is to maintain the existing facilities with improvement of the spray disposal area.

ESTERO BAY HYDROLOGIC UNIT

Municipal wastewater management plans for the Estero Bay Hydrologic Unit are described for each of these four areas: North Coast, Morro Bay, San Luis Obispo Creek, and South County Regions. Table 4-5 displays dischargers summarized below.

Dischargers in the North San Luis Obispo Coast include Cambria Community Services District (1.0 mgd) and San Simeon Acres Community Services District (0.2 mgd).

Secondary treatment facilities at Cambria have a design capacity of 1.0 mgd and include a land outfall and spray irrigation system for effluent disposal, and an effluent holding reservoir. Excess effluent that cannot be spray-irrigated is pumped to the reservoir for later land disposal or discharged during wet weather through a sand filter bed to Van Gordon Creek. The District is evaluating land disposal improvements. Implementation of this plan is the responsibility of Cambria Community Services District.

San Simeon Acres Community Services District owns and operates a secondary treatment (activated sludge) plant with design capacity of 0.2 mgd. Wastewater visitor complex generated at Hearst

Table 4-5. Estero Bay Hydrologic Unit Summarized Dischargers

Cambria Community Services District
San Simeon Acres Community Services District
City of Morro Bay and Cayucos Sanitary District
California Men's Colony
Los Osos septic tank/leachfield systems
City of San Luis Obispo
Avila Beach County Water District
San Luis Obispo County Service Area No. 18 Country Club Estates
City of Pismo Beach
South San Luis Obispo County Sanitation District
Lopez Recreation Area Wastewater Treatment Plant

Castle and within the community is treated and discharged to the Pacific Ocean through an ocean outfall. The recommended plan is to retain the treatment plant.

Dischargers in the Morro Bay area include the City of Morro Bay and Cayucos Sanitary District (2.1 mgd), California Men's Colony (CMC) (1.2 mgd), and Los Osos-Baywood septic tank leachfield systems.

The City of Morro Bay and the Cayucos Sanitary District jointly own treatment facilities with ocean outfall disposal. Wastewater is being treated by a newly constructed plant and discharged through a newly constructed ocean outfall. In order to maximize plant capacity and meet Ocean Plan requirements, part of the effluent receives primary treatment only and part receives secondary treatment. Primary and secondary quality effluents are blended before disposal to the Pacific Ocean in compliance with a secondary treatment waiver.

Recently renovated wastewater treatment facilities at California Men's Colony also serve the

California National Guard Camp, Cuesta College, the County Educational Center, and the County Operational Facility. Secondary treatment with coagulation/filtration, and subsequent disposal to Chorro Creek (stream flow augmentation) are provided. Effluent is also used to irrigate fodder crops on nearby lands owned by California State Polytechnic University.

Development on small lots in Los Osos-Baywood has resulted in one of the most densely populated areas without public sewers on the central coast. Septic tank effluent is discharged in predominantly sandy soil over a ground water basin which is the sole source of water for the area. Some shallow wells have approached and exceeded the public health maximum nitrate concentration limit. The County of San Luis Obispo conducted a Clean Water Grant funded study of this situation. Study findings resulted in a Basin Plan Prohibition of discharges effective November 1, 1988. The County has not implemented the recommended project of sewerage the area. (A new septic system

discharge prohibition now exists for the area).

Dischargers in the San Luis Obispo Creek area include the City of San Luis Obispo (5.1 mgd), Avila Beach County Water District (0.1 mgd), and San Luis Obispo County Service Area (CSA) No. 18, Country Club Estates (0.12 mgd).

The City of San Luis Obispo wastewater treatment facilities serve as a regional plant for the City and certain proximal unincorporated county areas. Trickling filters provide secondary treatment before disposal to San Luis Obispo Creek. Infiltration and inflow in the wastewater collection system causes excessive wet weather flows and intermittent discharges to San Luis Obispo Creek of partially treated wastewater. The recommended plan for San Luis Obispo is improving the collection and treatment facilities capacity to eliminate these discharges. The City's Wastewater Management Plan should be implemented to provide treatment necessary to comply with stringent permit requirements.

The small community of Avila Beach is served by a small advanced primary trickling filter wastewater treatment facility owned and operated by the Avila Beach County Water District. Design capacity of the plant was originally 0.18 mgd, but was downgraded in 1986 to 0.1 mgd as the NPDES permit was revised to include secondary treatment standards for trickling filters. Current average flow is only 0.07 mgd. Wastewater disposal is through an ocean outfall to the Pacific Ocean. Additional treat-

ment and/or outfall modification will be necessary as flow increases. Oceanographic studies would be required to determine appropriate modifications (e.g., lengthen the outfall and add a multiport diffuser).

Country Club Estates (CSA No. 18) is a small subdivision in South San Luis Obispo County that historically relied on septic tank systems for wastewater treatment and disposal. A septic tank system performance survey completed in January, 1981, identified significant public health hazards from numerous failing septic tank systems in the subdivision. The septic systems were replaced in 1988 by a small secondary treatment plant (0.12 mgd) with effluent disposal via golf course irrigation at the San Luis Obispo Golf and Country Club.

Dischargers in the South San Luis Obispo County Region include the City of Pismo Beach (1.2 mgd), South San Luis Obispo County Sanitation District (3.0 mgd) (serving the City of Arroyo Grande, City of Grover City, and Ocean Community Services District), and Lopez Recreation Area wastewater treatment plant (0.10 mgd). These dischargers provide secondary treatment of wastewater through three separate facilities. Pismo Beach has a land outfall to the South San Luis Obispo County Sanitation District ocean outfall. Plant reliability improvements were made in 1987. Future treatment plant enlargements should provide duplicate process units for improved operation and maintenance. A long-range solids man-

agement plan must be developed and implemented.

South San Luis Obispo County Sanitation District disposes of secondary effluent through an ocean outfall to the Pacific Ocean. The District has enlarged its facilities to 3.0 mgd and changed from activated sludge to fixed film reactor. A long range solids management plan is also needed for this plant.

The Lopez Recreation Area treatment facilities serve County facilities adjacent to Lopez Lake. Lopez Lake serves as a municipal water supply for downstream coastal communities. It is recommended land disposal of wastes be continued. Ground water quality monitoring should be used to provide warning of any potential ground water problems downstream of the disposal area. Implementation of this plan is the responsibility of the County of San Luis Obispo.

CARRIZO PLAIN HYDROLOGIC UNIT

There are no municipal sewerage systems in the Carrizo Plain Hydrologic Unit; recommended practices for individual disposal systems will pertain to this area.

SANTA MARIA RIVER HYDROLOGIC UNIT

The municipal wastewater management plans for the Santa Maria Valley and the Cuyama Valley are described separately for the City of Guadalupe, the City of Santa Maria, the Laguna County Sanitation District, Nipomo, and the New Cuyama wastewater treatment plant.

It is recommended that separate wastewater treatment and disposal/reclamation facilities be maintained by the City of Guadalupe (0.5 mgd), the City of Santa Maria (7.8 mgd), and the Laguna County Sanitation District (3.2 mgd). Discharge will be to land in each case.

The City of Guadalupe provides primary treatment followed by mechanically aerated lagoons. An unincorporated neighborhood known as the Gularte Tract is located adjacent to Guadalupe. A lift station and interceptor have been constructed to transport Gularte's wastewater to the City's collection system. The recommended plan for Guadalupe is to complete additional storage ponds and disposal facilities to insure containment of wastewaters during wet weather and accommodate planned growth and to continue effluent discharge to land. Use of reclaimed water to irrigate nearby pasture lands is encouraged and should be maximized. Implementation of this plan is the responsibility of the City of Guadalupe. The County of Santa Barbara will be responsible for wastewater collection and transport systems for Gularte Tract up to the point of discharge to interceptors owned and operated by Guadalupe.

The City of Santa Maria provides wastewater collection, treatment, and disposal services to the City of Santa Maria, Santa Maria Airport District, and part of Laguna County Sanitation District. Biological secondary treatment is provided with disposal to percolation ponds and irrigation lands. The recommend-

ed plan for Santa Maria is to retain the existing treatment and disposal facilities. Since the Santa Maria ground water basin is in a state of adverse dissolved solids balance, it is imperative that quantities of total dissolved solids, sodium, chloride, nitrogen, and nitrogen compounds be kept to a minimum by implementing a strict source control ordinance. Additional measures -- importing better quality water, drilling new wells, partial desalting, etc. -- may be required in the future to provide a suitable water supply for the area. Laguna County Sanitation District retains ownership and direct responsibility for wastewater collection and transport systems up to the point of discharge into interceptors owned and operated by the City of Santa Maria.

A secondary wastewater treatment plant owned and operated by Laguna County Sanitation District treats most of the wastewater generated within the District. Wastewater is discharged to approximately 2,250 acres of private lands located adjacent to the facility. The landowners and the County have a 30-year agreement for irrigation of fodder, fiber, and seed crops. The recommended plan for Laguna is to improve plant performance and increase capacity through a staged construction plan. Enough land is available to allow expansion and continue reclamation. Recommended improvements include increasing capacity and reliability of the Orcutt Lift Station, increasing sludge drying bed area, and expanding effluent, pumping, storage, and conveyance

facilities. Funding of future improvements and plant expansions would be through connection and user charges. Laguna County Sanitation District is responsible for implementation of the recommended plan. Impact of salts must be minimized by implementing a strict source control ordinance and discharging to areas outside the main ground water recharge area.

Failing individual on-site sewage disposal systems in the community of Nipomo resulted in a treatment facility being completed in 1987. Treatment is by aerated lagoons and disposal is by percolation beds. Sewer service is provided to downtown Nipomo and County operated systems of Nipomo Palms, Black Lake Estates and Galaxy Subdivisions. The recommended plan is to extend the sewer system to small lot areas as growth allows.

Existing facilities at the New Cuyama Wastewater Treatment Plant provide primary treatment of wastewater, with some aeration. Effluent is chlorinated before discharge to Salisbury Creek. The recommended plan for New Cuyama is to study existing facilities, determine future needs of the community, and, since water is in short supply, explore wastewater reclamation alternatives. Cuyama Community Services District is the responsible party for wastewater and water supply facilities in New Cuyama. It is recommended that exploratory wells be drilled to find a higher quality water supply. If a lower salt content water is not available, the ex-

isting water supply should be partially demineralized.

SAN ANTONIO CREEK HYDROLOGIC UNIT

Los Alamos Community Services District owns and operates a wastewater treatment and disposal facility to serve the Los Alamos community. Wastewater (0.1 mgd) is treated in mechanically aerated ponds and discharged to disposal ponds and a spray reclamation area.

SANTA YNEZ RIVER HYDROLOGIC UNIT

Municipal wastewater management plans for the Santa Ynez River Hydrologic Unit are described below. Table 4-6 displays dischargers discussed below.

Parts of Lompoc Valley ground water basin are in a state of adverse salt balance because of municipal and agricultural discharges. It is imperative that impacts of point-source waste discharges to land be reduced by continuing to implement strict salt limitations, source control programs, and other salt management practices.

The City of Lompoc operates a secondary treatment facility (5.0 mgd) and discharges treated effluent to Santa Ynez River. The City also provides service to Vandenberg Village Community Services District and sewer areas of Vandenberg Air Force Base. The recommended plan for Lompoc is to control mineral concentrations in the effluent by enforcing strict limits on discharges to the sewer system and to continue to implement a pretreatment program. Im-

plementation of this plan is the responsibility of the City of Lompoc. Vandenberg Air Force Base and Vandenberg Village Community Services District retain ownership and direct responsibility for wastewater collection and transport systems up to the point of discharge into the wastewater treatment plant and/or interceptors owned and operated by the City of Lompoc.

In 1980, the Mission Hills Community Services District (0.4 mgd) was formed, assuming ownership and responsibility for water supply and sewage disposal in Mission Hills. The District expanded and upgraded its La Purisima Plant and eliminated the Rucker Road Plant. Wastewater is treated in mechanically aerated ponds and discharged to a series of evaporation/percolation ponds and reclamation areas. Separate water reclamation requirements were adopted for Mission Belle Dairy as a primary user of reclaimed water for pasture and fodder crop irrigation.

There are isolated areas of Vandenberg Air Force Base that are not served by the Base's collection system. Separate treatment and disposal systems exist to serve these areas. Due to the isolation of these systems, it is recommended that they be retained. Efficient operation and maintenance of these systems will protect public health and water quality.

The United States Department of Justice, Bureau of Prisons, owns and operates existing facilities at the U.S. Penitentiary (0.6 mgd) which provide secondary

Table 4-6. Santa Ynez River Hydrologic Unit Summarized Municipal Dischargers

City of Lompoc
Mission Hills Community Services District
Vandenberg Air Force Base
U. S. Department of Justice, Bureau of Prisons
Buellton Community Services District
City of Solvang
Cachuma County Sanitation District

treatment of wastewater. Treated wastewater is reclaimed for irrigation of forage crop land.

It is recommended that facilities be maintained separately at Buellton Community Services District (0.65 mgd), City of Solvang (1.0 mgd), and Cachuma County Sanitation District (0.22 mgd). Secondary treatment prior to land disposal coupled with a strict source control program will be necessary to protect local ground waters in these three areas.

The City of Solvang operates a secondary wastewater treatment facility to serve the City and Santa Ynez Community Services District with effluent disposal to evaporation/percolation ponds. Since the disposal ponds are located in a flood-prone area, it is imperative that sufficient disinfection capacity be available to disinfect effluent during wet weather. Expansion of capacity should be considered for ongoing growth in areas adjacent to present City and District boundaries. Implementation of this plan is the responsibility of both the City of Solvang and Santa Ynez Community Services District. Need for, and feasibility of providing, sewerage

facilities for the Los Olivos-Ballard areas should be investigated by the County of Santa Barbara. Treatment and disposal service for this area be contracted with the City of Solvang.

The recommended plan for Cachuma County Sanitation District is to continue to treat and dispose of wastewater in percolation ponds and spray fields outside the Cachuma Reservoir watershed. Since ground waters downgradient from the spray field are used for domestic water supply, sampling of the nearest downgradient well is recommended to insure that water supply quality is not adversely affected by the discharge.

SOUTH COAST HYDROLOGIC UNIT

Summarized municipal wastewater treatment and disposal agencies in the South Coast Hydrologic Unit are described separately for the Goleta Sanitary District (9.7 mgd), City of Santa Barbara (11.0 mgd), Montecito Sanitary District (1.5 mgd), Summerland Sanitary District (0.20 mgd), and, Carpinteria Sanitary District (2.0 mgd) wastewater treatment plants.

Goleta Sanitary District operates a wastewater collection system within the District and a treatment and ocean disposal system to provide service to Goleta Sanitary District, Isla Vista Sanitary District, University of California at Santa Barbara, Santa Barbara Municipal Airport, and facilities of Santa Barbara County. EPA granted the District a waiver from secondary treatment requirements. The waiver permit limits flow to 7.9 mgd provided mass emission rates do not exceed limits based on a flow of 7.3 mgd. In order to meet EPA's conditions and Ocean Plan criteria, part of the effluent receive primary treatment only and part receives secondary treatment. Primary and secondary effluent are blended before disposal to the Pacific Ocean. The District implements a pretreatment program. Isla Vista Sanitary District, University of California at Santa Barbara, Santa Barbara Municipal Airport, and Santa Barbara County retain ownership and direct responsibility for wastewater collection and transport systems up to the point of discharge into interceptors owned and operated by Goleta Sanitary District. A long range solids management plan is needed to assure sludge disposal needs are met.

The recommended plan for the City of Santa Barbara is to retain El Estero Wastewater Treatment Plant, with disposal to the Pacific Ocean, along with implementation of the City of Santa Barbara wastewater reclamation project. The City could consider implementing a cost-effective composting program to reduce transportation costs. The City implements

a pretreatment program and also provides service to an unincorporated community in Mission Canyon located above the City.

The recommended plan for Montecito Sanitary District is to continue secondary treatment with disposal to the Pacific Ocean.

The recommended plan for Summerland Sanitary District is to expand and upgrade existing facilities to insure reliable plant operations and to accommodate planned growth. Recommended improvements are addition of standby power, dual processes, and continuous monitoring of total chlorine residual.

The recommended plan for Carpinteria Sanitary District is to retain existing secondary treatment facilities with disposal to the Pacific Ocean.

INDUSTRIAL WASTEWATER MANAGEMENT

In general, the alternatives available to industrial discharges are the following: (1) ocean discharge and compliance with the State Ocean Plan, the State Thermal Plan and Public Law 92-500; (2) containment of non-saline and non-toxic wastes on land; (3) reinjection of oil and gas production brines; (4) inland surface water discharge, if other alternatives are proved infeasible; and, (5) abandonment of the treatment facility and connection to a publicly owned treatment works. In most cases, alternatives will be limited by standards of performance and pretreatment standards being de-

veloped by EPA. It should also be noted that Federal guidelines will be subject to regional considerations such as important fishery resources or wildlife areas which could necessitate making regional industrial discharge requirements more stringent than national performance standards.

Specific effluent limitations are being promulgated for existing industrial waste discharges together with standards of performance and pretreatment standards of performance for new sources pursuant to sections 304(b), 306(b), and 307(b), of the Federal Water Pollution Control Act. Effluent limitations were being circulated for comment by the EPA. Waste source categories of particular interest in the basin which will be covered by those sections of the Federal Law include:

Meat product and rendering processing

Dairy product processing

Canned and preserved fruits and vegetables processing

Canned and preserved seafood processing

Cement Manufacturing

Feedlots

Electroplating

Beet sugar processing

Petroleum production and refining

Steam electric power plants

Leather tanning and finishing.

Further information pertaining to industrial discharges can be found in the Management Principles and Control Actions Section of Chapter 5. The State Water Resources Control Board Plans and Policies Section, Discharge Prohibition Section, and Regional Board Policies Section are likely to apply (depending on site-specific circumstances).

SOLID WASTE MANAGEMENT

The protection and maintenance of water resources requires consideration and regulation of solid waste management practices. This section discusses present and future solid waste production, existing disposal practices and their effect on water quality, and proposed plans for solid waste disposal within the study area.

Land disposal is regulated by the California Code of Regulations, Title 23, Chapter 15 (Chapter 15). In the vernacular of Chapter 15, wastes are classified as either hazardous waste, designated waste, non-hazardous solid waste, or inert waste. Waste Management Units (WMUs) are classified as either Class I, II or III depending on the type of waste to be disposed of in the unit. Class I WMUs have the most restrictive siting criteria and must be constructed to provide optimum conditions for isolation of wastes from waters of the State. A double

liner and a leachate collection and removal system (LCRS) is required for all Class I units. Class II WMUs also have relatively restrictive siting and construction standards and are designed to totally isolate wastes from the environment. Double liners and LCRSs are typically, but not always, required for Class II units. Class III WMUs must be sited and constructed such that no impairment of beneficial uses of surface or ground water beneath or adjacent to the site occurs. Siting and construction standards for Class III units are the least restrictive of the three, but the requirements are still considerable.

Wastes are considered hazardous if they meet the criteria defined in CCR Title 22, Section 66300. Examples of wastes that are considered hazardous include: waste solvents, waste pesticides, and waste electroplating solutions, to name a few. Hazardous wastes must be discharged only at Class I WMU.

Wastes are classified as designated if, under ambient conditions at the WMU, they may be released in concentrations in excess of applicable water quality objectives or cause degradation of waters of the state. Some examples of designated waste include, wet sewage treatment plant sludge, oil field wastes, and some drilling muds. Designated wastes must be disposed of only at Class I WMU's, or at Class II WMU's which are approved for that particular type of waste.

Nonhazardous solid wastes consist of the more typical household and industrial wastes including:

trash, rubbish, ashes, demolition and construction wastes, discarded home and industrial appliances, manure, and vegetable or animal solid or semi-solid wastes provided they do not meet the criteria mentioned above for hazardous or designated wastes. Nonhazardous solid waste may be disposed of at any classified WMU, but normally it is disposed of only at Class III WMUs to conserve the diminishing volume in the few operating Class I and Class II WMUs.

Inert waste does not contain hazardous waste or soluble pollutants at concentrations in excess of applicable water quality objectives and does not contain significant quantities of decomposable waste. Some examples of inert wastes include: broken up concrete rubble and excess clean earth fill. Inert wastes do not necessarily need to be disposed of at classified waste management units (i.e., Class I, II or III), but waste discharge requirements may be issued for the discharge at the discretion of the Regional Board.

There are 28 authorized active waste disposal sites regulated by the Central Coast Regional Board. Of the 28 sites, 26 are Class III landfills, with one Class I landfill, and one Class II surface impoundment. Additional information regarding a specific waste management unit can be found in the respective County Waste Management Plan in which the unit is located.

In recent years, data indicates municipal solid waste landfills may be having a greater impact on water resources than was pre-

viously anticipated. Legislation was passed in 1984, which requires all owners of active, inactive, or former landfills to initiate a study to determine if the landfilling operation has had an impact on waters of the state. Approximately 150 sites are evaluated per year throughout the state, with approximately nine sites per year coming from the Central Coastal Region. Further studies and/or corrective actions are initiated at all sites impacting state waters.

A recent report from the Assembly Office of Research has documented California's dwindling remaining landfill capacity. In general, remaining landfill capacity within the Central Coastal Region is higher than most areas of the state. However, the ratio of landfill closures to landfill expansions or opening of new landfills within the region for the last five years is approximately 4:1. This ratio will probably remain the same or increase with the more stringent regulatory requirements and the time-consuming permitting process required for siting of new waste management units. In order to avoid a landfill capacity crisis similar to the situation on the East Coast, our solid waste handling and disposal practices should be reevaluated and a more environmentally sound management practice should be developed.

The Toxic Pits Cleanup Act of 1984 (TPCA) declares that discharges of liquid hazardous wastes or hazardous wastes containing free liquids into lined or unlined impoundments pose a serious threat to the quality of

the waters of the State. Therefore, the legislature enacted TPCA as Article 9.5 (Surface Impoundments) of Chapter 6.5 (Hazardous Waste Control) of Division 20 of the California Health and Safety Code with the intent of insuring that existing surface impoundments were either made safe or were closed.

The effect of TPCA was to prohibit discharge (defined to include storage) of liquid hazardous wastes and hazardous wastes containing free liquids to surface impoundments, which did not satisfy specific construction and monitoring standards, by June 30, 1988, or December 31, 1988, depending on the location and characteristics of the impoundment. TPCA allows specific exemptions with varying application and granting deadlines. However, on and after January 1, 1989, all discharge of liquid hazardous wastes and of hazardous wastes containing free liquids to surface impoundments which had not been granted exemptions, and which did not meet specific construction and monitoring standards, was prohibited. There is a rare set of circumstances which may exempt a surface impoundment from the January 1, 1989, deadline.

TPCA is fulfilling its goal of reducing the threat of liquid hazardous wastes to the waters of the State.

SOLID WASTE DISCHARGE PROHIBITIONS

Discharge is prohibited as follows:

1. Any Class I solid waste material to any location other than Class I solid waste disposal site.

2. Any Class II solid waste materials to any location other than Class I or II solid waste disposal sites.

3. Solid wastes shall not be discharged to rivers, streams, creeks, or any natural drainage-ways or flood plains of the foregoing.

STORM WATER MANAGEMENT

Storm water runoff can be a significant pollution source. Water can become contaminated when pollutants, such as oil grease, pesticides, industrial wastes, herbicides, bacteria, and metals are washed off city streets, agricultural lands, forested areas, and industrial areas, to name a few.

Federal regulations define storm water point source discharges subject to the National Pollutant Discharge Elimination System (NPDES) Program (40 Code of Federal Regulations 122.26). The Environmental Protection Agency may require NPDES permits from a storm water point source covering all conveyances part of that storm water discharge. Where more than one owner/operator exists for a single conveyance system, all owners/operators will be identified and regulated by each own's discharge limitations.

NONPOINT SOURCE MEASURES

Wastewater originating from nonpoint sources includes those from agricultural activities, urban

runoff, erosion from construction, mining or timber harvesting operations, vessels, and individual waste disposal systems.

Control of nonpoint wastewaters falls into several categories including: 1) changes in practices to minimize waste emission; 2) prohibition of polluting activities; or 3) some form of treatment program. For example, to minimize waste emissions, agricultural irrigation practices can be modified to reduce salt buildup rates in ground water and there are ways to control drainage from dairies and feed-lots to minimize contamination of surface waters. Prohibition may be effectively used to eliminate vessel waste discharges and individual disposal systems in areas where such practices cause water degradation. Treatment approaches can be applied to all of the above examples and to collected urban drainage; use of buffer strips along water courses can be effective in controlling effects of erosion from timber harvesting or construction activities.

Effluent limits and facility requirements are not readily applicable to most nonpoint wastewater sources. Controls emphasize use of upgraded on-site practices; improved regulatory controls such as performance standards, policies, and inspection programs; and first-line implementation by local agencies. Topical discussions of significant nonpoint source control measures applicable to the Central Coastal Basin follow for urban runoff management; agricultural wastewater management;

individual, alternative, and community waste disposal practices; and, land disturbance activities.

URBAN RUNOFF MANAGEMENT

The effect of urban runoff on receiving water quality is a problem which has only recently come to be recognized. Most of the work up to the present has centered on characterizing urban runoff: concentrations of various constituents have been measured, attempts to relate these to such factors as land use type and rainfall intensity have been made, and studies concerning the amounts of these constituents present on street surfaces have been conducted. It appears that considerable quantities of contaminants, heavy metals in particular, may enter the receiving waters through urban runoff. The Federal Water Pollution Control Act Amendments of 1972 stress future "control of treatment of all point and nonpoint sources of pollution." Thus the federal government has concluded that nonpoint sources, such as urban runoff, are indeed deleterious to the aquatic environment and that measures should be taken to control such emissions.

There are four basic approaches to controlling pollution from urban runoff: (1) prevent contaminants from reaching urban land surfaces, (2) improve street cleaning and cleaning of other areas where contaminants may be present, (3) treat runoff prior to discharge to receiving waters, and (4) control land use and development. Which approach or com-

ination of approaches is most effective or economical has not yet been studied extensively. Thus only the basic characteristics of each approach can be discussed. In addition to these direct approaches, measures to reduce the volume of runoff from urban areas are also available.

SOURCE CONTROLS

The first approach, which emphasizes source control, has many aspects. Tough effective air pollution laws can probably aid in reducing the amount of certain materials deposited on the land. An obvious example is lead in automobile exhaust emissions. Effective anti-litter ordinances and campaigns can aid in reducing floatable materials washed to surface waters. These materials are objectionable primarily from an aesthetics viewpoint, although water fowl can be affected by plastics. New construction techniques may reduce emissions to receiving waters. Erosion can be decreased by seeding, sodding, or matting excavated areas as quickly as practicable. Construction in certain critical areas can be limited to the dry season. Stockpiling of excavated material can be regulated to minimize erosion. Control of chlorinated hydrocarbon pesticide usage would reduce the amounts found on urban land surfaces and thus reduce the amounts washed to natural waters.

STREET CLEANING

The second approach to reducing pollution from urban runoff involves improving street cleaning

techniques. Generally, street cleaning as presently practiced is intended to remove large pieces of litter which are aesthetically objectionable. The removal of fine material which may account for most of the important contaminants is minimal. It may be possible to design mechanical sweepers to remove a greater fraction of the fine material. Alternatively, vacuum-type street cleaners could produce better results.

In addition to streets, sidewalks and roofs contribute large amounts of runoff. Controlling contaminants present on these surfaces would be more difficult and would be up to individuals. Advertising campaigns would probably be unproductive and legislation would be unworkable except perhaps in specific, localized situations. Therefore, contaminant removal will probably be limited to street surfaces.

In many areas, streets are cleaned by flushing with water from a tank truck. If catch basins are present, this material may be trapped in them. If catch basins do not exist, the material will be simply washed to the storm sewers where subsequent rainfall will carry them to surface waters. Where catch basins are regularly cleaned out, they can be effective in removing materials during runoff. Where they are allowed to fill up with material, they add to the pollution loading during a storm by discharging septic material. In any case, catch basins usually exist in older urban areas and have a rather low efficiency in removing contaminants from storm water.

TREATMENT

The third approach to reducing the effects of urban runoff on receiving water quality involves collecting and treating the runoff. Physical or physical-chemical treatment would be required; the intermittent nature of storm flows precludes biological treatment. Examples of possible treatment processes are simple sedimentation, sedimentation with chemical clarification, and dissolved air flotation. In addition to cost, a principal problem with this approach is collection. Present storm sewerage systems generally drain to open creeks and rivers or directly to tidal waters. Even if treatment facilities were located at various sites in the Basin, a massive collection system would have to be built.

The economic question of "treatment vs. transport" would have to be studied with specific regard to storm water runoff. Local sewage treatment plants abandoned in favor of regional facilities could possibly be utilized in such a program. One method of cutting down the peak flow capacity required is to provide storage volume in the collection system.

Solutions to the problem of preventing water quality degradation by urban runoff are only in the earliest stages of development and consist mostly of plausible hypothesis on how to deal with the problem. Therefore, it is not possible at this time to present a definite plan with regard to this subject. It is probable that research and study which up to now has emphasized

defining and characterizing the problem, will turn to developing methods of control. The Federal Water Pollution Control Act Amendments of 1972 state specifically that the EPA is authorized to conduct and assist studies "which will demonstrate a new or improved method of preventing, reducing, and eliminating the discharge into any waters of pollutants from sewers which carry storm water..." Considerable progress will be made during the next few years.

Information should be collected and studied so that a workable plan can be implemented in the future.

CONTROL OF URBANIZATION

A fourth approach is to encourage controls on urbanization which will either reduce the volume of runoff or at least not cause runoff to increase as a result of urban growth. The usual pattern is that increased urbanization leads to higher runoff coefficients, reflecting the many impervious surfaces associated with development. Roof drains to storm sewers, paved parking lots and streets, installation of storm sewers, filling of natural recharge areas, and increased efficiency in realigned and resurfaced stream channels all are characteristics of urban growth. Development near streams and on steep slopes is deleterious to water resources; it is less disruptive to develop the lower portions of a watershed than the headwater areas, both from the standpoint of the length of channel affected and the extent of channel enlargement necessary to

convey storm water. Use of porous pavements and less reliance on roof connections to storm drains and more emphasis on local recharge would reduce the peak volume of runoff from storms. Areal mass emissions of urban drainage constituents should be quantified. Urban planning should be more cognizant of land constraints to permit greater natural recharge where possible and feasible and to discourage intensive development of steep land particularly in headwater areas.

AGRICULTURAL WATER AND WASTEWATER MANAGEMENT

Agricultural wastewaters and the effect of agricultural operations are a result of land use practices; controls should ultimately be developed from land use plans. Controls are required to minimize adverse effects from agricultural practices. The following discussion is confined to recommended improvements in practices and to the scope of federal-state permit programs which will regulate certain agricultural activities. The discussion of practices is limited here to animal confinement and irrigation practices. Although PL 92-500 defines a confined animal operation as a point source, this plan presents it in the traditional manner of dispersed nonpoint sources. Pesticide use and limits on fertilizer applications are not specifically considered; these materials are covered by appropriate water quality objectives.

FEDERAL-STATE PERMITS GOVERNING AGRICULTURAL OPERATION

Dischargers of wastes are managed in part by the NPDES permit program. Any person proposing to discharge waste that could affect the quality of the waters of the state must file a report of waste discharge with the appropriate regional board. The Board will prescribe discharge requirements. The requirements implement water quality control plans and take into consideration beneficial uses to be protected.

Public Law 92-500 directed the Environmental Protection Agency to set up a permit system for all dischargers. Agriculture is specifically considered and permits are required for:

1. Feed lots with 1,000 or more slaughter steers and heifers.
2. Dairies with 700 head or more, including milkers, pregnant heifers, and dry mature cows, but not calves.
3. Swine facilities with 2,500 or more swine weighing 55 pounds or more.
4. Sheep feedlots with 10,000 head or more.
5. Turkey lots with 55,000 birds, unless the facilities are covered and dry.
6. Laying hens and broilers, with continuous flow watering, and 100,000 or more birds.
7. Laying hens and broilers, with liquid manure handling systems, and 30,000 or more birds.

8. Irrigation return flow from 3,000 or more continuous acres of land when conveyed to navigable waters from one or more point sources.

The law also provides that the state may administer its own permit program if EPA determines such program is adequate to carry out the objective of the Law. On March 26, 1973, this authority was transferred from the EPA to the State of California for waters within the State. Thus, the Regional Board issues discharge requirements to the agricultural operations covered under the aforementioned guidelines. The State may require discharge permits from any discharger, regardless of size.

ANIMAL CONFINEMENT OPERATIONS

Animal confinements such as feedlots and dairy corrals present a surface runoff problem during wet winter flows. Runoff water passes through hillside operations to sometimes contribute manure loads to the surface streams. Stockpiled manure may also add to the problem. Disposing of washwater and manures from dairies in such a manner that ground waters are not degraded can be a problem. Most dairies have some associated land for waste disposal. The land is devoted to crops and pasture and its assimilative capacity will depend upon the size, crop, crop yield, and the season. During intensive growth periods, crops can utilize more nutrients than in slow growth period. Small dairies with adequate crop land in close proximity may be able to use washwaters year round as a source of

nutrients. Large dairies with smaller acreage will view the slurry wastes as a disposal problem, not a resource. Thus, there theoretically exists a threshold size for waste disposal. Regulations to achieve this size would be impractical and unenforceable. Crop land is expensive in the basin and would be difficult to acquire. However, a combination of crop patterns and pasture land best suited for each size operation should be determined and the dairymen should be encouraged to follow such a pattern. Where acreage is not available, mutually advantageous agreements between the dairymen and a neighbor cultivator could be formed for disposal of dairy wastes.

Sumps, holding ponds, and reservoirs holding manure wastes should be protected from flood flows. No pipes, drains or ditches from the milk barn should be allowed to drain in or near a stream channel.

Specific Regional Board policies pertaining to animal confinement operations can be found under "Control Actions" in Chapter 5.

IRRIGATION OPERATIONS - NEED FOR SALT MANAGEMENT

Salts originate by dissolution of the more soluble portions of rocks and soil particles in rain water (weathering). Such salts are transported in solution, but are concentrated in soils, waters, and so-called salt sinks due to evaporation from soil and water surfaces and transpiration (use) by crops (plants). This removal of water by evaporation

or transpiration leaves salts behind. Salts are concentrated by each successive evaporative loss of water. In time, accumulations of salt can go from no-problem to extreme-problem levels unless some controls are applied.

For irrigated agriculture to continue production into the foreseeable future, this problem of gradual accumulation of salts in soils and waters must be faced and kept under control at acceptable levels. Otherwise, production will decline even under the best management, and no added amount of good management will be able to continue production of the quantities of food crops needed. In most of California's water basins, the rate of export or removal of salts from the basin will need to be increased to more closely match or exceed the rate of salt accumulation. For each basin, not only do the rates of import and export of salts need to be in reasonably close balance, but the balance must also be maintained at a sufficiently low level of salinity to meet the quality demands of the various designated beneficial uses. This is often referred to as maintenance of a "favorable salt balance."

The rate of water quality degradation within a basin which results from inadequate salt exports is slow. It may be so slow that the need for control of salts is believed to be far into the future and of no concern to present planning. However, just as degradation may be a slow process, correction of a

critical basin-wide salinity problem is also an extremely slow process. Good planning, now, to control this long-term, slow degradation of our soil and water resources seems the better course of action, rather than to wait until the problem becomes critical. Decisions made, or not made, now can be critical to control in the future.

Agriculture's need for salt management is both for on-farm management and for off-farm (basin-wide) management. The absolute need for discharge of salts by agriculture will create conflicts with other water users -- even other agricultural water users.

Compromises and trade-offs will be necessary to reconcile these conflicts; however, necessary motivation for change in management at the farm level will need to be tied to dollars and the economic consequences of "no-change." If required agricultural management changes for essential pollution control result in added costs to the farmer, he has the same hard choices of any other businessman:

1. Absorb the cost with reduced profit;
2. Pass on the cost in increased prices to consumers;
3. Accept some form of public subsidy to off-set cost;
4. Go out of business; or
5. Change crops grown.

In coastal higher rainfall areas, irrigated agriculture could prob-

ably continue almost indefinitely, since irrigation would be used primarily during dry summer periods to supplement winter rainfall. Rainfall would be sufficient to flush salts through soils and provide adequate recharge and outflow from the underground water basin toward the ocean for salt control. There is more cause for concern in the drier inland areas such as the Salinas River Sub-basin and in the naturally mineralized ground water areas such as the Santa Maria Valley.

IMPROVED SALT MANAGEMENT TECHNIQUES

A concept of minimal degradation should be considered in some areas, but this will need to be coupled with management of the surface and ground water supplies to minimize and correct the effects of degradation that may occur. If complete correction is not possible, improved management will delay the time when salts reach critical levels. Several options available to correct degradation through improved salt management follow.

Improved irrigation efficiency would reduce both potential and actual pollutants in the water moving from surface to ground. Improved efficiency would also reduce total quantities of salts leaching to the water table and cut down on withdrawals or diversions from the limited water supply. Present statewide efficiency of water use may average 50 to 60 percent, but individual uses will vary from an estimated low of 30 percent where water is plentiful and in-

expensive to a high of 95 percent where water quantity is limited and/or the price is high.

Implementation of the Leaching Requirement reported by U. S. Salinity Laboratory, Riverside, will help improve efficiency of irrigation. Other research data by this same laboratory has been reported on the effects of low leaching fractions in reduction of salt loads leaching to water tables. The new data offers real incentives to agriculture to improve irrigation efficiency in the form of real dollars saved by the farmer. Real water saved by agriculture can then be used for dilution, recharge, or non-agricultural uses. True, the salts moving to the water table under these low leaching fractions will be more concentrated, but due to low solubilities of certain salts, a progressive precipitation and removal from solution occurs as the salt concentration in the percolating soil solution rises. As the concentration rises, considerable portions of the low solubility salts come out of solution, e.g., the relatively insoluble lime, dolomite, and slightly soluble gypsum.

With these low leaching fractions, salt load to the underground may be reduced as much as 50 percent in some cases. Sodium salts (sodium chloride, and sulfate) are not affected, so in relation to calcium and magnesium salts these sodium salts in the percolating waters increase. The compounds which precipitate are deposited in the lower root zone or below and cause no problem to agriculture except for a few specialized situations which are

correctable (lime induced chlorosis). The increased proportions of sodium salts (higher SAR) will not reduce permeabilities of subsoils since salinity remains high enough to continue normal permeabilities of subsoils. The higher sodium (SAR) reaching water tables may reduce hardness slightly, but is not expected to be a problem to users of the underground waters.

Crop production can continue into the foreseeable future in the low rainfall areas if the minimal degradation that almost inevitably will occur is offset (a) by recharge and replenishment of the underground which will furnish dilution water for the added salts and (b) by drainage or removal of degraded waters at a sufficient rate to maintain low salt levels and achieve a satisfactory balance between salts coming into the basin and salts leaving the basin.

To help in recharge and dilution, additional winter runoff can be stored in surface reservoirs for later use for either surface stream or underground water quantity/quality enhancement or maintenance, e.g., Nacimiento and Twitchell reservoirs. Possible future reservoirs may be located on the Arroyo Seco and Carmel rivers. Or winter runoff could be used directly for ground water recharge to enhance flushing and flow-through dilution of salts and pollutants.

Drainage wells which discharge to drains leading to salt sinks are a possibility in removing

salty waters, but these have had only limited success in draining high water table areas. However, they might be well adapted to ground water quality maintenance. Such wells could be drilled and operated to recover the salty top layers of water tables where salts are believed to accumulate as a layer of poorer quality water over the better quality deeper layers. Since most of the movement within water tables is thought to be horizontal and downslope, and vertical mixing is relatively slow, the possibility of recovering polluted upper layers of water tables should be explored as a quality maintenance tool or rejuvenation procedure for degraded water supplies.

Underdrains (tile systems) can aid in both water and salt management. Perched water tables intercept percolating salts, nutrients, and other pollutants and offer real possibilities as an aid in management and protection of the overall water quality of a basin. A "perched" water table is held up and separated from deeper aquifers by a relatively impermeable barrier (soil, rock, hardpan). This barrier often protects the deeper waters from pollution by preventing leakage of polluted waters from above. Perched water tables exist in portions of several basins. Salts and nutrients collected in these perched water tables may be tapped by underdrains (tile systems) and transported through the basin drainage system to disposal sites.

Basin-wide or area-wide drainage systems will be needed in order to move unusable wastewaters to acceptable temporary or permanent

disposal sites (salt sinks). On-farm drainage problems will normally be solved at individual farmer expense because of the economics involved--the cost is not prohibitive and the costs of "not-solving" the problem (reduced yields, changing cropping patterns, or going out of business) are unacceptable. The off-farm part of drainage, however, is too big for individual farmers to solve, and some form of collective, organized large scale action is needed. The off-farm problems include collection of discharges, rights-of-way for conveyance, building and maintenance of a drainage system, disposal site acquisition, and management for compliance with discharge requirements.

Acceptable temporary or permanent salt disposal sites (salt sinks) must be designated and used. The Pacific Ocean is the only acceptable sink for most of the Central Coastal Basin; however, Soda Lake and certain highly mineralized ground water basins may be acceptable. To be able to remove salts as required to maintain a low salinity level in any one basin, there must be some other basin or site that will accept the salts. These acceptor areas are known as salt sinks. Without acceptable salt sinks, salt management becomes a long-term losing battle and a frustrating exercise in futility.

Other salt inputs to a basin can be reduced by improved management of other salt sources such as fertilizer, animal wastes, and soil amendments. Regulation may be required but an appreciable improvement can be expected

by education of farmers to better understand and better utilize existing information and guidelines. A salt routing approach could be used in areas such as Pancho Rico Creek to permit discharge of highly mineralized wastewater during periods of high flow.

MUSHROOM FARM OPERATIONS

Mushroom farm operations present surface or ground water problems if not properly managed.

Typical Mushroom Farm Operation

Compost is needed as a growing base medium to produce mushrooms. Typically compost is produced on-site from straw, horse manure, cottonseed meal, or other organic matter. During composting, the organic material breaks down into a useable protein source for mushrooms. Water, added to assist the composting process, is constantly leaching through compost piles. Once compost is ready for use, it is placed in mushroom growing trays. After mushroom harvesting, steaming and fumigation sterilize the growing house and spent compost. Spent compost is then removed to "spent compost storage areas" and marketed as a soil additive or disposed of in some other manner.

Types of Wastes Discharged

Composting operations are typically carried out on concrete composting slabs. Compost is frequently sprayed with water. Excess water typically drains into a sump. Normally, excess water is recycled by pumping it back to

spray the pile. In summer very little runoff or leachate is produced from composting. During the rainy season the sump collects more runoff from the compost slab than is recycled. Discharge to drainageways or containment sumps may result.

When mushroom beds are irrigated, excess water drains from concrete floors to drainageways or disposal sumps. This water contains peat moss, soluble substances from beds, salt from salt pans (used to "sanitize" the footwear of persons entering the cultivating room), and whatever is on the floor, such as pesticide residues and mushroom stems, at the time the floor is washed.

Steam is used for tray sterilization and to heat and sterilize growing houses. Prior to entering boilers, water is softened and treated with an organic or inorganic corrosion and scale inhibitors. Salt is used as a water softener regenerant. Discharge of water softener regenerant and boiler blowdown to drainageways or disposal sumps may occur.

Solid wastes consisting of pesticide bags, mushroom roots and stumps, cardboard boxes, spent compost, and general debris are generated by mushroom farms.

Some of the disinfectants, fungicides, and pesticides being sprayed on the floor, walls, and mushrooms are occasionally washed off during washdown of the facility. Generally, pesticides used in this business have a relatively short life.

Possible Water Quality Problems

Compost leachate and irrigation/washwater is high in biochemical oxygen demand (BOD). BOD is generally considered high if the concentration exceeds 30 mg/l, but this can vary from situation to situation. If discharged to surface waters, these wastes may depress dissolved oxygen to a critical level, and provide a nutrient source for undesirable aquatic growth. Improper disposal may also cause impacts on ground water. Nitrates are a particular concern.

Discharges of water softener regenerant and boiler blowdown may degrade surface and ground waters if improperly disposed. These wastes are high in Total Dissolved Solids, Sodium, and Chloride concentrations. Boiler blowdown may also contain organic or inorganic corrosion and scale inhibitors which could present toxicity problems if improperly disposed. Solid wastes can be a problem if improperly disposed.

Disinfectants, fungicides, and pesticides do not appear to present water quality problems based on inspections and limited sampling. These biocides can be a problem if handled improperly. Surface water runoff entering mushroom farm operations can become contaminated if runoff contacts any of the sources described above.

Additional Concerns

Wastes can create a nuisance. Public health can be jeopardized if vectors develop among solid wastes. Further, odors resulting

from storage of wastes can become offensive and may obstruct the free use of neighboring property.

Recommendations

1. Spent irrigation/washwater and compost leachate may be re-used to spray compost piles.

2. Spent irrigation/washwater, compost leachate, and contaminated surface water runoff should be collected for treatment, storage, and disposal in lined ponds, unless shown by geohydrologic analysis that ground water will not be affected. If needed, aeration should be provided to stabilize organic substances and prevent odor problems. Dissolved oxygen of 1.0 mg/l or more is recommended for storage ponds.

3. Mushroom farm wastes, excluding water softener regenerant, may be used to irrigate farm crops during dry weather months. When salt is properly handled, the sodium and chloride content of these waters should be suitable for this purpose. The discharger must demonstrate to the Regional Board that irrigation water will not degrade beneficial water uses.

4. When irrigation is utilized, application rates and irrigation practices should be suitable to the crops irrigated.

5. Water softener regenerant and boiler blowdown should be disposed of separately from spent irrigation/washwater. Since its volume is small and concentration of pollutants is high, it is best to evaporate

the liquid on a lined drying bed, or provide a documented test by a registered Engineer or laboratory that the soils permeability in the disposal area is 10^{-6} cm/sec or less. Two drying beds should be used for the purpose of holding salt/regenerant liquid and boiler blowdown waste. Discharges to beds are alternated to allow sufficient drying time.

6. Drying bed residue from any disposal pond should be disposed at a suitable solid waste disposal site.

7. As an alternative, water softener regenerant and boiler blowdown can be hauled in liquid form to a suitable disposal site, or discharged to the ocean through a suitable outfall.

8. Chemical alternatives for sanitizing footwear to replace salt pans should be investigated by farm operators.

9. If used, salt sanitation pans should be at least 4 inches deep and elevated to prevent contact between salt and water. Salt solution should remain in pans until disposed. Spent salt should be dumped into a sealed container and disposed at a suitable site.

10. Solid waste should be routinely collected and disposed at a suitable site.

Prohibitions

The following activities are prohibited at mushroom farms:

1. Discharge of inadequately treated waste, including leachate, high BOD, high nutrient

waste, and contaminated surface water runoff to drainageways, surface waters, and ground waters.

2. Discharge of untreated water softener regenerant and boiler blowdown waste in a manner that pollutes any non-saline surface or ground water.

3. Discharge and/or storage of waste, including spent compost, in a manner promoting nuisance and vector development.

4. Disposal of sludges, salt residues, pesticide residues, and solid waste in a manner not accepted by the Regional Board.

INDIVIDUAL, ALTERNATIVE, AND COMMUNITY DISPOSAL SYSTEMS

On-site sewage disposal systems and other similar methods for liquid waste disposal are sometimes viewed as interim solutions in urbanizing areas, yet may be required to function for many years. On-site systems can be a viable long-term waste disposal method with proper siting, design, construction, and management. In establishing on-site system regulations, agencies must consider such systems as permanent, not interim systems to be replaced by public sewers. The reliability of these systems is highly dependent on land and soil constraints, proper design, proper construction, and proper operation and maintenance.

If on-site sewage treatment facilities are not carefully man-

aged, problems can occur, including:

- ° odors or nuisance;
- ° surfacing effluent;
- ° disease transmission; and,
- ° pollution of surface and ground waters.

Odors and nuisance can be objectionable and annoying and may obstruct free use of property. Surfacing effluent (effluent which fails to percolate and rises to the ground surface) can be an annoyance, or health hazard to the resident and neighbors. In some cases, nearby surface waters may be polluted.

On-site sewage disposal systems are a potential mechanism for disease transmission. Sewage is capable of transmitting diseases from organisms which are discharged by an infected individual. These include dysentery, hepatitis, typhoid, cholera, and gastro-intestinal disorders.

Pollution of surface or ground waters can result from the discharge of on-site system wastes. Typical problem waste constituents are total dissolved solids, phosphates, nitrates, heavy metals, bacteria, and viruses. Discharge of these wastes will, in some cases, destroy beneficial surface and ground water uses.

Subsurface disposal systems may be used to dispose of wastewater from: 1) individual residences; 2) multi-unit residences; 3) institutions or places of commerce; 4) industrial sanitary sources; and, 5) small communi-

ties. All individual and multi-unit residential developments are subject to criteria in this section of the Basin Plan. Commercial, institutional, and industrial developments with a discharge flow rate less than 2500 gallons per day generally are not regulated by waste discharge requirements; therefore, they must comply with these criteria. Community systems must also comply with criteria relating to this subject within the Basin Plan. Community systems are defined for the purposes of this Basin Plan as: 1) residential wastewater treatment systems for more than 5 units or more than 5 parcels; or, 2) commercial, institutional or industrial systems to treat sanitary wastewater equal to or greater than 2500 gallons per day (average daily flow). Systems of this type and size may be subject to waste discharge requirements.

Alternatives to conventional on-site system designs have been used when site constraints prevent the use of conventional systems. Examples of alternative systems include mound and evapotranspiration systems. Remote subdivisions, commercial centers, or industries may utilize conventional collection systems with community treatment systems and subsurface disposal fields for sanitary wastes. Alternative and community systems can pose serious water quality problems if improperly managed. Failures have been common in the past and are usually attributed to the following:

- ° Systems are inadequately or improperly sited, designed, or constructed.

- ° Long-term use is not considered.
- ° Inadequate operation and maintenance.

CORRECTIVE ACTIONS FOR EXISTING SYSTEMS

Individual disposal systems can be regulated with relative ease when they are proposed for a particular site. For new systems, regulations generally provide for good design and construction practices. A more troublesome problem is presented by older septic tank systems where design and construction may have been less strictly controlled or where land development has intensified to an extent that percolation systems are too close together and there is no room left for replacement leaching areas. Where this situation develops to an extent that public health hazards and nuisance conditions develop, the most effective remedy is usually a sewer system. Where soil percolation rates are particularly fast, ground water degradation is possible, particularly increases in nitrate concentrations.

Sewer system planning should be emphasized in urbanizing areas served by septic tanks. A first step would be a monitoring system involving surface and ground waters to determine whether problems are developing. Where septic tank systems in urbanized areas are not scheduled for replacement by sewers and where public health hazards are not documented, septic tank maintenance procedures are encouraged to lessen the probability that a

few major failures might force sewerage of an area which otherwise could be retained on individual systems without compromising water quality. Often a few systems will fail in an area where more frequent septic tank pumping, corrections to plumbing or leach fields, or in-home water conservation measures could help prevent failure. Improvements of this kind should be enforced by a local septic tank maintenance district or local governing jurisdiction.

A septic tank subjected to greater hydraulic load can fail due to washout of solids into percolation areas and plugging of the infiltrative surface. In some cases, excess wash water could be diverted to separate percolation areas by in-home plumbing changes. Dishwashers, garbage grinders, and washing machines could be eliminated. Water saving toilets, faucets, and shower heads are available to encourage low water use. Water use costs may also be structured to encourage more frugal use of water.

LOCAL GOVERNING JURISDICTION ACTIONS

Disclosure and Compliance of Existing Wastewater Disposal System

Local governing jurisdictions should provide programs to assure conformance with this Basin Plan and local regulations. Inspection programs should assure site suitability tests are performed as necessary, and that tests are in accordance with

standard procedures. Inspection should also assure proper system installation. Proper design and construction should be certified by the inspector. Concerned homeowners can be a tremendous asset in assuring proper construction. When a septic system permit is issued by the local agency, a handout specifying proper construction techniques should be made available to the general public. Systems must be inspected by the local agency before covering (backfilling).

Local agencies can use either staff inspectors or individuals under contract with the local government. Either way, a standard detailed checklist should be completed by the inspector to certify compliance.

Site suitability determinations should specify: 1) whether approval is for the entire lot or for specific locations of the lot; 2) if further tests are necessary; and, 3) if alternatives are necessary or available.

Where agency approval is necessary from various departments, final sign-offs should be on the same set of plans.

Home owners should be aware of the nature and requirements of their wastewater disposal system. Plans should be available in city or county offices showing placement of soil absorption systems. Since this is only feasible for new construction, local agencies should require septic system as-built plans as a condition of new construction final inspection. Plans would be kept on file for future use of property owners.

Prospective property buyers should be informed of any enforcement action affecting parcels or houses they wish to buy. For example, a parcel in a discharge prohibition area may be unbuildable for an indefinite period, or a developed parcel may be subject to significant user charges from a future sewer system. Local agencies should have prohibition area terms entered into the county record for each affected parcel. When a prospective buyer conducts a title search, terms of the prohibition would appear in the preliminary title report.

Dual leaching capabilities provide an immediate remedy in the event of system failure. For that reason, dual leachfields are considered appropriate for all systems. Furthermore, should wastewater flows increase, this area can be used until the system is expanded. But system expansion may not be possible if land is not set aside for this purpose. For these reasons, dedicated system expansion areas are also appropriate.

To protect this set-aside area from encroachment, the local agency should require restrictions on future use of the area as a condition of land division or building permit approval. For new subdivisions, Covenants, Conditions, and Restrictions (CC&R's) might provide an appropriate mechanism for protecting a set aside area. Future buyers of affected property would be notified of property use restrictions by reading CC&R's.

All on-site system owners need to be aware of proper operation

and maintenance procedures. Local governing jurisdictions should mount a continuing public education program to provide home owners with on-site system operation and maintenance guidelines. Basin Plan information should be available at local agency health and building departments.

Local agencies should conduct an on-site system inspection program, particularly in areas where system failures are common or where systems with poor soils are approved. An agency inspector should periodically check each septic tank for pumping need and each system for proper operation. Homeowners should be alerted where evidence of system failure exists. Where nuisance or a potential public health hazard exists, a followup procedure should insure the situation is corrected. On-site systems should be constructed in a location that facilitates system inspection.

Another approach is periodically to mail homeowners a brochure reminding them how to maintain and inspect their on-site system. Homeowners should be notified that they should periodically check their septic tank for pumping need. Homeowners should also be notified of other problems indicative of system failure. Some examples include wet spots in drainfield area, lush grass growths, slowly draining wastewater, and sewage odors.

Many existing systems do not comply with current or proposed standards. Repairs to failing systems should be done under permit from the local agency. To the extent practicable, the local

agency should require failing systems to be brought into compliance with Basin Plan recommendations. This could be a condition of granting a permit for repairs.

Land use changes on properties used for commerce, small institutions, or industries should not be approved by the local agency until the existing on-site system meets criteria of this Basin Plan and local ordinances. A land use permit or business license could be used to alert the local agency of land use changes.

On-Site Wastewater Management Plans

On-site wastewater management should be implemented in urbanizing areas to investigate long-term cumulative impacts resulting from continued use of individual, alternative, and community on-site disposal systems. A wastewater disposal study should be conducted to determine the best Wastewater Management Plan that would provide site or basin specific wastewater reuse. This study should identify basin specific criteria to prevent water quality degradation and public health hazards and provide an evaluation of the effects of existing and proposed developments and changes in land use. These plans should be a comprehensive planning tool to specify on-site disposal system limitations to prevent ground or surface water degradation. Wastewater management plans should:

- ° contain a ground/surface water monitoring program;
- ° identify sites suitable for conventional septic systems;
- ° project on-site disposal system demand;
- ° determine sites and methods to best meet demand;
- ° project maximum population densities for each subdrainage basin to control degradation or contamination of ground or surface water;
- ° recommend establishment of septic tank maintenance districts, as needed; and,
- ° identify alternate means of disposing of sewage in the event of irreversible degradation from on-site disposal systems.

For areas where watershed-wide plans are not developed, conditions could be placed on new divisions of land or community systems to provide monitoring data or geologic information to contribute to the development of a Wastewater Management Plan.

Wastewater disposal alternatives should identify costs to each homeowner. A cost-effectiveness analysis, which considers socioeconomic impacts of alternative plans, should be used to select the recommended plan.

On-site wastewater disposal zones, as discussed in Section 6950-6981 of the Health and Safety Code, may be an appropriate means of implementing on-site Wastewater Management Plans.

On-site Wastewater Management Plans shall be approved by the Regional Board.

Septic Tank Maintenance Districts

It may be appropriate for unsewered community on-site systems to be maintained by local sewage disposal maintenance districts. These special districts could be administered through existing local governments such as County Water Districts, a Community Services District, or a County Service Area.

Septic tank maintenance districts should be responsible for operation and maintenance in conformance with this Water Quality Control Plan. Administrators should insure proper construction, installation, operation, and maintenance of on-site disposal systems. Maintenance districts should establish septic tank surveillance, maintenance and pumping programs, where appropriate; provide repairs to plumbing or leachfields; and encourage water conservation measures.

CRITERIA FOR NEW SYSTEMS

On-site sewage disposal system problems can be minimized with proper site location, design, installation, operation, and maintenance. The following section recommends criteria for all new individual subsurface disposal systems and community sewage disposal systems. Local governing jurisdictions should incorporate these guidelines into their local ordinances. These recommendations will be used by the Regional Board for

Regional Board regulated systems and exemptions.

Recommendations are arranged in sequence under the following categories: site suitability; system design; construction; individual system maintenance; community system design; and local agencies.

Mandatory criteria are listed in the "Individual, Alternative, and Community Systems Prohibitions" section.

Site Suitability

Prior to permit approval, site investigation should determine on-site system suitability:

1. At least one soil boring or excavation per on-site system should be performed to determine soil suitability, depth to ground water, and depth to bedrock or impervious layer. Soil borings are particularly important for seepage pits. Impervious material is defined as having a percolation rate slower than 120 minutes per inch or having a clay content 60 percent or greater. The soil boring or excavation should extend at least 10 feet below the drainfield¹ bottom at each proposed location.

2. An excavation should be made to detect mottling or presence of underground channels, fissures, or cracks. Soils should be excavated to a depth of 4-5 feet below drainfield bottom.

3. For leachfields, at least three percolation test locations should be used to determine system acceptability. Tests should

be performed at proposed subsurface disposal system sites and depths.

4. If no restrictive layers intersect, and geologic conditions permit surfacing, the setback distance from a cut, embankment, or steep slope (greater than 30 percent) should be determined by projecting a line 20 percent downgradient from the sidewall at the highest perforation of the discharge pipe. The leachfields should be setback far enough to prevent this projected line from intersecting the cut within 100 feet, measured horizontally, of the sidewall. If restrictive layers intersect cuts, embankments or steep slopes, and geologic conditions permit surfacing, the setback should be at least 100 feet measured from the top of the cut.

5. Natural ground slope of the disposal area should not exceed 20 percent.

6. For new land divisions, lot sizes less than one acre should not be permitted.

System Design

On-site systems should be designed according to the following recommendations:

1. Septic tanks should be designed to remove nearly 100 percent of settleable solids and should provide a high degree of

¹ "Drainfield" refers to either a leachfield or seepage pit.

anaerobic decomposition of colloidal and soluble organic solids.

2. Tank design must allow access for inspection and cleaning. The septic tank must be accessible for pumping.

3. If curtain drains discharge diverted ground water to subsurface soils, the upslope separation from a leachfield or pit should be 20 feet and the downslope separation should be 50 feet.

4. Leachfield application rate should not exceed the following:

<u>Percolation Rate</u> <u>min./in</u>	<u>Loading Rate</u> <u>g.p.d./sq.ft.</u>
1 - 20	0.8
21 - 30	0.6
31 - 60	0.25
61 - 120	0.10

5. Seepage pit application rate should not exceed 0.3 gpd/sq. ft.

6. Drainfield design should be based only upon usable permeable soil layers.

7. The minimum design flow rate should be 375 gallons per day per dwelling unit.

8. In clayey soils, systems should be constructed to place infiltrative surfaces in more permeable horizons.

9. Distance between drainfield trenches should be at least two times the effective trench depth.¹

10. Distance between seepage pits (nearest sidewall to sidewall) should be at least 20 feet.

11. Dual disposal fields (200 percent of original calculated disposal area) are recommended.

12. For commercial systems, small institutions, or sanitary industrial systems, design should be based on daily peak flow.

13. For commercial and institutional systems, pretreatment may be necessary if wastewater is significantly different from domestic wastewater.

14. Commercial systems, institutional systems, or domestic industrial systems should reserve an expansion area (i.e. dual drainfields must be installed and area for replacement of drainfield must be provided) to be set aside and protected from all uses except future drainfield repair and replacement.

15. Nutrient and heavy metal removal should be facilitated by planting ground cover vegetation over shallow subsurface drainfields. The plants must have the following characteristics: (1) evergreen, (2) shallow root systems, (3) numerous leaves, (4) salt resistant, (5) ability to grow in soggy soils, and (6) low or no maintenance. Plants downstream of leaching area may also be effective in nutrient removal.

Design for Engineered Systems

1. Mound systems should be installed in accordance with

¹ "Effective trench depth" means depth below the bottom of the trench pipe.

criteria contained in Guidelines for Mound Systems by the State Water Resources Control Board.

2. Evapotranspiration systems should be installed in accordance with criteria contained in Guidelines for Evapotranspiration Systems by the State Water Resources Control Board. Exceptions are:

a. For evapotranspiration systems, each month of the highest precipitation year and lowest evaporation year within the previous ten years of record should be used for design.

b. Systems shall be designed by a registered civil engineer competent in sanitary engineering.

Construction

Water quality problems resulting from improper construction can be reduced by following these practices:

1. Subsurface disposal systems should have a slightly sloped finished grade to promote surface runoff.

2. Work should be scheduled only when infiltrative surfaces can be covered in one day to minimize windblown silt or rain clogging the soil.

3. In clayey soils, work should be done only when soil moisture content is low to avoid smeared infiltrative surfaces.

4. Bottom and sidewall areas should be left with a rough sur-

face. Any smeared or compacted surfaces should be removed.

5. Bottom of trenches or beds should be level throughout to prevent localized overloading.

6. Two inches of coarse sand should be placed on the bottom of trenches to prevent compacting soil when leachrock is dumped into drainfields. Fine sand should not be used as it may lead to system failure.

7. Surface runoff should be diverted around open trenches/pits to limit siltation of bottom area.

8. Prior to backfilling, the distribution system should be tested to check the hydraulic loading pattern.

9. Properly constructed distribution boxes or junction fittings should be installed to maintain equal flow to each trench. Distribution boxes should be placed with extreme care outside the leaching area to insure settling does not occur.

10. Risers to the ground surface and manholes should be installed over the septic tank inspection ports and access ports.

11. Drainfield should include an inspection pipe to check water level.

Additional construction precautions are discussed within the Environmental Protection Agency's Design Manual: On-Site Wastewater Treatment and Disposal Systems.

Individual System Maintenance

Individual septic tanks should be maintained as follows:

1. Septic tanks should be inspected every two to five years to determine the need for pumping. If garbage grinders or dishwashers discharge into the septic tank, inspection should occur at least every two years.
2. Septic tanks should be pumped whenever: (1) the scum layer is within three inches of the outlet device; or (2) the sludge level is within eight inches of the bottom of the outlet device.
3. Drainfields should be alternated when drainfield inspection pipes reveal a high water level.
4. Disposal of septage (solid residue pumped from septic tanks) should be accomplished in a manner acceptable to the Executive Officer. In some areas, disposal may be to either a Class I or Class II solid waste site; in others, septage may be discharged to a municipal wastewater treatment facility.

Community System Design

Community systems should be designed and maintained to accommodate the following items:

1. Capacities should accommodate build-out population.
2. Design should be based upon peak daily flow estimates.
3. Design should consider contributions from infiltration

throughout the collection system.

4. Septic tanks should be pumped when sludge and scum levels are greater than 1/3 of the depth of the first compartment.
5. Operation and maintenance should be in accordance with accepted sanitary practice.
6. Maintenance manuals should be provided to system users and maintenance personnel.
7. Discharge should not exceed 40 grams per day total nitrogen, on the average, per acre of total development overlying ground water recharge areas, unless local governing jurisdictions adopt Wastewater Management Plans subsequently approved by the Regional Board.

Local Agencies

Recommendations for local governing jurisdictions:

1. Adopt a standard percolation test procedure.

The California State Water Resources Control Board Guidelines for Evapotranspiration Systems provides a percolation test method recommended for use to standardize test results. A twelve-inch diameter percolation test hole may be used.

2. Percolation tests should be continued until a stabilized rate is obtained.

3. Percolation test holes should be drilled with a hand auger. A hole could be hand augered or dug with hand tools at the bottom of a larger excavation made by a backhoe.

4. Percolation tests should be performed at a depth corresponding to the bottom of the subsurface disposal area.

5. Seepage pits should be utilized only after careful consideration of site suitability. Soil borings or excavations should be inspected either by permitting agency or individual under contract to the permitting agency.

6. Approve permit applications after checking plans for erosion control measures.

7. Inspect systems prior to covering to assure proper construction.

8. Require replacements or repairs to failing systems to be in conformance with Basin Plan recommendations, to the extent practicable.

9. For new land divisions, protect on-site disposal systems and expansion areas from encroachment by provisions in covenants, conditions, and restrictions.

10. Inform property buyers of the existence, location, operation, and maintenance of on-site disposal systems. Prospective home or property buyers should also be informed of any enforcement action (e.g. Basin Plan prohibitions) through the County Record.

11. Conduct public education programs to provide property owners with operation and maintenance guidelines.

12. Alternative system owners shall be provided an informational maintenance or replacement document by the appropriate governing jurisdiction. This document shall cite homeowner procedures to ensure maintenance, repair, or replacement of critical items within 48 hours following failure.

13. Where appropriate, septic tank systems should be maintained by local septic tank maintenance districts.

14. Wastewater Management Plans should be prepared and implemented for urbanizing and high density areas, including applicable portions of San Martin, San Lorenzo Valley, Carmel Valley, Carmel Highland, Prunedale, El Toro, Shandon, Templeton, Santa Margarita/Garden Farms, Los Osos/Baywood Park, Arroyo Grande, Nipomo, upper Santa Ynez Valley, and Los Olivos/Ballard.

15. Ordinances should be updated to reflect Basin Plan criteria.

Additional Considerations

1. Water conservation and solids reduction practices are recommended. Garbage grinders should not be used in homes with septic tanks.

2. Metering and water use costs should be used to encourage water conservation.

3. Grease and oil should not be introduced into the system. Bleach, solvents, fungicides, and any other toxic material should not be poured into the system.

4. Reverse osmosis unit blow-down should not be discharged to on-site wastewater treatment systems overlying usable ground water. Off-site (factory regeneration) practices are recommended for water softeners.

5. If on-site water softener regeneration is necessary, minimum salt use in water softeners is recommended. This can be accomplished by minimizing regeneration time or limiting the number of regeneration cycles.

**Individual, Alternative
and Community
Systems Prohibitions**

Discharges from new soil absorption systems in sites with any of the following conditions are prohibited:

1. Soils or formations contain continuous channels, cracks, or fractures.¹

2. For seepage pits, soils or formations containing 60 percent or greater clay (a soil particle less than two microns in size) unless parcel size is at least two acres.

3. Distances between trench bottom and usable ground water, including perched ground water, less than separation specified by appropriate percolation rate:

<u>Percolation Rate, min/in</u>	<u>Distance, ft</u>
<1	50 ¹
1-4	20 ¹
5-29	8
>30	5

4. For seepage pits, distances between pit bottom and usable ground water, including perched ground water, less than separation specified by appropriate soil type:

<u>Soil</u>	<u>Distance, ft.</u>
Gravels ²	50 ¹
Gravels with few fines ³	20 ¹
Other	10

5. Distances between trench/pit bottom and bedrock or other impervious layer less than ten feet.

6. For leachfields, where percolation rates are slower than 120 min/in, unless parcel size is at least two acres.

7. For leachfields, where soil percolation rates are slower than 60 min./in. unless the effluent application rate is 0.1 gpd/ft² or less.

8. Areas subject to inundation from a ten-year flood.

9. Natural ground slope of the disposal area exceeds 30 percent.

¹ Unless a set-back distance of at least 250 feet to any domestic water supply well or surface water is assured.

² Gravels - Soils with over 95 percent by weight coarser than a No. 200 sieve and over half of the coarse fraction larger than a No. 4 sieve.

³ Gravels with few fines - Soils with 90 percent to 94 percent coarse fraction larger than a No. 4 sieve.

10. Setback distances less than:

Minimum Setback
Distance, Feet

Domestic water supply wells in unconfined aquifer	100
Watercourse ¹ where geologic conditions permit water migration	100
Reservoir ² spillway elevation	200
Springs, natural or any part of man-made spring	100

11. While new septic tank systems should generally be limited to new divisions of land having a minimum parcel size of one acre, where soil and other physical constraints are particularly favorable, parcel size shall not be less than one-half acre.

12. Within a reservoir² watershed where the density for each land division is less than 2.5 acres for areas without approved Waste-water Management Plans.

13. For individual systems on new land divisions, and commercial, institutional, and sanitary industrial systems without an area set aside for dual leachfields (100 percent replacement area).

14. Commercial, institutional, or sanitary industrial systems not basing design on daily peak flow estimate.

15. Any site unable to maintain subsurface disposal.

16. Any subdivision unless the subdivider clearly demonstrates

the use of the system will be in the best public interest, that beneficial water uses will not be adversely affected, and compliance with all Basin Plan prohibitions is demonstrated.

17. Lot sizes, dwelling densities or site conditions causing detrimental impacts to water quality.

18. Any area where continued use of on-site systems constitutes a public health hazard, an existing or threatened condition of water pollution, or nuisance.

Discharges from community subsurface disposal systems (serving more than five parcels or more than five dwelling units) are prohibited unless:

1. Seepage pits have at least 15 vertical feet between pit bottom and highest usable ground water, including perched ground water.

2. Sewerage facilities are operated by a public agency. (If a demonstration is made to the Board that an existing public agency is unavailable and formation of a new public agency is unreasonable, a private entity with adequate financial, legal,

¹ Watercourse - (1) A natural or artificial channel for passage of water. (2) A running stream of water. (3) A natural stream fed from permanent or natural sources, including rivers, creeks, runs, and rivulets. There must be a stream, usually flowing in a particular direction (though it need not flow continuously) in a definite channel, having a bed or banks and usually discharging into some stream or body of water.

² Reservoir-A pond, lake, tank, basin, or other space either natural or created in whole or in part by the building of engineering structures, which is used for storage, regulation, and control of water, recreation, power, flood control, or drinking.

and institutional resources to assume responsibility for waste discharges may be acceptable.)

3. Dual disposal systems are installed (200 percent of total of original calculated disposal area).

4. An expansion area is included for replacement of the original system (300 percent total).

5. Community systems provide duplicate individual equipment components for components subject to failure.

6. Discharge does not exceed 40 grams per day of total nitrogen, on the average, per 1/2 acre of total development overlying ground water recharge areas excepting where a local governing jurisdiction has adopted a Wastewater Management Plan subsequently approved by the Regional Board.

In order to achieve water quality objectives, protect present and future beneficial water uses, protect public health, and prevent nuisance, discharges are prohibited in the following areas:

1. a. Discharges from individual sewage disposal systems are prohibited in portions of the community of Nipomo, San Luis Obispo County, which are particularly described in Appendix A-21.

b. Discharges from individual sewage disposal systems are prohibited for systems proposed to be less than one (1) acre in portions of the community of Nipomo, San Luis Obispo County, which is

particularly described in Appendix A-22.

2. Discharges from individual sewage disposal systems within the San Lorenzo Valley north of Henry Cowell State Park shall be managed as follows:

a. Discharges within five major communities are prohibited where the affected area (Class I Area) is defined by the Santa Cruz County Assessor's Parcel Numbers as described in Appendix A-23.

b. To preclude prohibition of discharges outside the Class I Area, the County of Santa Cruz shall act as lead agency in coordinating and establishing a program that will assure the Regional Board that:

° additional systems in these areas will be designed, sized, located, spaced, and constructed in a manner that will protect water quality, protect beneficial uses of water, and prevent nuisance, pollution, and contamination.

° existing systems within specific communities are systematically evaluated and redesigned, resized, relocated, and reconstructed as appropriate to protect and enhance water quality, protect and restore beneficial uses of water, and abate and prevent nuisance, pollution and contamination, where the specific communities (Class II Area) are defined by the Santa Cruz County Assessor's Parcel Numbers as described in Appendix A-24.

° systems within the Class II Area are regularly inspected and maintained in a manner that will protect water quality, protect beneficial uses of water, and prevent nuisance, pollution, and contamination.

3. Discharges from individual and community sewage disposal systems are prohibited effective November 1, 1988, in the Los Osos/Baywood Park area depicted in the Prohibition Boundary Map included as Attachment "A" of Resolution No. 83-13 which can be found in Appendix A-25.

Subsurface Disposal Exemptions

The Board or Executive Officer may grant exemption to prohibitions for: 1) engineered new on-site disposal systems for sites unsuitable for standard systems; and 2) new or existing on-site systems within the specific prohibition areas cited above. Such exemptions may be granted only after presentation by the discharger of sufficient justification, including geologic and hydrologic evidence that the continued operation of such system(s) in a particular area will not individually or collectively, directly or indirectly, result in pollution or nuisance, or affect water quality adversely.

Individual, alternative, and community systems shall not be approved for any area where it appears that the total discharge of leachate to the geological system, under fully developed conditions, will cause: 1) damage to public or private property; 2) ground or surface water degradation; 3) nuisance condition; or,

4) a public health hazard. Interim use of septic tank systems may be permitted where alternate parcels are held in reserve until sewer systems are available.

Requests for exemptions will not be considered until the local entity has reviewed the system and submitted the proposal for Regional Board review. Dischargers requesting exemptions must submit a Report of Waste Discharge. Exemptions will be subject to filing fees as established by the State Water Code.

Engineered systems shall be designed only by registered engineers competent in sanitary engineering. Engineers should be responsible for proper system operation. Engineers should be responsible for educating system users of proper operation and maintenance. Maintenance schedules should be established. Engineered systems should be inspected by designer during installation to insure conformance with approved plans.

Some engineered systems may be considered experimental by the Regional Board. Experimental systems will be handled with caution. A trial period of at least one year should be established whereby proper system operation must be demonstrated. Under such an approach, experimental systems are granted a one year conditional approval.

Further information concerning individual, alternative, or community on-site sewage disposal systems can be found in Chapter 5 in the Management Principals and Control Actions sections.

State Water Resources Control Board Plans and Policies, Discharge Prohibitions, and Regional Board Policies may also apply depending on individual circumstances.

LAND DISTURBANCE ACTIVITIES

Construction, mining, and other soil disturbance activities which may disturb or expose soil or otherwise increase susceptibility of land areas to erosion are difficult to regulate effectively. Construction or timber harvesting may often begin and end with no obvious impairment of stream quality; however, erosion or land slides the following winter may be directly related to earlier land disturbance or tree cutting. Mining and quarrying activities are generally longer in duration.

Under contract with the Regional Board, the California Association of Resource Conservation Districts completed a study entitled, "Erosion and Sediment in California Central Coast Watersheds - A study of Best Management Practices" (Erosion Study), dated June, 1979. This Erosion Study, funded under Section 208 of the Clean Water Act, assesses impacts of erosion and sedimentation on water quality and beneficial uses in non-designated planning areas (San Benito, San Luis Obispo, and Santa Barbara Counties) of the Central Coast Region. This Erosion Study and supporting documents have been used by the Regional Board in developing erosion and sedimentation control policy.

Nonpoint source pollution in the remainder of the Region is addressed by designated planning agencies through their respective Areawide Waste Treatment Management Plans. Designated agencies and the areas affected within this Region include: Association of Bay Area Governments (portions of San Mateo and Santa Clara Counties), Association of Monterey Bay Area Governments (Santa Cruz and Monterey Counties), and Ventura County Board of Supervisors (portion of Ventura County). The policy herein described is compatible with those plans and is within the scope of the Regional Board authority.

The Erosion Study and Areawide Waste Treatment Management Plans identify examples of accelerated erosion resulting from insufficient land management of soil cultivation, grazing, silviculture, construction, and off-road vehicle activities, as well as wildfires.

Adverse impacts of sediment are identified, in part, as: impairment of water supplies and ground water recharge, siltation of streams and reservoirs, impairment of navigable waters, loss of fish and wildlife habitat, degradation of recreational waters, transport of pathogens and toxic substances, increased flooding, increased soil loss, and increased costs associated with maintenance and operation of water storage and transport facilities. Recommendations based on conclusions of the Erosion Study and practices recommended in Areawide Waste Treatment Management Plans are a means to reduce unnecessary soil

loss due to erosion and to minimize adverse water quality impacts resulting from sediment.

When a practice or combination of practices is found to be the most effective, practical (including technological, economic, and institutional considerations) means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals, it is designated a Best Management Practice (BMP). BMPs are determined only after problem assessment, examination of alternative practices, and appropriate public participation in the BMP development process.

General recommendations based on conclusions of the Erosion Study are discussed below. These recommendations are considered to be Best Management Practices (BMPs) by the Regional Board as are the areawide approved water quality management plans.

1. Soil conservation control measures should be used to minimize impacts that would otherwise result from soil erosion. Control measures are identified according to systems, which are then broken down into subsystems of erosion control techniques or component measures.

For example, a system for control of erosion from construction sites would identify component measures such as debris basins, access roads, hillside ditches, etc. Other conservation control systems include: conservation cropping, conservation irrigation, roadside erosion control, critical area treatment, diver-

sions and ditches, grade stabilization, pasture and range management, runoff and sediment control ponds and basins, streambank and channel protection, and watershed, wildlife, and recreation land improvement. These control measures are comparable to the USDA Soil Conservation Services' Resource Management Subsystem approach as referenced in AMBAG's "Water Quality Management Plan for the Monterey Bay Region," dated July 1978, and in ABAG's, "Handbook of Best Management Practices," dated October 1977.

Experience has shown that no one control measure best solves an existing, or prevents a potential, pollution problem -- especially in the area of soil erosion and sedimentation. As land use, the land user, and various situations change, so does the need for control measures. Before application, an on-site investigation with the land user is necessary to determine which practice or set of practices will be most effective and acceptable.

2. Erosion control should be implemented in a reasonable manner with as much implementation responsibility remaining with existing local entities and programs as is possible and consistent with water quality goals.

3. The Regional Board and local units of government should establish a clear policy for control of erosion, including consideration of off-site and cumulative impacts and the imposition of performance standards according to the sensitiv-

ity of the area where land is to be disturbed.

4. Effective ordinances and regulatory programs should be adopted by local units of government. Effective programs would allow only land disturbance actions consistent with the waste load capacity of the watershed, require preparation of erosion and sediment control plans with specific contents and with attention to both offsite/on-site impacts, identify performance standards, be at least comparable to the model ordinance in the "Erosion and Sediment Control Handbook," dated May 1978, and have provisions for inspection follow-up, enforcement, and referral.

5. Watersheds with critical erosion and sediment problems should be identified by one or more concerned agencies such as the California Department of Fish and Game, the Regional Board, the local Environmental Health, Planning, or Engineering Departments, the local Flood Control District, or the local Resource Conservation District, and then referred to the remaining agencies by a designated local coordinating agency for determining the scope, nature, and significance of the identified problem. The designated local agency would evaluate the adequacy and appropriateness of the total assessment, including an assessment of the problem and causes, alternatives considered, recommended interim and permanent control measures, and the amount and sources of funding. The evaluation would then be submitted as an Impact Findings Report for consideration and decision by the local governing body.

6. Comprehensive and continuous training should be mandatory for building and grading inspectors, engineers, and planners involved in approving, designing, or inspecting erosion control plans and on-site control measures. The training program would preferably be conducted on an inter-county/agency basis and be administered through a USDA Soil Conservation Service cooperative training arrangement or through seminars conducted by the USDA Soil Conservation Service and the University of California Cooperative Extension seminars. The Soil Conservation Society of America should be requested to assist in establishing an effective training program, including public education to heighten awareness of the adverse affects of erosion and sediment on soil and water resources.

7. More intensive erosion controls should be considered within four watersheds (Lauro Reservoir and Devereaux Ranch Slough in Santa Barbara County and Pismo Lake and Morro Bay in San Luis Obispo County) with apparent critical erosion and sediment problems. Alternative practices that may be implemented to effect the necessary level of control are assigned a relative priority.

LAND DISTURBANCE PROHIBITIONS

Soil disturbance activities not exempted pursuant to Regional Board Management Principles contained in Chapter 5 are prohibited:

1. In geologically unstable areas,

2. On slopes in excess of thirty percent (excluding agricultural activities), and

3. On soils rated a severe erosion hazard by soil specialists (as recognized by the Executive Officer) where water quality may be adversely impacted;

Unless,

a. In the case of agriculture, operations comply with a Farm Conservation or Farm Management Plan approved by a Resource Conservation District or the USDA Soil Conservation Service;

b. In the case of construction and land development, an erosion and sediment control plan or its equivalent (e.g., EIR, local ordinance) prescribes best management practices to minimize erosion during the activity, and the plan is certified or approved, and will be enforced by a local unit of government through persons trained in erosion control techniques; or,

c. There is no threat to downstream beneficial uses of water, as certified by the Executive Officer of the Regional Board.

The discharge or threatened discharge of soil, silt, bark, slash, sawdust, or other organic and earthen materials into any stream in the basin in violation of best management practices for timber harvesting, construction, and other soil disturbance activities and in quantities deleterious to fish, wildlife, and other beneficial uses is prohibited.

The placing or disposal of soil, silt, bark, slash, sawdust, or other organic and earthen materials from timber harvesting, construction, and other soil disturbance activities at locations above the anticipated high water line of any stream in the basin where they may be washed into said waters by rainfall or runoff in quantities deleterious to fish, wildlife, and other beneficial uses is prohibited.

CONSTRUCTION ACTIVITIES

Road construction is often a cause of water quality impairment; all too often roads are located near streams, estuaries, or ocean waters where side fills may be eroded by flood waters. Construction within stream beds will inevitably cause turbidity; however, the timing of such activities should be established with reference to environmental sensitivity factors such as fish migrations, spawning or hatching, and minimum streamflow conditions. Sediment loads can be reduced by proper timing, bank and channel protection, and use of settling ponds to catch silt.

Construction debris should not be left in the flood plain; revegetation of cuts and fills should be encouraged. California Department of Transportation (CALTRANS) has prepared a document entitled "Best Management Practices for Control of Water Pollution (Transportation Activities)," that sets forth procedures used by CALTRANS to address transportation activities which might impact water quality. These procedures are sum-

marized under "Control Actions" in the Plans and Policies chapter. Past and potential impacts from CALTRANS activities may result from the above problems and may include impacts resulting from questionable maintenance practices, chemical spills, and discharges of silt and cement.

Land development projects in sensitive areas should be scheduled so as to minimize the areal extent of land exposed to erosive forces. Where water quality impairment is likely, permits should be issued by the Regional Water Quality Control Board which will insure against water quality degradation. Cooperation of local approving agencies should be obtained in order that approvals of significant subdivisions in environmentally sensitive areas, particularly the upper reaches of watersheds and lands near riparian habitats, are appropriately conditioned. For example, proposed subdivisions of 50 lots or more in such areas should be 1) covered by environmental impact reports on the development and its impact on waste loads and water quality, 2) be in conformance with regional or county master plans, and 3) include provisions for establishment of a public agency responsible for environmental monitoring and maintenance where such subdivisions are outside other appropriate public jurisdictions.

MINING ACTIVITIES

Mining and petroleum related activities, including abandoned mines or well fields, affecting water quality should be covered by up-to-date waste discharge permits and monitoring programs.

Offshore oil operations, mercury mines, and gravel operations should receive high priority in this regard. Monitoring of coastal waters should include oil surveillance from federal lease areas to state waters.

TIMBER HARVESTING ACTIVITIES

The Regional Board has regulatory responsibility to prevent adverse water quality impacts from timber harvest activities. Impacts usually consist of temperature, turbidity, and siltation effects caused by logging and associated activities. These can have deleterious impacts on fish and water flow.

Sensitivity of all watercourses, lakes, estuaries, or ocean waters in the basin to timber harvesting operations should be identified following rigorous analysis of geological, pedological, hydrological, and biological data as confirmed by field inspections. Relative sensitivity could then be portrayed on a large map. The sensitivity would also reflect beneficial uses which are not directly associated with ecological systems.

Upon receiving a timber harvest plan, the Regional Board staff could locate the operation on the sensitivity map and determine the relative risk involved. This information could enable the board to better evaluate the proposed method of operation and the adequacy of proposed mitigation actions or other special considerations. The success of this process depends upon the degree of cooperation provided by the Department of Forestry.

Timber harvest plans must contain sufficient detail for evaluation, and the Regional Board must be allowed an ample amount of time for review before start of timber harvesting operations.

The timber yarding and road building methods used at each operation is a function of the terrain, soils, species and other timber considerations including economics. The aforementioned are usually compatible with water quality management, but in cases where water quality may be degraded, mitigating measures to preserve the character and quality of the water course must be taken. Since the Department of Forestry is familiar with the limitations and relative degradation potential of the various harvest methods, it has the lead role in incorporating necessary mitigation measures into the permits and seeing that they are enforced.

The Department of Forestry administers provisions of the Z'berg-Nejedly Forest Practice Act of 1973. The Act provides an opportunity for Regional Boards involved with timber harvesting activities to participate on the Timber Harvest Plan permit process review team. A 1987 Clean Water Act amendment requires States to implement Water Quality Management Plans to control non-point sources of pollution, including silviculture. As part of that directive, the State Board has executed a Management Agency Agreement (MAA) with the Board of Forestry and Department of Forestry. It provides a better opportunity for water quality concerns to be incorporated into

timber harvesting practices and regulations.

Several possibilities exist to deal with negligent or incompetent operators. The Department of Forestry can revoke the Registered Professional Forester's or Licensed Timber Operator's License. The Regional Board can also implement enforcement action. While these actions can be necessary and effective, they are after-the-fact methods rather than for deterring roles. Thus, the major emphasis must be placed on control measures rather than enforcement actions.

AGENCY ACTIVITIES

To insure that impacts on water quality from nonpoint sources of pollution are held to a minimum and that goals and management principles of the Regional Board are met, water quality management programs for implementation by land managing agencies have been developed through the area-wide planning process. For nonpoint sources of pollution, this required identification of Best Management Practices (BMP's).

Within the Central Coast Region, federal and state agencies control substantial portions of land. All retain their own land management programs, but are required by regulation to cooperate and give support to state planning agencies in formulating and implementing water quality management plans. Federal law also directs federal agencies to comply with requirements formulated to meet the objectives of the federal act.

During preparation of the Forest Service's "Water Quality Management Plan for the National Forest Systems Lands Within the Non-designated Planning Area of California," adopted April, 1979, Forest Service manuals, guidelines, regulations, etc., were reviewed for identification of those practices which are directly or indirectly for the purpose of protecting water quality. The report identifies and discusses ninety-eight such practices in eight activity categories (i.e., timber harvesting, road and building site construction, mining, recreation, vegetative manipulation, fire supervision and prescribed burning, watershed management, and grazing). Ninety-four of the practices are presented as BMPs, while four practices need improvement, and four practices need development. A course of action for improving inadequacies of current practices and for development of new practices is identified.

The practices/procedures contained in the Forest Service 208 plan are at a level of detail appropriate for all Forest Service operations statewide. These practices must be flexible to account for varying geographic conditions. The plan also includes a description of the "decision-making" process which leads to the actual selections of management solutions on a project-specific basis. There are several steps in this process at which Regional Boards can be involved and there is a public involvement program to identify and respond to concerns of interested public. The most critical point of in-

volvement is Step 1, identification of issues, concerns, and opportunities. Once this step is completed, the need for and time of future involvement in subsequent steps can be identified.

United States Bureau of Land Management

The United States Department of the Interior, Bureau of Land Management (BLM), has management responsibility for approximately 320,000 acres within the Central Coast Region. Management activities occurring on this land have potential for significantly affecting water quality (e.g., mining, grazing, recreation, road construction, off-road vehicles, etc.). The BLM prepared and submitted to the State a report entitled, "BLM California 208 Report." The report includes: (a) a discussion of existing or potential water quality problems on BLM lands, (b) a discussion of current BLM practices and policies including a description of the BLM planning process, (c) a description of the "decision-making process" which leads to the actual selection of management solutions on a project-specific basis, and (d) general policies.

The problem assessment identifies nonpoint sources of water pollution originating on lands administered by the BLM. Problems were qualitatively assessed by BLM with information provided primarily by Regional Board staff. Most of the identified water quality problems on BLM lands within the Central Coast Region result from recreation.

Practices and procedures in the U. S. Forest Service's, U. S. Bureau of Land Management's (BLM's) and California Department of Transportation's (CALTRANS') 208 reports described below constitute proper management for water quality protection and are considered BMP's. Further, these agencies have expressed a willingness and capability to implement practices and to revise practices which are currently inadequate. Management agency agreements have been prepared between the State Board and each of these agencies which designates the Forest Service, the BLM, and CALTRANS as management agencies responsible for implementing BMPs for water quality protection on lands under the control of each of these respective agencies. The management agency agreement further provides for State/Regional Board working relationships with each agency and establishes a mechanism by which the State and Regional Boards will, on a continuing basis and in conjunction with each of these agencies, identify and address water quality management issues of concern to all parties.

The management agency agreements, as approved by the State Water Resources Control Board and each of the agencies, are a part of this Water Quality Control Plan by reference. Management agency agreements will be reviewed and updated periodically to reflect recent achievements, new information, and new concerns.

United States Forest Service

The United States Forest Service has prepared a report entitled, "Water Quality Management Plan

for the National Forest Systems Lands Within the Non-designated Planning Areas of California," dated April, 1979. The report assesses water quality problems, evaluates current practices, and sets forth procedures used by the Forest Service to address activities that might affect water quality. About 72 percent of Los Padres National Forest (which encompasses 1,964,408 gross acres) is within the Central Coast Region. Water and watershed protection were the chief reasons the forest was established. Approximately 1.5 million acre feet of water per year are used by people living adjacent to the forest for domestic and agricultural purposes. Less than five percent of the area is commercial forest land and most wood production is fuel wood sales.

A qualitative assessment of water quality problems on National Forest lands within the Central Coast Region was conducted primarily from information gathered by Forest Service and Regional Board staff. Fire management and recreation are activities with the greatest influence on water quality. Other major activities with potential impact on water quality include road construction, road maintenance, and grazing. Fire management can cause degradation from sediments, nutrients, and bacteria, but the major cause might well be off-road vehicles and misuse of unimproved roads by all vehicles. Road construction has been a source of problems along the Cuyama River. No significant affects from over-grazing or silvacultural practices were noted.

Other Agencies Programs

Resource Conservation Districts (RCD's) and the U.S.D.A. Soil Conservation Service are organizations that assist property owners in applying effective conservation and land management practices. The program includes technical, educational, and planning services to property owners and local governments who request assistance. It has been relatively successful considering its voluntary nature and resource limitations. The Soil Conservation Service has a major role in the Rural Clean Water Program.

The U.S.D.A. Agricultural Stabilization and Conservation Service administers the cost-sharing aspects of the Agricultural Conservation Program, allocating available monies to farmers and ranchers for erosion and sedimentation control and water conservation projects.

Cities and Counties, as general purpose governments, have broad powers to adopt specific and general plans; to regulate land use, subdividing, grading, and private construction; and to construct and operate public works facilities. Local authority to regulate existing and potential discharges of sediment has been exercised to varying degrees throughout the region.

Many cities and counties within the coastal zone have developed Local Coastal Programs. These programs may include land use and grading restrictions designed to protect long-term productivity of soils and waters within the coastal zone. Regulation by the

California Coastal Commission provides this protection where Local Coastal Programs are inadequate.

The State Department of Fish and Game promotes the protection and improvement of streams, lakes, and natural habitat areas for fish and wildlife. It also regulates stream alteration and compels cleanup of fouled streams.

There is improper grazing management on the Temblor range in east San Luis Obispo County (BLM's Bakersfield District) that is causing sedimentation of retention structures for beneficial uses.

The process for determining management practices on a site-specific basis applies to all BLM activities and is divided into three major phases; (1) consideration of site characteristics and water quality concerns, (2) definition and application of BMP's through contract clauses, leases, stipulations, etc., and (3) evaluation of BMP effectiveness and practice modification, if necessary.

California Department of Transportation

Water Quality Studies

In developing control measures for CALTRANS projects, three basic types of studies are conducted for water quality protection:

1. Transportation System Planning - Emphasizes broad scale water quality problems. The focus is on regional factors such as variations in regional surface and ground water hydrology, existing water quality, and land use. Such studies are not site-specific.

2. Project Level Planning - Emphasis is on runoff associated problems (erosion and sedimentation). Detailed hydrologic and hydraulic analyses are made where warranted. Information is used in selecting project alternatives.

3. Construction - This type is usually associated with waste discharge requirements (issued by Regional Board). The intent is to monitor and control the contractor's operations.

Construction Control

Standard specifications for water pollution control have been prepared by CALTRANS, are set forth in CALTRANS' BMP document, and are incorporated as part of project design. Where warranted, special specifications are prepared by CALTRANS on a project-by-project basis. For every project, contractors must submit a plan for water pollution control to the CALTRANS resident engineer. During the course of any construction project, operations may be temporarily halted if inadequate provision has been made for water quality protection. Remedial work may be required.

In addition to CALTRANS specifications, Federal and State permits (including waste discharge requirements) are made a part of project requirements.

Operation and Maintenance

1. Accidental Chemical Spills - A procedural manual has been developed by each CALTRANS district to standardize cleanup procedures. CALTRANS maintenance personnel are equipped and trained to handle such situations.

2. Erosion Control - Where slopes show evidence of erosion, remedial stabilization measures must be taken. Debris is disposed of at approved disposal site.

CHAPTER 5. PLANS AND POLICIES

In addition to the Implementation Plan, many other plans and policies direct State and Regional Board actions or clarify the Regional Board's intent. The following pages contain brief descriptions of State Board plans and policies and numerous Regional Board plans and policies. Copies of the State and Regional Board policies are contained in the Appendix.

STATE WATER RESOURCES CONTROL BOARD PLANS AND POLICIES

The State Water Resources Control Board (State Board) has adopted a number of plans and policies for statewide water quality management including:

State Policy for Water Quality Control (1972)

Anti-degradation Policy

Thermal Plan

Ocean Plan

Bays and Estuaries Policy

Power Plant Cooling Policy

Reclamation Policy

Shredder Waste Disposal Policy

Underground Storage Tank Pilot Program

Sources of Drinking Water Policy

Should any of these policies be amended by the State Board, the Regional Board will implement the amended version.

The following sections summarize the adopted policies.

STATE POLICY FOR WATER QUALITY CONTROL

The State Board has developed a set of twelve general principles to implement the provisions and intent of the Porter-Cologne Act. These principles, listed below, are contained in a document called the State Policy for Water Quality Control, adopted on July 6, 1972.

1. Water rights and quality control decisions must assure protection of fresh and marine waters for maximum beneficial use.
2. Wastewaters must be considered a part of the total available fresh water resource.
3. Management of supplies and wastewaters shall be on a regional basis for efficient utilization of the resource.
4. Efficient wastewater management requires a balanced program of source control of hazardous substances, treatment, reuse and proper disposal of effluents and residuals.
5. Substances not amenable to removal in treatment plants must be prevented from entering the system.
6. Treatment systems must provide sufficient removals to protect beneficial uses and aquatic communities.

7. Institutional and financial programs of consolidated systems must serve each area equitably.

8. Sewerage facilities must be consolidated for long-range economic and water quality benefits.

9. Reclamation and reuse for maximum benefit shall be encouraged.

10. Systems must be designed and operated for maximum benefit from expended funds.

11. Control methods must be based on the latest information.

12. Monitoring programs must be provided.

ANTI-DEGRADATION POLICY

On October 28, 1968, the State Water Resources Control Board adopted Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California." While requiring continued maintenance of existing high quality waters, the policy provides conditions under which a change in water quality is allowable. A change must:

1. be consistent with maximum benefit to the people of the State,

2. not unreasonably affect present and anticipated beneficial uses of water, and

3. not result in water quality less than that prescribed in water quality control plans or policies.

THERMAL PLAN

The "Water Quality Control Plan for the Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California," adopted by the State Water Resources Control Board on May 18, 1972, and amended September 18, 1975, specifies water quality objectives, effluent quality limits, and discharge prohibitions related to thermal characteristics of enclosed bay and estuary waters and waste discharges.

OCEAN PLAN

The "Water Quality Control Plan for Ocean Waters of California," Resolution No. 88-111 was adopted by the State Water Resources Control Board on September 22, 1988. (This 1988 plan is a major revision of the original plan adopted by State Water Resources Control Board Resolution 72-45 on July 6, 1972.) This 1988 plan establishes beneficial uses and water quality objectives for waters of the Pacific Ocean adjacent to the California Coast outside of enclosed bays, estuaries, and coastal lagoons. Also, the Ocean Plan prescribes effluent quality requirements and management principles for waste discharges and specifies certain waste discharge prohibitions.

The Ocean Plan also provides that the State Water Resources Control Board shall designate Areas of Special Biological Significance (ASBS) and requires wastes to be discharged a sufficient distance from these areas

to assure maintenance of natural water quality conditions.

The State Water Resources Control Board declared its intent to periodically revise the Plan to reflect water quality objectives that are necessary to protect beneficial uses of ocean waters and to be consistent with current technology.

BAYS AND ESTUARIES POLICY

The "Water Quality Control Policy for the Enclosed Bays and Estuaries of California," Resolution No. 74-43, was adopted by the State Water Resources Control Board on May 16, 1974. Commonly referred to as the "Bays and Estuaries Policy," it was adopted specifically to provide water quality principles and guidelines for the affected waters.

Decisions by the Regional Boards are required to be consistent with the provisions designed to prevent water quality degradation and to protect beneficial uses. The policy lists principles of management that include a statement of the desirability of phasing out all discharges (exclusive of cooling waters) as soon as practicable. Quality requirements state conformability with other plans and policies. Discharge prohibitions are placed on:

1. new dischargers (other than those that would enhance the receiving waters);
2. untreated waste and waste products;
3. refuse;

4. consequential effects of mining, construction, agriculture, and timber harvesting;

5. materials of petroleum origin;

6. radiological, chemical, or high-level radioactive waste; or

7. discharge or by-pass of untreated waste.

POWER PLANT COOLING POLICY

The "Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Power Plant Cooling" indicates the State Board's position on power plant cooling, specifying that fresh inland waters should be used for cooling only when other alternatives are environmentally undesirable or economically unsound.

RECLAMATION POLICY

The "Policy with Respect to Water Reclamation in California" requires the Regional Boards to conduct reclamation surveys and specifies reclamation actions to be implemented by the State and Regional Boards as well as other agencies.

SHREDDER WASTE DISPOSAL POLICY

The "Policy on the Disposal of Shredder Waste" designates specific conditions to be enforced by the Regional Board by which mechanically destructed car bodies, old appliances, or other

similar castoffs can be disposed at certain landfills.

UNDERGROUND STORAGE TANK PILOT POLICY

The "Policy Regarding the Underground Storage Tank Pilot Program" implements a pilot program to fund oversight of remedial action at leaking underground storage tank sites, in cooperation with the California Department of Health Services. Oversight may be deferred to the Regional Boards.

SOURCES OF DRINKING WATER POLICY

The "Sources of Drinking Water" policy specifies which ground and surface waters are considered to be suitable or potentially suitable for the beneficial use of water supply (MUN). It allows the Regional Board some discretion in making MUN determinations.

RECOMMENDED STATE WATER RESOURCES CONTROL BOARD CONTROL ACTIONS

1. State policies for surface waters and for bays and estuaries should be further considered in light of the revised Ocean Plan of 1988.

2. State policies for water quality control should place increasing emphasis on water quality monitoring to determine compliance with water quality objectives in order to provide a firm basis for classification of receiving waters relative to Section 303(e) of Public Law 92-500.

3. Erosion and sedimentation control policies should be established based on (a) pilot studies conducted by the U. S. Soil Conservation Service which recommended best management practices for erosion problems, (b) a state-wide study by the California Association of Resource Conservation Districts on institutional solutions to sedimentation problems, and (c) findings of erosion studies conducted in the Central Coast Region as part of nondesignated area 208 planning.

4. Land use planning relative to nonpoint pollution sources should be considered as a future activity, possibly as a multi-agency effort; initial control efforts and means for effective control should be from local agencies.

5. Water quality control programs should continue to include emphasis on total water management in order to permit enhancement of naturally degraded surface and ground waters.

6. The State Water Resources Control Board should consider water quality effects when reviewing water rights permits.

7. Policies affecting water rights should reinforce water quality goals particularly as related to long-term ground water salinity changes. Adjudication of degraded ground water basins should be considered as a tool for implementation of water quality goals to be utilized only if other measures fail.

8. Water supply improvements to reduce influent wastewater sa-

linity made in the interest of total water quality management should be considered for partial eligibility for Clean Water Grants. Increased costs for grant eligibility could be in lieu of costs for wastewater effluent demineralization where such measures are required.

9. Water reclamation and reuse programs for supplementing agricultural irrigation supplies should be given increased emphasis. Grant support should be available for water short areas where such water demand can be demonstrated.

REGIONAL WATER QUALITY CONTROL BOARD MANAGEMENT PRINCIPLES

GENERAL

1. Land use practices should assure protection of beneficial water uses and aquatic environmental values.

2. There shall be no waste discharged into areas which possess unique or uncommon cultural, scenic, aesthetic, historical or scientific values. Such areas will be defined by the Regional Board.

3. Property owners are considered ultimately responsible for all activities and practices that could result in adverse affects on water quality from waste discharges and surface runoff.

WASTEWATER RECLAMATION

1. Water quality management systems throughout the basin shall provide for eventual wastewater reclamation, but may discharge wastes to the aquatic environment (with appropriate discharge requirements) when wastewater reclamation is precluded by processing costs or lack of demand for reusable water.

2. The number of waste sources and independent treatment facilities shall be minimized and the consolidated systems shall maximize their capacities for wastewater reclamation, assure efficient management of, and meet potential demand for reclaimed water.

Further wastewater reclamation guidance is available in the Implementation Plan chapter.

DISCHARGE TO SURFACE WATERS

1. All discharges to the aquatic environment shall be considered temporary unless it is demonstrated that no undesirable change will occur in the natural receiving water quality.

2. The quality of all surface waters of the basin shall be such as to permit unrestricted recreational use.

3. The discharge of pollutants into surface fresh waters shall be discontinued.

MUNICIPAL AND INDUSTRIAL SEWERING ENTITIES

1. Municipal and industrial sewerage entities should implement comprehensive regulations to prohibit the discharge to the sewer system of substances listed below which may be controlled at their source:

Chlorinated hydrocarbons

Toxic substances

Harmful substances that may concentrate in food webs

Excessive heat

Radioactive substances

Grease, oil, and phenolic compounds

Mercury or mercury compounds; excessively acidic and basic substances

Heavy metals such as lead, copper, zinc, etc.

Other known deleterious substances.

2. Sewerage entities should implement comprehensive industrial waste ordinances to control the quantity and quality of organic compounds, suspended and settleable substances, dissolved solids, and all other materials which may cause overloading of the municipal waste treatment facility.

GROUND WATER

1. Ground water recharge with high quality water shall be encouraged.

2. In all ground water basins known to have an adverse salt balance, total salt content of the discharge shall not exceed that which normally results from domestic use, and control of salinity shall be required by local ordinances which effectively limit municipal and industrial contributions to the sewerage system.

3. Wastewaters percolated into the ground waters shall be of such quality at the point where they enter the ground so as to assure the continued usability of all ground waters of the basin.

INDIVIDUAL, ALTERNATIVE, AND COMMUNITY SYSTEMS

1. The Regional Board intends to discourage high density development on septic tank disposal systems and generally will require increased size of parcels with increasing slopes and slower percolation rates. Consideration of development will be based upon the percolation rates and engineering reports supplied. In any questionable situation, engineer-designed systems will be required.

Further information concerning on-site systems can be found in Chapter 4.

EROSION AND SEDIMENTATION CONTROL

1. General recommendations for erosion control, numbered one through six under "Land Disturbance Activities" in the Implementation Plan chapter, are con-

sidered by the Regional Board to be Best Management Practices (BMP's), as are those BMP's identified in approved areawide Water Quality Management Plans.

2. Local units of government should have the lead role in controlling land use activities that cause erosion and may, as necessary, impose further conditions, restrictions, or limitations on waste disposal and other activities that might degrade the quality of waters of the state.

3. In implementing BMP's through local units of government, or through state and federal agencies for lands under their control, working relationships, priorities, and time schedules will be defined in management agency agreements between the areawide waste treatment planning agency and the local management agency. Agreements will be reviewed and updated annually to reflect recent achievements, new information and new concerns.

4. Regional Board participation in sediment control programs shall include assistance in the establishment of local control programs, participation in the determination of water quality problems, and a cooperative program evaluation with local units of government. Regional Board enforcement authority will be exercised where local volunteer programs fail to correct sediment problems within a reasonable period.

5. Emergency projects undertaken or approved by a public agency and necessary to prevent or mitigate loss of, or damage to, life, health, property, or essential

public services from an unexpected occurrence involving a clear and imminent danger are exempt from this chapter providing such exemption is in the public interest.

6. Regulation of sediment discharges from routine annual agricultural operations, such as tilling, grazing, and land grading and from construction of agricultural buildings is waived except where such activity is causing severe erosion and causing, or threatening to cause, a pollution or nuisance.

7. Regulation of discharges from state and federal lands managed by agencies operating in accordance with approved management agency agreements is waived except where such activity is causing, or threatening to cause, a pollution or nuisance.

"Control Actions" and "Actions by Other Authorities" in this chapter and the "Implementation Plan" chapter contain further information regarding erosion and sedimentation control.

DISCHARGE PROHIBITIONS

Due to unique cultural, scenic, aesthetic, historical, scientific, and ecological values of the Central Coastal Basin, and the necessity to protect the public health and the desire to achieve water quality objectives, the Regional Water Quality Control Board has established certain discharge prohibitions.

ALL WATERS

The discharge of oil or any residual products of petroleum to the waters of the State, except in accordance with waste discharge requirements or other provisions of Division 7 of the California Water Code, is prohibited.

Discharge of elevated temperature wastes into COLD intrastate waters is prohibited where it may cause the natural temperature of the receiving water to exceed limits specified in Chapter 3, Water Quality Objectives.

TOXIC OR HAZARDOUS POLLUTANTS

Discharge of toxic or hazardous material that violates: 1) the toxicity objective for all waters as designated in the Ocean Plan [See Appendix A-5] and Objectives for All Inland Surface Waters, Enclosed Bays, and Estuaries [See Chapter 3], or 2) Proposition 65 limitations for municipal/domestic water supply waters is prohibited.

Discharge to publicly owned treatment works is prohibited in concentrations that:

1. Exceeds applicable federal pretreatment standards,
2. Endangers safe and continuous operation of wastewater treatment facilities,
3. Endangers public health and safety, and
4. Causes violation of applicable water quality objectives.

INLAND WATERS

Waste discharges to the following inland waters are prohibited:

1. All surface freshwater impoundments and their immediate tributaries.

2. All surface waters within the San Lorenzo River, Aptos-Soquel, and San Antonio Creek Sub-basins and all water contact recreation areas except where benefits can be realized from direct discharge of reclaimed water.

3. All deadend sloughs receiving little flushing action from land drainage or natural runoff.

4. All coastal surface streams and natural drainageways that flow directly to the ocean within the Santa Cruz Coastal, Monterey Coastal, San Luis Obispo Coastal from the Monterey County line to the northern boundary of San Luis Obispo Creek drainage, and the Santa Barbara Coastal Sub-basins except where discharge is associated with an approved wastewater reclamation program.

5. The Santa Maria River downstream from the Highway 1 bridge.

6. The Santa Ynez River downstream from the salt water barrier.

WATERS SUBJECT TO TIDAL ACTION

The discharge of any radiological, chemical, or biological

warfare agent or high level radioactive waste into the ocean is prohibited.

Waste discharges to the following areas are prohibited.

1. In the northern extreme of Monterey Bay, inshore from an imaginary line extending from Santa Cruz Point (36°-57.0'N, 122°-01.5'W) to the mouth of the Pajaro River (36°-51.0'N, 121°-48.6'W) and in ocean waters within a three (3) mile radius of Point Pinos (36°-38.3'N, 121°-56.0'W), excepting the area described in No. 2 below.

2. In the southern extreme of Monterey Bay, in-shore from an imaginary line extending from Point Pinos (36°-38.3'N, 121°-56.0'W) to the mouth of the Salinas River (36°-44.9'N, 121°-48.3'W).

Discharges to the Monterey Bay Prohibition Zone from desalination units and circulating seawater system discharges may be permitted after each proposal satisfies California Environmental Quality Act requirements and completes the National Pollutant Discharge Elimination System process.

AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE

Discharge of waste is prohibited where it will alter natural water quality conditions in Areas of Special Biological Significance. Areas of Special Biological Significance are:

1. Ano Nuevo Point and Island, San Mateo County, including ocean

waters within three (3) nautical miles offshore and defined by extensions of Cascade Creek on the north and the Santa Cruz -- San Mateo County line on the south.

2. Pacific Grove Marine Gardens Fish Refuge and Hopkins Marine Life Refuge, Monterey County, including Monterey Bay waters bounded by Point Alones on the east, by Point Pinos on the west, and extending offshore to the 60-foot depth contour (about 0.7 miles).

3. Carmel Bay, Monterey County, including all bay waters enclosed by an imaginary line extending between Pescadero Point and Granite Point.

4. Point Lobos Ecological Reserve, Monterey County, including ocean waters within one-quarter (0.25) mile offshore from Granite Point southerly to the southernmost boundary of Point Lobos Reserve State Park.

5. Julia Pfeiffer Burns Underwater Park, Monterey County, including ocean waters within an area extending about one (1.0) mile offshore and about two and one-half (2.5) miles south of Partington Point.

6. Salmon Creek, Monterey County, including ocean waters within one-thousand (1000) feet or more offshore, bounded on the south by an extension of the Monterey-San Luis Obispo County line, and extending northward about three (3) miles.

7. San Miguel, Santa Rosa, and Santa Cruz Islands, Santa Bar-

bara County, including ocean waters within about one (1) nautical mile offshore.

The discharge of municipal and industrial waste sludge and sludge digester supernatant directly to the ocean, or into a waste stream that discharges to the ocean without further treatment, is prohibited.

The bypassing of untreated waste to the ocean is prohibited.

Excepting vessel washdown waters, disposal of waste matter or untreated waste from vessel to tidal water is prohibited.

The discharge of oil or grease, from other than natural sources, which produces a visible or measurable effect to tidal waters of the basin is prohibited.

New thermal waste discharges to coastal waters, enclosed bays and estuaries having a maximum temperature greater than 4°F above the natural temperature of the receiving water are prohibited.

OTHER SPECIFIC PROHIBITION SUBJECTS

Other prohibitions exist which pertain to the following topics. These prohibitions can be found under the respective heading in the Implementation Plan.

Mushroom Farms Operation Prohibitions

Individual, Alternative, and Community Sewage Disposal Systems Prohibitions

Land Disturbance Prohibitions

Solid Waste Discharge Prohibitions

EXCEPTIONS TO BASIN PLAN REQUIREMENTS

The Regional Board may, subsequent to a public hearing, grant exceptions to any provision of this Plan where the Board determines:

1. The exception will not compromise protection of waters for beneficial uses, and
2. The public interest will be served.

Regional Board exceptions will be effective upon State Board approval, unless exceptions involve surface water beneficial use designations or surface water quality objectives (i.e. federally accepted water quality standards). Such water quality standard related exceptions will also require Environmental Protection Agency approval to become effective.

CONTROL ACTIONS

Specific actions can be taken to control water quality. These are specified below.

WASTE DISCHARGE REQUIREMENTS

1. The Regional Water Quality Control Board will implement water quality control plan provisions through establishment or requirements and timetables for compliance with plan actions.

2. Waste discharge requirements will be established for all (operating) solid waste sites and where inactivated sites may contribute to water quality impairment.

3. Waste discharge requirements will be established for all existing oil well fields, mines, or other well fields which threaten water quality.

4. Waste discharge requirements will be established for all irrigation, feedlot, dairy, and poultry operations which are so located as to pose a clear and direct threat to water quality; such operations need not be so large as to require a permit under NPDES.

STATE CLEAN WATER GRANTS OR LOANS

1. Priorities for State Clean Water Grants or Loans will be ordered by the Regional Water Quality Control Board and provide ever increasing emphasis toward correction of basin water quality problems.

2. Water supply improvements (which encourage cost-effective water quality management) beyond normal source control measures (i.e., water supply quality enhancement by treatment or other means in lieu of effluent demineralization) will be recommended for funding.

SALT DISCHARGE

1. Emphasize control of brine disposal into public sewer systems by requiring affected dischargers to comply with normal

salt increments, to adopt salt source control ordinances, and to conduct wastewater monitoring programs.

2. Minimize degradation of water during transport from points of use; minimize leakage of poor quality water during transport from salt affected areas through salt free lands to salt sinks for disposal.

3. Regulate importation of water into any basin or sub-basin and regulate the re-use of waters in upstream portions of sub-basins which is of poorer quality than existing or imported supplies. If such import or transport to up-slope areas for re-use is allowed, take suitable steps to mitigate short and long term adverse effects of increased salt load resulting from this recycling.

4. Increase recharge of underground water storage basins (where recharge is possible) using surplus winter or spring runoff waters.

5. Actively support measures designed to protect and to improve quality of waters imported into areas with unfavorable or poor salt balance.

6. Regulate reclamation of new lands which would contribute large quantities of salts or pollutants to water supplies.

7. Where water supplies are limited, restrict use of reclaimed waters to existing irrigated acreage rather than develop new irrigated acreage to utilize the reclaimed water.

INDIVIDUAL, ALTERNATIVE, AND COMMUNITY SEWAGE DISPOSAL SYSTEMS

Unsewered areas having high density (one acre lots or smaller) should be organized into septic tank management districts and sewerage feasibility studies should be encouraged in potential problem areas. Local implementation should be encouraged by Regional Board action.

AGENCY COORDINATION

The Regional Water Quality Control Board will initiate coordination with the appropriate Coastal Commission, as well as other State, Federal, and local agencies which possess related or overlapping planning responsibilities.

ANIMAL CONFINEMENT OPERATIONS

The California Code of Regulations, Title 23, Chapter 15, Section 2601 defines a confined animal facility as "any place where cattle, calves, sheep, swine, horses, mules, goats, fowl, or other domestic animals are corralled, penned, tethered, or otherwise enclosed or held and where feeding is by means other than grazing."

1. Animal confinement facilities plus adjacent crop land under the control of the operator shall have the capacity to retain surface drainage from manure storage areas plus any washwater during a 25-year 24-hour storm.

2. Surface drainage, including water from roofed areas, shall be prevented from running through manure storage areas.

3. Animal confinement facilities, including retention ponds shall be protected from overflow to stream channels during 20-year peak stream flows for existing facilities and 100-year peak stream flows for new facilities.

4. Retention ponds shall be lined with or underlain by soils containing at least ten percent clay and not more than ten percent gravel or artificial material of equivalent impermeability.

5. Washwater and surface drainage from manure storage areas shall be contained, applied to crop lands, or discharged to treatment systems subject to approval by the Regional Water Quality Control Board.

6. Animals in confinement shall be prevented from entering any surface waters within the confined area.

7. Lands that have received animal wastes shall be managed to minimize erosion and runoff. Dry manures applied to cultivated crop lands should be incorporated into the soil soon after application.

8. Animal wastes shall be managed to prevent nuisances in manure storage areas.

9. Manure storage areas shall be managed to minimize percolation of water into underlying soils; this may be accomplished

by routing drainage to impervious storage areas, land applications, relocation of existing lots and, in the case of new locations, by selecting more impervious soils for manure storage areas.

10. Animal confinement facilities shall have adequate surface drainage to prevent continuous accumulation of surface waters in corrals and feed yards; drainage should be routed to impervious storage areas or applied to land.

11. Application of manures and washwaters to crop lands shall be at rates which are reasonable for crop, soil, climate, special local situations, management system and type of manure.

12. A monitoring program may be required by the Regional Water Quality Control Board as a condition to issuance or waiver of waste discharge requirements.

Further animal confinement information can be found in Chapter 4 in the Nonpoint Source Measures section under Agricultural Water and Wastewater Management.

EROSION AND SEDIMENTATION

1. Erosion from nonpoint pollution sources shall be minimized through implementation of BMP's (identified under "Management Principles" and described under "Land Disturbance Activities" in Chapter 4's "Nonpoint Source Measures" section.

2. All necessary control measures for minimizing erosion and

sedimentation, whether structural or vegetal, shall be properly established prior to November 15 each year.

3. All structural and vegetal measures taken to control erosion and sedimentation shall be properly maintained.

4. A filter strip of appropriate width, and consisting of undisturbed soil and riparian vegetation or its equivalent, shall be maintained, wherever possible, between significant land disturbance activities and watercourses, lakes, bays, estuaries, marshes, and other water bodies. For construction activities, minimum width of the filter strip shall be thirty feet, wherever possible as measured along the ground surface to the highest anticipated water line.

5. Design and maintenance of erosion and sediment control structures, (e.g., debris and settling basins, drainage ditches, culverts, etc.) shall comply with accepted engineering practices.

6. Cover crops shall be established by seeding and/or mulching, or other equally effective measures, for all disturbed areas not otherwise protected from excessive erosion.

7. Land shall be developed in increments of workable size that can be completed during a single construction season. Graded slope length shall not be excessive and erosion and sediment control measures shall be coordinated with the sequence of grading, development, and construction operations.

8. Use of soil sterilants is discouraged and should be minimized.

Further erosion and sedimentation information can be found in other areas of this chapter as well as the Implementation Plan chapter under "Land Disturbance Activities."

ACTIONS BY OTHER AUTHORITIES

FEDERAL AGENCIES

1. Federal agencies directly affected by the facility plans involving consolidation with other communities should comply with applicable provisions of the Basin Plan (e.g. Fort Ord on the Monterey Peninsula is shown as part of municipal wastewater sewerage consolidation plans); agency policies favoring plan recommendations are encouraged.

2. Federal agencies otherwise affected by plan provisions should signify their compliance or concern with plan recommendations; time at public hearings will be provided for this purpose.

ASSOCIATION OF MONTEREY BAY AREA GOVERNMENTS

The Association of Monterey Bay Area Governments (AMBAG) should coordinate with local agencies and the Regional Board relative to implementation of water quality control plans in that area.

SEPTIC TANK MANAGEMENT AGENCIES

1. County governments should revise septic tank ordinances to conform with basin plan recommendations and State Board guidelines.

2. Formation of septic tank management districts within existing local agencies should be accomplished in areas where directed by Regional Board action.

WATER MANAGEMENT AGENCIES

Conjunctive ground water-surface water management should continue to be encouraged by water management agencies, both in terms of storage and recharge operations and containment and routing of highly mineralized surface waters to prevent recharge. Examples in the Salinas Subbasin include storage of wet weather flows and recharge from a reservoir on Arroyo Seco and containment to prevent recharge of highly mineralized surface waters in streams such as Pancho Rico Creek.

SOLID WASTE MANAGEMENT

Preparation of solid waste management plans by all counties in the basin should be accomplished as required by the Nejedly-Z'berg-Dills Solid Waste Management and Resource Recovery Act of 1972.

AGRICULTURAL MANAGEMENT

Local agricultural representatives and the University of California extension service should maintain liaison with the

Regional Water Quality Control Board and the State Board relative to agricultural wastewater management.

OFFSHORE OIL

Water quality in offshore oil lease areas should be monitored by State and Federal agencies preferably by arrangements with independent oceanographic institutions.

SALINITY MANAGEMENT

Salt source control measures should be implemented by municipalities having excessive mineral quality in wastewaters discharged to land or inland waters; control of salinity through water supply improvements is recommended.

EROSION AND SEDIMENTATION CONTROL

1. The federal government should increase its support of erosion and sediment control programs by increasing its technical staffs, increasing cost-share funds, increasing the availability of low-interest loans, and changing its income tax laws to encourage the use of Best Management Practices for erosion and sediment control.

2. The State of California should establish an erosion and sediment control program that includes incentives for the individual - such as cost-sharing, changes in state law that would reduce property taxes for enduring erosion and sediment control practices, and incentives through state income taxes.

3. Resource Conservation Districts within the Central Coast Region should develop management agency agreements with the Regional Board agreeing to work jointly with the Regional Board to integrate soil and water resource programs in the application of Best Management Practices to correct existing erosion and sediment problems and to prevent new problems from occurring.

4. Local units of government should improve land use plans to establish a clear policy, and shall adopt or improve ordinances to include definitive performance standards, for the control of erosion and sedimentation, including consistency with this Basin Plan and Best Management Practices identified under Regional Board "Management Principles."

5. Local units of government developing Local Coastal Programs shall establish a clear policy on erosion and sedimentation and adopt an ordinance consistent with Best Management Practices for their land areas within the Coastal Zone.

6. Resource Conservation Districts, the U.S.D.A. Soil Conservation Service, the California Department of Transportation, and the Extension Service, in conjunction with the cities and counties, should develop and carry out an erosion and sediment control training program for employees who check erosion and sediment control plans and who enforce local ordinances and regulations relating to erosion and sediment control practices.

7. Counties and cities should work with the Regional Board to identify priorities, time schedules, and limitations and to negotiate management agency agreements concerning implementation of Best Management Practices for control of erosion and sedimentation.

8. Review and assessment of erosion and sediment control plans for new land developments in those counties and cities that have signed management agency agreements with the Regional Board will be processed entirely by that county or city.

REGIONAL BOARD POLICIES

Formal specific policies adopted by the Regional Board are presented below according to various categories.

SEPTIC TANKS

1. Resolution 86-02: Acceptance of Monterey County Board of Supervisor's Ordinance Applying Development Restrictions to the Bay Hills (Bay Farms/Hillcrest) Area.

This policy accepts Monterey County's moratorium in lieu of a Regional Board prohibition. Further, the policy requested a compliance schedule to eliminate discharge from individual sewage disposal systems and the State Water Resources Control Board is requested to rank this project Class "A" on the Clean Water Grant project priority list.

2. Resolution 87-05: Acceptance of Monterey County Board of Su-

pervisor's Ordinance Applying Development Restrictions to the area within the San Lucas County Water District.

This policy accepts Monterey County's moratorium in lieu of a Regional Board prohibition. Further, the policy requested a compliance schedule to eliminate discharge from individual sewage disposal systems and the State Water Resources Control Board is requested to rank this project Class "A" on the Clean Water Grant project priority list.

Further information concerning on-site system development restrictions can be found in Chapter 4.

OIL FIELD WASTES

- **SANTA MARIA**
- **ALL REGIONS**

1.

a. Resolution 73-05: Adopting Policy Regarding Beneficial Use of Oil Field Waste Materials in the Santa Maria Oil Fields, Santa Barbara County

b. Resolution 89-04: Adopting Policy Regarding Beneficial Use of Oil Field Waste Materials in the Central Coast Region

The above policies require oil field waste materials to be deposited at an appropriate and approved Class I or Class II disposal site. Other disposal sites may be used for disposal under certain conditions. Executive Officer approval is neces-

sary for other sites. A procedure to obtain Executive Officer approval is specified.

AREA OF SPECIAL BIOLOGICAL SIGNIFICANCE (ASBS)

Resolution 76-10: Recommendation to the State Water Resources Control Board Concerning the Designation of Terrace Point in Santa Cruz County as an Area of Special Biological Significance.

This policy recommended the State Water Resources Control Board to not designate Terrace Point as an Area of Special Biological Significance. The State Board concurred with the Regional Board in Resolution 77-21.

Further information concerning ASBS areas can be found in Chapter 2.

LEGISLATIVE MATTERS

Resolution 78-04: Supporting Approval of the Clean Water and Water Conservation Bond Law of 1978.

This policy expressed support for Proposition 2 and urged California voters to support the proposition.

PROHIBITION ZONES

Resolution 79-06: Resolution Regarding Marina County Water District's Petition to Delete the Southern Monterey Bay Discharge Prohibition Zone from the Basin Plan.

This policy considers Marina County Water District challenge to the Southern Monterey Bay prohibition zone. This policy resolves the Southern Monterey Bay prohibition zone is appropriate.

Regional Board adopted prohibition zones for tidal waters can be found under "Waters Subject to Tidal Action" under "Discharge Prohibitions" in this chapter.

SAN LORENZO VALLEY

Resolution 87-04: Certification of Santa Cruz County's Wastewater Management Program for the San Lorenzo River Watershed.

This policy certifies Santa Cruz County's Wastewater Management Program for the San Lorenzo Valley is adequate to satisfy the loan condition authorized by Chapter 962 of the 1986 State Statutes.

HIGHWAY GROOVING RESIDUES

Resolution 89-04: Adopting Policy Regarding Disposal of Highway Grooving Residues.

This policy specifies conditions for highway grooving residue disposal.

WAIVER OF WASTE DISCHARGE REQUIREMENTS

Resolution 89-04: Waiver of Regulation of Specific Types of Waste Dischargers.

State law allows Regional Boards to waive waste discharge requirements (WDRs) for a specific discharge or types of discharges where it is not against the public interest (California Water Code Section 13269). These waivers are conditional and may be terminated at any time.

On April 15, 1983, the Regional Board held a public hearing regarding the types and nature of waste discharges considered for waiver. Following this hearing, the Regional Board established certain discharges which waived WDRs. These waived are listed below:

Type of Waste Discharge

Limitations

1. Air conditioner, cooling and elevated temperature waters

Discharged to storm drains, to land, or in small volumes which will not change temperature of receiving water more than one degree C.

2. Drilling muds

Discharged to sump with at least two feet of freeboard. Sump must be dried by evaporation or pumping. Drilling muds may remain in sump only if discharger demonstrates mud is non-toxic. Sump area shall be restored to preconstruction state within sixty (60) days of completion or abandonment of well.

Clean, oil-free, freshwater drilling mud removed from the oil well drilling operation prior to the time the first production casing is installed.

3. Oilfield waste materials

Clean oil not mixed with contaminants such as salt brines or toxic materials, used for beneficial purposes such as dust control, weed control and mosquito abatement where oil cannot reach State Waters.

4. Minor dredge operations

When operation is short-term and spoil is nontoxic, and discharged to land.

<u>Type of Waste Discharge</u>	<u>Limitations</u>
5. Inert waste solid wastes	Small-scale operations using good disposal and erosion control practices.
*6. Test pumpings of fresh water wells	When pollutants are neither present nor added.
7. Storm water runoff	Where no water quality problems are contemplated and no federal NPDES permit is required.
*8. Erosion from construction projects	Where Best Management Practices (BMP) plans have been formulated and implemented or the local entity has an approved program for implementing BMPs (Reference: Resolution No. 79-09).
9. Pesticide rinse waters from applicators	Where discharger complies with State Board's Pesticides Guidance Document, (January, 1982).
10. Confined animal wastes	Where discharger complies with the Basin Plan and no federal NPDES permit is required.
11. Minor stream channel alterations and suction dredging	Where regulated by Department of Fish and Game conditions.
12. Short-term sand and gravel operations	Operations where washwaters are confined to land.
13. Metal mining operations	Operations confined to land where toxic materials are not used in recovery operations.
*14. Swimming pool discharges	Where adequate dilution exists to offset chlorine toxicity or where beneficial uses will not be affected.
15. Food processing wastes spread on land	Small, seasonal, confined to land, and removed from populated areas.
16. Agricultural commodity wastes	Small, seasonal, confined to land, and removed from populated areas.

Type of Waste Discharge

Limitations

- | | |
|--|--|
| 17. Industrial wastes utilized for soil amendments | Where industry certifies nontoxic and non-hazardous content and BMP for agricultural application used. |
| *18. Timber harvesting | Operating under approved Timber Harvest Plan. |
| 19. Minor hydro projects | Operating under water rights permit from State Water Resources Control Board or Fish and Game conditions. |
| 20. Irrigation return water | Where sediment meets Basin Plan turbidity objectives and discharge is not toxic to fish or wildlife. (Exempted from NPDES permit as per consolidated regulations). |
| *21. Project where application for Water Quality Certification is required | Where project (normally minor construction) is not expected to have a significant water quality effect, and project complies with Fish and Game conditions. |
| 22. Brine disposal | To ocean without toxic constituents or to impermeable ponds. |
| *23. Individual sewage disposal systems | Where project is required to meet stand criteria of county or city that is implementing Basin Plan requirements pursuant to MOU, or an individual project that complies with Basin Plan. |
| 24. Treatment and disposal systems for sanitary waste from small community, industrial operations. | Small community systems (serving five or less residential units) or institutional, commercial, or industrial systems (less than 2500 gallons per day) with subsurface disposal, regulated by local agency that is implementing the Basin Plan through Memorandum of Understanding (MOU) with Regional Board, or an individual project that complies with the Basin Plan. |

Type of Waste Discharge

Limitations

25. Flow-through seawater systems
and aquacultural operations

Where no water quality problems
are anticipated and no federal
NPDES permit is provided.

*26. Injection wells

Where waste is produce water
(CDOG/SWRCB MOA).

* The Board will not be requested to
ratify staff waivers for these
discharge types.

CHAPTER 6. SURVEILLANCE AND MONITORING

The effectiveness of a water quality control program cannot be judged without the information supplied by a comprehensive surveillance and monitoring program.

Historically, a wide variety of interested state, federal, and local agencies have sampled, analyzed, and tracked water quality. The State Board monitoring program coordinates existing information, gathering and supplementing it where necessary to meet data needs.

The State Board is the lead agency in California directing surveillance and monitoring of water quality. A routine program of systematic sampling of the State's waters is now in existence. The activity is coordinated through and assisted by the California Department of Water Resources (DWR) and Health Services (DOHS) as well as the United States Geologic Survey (USGS) and the Environmental Protection Agency (EPA).

This chapter contains a discussion of the objectives and various elements of the State and Regional Boards' programs.

PROGRAM OBJECTIVES

The overall objectives of an adequate surveillance and monitoring program are:

1. To measure the achievement of water quality goals and objectives specified in this plan.

2. To measure specific effects of water quality changes on the established beneficial uses.

3. To measure background conditions of water quality and long-term trends in water quality.

4. To locate and identify sources of water pollution that pose an acute, accumulative, and/or chronic threat to the environment.

5. To provide information needed to correlate receiving water quality to mass emissions of pollutants by waste dischargers.

6. To provide data for determining waste discharger compliance with permit conditions.

7. To measure waste loads discharged to receiving waters and to identify the limits of their effect, and in water quality segments, prepare waste load allocations necessary to achieve water quality control.

8. To provide documentation necessary to support enforcement of permit conditions and waste discharge requirements.

9. To provide data needed to carry on the continuing planning process.

10. To measure the effects of water rights decisions on water quality and to guide the State Board in its responsibility to regulate unappropriated water for the control of quality.

11. To provide a clearinghouse for the collection and dissemination of water quality data gathered by other agencies and private parties cooperating in the program.

12. To prepare reports on water quality conditions as required by federal and state regulations and other users requesting water quality data.

STATE WATER RESOURCES CONTROL BOARD PROGRAM TASKS

STATE-WIDE SURFACE WATER MONITORING PROGRAM

Section 13160 of the Porter-Cologne Water Quality Control Act delegates primary responsibility for coordination and control of water quality in California to the State Board. Section 13163 of the Act states that in conducting this mission, the State Board is to coordinate water quality investigations, recognizing that other State agencies have primary statutory responsibility for such investigations.

Pursuant to these mandates, the State Board developed and in April 1976 established a coordinated Primary Water Quality Monitoring Network for California. Participants in the Coordinated Network included the California Departments of Health, Water Resources, and Fish and Game and the United States Department of the Interior, Federal Bureau of Reclamation; the U. S. Geological Survey; and, the Environmental Protection Agency.

The goal of the Primary Network is to provide an overall, continuing assessment of water quality in the State. This goal is to be achieved by statewide monitoring of water quality parameters that can affect beneficial uses of State waters. Among such parameters, toxic substances have received increasing attention in federal and state water pollution control activities; accordingly, Toxic Substances Monitoring and the State Mussel Watch program are included in the Primary Network.

TOXIC SUBSTANCE MONITORING

One alternative in monitoring for toxic substances (toxic elements and organic compounds) is to collect and analyze water samples. A major problem with this approach is that toxic discharges are likely to occur in an intermittent fashion and are thus likely to be missed with "grab" sampling of the water. Another limitation to analyzing water samples is that, generally, harmful toxicants are present in low concentrations in the water. The process of bioaccumulation acts to concentrate toxicants through the aquatic food web. Therefore, in the Toxic Substances Monitoring Program the flesh of fish and other aquatic organisms is analyzed for toxic metals and synthetic organic compounds.

The Toxic Substances Monitoring (TSM) portion of the Primary Network has been integrated with other Primary Network Monitoring. Streams and lakes were ranked according to various criteria established to indicate

their importance to the State in terms of water quality. From this process, the water bodies ranked Priority 1, or highest priority, were included in the Primary Network; routine chemical and biological water monitoring is performed by DWR and/or the USGS; and toxic substances monitoring of resident organisms is performed by the Department of Fish and Game.

The objectives of the Primary Network TSM program are:

1. To develop statewide baseline data and to demonstrate trends in the occurrence of toxic elements and organic substances in the aquatic biota.
2. To assess impacts of accumulated toxicants upon the usability of State waters by man.
3. To assess impacts of accumulated toxicants upon the aquatic biota.
4. Where problem concentrations of toxicants are detected, to attempt to identify sources of toxicants and to relate concentrations found in the biota to concentrations found in the water.

The samples collected in the TSM program are benthic invertebrates and predator fish. The flesh of bivalve mollusks or crayfish, tailflesh, and fish livers are analyzed for important metals, including arsenic, cadmium, chromium, copper, lead, nickel, silver, and zinc; fish flesh is analyzed for mercury. In addition, both invertebrate and fish flesh samples are analyzed for 55 synthetic organic compounds, most of

which are pesticides (Table VI-1). TSM reports have been published annually since 1977.

STATE MUSSEL WATCH

The State Mussel Watch (SMW) program has been integrated with the Primary Network Monitoring to provide documentation of the quality of coastal marine and estuarine waters. The SMW program fulfills the goal of providing the state with long-term trends in the quality of these waters.

Mussels were chosen as the indicator organism for trace metals and synthetic organic compounds in the coastal and estuarine waters. Although the mussel populations of bays and estuaries are of a different species than those found in the open coast, their suitability as sentinels for monitoring the presence of toxic pollutants stems from several factors including: (1) their ubiquity along the California coast; (2) their ability to concentrate pollutants above ambient sea water levels and to provide a time-averaged sample; and (3) their non-motile nature which permits a localized measurement of water quality. The trace metals analyzed for in mussel tissues include aluminum, cadmium, chromium, copper, lead, manganese, mercury, nickel, silver and zinc. Synthetic organic compounds analyzed for are summarized in Table VI-1. When compared with alternative sampling designs, such as seawater and sediment sampling, SMW is a more cost effective program. Reports have been published annually since 1978.

TABLE VI-1
SYNTHETIC ORGANIC COMPOUNDS ANALYZED IN THE
TOXIC SUBSTANCES MONITORING AND STATE MUSSEL WATCH PROGRAMS

<u>COMPOUND</u>	<u>COMPOUND</u>	<u>COMPOUND</u>
Aldrin	DDMU pp	Nitrofen (TOK)
Benefin	DDT pp	Oxychlordan
BHC α	Dialifor	Parathion, ethyl
BHC β	Diazinon	Parathion, methyl
BHC γ (lindane)	Dichlofenthion	PCB 1248
BHC δ	Dicofol (Kelthane)	PCB 1254
Carbophenothion	Dieldrin	PCB 1260
CDEC (Vege-dex)	Endosulfan I (Thiodan I)	PCNB (Quintozene)
Chlorbenside	Endrin	Perthane
cis-Chlordane	EPN	Phenkapton
trans-Chlordane	Ehtion	Phorate (Thimet)
Chloroneb	Fenitrothion	Ronnel
Chlorpyrifos (Dursban)	Fonofos (Dyfonate)	Strobane
Dacthal	Heptachlor	Tetradifon (Tedion)
DDE op	Heptachlor epoxide	Toxaphene
DDE pp	Hexachlorobenzene (HCB)	2,4-D isopropyl ester
DDD op	Methoxychlor pp'	2,4-D isobutyl ester
DDMS pp	Mirex	2,4-D n-butyl ester

During the 1977 and 1978 sampling periods, the focus of the SMW was, for the most part, on open coast monitoring of sites outside the vicinity of known pollutant point sources. Monitoring water quality in the State Board's designated Areas of Special Biological Significance (ASBS), to establish baseline conditions relating to the range of typical conditions in water, sediment and biota, was given prime importance in the early years of the program.

Based on identification of "hot spot" areas during 1977 and 1978, intensive sampling of these areas was implemented in 1979. Such a sampling strategy was intended to confirm previous findings, establish the magnitude of the potential problem and identify pollutant sources. The program has

since evolved to include transplanting *M. californianus* mussels into selected California bays and estuaries at specific sites to confirm potential toxic substance pollution - i.e., in the vicinity of dischargers.

LAKE SURVEILLANCE

This element is responsive to the requirements set forth in Section 314 of PL 92-500 and applicable federal regulations. The State is required to identify and determine the present trophic condition of all publicly owned fresh water lakes. The lakes inventory is updated on a two year cycle to include additional data as it becomes available and to indicate changes in trophic conditions.

BIENNIAL WATER QUALITY INVENTORY

Section 305(b) of PL 92-500 requires the State to prepare and submit biennially to EPA the Water Quality Inventory. This report includes: (a) a description of the water quality of major navigable waters in the State during the preceding years; (b) an analysis of the extent to which significant navigable waters provide for the protection and propagation of a balanced population of shellfish, fish and wildlife, and allow recreational activities in and on the water; (c) an analysis of the extent to which elimination of the discharge of pollutants is being employed or will be needed; and (d) an estimate of the environmental impact, the economic, and social costs necessary to achieve the "no discharge" objective of PL 92-500, the economic and social benefits of such achievement and estimate of the date of such achievement. Recommendations as to the programs which must be taken to control them are provided, along with estimates of the cost.

Data collection and analyses already being carried out by the State in the permits, planning, facilities, monitoring and enforcement programs is utilized in preparing the reports on the quality of the waters of California. The first report was published in 1975 with subsequent reports in 1977 and 1979. The next biennial report is due in 1990.

REGIONAL WATER QUALITY CONTROL BOARD PROGRAM TASKS

Compliance Monitoring

This task determines permit compliance, validates self-monitoring reports, checks receiving water standards compliance, and provides data for enforcement actions. Data obtained are added to the water quality supply data for regulation, enforcement, planning, and facilities development activities. Discharger compliance monitoring and enforcement actions are the responsibility of, and will normally be carried out wholly by, the Regional Board staff. Standards Compliance Monitoring will be coordinated by the State Board and use data available from other program tasks.

The scope of the Waste Discharger Compliance Monitoring Program for the basin will be dependent on the number and complexity of Waste Discharger Requirements (NPDES and other Permits) issued by the Regional Board. Waste discharge requirements may or may not include a specific discharger self-monitoring and reporting requirement on the effluent and receiving waters.

This program includes a control procedure whereby each discharger is periodically visited by Regional Board personnel on both an announced and an unannounced "Facility Inspection" basis. The intent of announced visits is to work with the discharger through personal contact and

communication to review his procedures in order to assure quality control. The intent of the unannounced inspections is to survey the operation; inspect the discharge area; and collect, check, or reference samples.

Self-Monitoring Report Review

Discharger self-monitoring reports generated as a result of permits and waste discharge requirements are collected and reviewed by the Regional Board for obvious errors or omissions and entered into the data bank for checking. Significant reports of noncompliance are made immediately upon detection. Other data desired by the Regional or State Board will be rendered on a routine basis. Self-monitoring reports are normally submitted by the discharger on a monthly or quarterly basis as required by the permit conditions.

Complaint Investigation

The Complaint Monitoring task involves investigation of complaints of citizens and public or governmental agencies on the discharge of pollutants or creation of nuisance conditions. It is a Regional Board responsibility which includes preparation of reports, letters, or taking other follow-up actions to document observed conditions and to inform the State Board and complainant and discharger of the observed conditions.

AERIAL SURVEILLANCE

Aerial surveillance is used primarily to gather photographic records of discharges and water quality conditions and to observe conditions at solid waste disposal sites in the Region. Aerial surveillance is particularly effective because of the overall view of a facility that is obtained and because many facilities can be observed in a short period of time.

NONPOINT SOURCE INVESTIGATIONS

The objective in this task is to (a) identify location of the sources of nonpoint pollutants; (b) develop information on the quantity, strength, character, and variability of nonpoint source pollutants; (c) evaluate impact on receiving water quality and biota; (d) provide information useful in management of nonpoint source pollution; and (e) monitor results of any control plan. Investigations will be undertaken on a state-wide priority basis.

INTENSIVE SURVEYS

Intensive monitoring surveys provide detailed water quality data to locate and evaluate violations of receiving water standards and make waste load allocations. They are usually localized, intermittent sampling at a higher than normal frequency. These surveys are specially designed to evaluate problems in water quality class segments, areas of special biological significance, or hydro-

logic units requiring sampling in addition to routine monitoring programs. Surveys are repeated at appropriate intervals depending on parameters involved, variability of conditions, and changes in hydrologic or effluent regimes.

Intensive surveys are needed for several water bodies. The data are needed for one or more of the following reasons:

- (a) A water quality problem is suspected, however, little data is available to substantiate the existence or degree of a problem,
- (b) A water quality screening is needed to verify the Regional Board's judgement of the water quality status, or,
- (c) A water body is suspected to be water quality limited.

Table 6-2 lists each water body, the constituent needing sampling, and the reason it should be sampled. The Regional Board urgently requests the State Board to make money available for intensive surveys.

Table 6-2. Water Bodies Needing Intensive Survey

Water Body	Constituent(s)	Water Quality Problem Suspected	Water Quality Screening	Suspected Water Quality Limited
San Lorenzo River*	Bacteria Nutrients	X		
Corcoran Lagoon	Nutrients	X		
Soquel Creek/ Lagoon	Bacteria Nutrients	X		
Aptos Creek			X	
Valencia Creek			X	
Pescadero Creek			X	
Hernandez Lake	Mercury		X	
Monterey Bay	DDT			X
Watsonville Slough	Chromium Copper	X		
Watsonville Slough	Pesticides			X
Elkhorn Slough	Pesticides			X
Elkhorn Slough	Cadmium Chromium Copper Lead Nickel Silver Zinc		X	
Moss Landing Harbor	Pesticides			X
Moro Cojo Slough	Chromium Copper Nickel Zinc		X	
Tembladero Slough	Pesticides			X
Salinas Reclamation Slough	Pesticides			X
Salinas River and Old Salinas River	Pesticides			X
Monterey Harbor	Lead			X
Carmel River/ Lagoon			X	
Garapatta Creek/ Lagoon			X	
Big Sur River			X	
San Antonio River	Cadmium	X		
Nacimiento River	Mercury	X		
Las Tablas Creek	Mercury			X
Atascadero Lake			X	
Morro Creek	Heavy Metals	X		

*Sampling should be conducted after area sewered.

Table 6-2. Water Bodies Needing Intensive Survey

Water Body	Constituent(s)	Water Quality Problem Suspected	Water Quality Screening	Suspected Water Quality Limited
Morro Bay	Bacteria			X
Chorro Creek	Bacteria Heavy Metals	X		
Los Osos Creek			X	
Sweet Springs	Bacteria	X		
Pismo Creek			X	
Arroyo Grande Creek			X	
Lopez Lake	Nutrients	X		
Oso Flaco Lake			X	
San Antonio Creek*	Bacteria Nutrients	X		
Santa Ynez Lagoon	Copper Lead	X		
Goleta Slough	Bacteria Heavy Metals	X		
Los Palmas Creek			X	
Arroyo Burro Creek			X	
Santa Barbara Channel	Bacteria			X
Mission Creek**	Bacteria Nutrients	X		
Laguna Creek	Bacteria	X		
Franklin Creek			X	
Santa Monica Creek			X	
Carpinteria Marsh	Chromium Copper Lead Silver Zinc Pesticides			X

*Downstream of Los Alamos

**Upstream and downstream Mission Creek

APPENDIX

Sources of Drinking Water Policy

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 88-63

ADOPTION OF POLICY ENTITLED
"SOURCES OF DRINKING WATER"

WHEREAS:

1. California Water Code Section 13140 provides that the State Board shall formulate and adopt State Policy for Water Quality Control; and,
2. California Water Code Section 13240 provides that Water Quality Control Plans "shall conform" to any State Policy for Water Quality Control; and,
3. The Regional Boards can conform the Water Quality Control Plans to this policy by amending the plans to incorporate the policy; and,
4. The State Board must approve any conforming amendments pursuant to Water Code Section 13245; and,
5. "Sources of drinking water" shall be defined in Water Quality Control Plans as those water bodies with beneficial uses designated as suitable, or potentially suitable, for municipal or domestic water supply (MUN); and,
6. The Water Quality Control Plans do not provide sufficient detail in the description of water bodies designated MUN to judge clearly what is, or is not, a source of drinking water for various purposes.

THEREFORE BE IT RESOLVED:

All surface and ground waters of the State are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Boards¹ with the exception of:

1. Surface and ground waters where:
 - a. The total dissolved solids (TDS) exceed 3,000 mg/L (5,000 uS/cm, electrical conductivity) and it is not reasonably expected by Regional Boards to supply a public water system, or

- b. There is contamination, either by natural processes or by human activity (unrelated to a specific pollution incident), that cannot reasonably be treated for domestic use using either Best Management Practices or best economically achievable treatment practices, or
- c. The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day.

2. Surface waters where:

- a. The water is in systems designed or modified to collect or treat municipal or industrial wastewaters, process waters, mining wastewaters, or storm water runoff, provided that the discharge from such systems is monitored to assure compliance with all relevant water quality objectives as required by the Regional Boards; or,
- b. The water is in systems designed or modified for the primary purpose of conveying or holding agricultural drainage waters, provided that the discharge from such systems is monitored to assure compliance with all relevant water quality objectives as required by the Regional Boards.

3. Ground water where:

The aquifer is regulated as a geothermal energy producing source or has been exempted administratively pursuant to 40 Code of Federal Regulations, Section 146.4 for the purpose of underground injection of fluids associated with the production of hydrocarbon or geothermal energy, provided that these fluids do not constitute a hazardous waste under 40 CFR, Section 261.3.

4. Regional Board Authority to Amend Use Designations:

Any body of water which has a current specific designation previously assigned to it by a Regional Board in Water Quality Control Plans may retain that designation at the Regional Board's discretion. Where a body of water is not currently designated as MUN but, in the opinion of a Regional Board, is presently or potentially suitable for MUN, the Regional Board shall include MUN in the beneficial use designation.

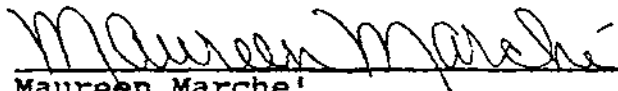
The Regional Boards shall also assure that the beneficial uses of municipal and domestic supply are designated for protection wherever those uses are presently being attained, and assure that any changes in beneficial use designations for waters of the State are consistent with all applicable regulations adopted by the Environmental Protection Agency.

The Regional Boards shall review and revise the Water Quality Control Plans to incorporate this policy.

-
- 1 This policy does not affect any determination of what is a potential source of drinking water for the limited purposes of maintaining a surface impoundment after June 30, 1988, pursuant to Section 25208.4 of the Health and Safety Code.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a policy duly and regularly adopted at a meeting of the State Water Resources Control Board held on May 19, 1988.



Maureen Marche'

Administrative Assistant to the Board

APPENDIX A-2

Statement of Policy with Respect to Maintaining High Quality of Waters in California (Anti-Degradation Policy)

STATE WATER RESOURCES CONTROL BOARD

RESOLUTION NO. 68-16

STATEMENT OF POLICY WITH RESPECT TO
MAINTAINING HIGH QUALITY OF WATERS IN CALIFORNIA

WHEREAS the California Legislature has declared that it is the policy of the State that the granting of permits and licenses for unappropriated water and the disposal of wastes into the waters of the State shall be so regulated as to achieve highest water quality consistent with maximum benefit to the people of the State and shall be controlled so as to promote the peace, health, safety and welfare of the people of the State; and

WHEREAS water quality control policies have been and are being adopted for waters of the State; and

WHEREAS the quality of some waters of the State is higher than that established by the adopted policies and it is the intent and purpose of this Board that such higher quality shall be maintained to the maximum extent possible consistent with the declaration of the Legislature;

NOW, THEREFORE, BE IT RESOLVED:

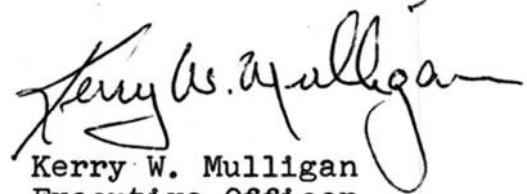
1. Whenever the existing quality of water is better than the quality established in policies as of the date on which such policies become effective, such existing high quality will be maintained until it has been demonstrated to the State that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies.
2. Any activity which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.
3. In implementing this policy, the Secretary of the Interior will be kept advised and will be provided with such information as he will need to discharge his responsibilities under the Federal Water Pollution Control Act.

BE IT FURTHER RESOLVED that a copy of this resolution be forwarded to the Secretary of the Interior as part of California's water quality control policy submission.

CERTIFICATION

The undersigned, Executive Officer of the State Water Resources Control Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on October 24, 1968.

Dated: October 28, 1968

A handwritten signature in cursive script, reading "Kerry W. Mulligan". The signature is written in dark ink and is positioned above the printed name and title.

Kerry W. Mulligan
Executive Officer
State Water Resources
Control Board

APPENDIX A-3

Water Quality Control Plan for Control of Temperature in Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan)

STATE WATER RESOURCES CONTROL BOARD

P. O. Box 100
Sacramento, CA 95801



MAR 10 1975

NOTICE

ADOPTION OF NEW "WATER QUALITY CONTROL
PLAN FOR CONTROL OF TEMPERATURE IN THE
COASTAL AND INTERSTATE WATERS AND
ENCLOSED BAYS AND ESTUARIES OF CALIFORNIA"

On September 18, 1975, the State Water Resources Control Board adopted a revised version of the above plan.

Basically, the amendments made the following changes:

1. The provisions of Section 316(a) of the Federal Water Pollution Control Act were substituted for previous variance provisions of the Plan.
2. A provision was added that would allow Regional Boards to develop additional requirements for protecting the beneficial uses of warm interstate and coastal waters.
3. The original compliance schedule was revised.
4. A provision was added to require monitoring to demonstrate the degree of protection afforded to beneficial uses.
5. A provision was added that allows the State or Regional Board to establish, if needed, independent monitoring studies to be financed by the discharger.

The Environmental Protection Agency has concurred with these amendments.

Handwritten signature of Bill B. Dendy in cursive.

Bill B. Dendy
Executive Officer

7/7

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 75-89

ADOPTING AMENDMENTS TO THE "WATER QUALITY CONTROL PLAN FOR
CONTROL OF TEMPERATURE IN THE COASTAL AND INTERSTATE
WATERS AND ENCLOSED BAYS AND ESTUARIES OF CALIFORNIA"
(THERMAL PLAN)

WHEREAS:

1. On February 25, 1975, the State Water Resources Control Board conducted a public hearing to consider proposed amendments to the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California", hereinafter called the Thermal Plan.
2. As a result of that hearing, evidence was obtained from various parties regarding the desirability of the proposed amendments.
3. The State Water Resources Control Board has been advised by the Environmental Protection Agency that the proposed amendments are necessary in order to bring the Plan into full conformance with the provisions of P.L. 92-500.

THEREFORE BE IT RESOLVED:

That the State Water Resources Control Board adopt the proposed amendments as attached.

CERTIFICATION

The undersigned, Executive Officer of the State Water Resources Control Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on
SEP 18 1975

Bill B. Dendy

Bill B. Dendy
Executive Officer

State Water Resources Control Board

WATER QUALITY CONTROL PLAN
FOR CONTROL OF
TEMPERATURE IN THE
COASTAL AND INTERSTATE WATERS
AND ENCLOSED BAYS AND ESTUARIES
OF CALIFORNIA¹

DEFINITION OF TERMS

1. Thermal Waste - Cooling water and industrial process water used for the purpose of transporting waste heat.
2. Elevated Temperature Waste - Liquid, solid, or gaseous material including thermal waste discharged at a temperature higher than the natural temperature of receiving water. Irrigation return water is not considered elevated temperature waste for the purpose of this plan.
3. Natural Receiving Water Temperature - The temperature of the receiving water at locations, depths, and times which represent conditions unaffected by any elevated temperature waste discharge or irrigation return waters.
4. Interstate Waters - All rivers, lakes, artificial impoundments, and other waters that flow across or form a part of the boundary with other states or Mexico.
5. Coastal Waters - Waters of the Pacific Ocean outside of enclosed bays and estuaries which are within the territorial limits of California.
6. Enclosed Bays - Indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays will include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to the following: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.
7. Estuaries and Coastal Lagoons - Waters at the mouths of streams which serve as mixing zones for fresh and ocean water during a major portion of the year. Mouths of streams which are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to

¹ This plan revises and supersedes the policy adopted by the State Board on January 7, 1971, and revised October 13, 1971, and June 5, 1972.

extend seaward if significant mixing of fresh and saltwater occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge and appropriate areas of Smith River, Klamath River, Mad River, Eel River, Noyo River, and Russian River.

8. Cold Interstate Waters - Streams and lakes having a range of temperatures generally suitable for trout and salmon including but not limited to the following: Lake Tahoe, Truckee River, West Fork Carson River, East Fork Carson River, West Walker River and Lake Topaz, East Walker River, Minor California-Nevada Interstate Waters, Klamath River, Smith River, Goose Lake, and Colorado River from the California-Nevada stateline to the Needles-Topoc Highway Bridge.
9. Warm Interstate Waters - Interstate streams and lakes having a range of temperature generally suitable for warm water fishes such as bass and catfish. This definition includes but is not limited to the following: Colorado River from the Needles-Topoc Highway Bridge to the northerly international boundary of Mexico, Tijuana River, New River, and Alamo River.
10. Existing Discharge - Any discharge (a) which is presently taking place, or (b) for which waste discharge requirements have been established and construction commenced prior to the adoption of this plan, or (c) any material change in an existing discharge for which construction has commenced prior to the adoption of this plan. Commencement of construction shall include execution of a contract for onsite construction or for major equipment which is related to the condenser cooling system.

Major thermal discharges under construction which are included within this definition are:

- A. Diablo Canyon Units 1 and 2, Pacific Gas and Electric Company.
 - B. Ormond Beach Generating Station Units 1 and 2, Southern California Edison Company.
 - C. Pittsburg No. 7 Generating Plant, Pacific Gas and Electric Company.
 - D. South Bay Generating Plant Unit 4 and Encina Unit 4, San Diego Gas and Electric Company.
11. New Discharge - Any discharge (a) which is not presently taking place unless waste discharge requirements have been established and construction as defined in Paragraph 10 has commenced prior to adoption of this plan or (b) which is presently



taking place and for which a material change is proposed but no construction as defined in Paragraph 10 has commenced prior to adoption of this plan.

12. Planktonic Organism - Phytoplankton, zooplankton and the larvae and eggs of worms, molluscs, and arthropods, and the eggs and larval forms of fishes.
13. Limitations or Additional Limitations - Restrictions on the temperature, location, or volume of a discharge, or restrictions on the temperature of receiving water in addition to those specifically required by this plan.

SPECIFIC WATER QUALITY OBJECTIVES

1. Cold Interstate Waters

- A. Elevated temperature waste discharges into cold interstate waters are prohibited.

2. Warm Interstate Waters

- A. Thermal waste discharges having a maximum temperature greater than 5°F above natural receiving water temperature are prohibited.
- B. Elevated temperature wastes shall not cause the temperature of warm interstate waters to increase by more than 5°F above natural temperature at any time or place.
- C. Colorado River - Elevated temperature wastes shall not cause the temperature of the Colorado River to increase above the natural temperature by more than 5°F or the temperature of Lake Havasu to increase by more than 3°F provided that such increases shall not cause the maximum monthly temperature of the Colorado River to exceed the following:

January	60°F	July	90°F
February	65°F	August	90°F
March	70°F	September	90°F
April	75°F	October	82°F
May	82°F	November	72°F
June	86°F	December	65°F

- D. Lost River - Elevated temperature wastes discharged to the Lost River shall not cause the temperature of the receiving water to increase by more than 2°F



when the receiving water temperature is less than 62°F, and 0°F when the receiving water temperature exceeds 62°F.

- E. Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

3. Coastal Waters

A. Existing discharges

- (1) Elevated temperature wastes shall comply with limitations necessary to assure protection of the beneficial uses and areas of special biological significance.

B. New discharges

- (1) Elevated temperature wastes shall be discharged to the open ocean away from the shoreline to achieve dispersion through the vertical water column.
- (2) Elevated temperature wastes shall be discharged a sufficient distance from areas of special biological significance to assure the maintenance of natural temperature in these areas.
- (3) The maximum temperature of thermal waste discharges shall not exceed the natural temperature of receiving waters by more than 20°F.
- (4) The discharge of elevated temperature wastes shall not result in increases in the natural water temperature exceeding 4°F at (a) the shoreline, (b) the surface of any ocean substrate, or (c) the ocean surface beyond 1,000 feet from the discharge system. The surface temperature limitation shall be maintained at least 50 percent of the duration of any complete tidal cycle.
- (5) Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

4. Enclosed Bays

A. Existing discharges

- (1) Elevated temperature waste discharges shall comply with limitations necessary to assure protection of beneficial uses.



B. New discharges

- (1) Elevated temperature waste discharges shall comply with limitations necessary to assure protection of beneficial uses. The maximum temperature of waste discharges shall not exceed the natural temperature of the receiving waters by more than 20°F.
- (2) Thermal waste discharges having a maximum temperature greater than 4°F above the natural temperature of the receiving water are prohibited.

5. Estuaries

A. Existing discharges

- (1) Elevated temperature waste discharges shall comply with the following:
 - a. The maximum temperature shall not exceed the natural receiving water temperature by more than 20°F.
 - b. Elevated temperature waste discharges either individually or combined with other discharges shall not create a zone, defined by water temperatures of more than 1°F above natural receiving water temperature, which exceeds 25 percent of the cross-sectional area of a main river channel at any point.
 - c. No discharge shall cause a surface water temperature rise greater than 4°F above the natural temperature of the receiving waters at any time or place.
 - d. Additional limitations shall be imposed when necessary to assure protection of beneficial uses.
- (2) Thermal waste discharges shall comply with the provisions of 5A (1) above and, in addition, the maximum temperature of thermal waste discharges shall not exceed 86°F.

B. New discharges

- (1) Elevated temperature waste discharges shall comply with item 5A(1) above.



- (2) Thermal waste discharges having a maximum temperature greater than 4°F above the natural temperature of the receiving water are prohibited.
- (3) Additional limitations shall be imposed when necessary to assure protection of beneficial uses.

GENERAL WATER QUALITY PROVISIONS

1. Additional limitations shall be imposed in individual cases if necessary for the protection of specific beneficial uses and areas of special biological significance. When additional limitations are established, the extent of surface heat dispersion will be delineated by a calculated 1 1/2°F isotherm which encloses an appropriate dispersion area. The extent of the dispersion area shall be:
 - A. Minimized to achieve dispersion through the vertical water column rather than at the surface or in shallow water.
 - B. Defined by the Regional Board for each existing and proposed discharge after receipt of a report prepared in accordance with the implementation section of this plan.
2. The cumulative effects of elevated temperature waste discharges shall not cause temperatures to be increased except as provided in specific water quality objectives contained herein.
3. Areas of special biological significance shall be designated by the State Board after public hearing by the Regional Board and review of its recommendations.
4. Regional Boards may, in accordance with Section 316(a) of the Federal Water Pollution Control Act of 1972, and subsequent federal regulations including 40 CFR 122, grant an exception to Specific Water Quality Objectives in this Plan. Prior to becoming effective, such exceptions and alternative less stringent requirements must receive the concurrence of the State Board.
5. Natural water temperature will be compared with waste discharge temperature by near-simultaneous measurements accurate to within 1°F. In lieu of near-simultaneous measurements, measurements may be made under calculated conditions of constant waste discharge and receiving water characteristics.

IMPLEMENTATION



1. The State Water Resources Control Board and the California Regional Water Quality Control Boards will administer this plan by establishing waste discharge requirements for discharges of elevated temperature wastes.
2. This plan is effective as of the date of adoption by the State Water Resources Control Board and the sections pertaining to temperature control in each of the policies and plans for the individual interstate and coastal waters shall be void and superseded by all applicable provisions of this plan.
3. Existing and future dischargers of thermal waste shall conduct a study to define the effect of the discharge on beneficial uses and, for existing discharges, determine design and operating changes which would be necessary to achieve compliance with the provisions of this plan.
4. Waste discharge requirements for existing elevated temperature wastes shall be reviewed to determine the need for studies of the effect of the discharge on beneficial uses, changes in monitoring programs and revision of waste discharge requirements.
5. All waste discharge requirements shall include a time schedule which assures compliance with water quality objectives by July 1, 1977, unless the discharger can demonstrate that a longer time schedule is required to complete construction of necessary facilities; or, in accordance with any time schedule contained in guidelines promulgated pursuant to Section 304(b) of the Federal Water Pollution Control Act.
6. Proposed dischargers of elevated temperature wastes may be required by the Regional Board to submit such studies prior to the establishment of waste discharge requirements. The Regional Board shall include in its requirements appropriate postdischarge studies by the discharger.
7. The scope of any necessary studies shall be as outlined by the Regional Board and shall be designed to include the following as applicable to an individual discharge:
 - A. Existing conditions in the aquatic environment.
 - B. Effects of the existing discharge on beneficial uses.
 - C. Predicted conditions in the aquatic environment with waste discharge facilities designed and operated in compliance with the provisions of this plan.
 - D. Predicted effects of the proposed discharge on beneficial uses.
 - E. An analysis of costs and benefits of various design alternatives.



- F. The extent to which intake and outfall structures are located and designed so that the intake of planktonic organisms is at a minimum, waste plumes are prevented from touching the ocean substrate or shorelines, and the waste is dispersed into an area of pronounced along-shore or offshore currents.
- 8. All waste discharge requirements adopted for discharges of elevated temperature wastes shall be monitored in order to determine compliance with effluent or receiving water temperature (or heat) requirements.

Furthermore, for significant thermal discharges as determined by the Regional Board or State, Regional Boards shall require expanded monitoring programs, to be carried out either on a continuous or periodic basis, designed to assess whether the source continues to provide adequate protection to beneficial uses (including the protection and propagation of a balanced indigenous community of fish, shellfish, and wildlife, in and on the body of water into which the discharge is made). When periodic expanded monitoring programs are specified, the frequency of the program shall reflect the probable impact of the discharge.

- 9. The State Board or Regional Board may require a discharger(s) to pay a public agency or other appropriate person an amount sufficient to carry out the expanded monitoring program required pursuant to paragraph 8 above if:
 - A. The discharger has previously failed to carry out monitoring programs in a manner satisfactory to the State Board or Regional Board, or;
 - B. More than a single facility, under separate ownerships, may significantly affect the thermal characteristics of the body of water, and the owners of such facilities are unable to reach agreement on a cooperative program within a reasonable time period specified by the State Board or Regional Board.



APPENDIX

State Policy for Water Quality Control (1972)

CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

STATE POLICY FOR
WATER QUALITY CONTROL

I. FOREWORD

To assure a comprehensive statewide program of water quality control, the California Legislature by its adoption of the Porter-Cologne Water Quality Control Act in 1969 set forth the following statewide policy:

The people of the state have a primary interest in the conservation, control, and utilization of the water resources, and the quality of all the waters shall be protected for use and enjoyment.

Activities and factors which may affect the quality of the waters shall be regulated to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible.

The health, safety, and welfare of the people requires that there be a statewide program for the control of the quality of all the waters of the state. The state must be prepared to exercise its full power and jurisdiction to protect the quality of waters from degradation.

The waters of the state are increasingly influenced by interbasin water development projects and other statewide considerations. Factors of precipitation, topography, population, recreation, agriculture, industry, and economic development vary from region to region. The statewide program for water quality control can be most effectively administered regionally, within a framework of statewide coordination and policy.

To carry out this policy, the Legislature established the State Water Resources Control Board and nine California Regional Water Quality Control Boards as the principal state agencies with primary responsibilities for the coordination and control of water quality. The State Board is required pursuant to legislative directives set forth in the California Water Code (Division 7, Chapter 3, Article 3, Sections 13140 Ibid) to formulate and adopt state policy for water quality control consisting of all or any of the following:

Adopted by the State Water Resources Control Board by motion of July 6, 1972.

I. (continued)

Water quality principles and guidelines for long-range resource planning, including groundwater and surface water management programs and control and use of reclaimed water.

Water quality objectives at key locations for planning and operation of water resource development projects and for water quality control activities.

Other principles and guidelines deemed essential by the State Board for water quality control.

II. GENERAL PRINCIPLES

The State Water Resources Control Board hereby finds and declares that protection of the quality of the waters of the State for use and enjoyment by the people of the State requires implementation of water resources management programs which will conform to the following general principles:

1. Water rights and water quality control decisions must assure protection of available fresh water and marine water resources for maximum beneficial use.
2. Municipal, agricultural, and industrial wastewaters must be considered as a potential integral part of the total available fresh water resource.
3. Coordinated management of water supplies and wastewaters on a regional basis must be promoted to achieve efficient utilization of water.
4. Efficient wastewater management is dependent upon a balanced program of source control of environmentally hazardous substances^{1/}, treatment of wastewaters, reuse of reclaimed water, and proper disposal of effluents and residuals.
5. Substances not amenable to removal by treatment systems presently available or planned for the immediate future must be prevented from entering sewer systems

^{1/} Those substances which are harmful or potentially harmful even in extremely small concentration to man, animals, or plants because of biological concentration, acute or chronic toxicity, or other phenomenon.

II. 5. (continued)

in quantities which would be harmful to the aquatic environment, adversely affect beneficial uses of water, or affect treatment plant operation.

Persons responsible for the management of waste collection, treatment, and disposal systems must actively pursue the implementation of their objective of source control for environmentally hazardous substances. Such substances must be disposed of such that environmental damage does not result.

6. Wastewater treatment systems must provide sufficient removal of environmentally hazardous substances which cannot be controlled at the source to assure against adverse effects on beneficial uses and aquatic communities.
7. Wastewater collection and treatment facilities must be consolidated in all cases where feasible and desirable to implement sound water quality management programs based upon long-range economic and water quality benefits to an entire basin.
8. Institutional and financial programs for implementation of consolidated wastewater management systems must be tailored to serve each particular area in an equitable manner.
9. Wastewater reclamation and reuse systems which assure maximum benefit from available fresh water resources shall be encouraged. Reclamation systems must be an appropriate integral part of the long-range solution to the water resources needs of an area and incorporate provisions for salinity control and disposal of nonreclaimable residues.
10. Wastewater management systems must be designed and operated to achieve maximum long-term benefit from the funds expended.
11. Water quality control must be based upon latest scientific findings. Criteria must be continually refined as additional knowledge becomes available.
12. Monitoring programs must be provided to determine the effects of discharges on all beneficial water uses including effects on aquatic life and its diversity and seasonal fluctuations.

III. PROGRAM OF IMPLEMENTATION

Water quality control plans and waste discharge requirements hereafter adopted by the State and Regional Boards under Division 7 of the California Water Code shall conform to this policy.

This policy and subsequent State plans will guide the regulatory, planning, and financial assistance programs of the State and Regional Boards. Specifically, they will (1) supersede any regional water quality control plans for the same waters to the extent of any conflict, (2) provide a basis for establishing or revising waste discharge requirements when such action is indicated, and (3) provide general guidance for the development of basin plans.

Water quality control plans adopted by the State Board will include minimum requirements for effluent quality and may specifically define the maximum constituent levels acceptable for discharge to various waters of the State. The minimum effluent requirements will allow discretion in the application of the latest available technology in the design and operation of wastewater treatment systems. Any treatment system which provides secondary treatment, as defined by the specific minimum requirements for effluent quality, will be considered as providing the minimum acceptable level of treatment. Advanced treatment systems will be required where necessary to meet water quality objectives.

Departures from this policy and water quality control plans adopted by the State Board may be desirable for certain individual cases. Exceptions to the specific provisions may be permitted within the broad framework of well established goals and water quality objectives.

APPENDIX

Water Quality Control Plan for Ocean Waters of California (1990) (Ocean Plan)

WATER QUALITY CONTROL PLAN

OCEAN WATERS OF CALIFORNIA

CALIFORNIA OCEAN PLAN



1990

STATE WATER RESOURCES CONTROL BOARD

State of California
STATE WATER RESOURCES CONTROL BOARD

1990
CALIFORNIA OCEAN PLAN
WATER QUALITY CONTROL PLAN
OCEAN WATERS OF CALIFORNIA

Adopted and Effective

March 22, 1990

CORRECTED COPY
(TABLE B, RADIOACTIVITY)
OCTOBER 18, 1990.

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 90-27

APPROVAL OF AMENDMENT TO THE
WATER QUALITY CONTROL PLAN FOR OCEAN WATERS OF CALIFORNIA
(CALIFORNIA OCEAN PLAN)

WHEREAS:

1. The State Water Resources Control (State Board) adopted the Ocean Plan on July 6, 1972 and revised the plan in 1978, 1983, and 1988.
2. The State Board may adopt water quality control plans for waters for which water quality standards are required by the Federal Clean Water Act in accordance with California Water Code Section 13170.
3. The State Board is responsible for reviewing Ocean Plan water quality standards and for modifying and adopting standards in accordance with Section 303(c)(1) of the Federal Clean Water Act and Section 13170.2(b) of the California Water Code.
4. The State Board has considered relevant management agency agreements in accordance with Section 13170.1 of the California Water Code.
5. Additional information pertinent to water quality objectives for dioxin and related compounds is being developed and reviewed by the scientific community.
6. The State Board prepared and circulated a draft Function Equivalent Document in accordance with the provisions of the California Environmental Quality Act and Title 14, California Code of Regulations 15251(g).
7. The State Board conducted a public hearing in Torrance on August 29, 1989 to solicit comments regarding the proposed amendments of the Ocean Plan and has reviewed and considered carefully all comments and testimony received. The State Board considered the information contained in the Functional Equivalent Document prior to approval of the California Ocean Plan.
8. The California Ocean Plan as approved will not have a significant adverse effect on the environment.

THEREFORE BE IT RESOLVED:

1. That the State Board approves the Functional Equivalent Document for the amendment of the Water Quality Control Plan for Ocean Waters of California.
2. That the State Board hereby adopts amendments to the California Ocean Plan (attached).

3. That the State Board authorizes the Executive Director, or his designee, to transmit the Plan to the U.S. Environmental Protection Agency, Region 9 in compliance with Section 303(c)(1) of the Clean Water Act.
4. That the State Board directs its staff to review the water quality objective for dioxin and related compounds as soon as possible within the next triennial review period.
5. That the State Board declares its intent to require continual monitoring of the marine environment to assure that the Plan reflects the latest available data and that the water quality objectives are adequate to fully protect indigenous marine species and to protect human health.

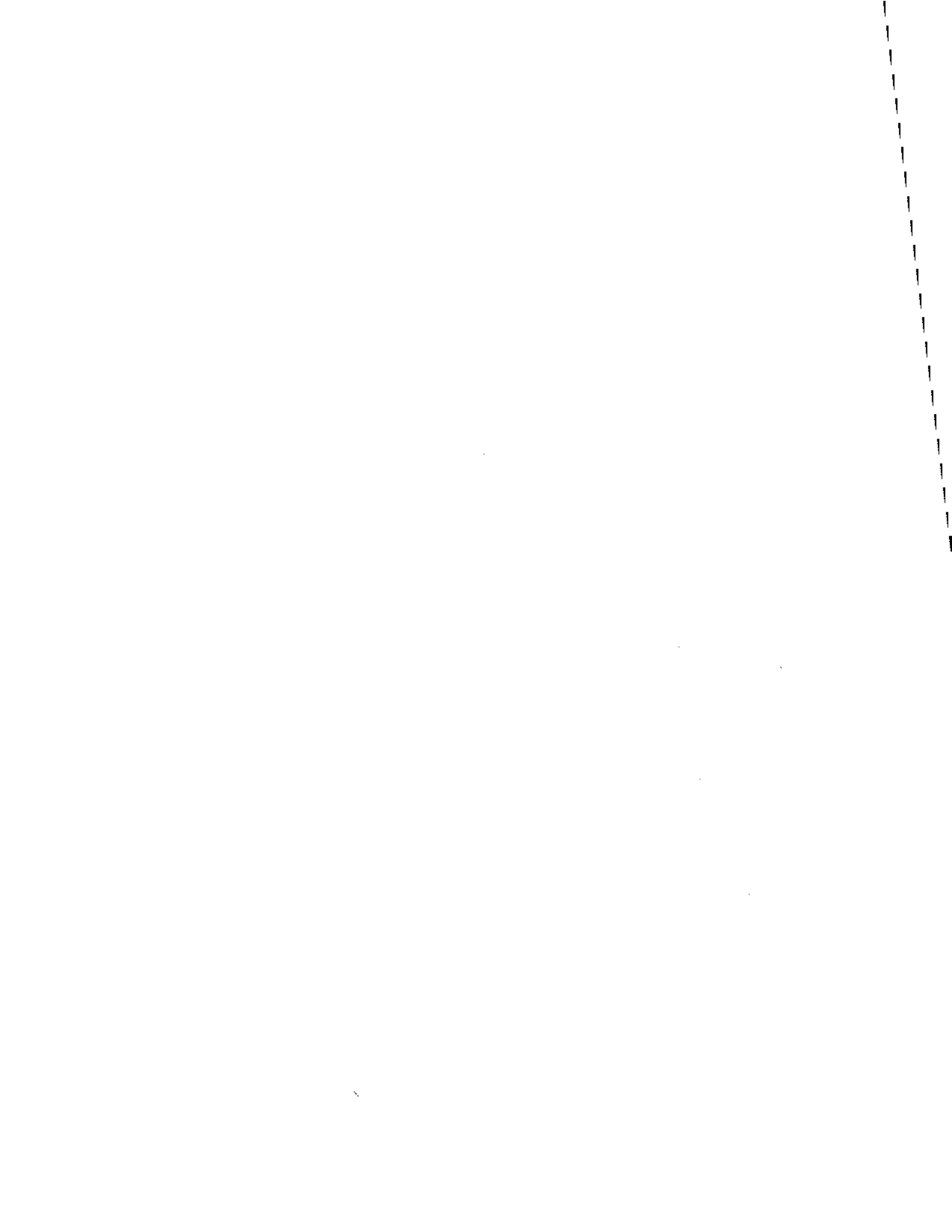
CERTIFICATION

The undersigned Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on March 22, 1990.


Maureen Marche
Administrative Assistant to the Board

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CALIFORNIA OCEAN PLAN
WATER QUALITY CONTROL PLAN FOR
OCEAN WATERS OF CALIFORNIA

INTRODUCTION

In furtherance of legislative policy set forth in Section 13000 of Division 7 of the California Water Code (Stats. 1969, Chap. 482) pursuant to the authority contained in Section 13170 and 13170.2 (Stats. 1971, Chap. 1288) the State Water Resources Control Board hereby finds and declares that protection of the quality of the ocean* waters for use and enjoyment by the people of the State requires control of the discharge of waste* to ocean* waters in accordance with the provisions contained herein. The Board finds further that this plan shall be reviewed at least every three years to guarantee that the current standards are adequate and are not allowing degradation* to marine species or posing a threat to public health.

This plan is applicable, in its entirety, to point source discharges to the ocean*. Nonpoint sources of waste* discharges to the ocean* are subject to Chapter I Beneficial Uses, Chapter II - Water Quality Objectives, Chapter III - General Requirements, Chapter IV - Table B (wherein compliance with water quality objectives shall, in all cases, be determined by direct measurements in the receiving waters) and Chapter V - Discharge Prohibitions.

This plan is not applicable to discharges to enclosed* bays and estuaries* or inland waters nor is it applicable to vessel wastes, or the control of dredging spoil.

Provisions regulating the thermal aspects of waste* discharged to the ocean* are set forth in the Water Quality Control Plan for the Control of Temperature in the Coastal and Interstate Waters and Enclosed* Bays and Estuaries* of California.

Chapter I
BENEFICIAL USES

The beneficial uses of the ocean* waters of the State that shall be protected include industrial water supply, water contact and non-contact recreation, including aesthetic enjoyment, navigation, commercial and sport fishing, mariculture*, preservation and enhancement of Areas of Special Biological Significance, rare and endangered species, marine habitat, fish migration, fish spawning and shellfish* harvesting.

Chapter II
WATER QUALITY OBJECTIVES

This chapter sets forth limits or levels of water quality characteristics for ocean* waters to ensure the reasonable protection of beneficial uses and the prevention of nuisance. The discharge of waste* shall not cause violation of these objectives.

The Water Quality Objectives and Effluent Quality Requirements are defined by a statistical distribution when appropriate. This method recognizes the normally occurring variations in treatment efficiency and sampling and analytical techniques and does not condone poor operating practices.

* See Appendix 1 for definition of terms.

Compliance with the water quality objectives of this chapter shall be determined from samples collected at stations representative of the area within the waste field where initial* dilution is completed.

A. Bacterial Characteristics

i. Water-Contact Standards

Within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and in areas outside this zone used for water contact sports, as determined by the Regional Board, but including all kelp* beds, the following bacterial objectives shall be maintained throughout the water column:

- a. Samples of water from each sampling station shall have a density of total coliform organisms less than 1,000 per 100 ml (10 per ml); provided that not more than 20 percent of the samples at any sampling station, in any 30-day period, may exceed 1,000 per 100 ml (10 per ml), and provided further that no single sample when verified by a repeat sample taken within 48 hours shall exceed 10,000 per 100 ml (100 per ml).
- b. The fecal coliform density based on a minimum of not less than five samples for any 30-day period, shall not exceed a geometric mean of 200 per 100 ml nor shall more than 10 percent of the total samples during any 60-day period exceed 400 per 100 ml.

The "Initial* Dilution Zone" of wastewater outfalls shall be excluded from designation as "kelp* beds" for purposes of bacterial standards, and Regional Boards should recommend extension of such exclusion zone where warranted to the State Board (for consideration under Chapter V.I.F.). Adventitious assemblages of kelp plants on waste discharge structures (e.g., outfall pipes and diffusers) do not constitute kelp* beds for purposes of bacterial standards.

2. Shellfish* Harvesting Standards

At all areas where shellfish* may be harvested for human consumption, as determined by the Regional Board, the following bacterial objectives shall be maintained throughout the water column:

The median total coliform density shall not exceed 70 per 100 ml, and not more than 10 percent of the samples shall exceed 230 per 100 ml.

B. Bacterial Assessment and Remedial Action Requirements

The requirements listed below shall be used to 1) determine the occurrence and extent of any impairment of a beneficial use due to bacterial contamination; 2) generate information which can be used in the development of an enterococcus standard; and 3) provide the basis for remedial actions necessary to minimize or eliminate any impairment of a beneficial use.

* See Appendix I for definition of terms.

Measurement of enterococcus density shall be conducted at all stations where measurement of total and fecal coliforms are required. In addition to the requirements of Section II.A.1., if a shore station consistently exceeds a coliform objective or exceeds a geometric mean enterococcus density of 24 organisms per 100 ml for a 30-day period or 12 organisms per 100 ml for a six-month period, the Regional Board shall require the appropriate agency to conduct a survey to determine if that agency's discharge is the source of the contamination. The geometric mean shall be a moving average based on no less than five samples per month, spaced evenly over the time interval. When a sanitary survey identifies a controllable source of indicator organisms associated with a discharge of sewage, the Regional Board shall take action to control the source.

Waste discharge requirements shall require the discharger to conduct sanitary surveys when so directed by the Regional Board. Waste discharge requirements shall contain provisions requiring the discharger to control any controllable discharges identified in a sanitary survey.

C. Physical Characteristics

1. Floating particulates and grease and oil shall not be visible.
2. The discharge of waste* shall not cause aesthetically undesirable discoloration of the ocean* surface.
3. Natural* light shall not be significantly* reduced at any point outside the initial* dilution zone as the result of the discharge of waste*.
4. The rate of deposition of inert solids and the characteristics of inert solids in ocean* sediments shall not be changed such that benthic communities are degraded*.

D. Chemical Characteristics

1. The dissolved oxygen concentration shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste* materials.
2. The pH shall not be changed at any time more than 0.2 units from that which occurs naturally.
3. The dissolved sulfide concentration of waters in and near sediments shall not be significantly* increased above that present under natural conditions.
4. The concentration of substances set forth in Chapter IV, Table B, in marine sediments shall not be increased to levels which would degrade* indigenous biota.
5. The concentration of organic materials in marine sediments shall not be increased to levels which would degrade* marine life.
6. Nutrient materials shall not cause objectionable aquatic growths or degrade* indigenous biota.

* See Appendix I for definition of terms.

E. Biological Characteristics

1. Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded*.
2. The natural taste, odor, and color of fish, shellfish*, or other marine resources used for human consumption shall not be altered.
3. The concentration of organic materials in fish, shellfish* or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health.

F. Radioactivity

1. Discharge of radioactive waste* shall not degrade* marine life.

Chapter III
GENERAL REQUIREMENTS FOR MANAGEMENT OF
WASTE* DISCHARGE TO THE OCEAN*

- A. Waste* management systems that discharge to the ocean* must be designed and operated in a manner that will maintain the indigenous marine life and a healthy and diverse marine community.
- B. Waste discharged* to the ocean* must be essentially free of:
 1. Material that is floatable or will become floatable upon discharge.
 2. Settleable material or substances that may form sediments which will degrade* benthic communities or other aquatic life.
 3. Substances which will accumulate to toxic levels in marine waters, sediments or biota.
 4. Substances that significantly* decrease the natural* light to benthic communities and other marine life.
 5. Materials that result in aesthetically undesirable discoloration of the ocean* surface.
- C. Waste* effluents shall be discharged in a manner which provides sufficient initial* dilution to minimize the concentrations of substances not removed in the treatment.
- D. Location of waste* discharges must be determined after a detailed assessment of the oceanographic characteristics and current patterns to assure that:
 1. Pathogenic organisms and viruses are not present in areas where shellfish* are harvested for human consumption or in areas used for swimming or other body-contact sports.

* See Appendix I for definition of terms.

2. Natural water quality conditions are not altered in areas designated as being of special biological significance or areas that existing marine laboratories use as a source of seawater.
3. Maximum protection is provided to the marine environment.

Waste* that contains pathogenic organisms or viruses should be discharged a sufficient distance from shellfishing* and water-contact sports areas to maintain applicable bacterial standards without disinfection. Where conditions are such that an adequate distance cannot be attained, reliable disinfection in conjunction with a reasonable separation of the discharge point from the area of use must be provided. Disinfection procedures that do not increase effluent toxicity and that constitute the least environmental and human hazard should be used.

Chapter IV
QUALITY REQUIREMENTS
FOR WASTE* DISCHARGES
(EFFLUENT QUALITY REQUIREMENTS)

This chapter sets forth the quality requirements for waste* discharge to the ocean*.

Table A limitations apply only to publicly owned treatment works and industrial discharges for which Effluent Limitations Guidelines have not been established pursuant to Sections 301, 302, 304, or 306 of the Federal Clean Water Act.

Table B limitations apply to all discharges within the jurisdiction of this plan.

Table A limitations, and effluent concentrations calculated from Table B limitations, shall apply to a discharger's total effluent, of whatever origin (i.e. gross, not net, discharge), except where otherwise specified in this Plan.

The State Board is authorized to administer and enforce effluent requirements established pursuant to the Federal Clean Water Act. Effluent limitations established under Sections 301, 302, 306, 307, 316, 403, and 405 of the aforementioned Federal Act and administrative procedures pertaining thereto, are included in this plan by reference. Compliance with Table A limitations, or Environmental Protection Agency Effluent Limitations Guidelines for industrial discharges, based on Best Practicable Control Technology, shall be the minimum level of treatment acceptable under this plan, and shall define reasonable treatment and waste control technology.

* See Appendix I for definition of terms.

TABLE A
MAJOR WASTEWATER CONSTITUENTS AND PROPERTIES

	<u>Unit of measurement</u>	<u>Limiting Concentrations</u>		
		<u>Monthly (30 day Average)</u>	<u>Weekly (7 day Average)</u>	<u>Maximum at any time</u>
Grease and Oil	mg/l	25	40	75
Suspended Solids			see below+	
Settleable Solids	ml/l	1.0	1.5	3.0
Turbidity	NTU	75	100	225
pH	units		within limits of 6.0 to 9.0 at all times	
Acute* Toxicity	TUa	1.5	2.0	2.5

+Suspended Solids: Dischargers shall, as a 30-day average, remove 75% of suspended solids from the influent stream before discharging wastewaters to the ocean*, except that the effluent limitation to be met shall not be lower than 60 mg/l. Regional Boards may recommend that the State Board (Chapter VI.F.), with the concurrence of the Environmental Protection Agency, adjust the lower effluent concentration limit (the 60 mg/l above) to suit the environmental and effluent characteristics of the discharge. As a further consideration in making such recommendation for adjustment, Regional Boards should evaluate effects on existing and potential water* reclamation projects.

If the lower effluent concentration limit is adjusted, the discharger shall remove 75% of suspended solids from the influent stream at any time the influent concentration exceeds four times such adjusted effluent limit.

Effluent limitations shall be imposed in a manner prescribed by the State Board such that the concentrations set forth below as water quality objectives shall not be exceeded in the receiving water upon completion of initial* dilution, except that limitations indicated for radioactivity shall apply directly to the undiluted waste* effluent.

* See Appendix I for definition of terms.

TABLE B
TOXIC MATERIALS LIMITATIONS

	<u>Limiting Concentrations</u>			
	<u>Units of Measurement</u>	<u>6-Month Median</u>	<u>Daily Maximum</u>	<u>Instantaneous Maximum</u>
OBJECTIVES FOR PROTECTION OF MARINE AQUATIC LIFE				
Arsenic	ug/l	8	32	80
Cadmium	ug/l	1	4	10
Chromium (Hexavalent) (see below, a)	ug/l	2	8	20
Copper	ug/l	3	12	30
Lead	ug/l	2	8	20
Mercury	ug/l	0.04	0.16	0.4
Nickel	ug/l	5	20	50
Selenium	ug/l	15	60	150
Silver	ug/l	0.7	2.8	7
Zinc	ug/l	20	80	200
Cyanide (see below, b)	ug/l	1	4	10
Total Chlorine Residual (For intermittent chlorine sources, see below, c)	ug/l	2	8	60
Ammonia (expressed as nitrogen)	ug/l	600	2400	6000
Chronic* Toxicity	TUc		1	
Phenolic Compounds (non-chlorinated)	ug/l	30	120	300
Chlorinated Phenolics	ug/l	1	4	10
Endosulfan	ng/l	9	18	27
Endrin	ng/l	2	4	6
HCH*	ng/l	4	8	12
Radioactivity	Not to exceed limits specified in Title 17, Division 5, Chapter 4, Group 3, Article 3, Section 32069 of the California Code of Regulations.			

* See Appendix I for definition of terms.

Table B Continued

<u>Chemical</u>	<u>Units of Measurement</u>	<u>30-day Average</u>
OBJECTIVES FOR PROTECTION OF HUMAN HEALTH -- NONCARCINOGENS		
acrolein	ug/l	220
antimony	mg/l	1.2
bis(2-chloroethoxy) methane	ug/l	4.4
bis(2-chloroisopropyl) ether	mg/l	1.2
chlorobenzene	ug/l	570
chromium (III)	mg/l	190
di-n-butyl phthalate	mg/l	3.5
dichlorobenzenes*	mg/l	5.1
1,1-dichloroethylene	mg/l	7.1
diethyl phthalate	mg/l	33
dimethyl phthalate	mg/l	820
4,6-dinitro-2-methylphenol	ug/l	220
2,4-dinitrophenol	ug/l	4.0
ethylbenzene	mg/l	4.1
fluoranthene	ug/l	15
hexachlorocyclopentadiene	ug/l	58
isophorone	mg/l	150
nitrobenzene	ug/l	4.9
thallium	ug/l	14
toluene	mg/l	85
1,1,2,2-tetrachloroethane	mg/l	1.2
tributyltin	ng/l	1.4
1,1,1-trichloroethane	mg/l	540
1,1,2-trichloroethane	mg/l	43

OBJECTIVES FOR PROTECTION OF HUMAN HEALTH -- CARCINOGENS

acrylonitrile	ug/l	0.10
aldrin	ng/l	0.022
benzene	ug/l	5.9
benzidine	ng/l	0.069
beryllium	ng/l	33
bis(2-chloroethyl) ether	ug/l	0.045
bis(2-ethylhexyl) phthalate	ug/l	3.5
carbon tetrachloride	ug/l	0.90
chlordane*	ng/l	0.023
chloroform	mg/l	0.13
DDT*	ng/l	0.17
1,4-dichlorobenzene	ug/l	18
3,3'-dichlorobenzidine	ng/l	8.1

* See Appendix I for definition of terms.

Table B Continued

<u>Chemical</u>	<u>Units of Measurement</u>	<u>30-day Average</u>
1,2-dichloroethane	mg/l	0.13
dichloromethane	mg/l	0.45
i,3-dichloropropene	ug/l	8.9
dieldrin	ng/l	0.040
2,4-dinitrotoluene	ug/l	2.6
1,2-diphenylhydrazine	ug/l	0.16
halomethanes*	mg/l	0.13
heptachlor*	ng/l	0.72
hexachlorobenzene	ng/l	0.21
hexachlorobutadiene	ug/l	14
hexachloroethane	ug/l	2.5
N-nitrosodimethylamine	ug/l	7.3
N-nitrosodiphenylamine	ug/l	2.5
PAHs*	ng/l	8.8
PCBs*	ng/l	0.019
TCDD equivalents*	pg/l	0.0039
tetrachloroethylene	ug/l	99
toxaphene	ng/l	0.21
trichloroethylene	ug/l	27
2,4,6-trichlorophenol	ug/l	0.29
vinyl chloride	ug/l	36

- a) Dischargers may at their option meet this limitation as a total chromium limitation.
- b) If a discharger can demonstrate to the satisfaction of the Regional Board (subject to EPA approval) that an analytical method is available to reliably distinguish between strongly and weakly complexed cyanide, effluent limitations for cyanide may be met by the combined measurement of free cyanide, simple alkali metal cyanides, and weakly complexed organometallic cyanide complexes. In order for the analytical method to be acceptable, the recovery of free cyanide from metal complexes must be comparable to that achieved by Standard Methods 412F, G, and H (Standard Methods for the Examination of Water and Wastewater. Joint Editorial Board, American Public Health Association, American Water Works Association, and Water Pollution Control Federation. Most recent edition.).
- c) Water quality objectives for total chlorine residual applying to intermittent discharges not exceeding two hours, shall be determined through the use of the following equation:

$$\log y = -0.43 (\log x) + 1.8$$

where: y = the water quality objective (in ug/l) to apply when chlorine is being discharged;

x = the duration of uninterrupted chlorine discharge in minutes.

* See Appendix I for definition of terms.

Implementation Provisions for Table B

A. Calculation of Effluent Limitations

Effluent limitations for parameters identified in Table B with the exception of Radioactivity, shall be determined through the use of the following equation:

$$C_e = C_o + D_m (C_o - C_s) \quad (1)$$

where:

- C_e = the effluent concentration limit,
- C_o = the concentration to be met at the completion of initial* dilution,
- C_s = background seawater concentration (see Table C below),
- D_m = minimum probable initial* dilution expressed as parts seawater per part wastewater.

For the purpose of this Plan, minimum initial dilution is the lowest average initial dilution within any single month of the year. Dilution estimates shall be based on observed waste flow characteristics, observed receiving water density structure, and the assumption that no currents, of sufficient strength to influence the initial dilution process, flow across the discharge structure.

The Executive Director of the State Board shall identify standard dilution models for use in determining D_m, and shall assist the Regional Board in evaluating D_m for specific waste discharger. Dischargers may propose alternative methods of calculating D_m, and the Regional Board may accept such method upon verification of its accuracy and applicability.

TABLE C
BACKGROUND SEAWATER CONCENTRATIONS (C_s)

<u>Waste Constituent</u>	<u>C_s (ug/l)</u>
Arsenic	3
Copper	2
Mercury	0.0005
Silver	0.16
Zinc	8

For all other Table B parameters, C_s = 0.

The six-month median effluent concentration limit shall apply as a moving median of daily values for any 180 day period in which daily values represent flow weighted

* See Appendix I for definition of terms.

average concentrations within a 24-hour period. For intermittent discharges, the daily value shall be considered to equal zero for days on which no discharge occurred.

The daily maximum effluent concentration limit shall apply to flow weighted 24 hour composite samples.

The instantaneous maximum shall apply to grab sample determinations.

If only one sample is collected during the time period associated with the water quality objective (e.g., 30-day average or 6-month median), the single measurement shall be used to determine compliance with the effluent limitation for the entire time period.

Discharge requirements shall also specify effluent requirements in terms of mass emission rate limits utilizing the general formula:

$$\text{lbs/day} = 8.34 \times C_e \times Q \quad (2)$$

The six-month median limit on daily mass emissions shall be determined using the six-month median effluent concentration as C_e and the observed flow rate Q in millions of gallons per day. The daily maximum mass emission shall be determined using the daily maximum effluent concentration limit as C_e and the observed flow rate Q in millions of gallons per day.

Any significant change in waste* flow shall be cause for reevaluating effluent quality requirements.

B. Compliance Determination

All analytical data shall be reported uncensored with detection limits and quantitation limits identified. For any effluent limitation, compliance shall be determined using appropriate statistical methods to evaluate multiple samples. Compliance based on a single sample analysis should be determined where appropriate as described below.

When a calculated effluent limitation is greater than or equal to the PQL*, compliance shall be determined based on the calculated effluent limitation and either single or multiple sample analyses.

When the calculated effluent limitation is below the PQL*, compliance determinations based on analysis of a single sample shall only be undertaken if the concentration of the constituent of concern in the sample is greater than or equal to the PQL*.

When the calculated effluent limitation is below the PQL* and recurrent analytical responses between the PQL* and the calculated limit occur, compliance shall be determined by statistical analysis of multiple samples. Sufficient sampling and analysis shall be required to determine compliance.

Published values for MDL*s and PQL*s should be used except where revised MDL*s and PQL*s are available from recent laboratory performance evaluations, in which case the

* See Appendix I for definition of terms.

revised MDL*s and PQL*s should be used. Where published values are not available the Regional Boards should determine appropriate values based on available information.

If a discharger believes the sample matrix under consideration in the waste discharge requirements is sufficiently different from that used for an established MDL* value, the discharger may demonstrate to the satisfaction of the Regional Board what the appropriate MDL* should be for the discharger's matrix. In this case the PQL* shall be established at the limit of quantitation (equal to 10 standard deviations above the average measured blank used for development of the MDL* in the discharger's matrix).

When determining compliance based on a single sample, with a single effluent limitation which applies to a group of chemicals (e.g., PCBs) concentrations of individual members of the group may be considered to be zero if the analytical response for individual chemicals falls below the MDL* for that parameter.

Due to the large total volume of powerplant and other heat exchange discharges, special procedures must be applied for determining compliance with Table B limitations on a routine basis. Effluent concentration values (C_e) shall be determined through the use of equation 1 considering the minimal probable initial* dilution of the combined effluent (in-plant waste streams plus cooling water flow). These concentration values shall then be converted to mass emission limitations as indicated in equation 2. The mass emission limits will then serve as requirements applied to all inplant waste* streams taken together which discharge into the cooling water flow, except that limitations on total chlorine residual, chronic* toxicity and instantaneous maximum limitations on Table B toxic materials shall apply to, and be measured in, the combined final effluent, as adjusted for dilution with ocean water. The Table B limitation on radioactivity shall apply to the undiluted combined final effluent.

C. Toxicity Reduction Requirements

If a discharge consistently exceeds an effluent limitation based on a toxicity objective in Table B, a toxicity reduction evaluation (TRE) is required. The TRE shall include all reasonable steps to identify the source of toxicity. Once the source(s) of toxicity is identified, the discharger shall take all reasonable steps necessary to reduce toxicity to the required level.

The following shall be incorporated into waste discharge requirements: (1) a requirement to conduct a TRE if the discharge consistently exceeds its toxicity effluent limitation, and (2) a provision requiring a discharger to take all reasonable steps to reduce toxicity once the source of toxicity is identified.

* See Appendix I for definition of terms.

Chapter V
DISCHARGE PROHIBITIONS

A. Hazardous Substances

The discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste* into the ocean* is prohibited.

B. Areas of Special Biological Significance

Waste* shall not be discharged to areas designated as being of special biological significance. Discharges shall be located a sufficient distance from such designated areas to assure maintenance of natural water quality conditions in these areas.

C. Sludge

Pipeline discharge of sludge to the ocean* is prohibited by federal law; the discharge of municipal and industrial waste* sludge directly to the ocean*, or into a waste* stream that discharges to the ocean*, is prohibited by this Plan. The discharge of sludge digester supernatant directly to the ocean*, or to a waste* stream that discharges to the ocean* without further treatment, is prohibited.

It is the policy of the State Board that the treatment, use and disposal of sewage sludge shall be carried out in the manner found to have the least adverse impact on the total natural and human environment. Therefore, if federal law is amended to permit such discharge, which could affect California waters, the State Board may consider requests for exceptions to this section under Chapter VI, F. of this Plan, provided further that an Environmental Impact Report on the proposed project shows clearly that any available alternative disposal method will have a greater adverse environmental impact than the proposed project.

D. By-Passing

The by-passing of untreated wastes* containing concentrations of pollutants in excess of those of Table A or Table B to the ocean* is prohibited.

Chapter VI
GENERAL PROVISIONS

A. Effective Date

This Plan is in effect as of the date of adoption by the State Water Resources Control Board.

* See Appendix I for definition of terms.

B. Waste Discharge Requirements

The Regional Boards may establish more restrictive water quality objectives and effluent quality requirements than those set forth in this Plan as necessary for the protection of beneficial uses of ocean* waters.

Regional Boards may impose alternative less restrictive provisions than those contained within Table B of the Plan, provided an applicant can demonstrate that:

Reasonable control technologies (including source control, material substitution, treatment and dispersion) will not provide for complete compliance; or

Any less stringent provisions would encourage water* reclamation;

Provided further that:

- a) Any alternative water quality objectives shall be below the conservative estimate of chronic toxicity, as given in Table D below, and such alternative will provide for adequate protection of the marine environment;
- b) A receiving water toxicity* objective of 1 TUC is not exceeded; and
- c) The State Board grants an exception (Chapter VI.F.) to the Table B limits as established in the Regional Board findings and alternative limits.

TABLE D
CONSERVATIVE ESTIMATES OF CHRONIC TOXICITY

<u>Constituent</u>	Estimate of Chronic Toxicity <u>(ug/l)</u>
Arsenic	19
Cadmium	8
Hexavalent Chromium	18
Copper	5
Lead	22
Mercury	0.4
Nickel	48
Silver	3
Zinc	51
Cyanide	10
Total Chlorine Residual	10.0
Ammonia	4,000.0
Phenolic Compounds (non-chlorinated)	a)(see below)
Chlorinated Phenolics	a)
Chlorinated Pesticides and PCB's	b)

* See Appendix I for definition of terms.

- a. There is insufficient data for phenolics to estimate chronic toxicity levels. Requests for modification of water quality objectives for these waste* constituents must be supported by chronic toxicity data for representative sensitive species. In such cases, applicants seeking modification of water quality objectives should consult the Regional Water Quality Control Board to determine the species and test conditions necessary to evaluate chronic effects.
- b. Limitations on chlorinated pesticides and PCB's shall not be modified so that the total of these compounds is increased above the limitations in Table B (6-Month Median = 31 ng/l, Daily Maximum = 62 ng/l, and Instantaneous Maximum = 93 ng/l).

C. Revision of Waste* Discharge Requirements

The Regional Board shall revise the waste* discharge requirements for existing discharges as necessary to achieve compliance with this Plan and shall also establish a time schedule for such compliance.

D. Monitoring Program

The Regional Boards shall require dischargers to conduct self-monitoring programs and submit reports necessary to determine compliance with the waste* discharge requirements, and may require dischargers to contract with agencies or persons acceptable to the Regional Board to provide monitoring reports. Monitoring provisions contained in waste discharge requirements shall be in accordance with the Monitoring Procedures provided in Appendix II.

Where the Regional Board is satisfied that any substance(s) of Table B will not significantly occur in a discharger's effluent, the Regional Board may elect not to require monitoring for such substance(s), provided the discharger submits periodic certification that such substance(s) are not added to the waste* stream, and that no change has occurred in activities that could cause such substance(s) to be present in the waste* stream. Such election does not relieve the discharger from the requirement to meet the limitations of Table B.

The Regional Board may require monitoring of bioaccumulation of toxicants in the discharge zone. Organisms and techniques for such monitoring shall be chosen by the Regional Board on the basis of demonstrated value in waste* discharge monitoring.

E. Areas of Special Biological Significance

Areas of special biological significance shall be designated by the State Board after a public hearing by the Regional Board and review of its recommendations.

F. State Board Exceptions to Plan Requirements

The State Board may, in compliance with the California Environmental Quality Act, subsequent to a public hearing, and with the concurrence of the Environmental Protection Agency, grant exceptions where the Board determines:

* See Appendix I for definition of terms.

1. The exception will not compromise protection of ocean* waters for beneficial uses,
and
2. The public interest will be served.

* See Appendix I for definition of terms.

APPENDIX I

DEFINITION OF TERMS

ACUTE TOXICITY

a. Acute Toxicity (TUa)

Expressed in Toxic Units Acute (TUa)

$$TUa = 100/96\text{-hr LC } 50\%$$

b. Lethal Concentration 50% (LC 50)

LC 50 (percent waste giving 50% survival of test organisms) shall be determined by static or continuous flow bioassay techniques using standard test species. If specific identifiable substances in wastewater can be demonstrated by the discharger as being rapidly rendered harmless upon discharge to the marine environment, but not as a result of dilution, the LC 50 may be determined after the test samples are adjusted to remove the influence of those substances.

When it is not possible to measure the 96-hour LC 50 due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

$$TUa = \frac{\log(100 - S)}{1.7}$$

S = percentage survival in 100% waste. If S > 99, TUa shall be reported as zero.

CHLORDANE shall mean the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma, and oxychlordane.

CHRONIC TOXICITY: This parameter shall be used to measure the acceptability of for waters supporting a healthy marine biota until improved methods are developed to evaluate biological response.

a. Chronic Toxicity (TUc)

Expressed as Toxic Units Chronic (TUc)

$$TUc = 100/NOEL$$

b. No Observed Effect Level (NOEL)

The NOEL is expressed as the maximum percent effluent or receiving water that causes no observable effect on a test organism, as determined by the result of a critical life stage toxicity test listed in Appendix II.

* See Appendix I for definition of terms.

DDT shall mean the sum of 4,4'DDT, 2,4'DDT, 4,4'DDE, 2,4'DDE, 4,4'DDD, and 2,4'DDD.

DEGRADE: Degradation shall be determined by comparison of the waste field and reference site(s) for characteristics species diversity, population density, contamination, growth anomalies, debility, or supplanting of normal species by undesirable plant and animal species. Degradation occurs if there are significant differences in any of three major biotic groups, namely, demersal fish, benthic invertebrates, or attached algae. Other groups may be evaluated where benthic species are not affected, or are not the only ones affected.

DICHLOROBENZENES shall mean the sum of 1,2- and 1,3-dichlorobenzene.

ENCLOSED BAYS are indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

ENDOSULFAN shall mean the sum of endosulfan-alpha and -beta and endosulfan sulfate.

ESTUARIES AND COASTAL LAGOONS are waters at the mouths of streams which serve as mixing zones for fresh and ocean waters during a major portion of the year. Mouths of streams which are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and salt water occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

HALOMETHANES shall mean the sum of bromoform, bromomethane (methyl bromide), chloromethane (methyl chloride), chlorodibromomethane, and dichlorobromomethane.

HEPTACHLOR shall mean the sum of heptachlor and heptachlor epoxide.

HCH shall mean the sum of the alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.

INITIAL DILUTION is the process which results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.

For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from the submarine outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial

* See Appendix I for definition of terms.

dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.

For shallow water submerged discharges, surface discharges, and nonbuoyant discharges, characteristic of cooling water wastes and some individual discharges, turbulent mixing results primarily from the momentum of discharge. Initial dilution, in these cases, is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the Regional Board, whichever results in the lower estimate for initial dilution.

KELP BEDS, for purposes of the bacteriological standards of this plan, are significant aggregations of marine algae of the genera Macrocystis and Nereocystis. Kelp beds include the total foliage canopy of Macrocystis and Nereocystis plants throughout the water column.

MARICULTURE is the culture of plants and animals in marine waters independent of any pollution source.

MDL (Method Detection Limit) is the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero, as defined in 40 CFR 136 Appendix B.

NATURAL LIGHT: Reduction of natural light may be determined by the Regional Board by measurement of light transmissivity or total irradiance, or both, according to the monitoring needs of the Regional Board.

OCEAN WATERS are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. If a discharge outside the territorial waters of the State could affect the quality of the waters of the State, the discharge may be regulated to assure no violation of the Ocean Plan will occur in ocean waters.

PAHs (polynuclear aromatic hydrocarbons) shall mean the sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

PCBs (polychlorinated biphenyls) shall mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.

PQL (Practical Quantitation Level) is the lowest concentration of a substance which can be consistently determined within +/- 20% of the true concentration by 75% of the labs tested in a performance evaluation study. Alternatively, if performance data are not available, the PQL* for carcinogens is the MDL* x 5, and for noncarcinogens is the MDL* x 10.

SHELLFISH are organisms identified by the California Department of Health Services as shellfish for public health purposes (i.e., mussels, clams and oysters).

* See Appendix I for definition of terms.

SIGNIFICANT difference is defined as a statistically significant difference in the means of two distributions of sampling results at the 95 percent confidence level.

TCDD EQUIVALENTS shall mean the sum of the concentrations of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below.

<u>Isomer Group</u>	<u>Toxicity Equivalence Factor</u>
2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8 tetra CDF	0.1
1,2,3,7,8 penta CDF	0.05
2,3,4,7,8 penta CDF	0.5
2,3,7,8 hexa CDFs	0.1
2,3,7,8 hepta CDFs	0.01
octa CDF	0.001

WASTE: As used in this Plan, waste includes a discharger's total discharge, of whatever origin, i.e., gross, not net, discharge.

WATER RECLAMATION: The treatment of wastewater to render it suitable for reuse, the transportation of treated wastewater to the place of use, and the actual use of treated wastewater for a direct beneficial use or controlled use that would not otherwise occur.

* See Appendix I for definition of terms.

APPENDIX II

STANDARD MONITORING PROCEDURES

The purpose of this appendix is to provide direction to the Regional Boards on the implementation of the California Ocean Plan and to ensure the reporting of useful information. It is not feasible to cover all circumstances and conditions that could be encountered by all dischargers. Therefore, this appendix should be considered as the basic components of any discharger monitoring program. Regional Boards can deviate from the procedures required in the appendix only with the approval of the State Water Resources Control Board unless the Ocean Plan allows for the selection of alternate protocols by the Regional Boards. If no direction is given in this appendix for a specific provision of the Ocean Plan, it is within the discretion of the Regional Board to establish the monitoring requirements for the provision.

The appendix is organized in the same manner as the Ocean Plan.

Chapter II. A. Bacterial Standards:

For all bacterial analyses, sample dilutions should be performed so the range of values extends from 2 to 16,000. The detection methods used for each analysis shall be reported with the results of the analysis.

Detection methods used for coliforms (total and fecal) shall be those presented in the most recent edition of Standard Methods for the Examination of Water and Wastewater or any improved method determined by the Regional Board (and approved by EPA) to be appropriate.

Detection methods used for enterococcus shall be those presented in EPA publication EPA 600/4-85/076, Test Methods for Escherichia coli and Enterococci in Water By Membrane Filter Procedure or any improved method determined by the Regional Board to be appropriate.

Chapter IV. Table B. Compliance with Table B objectives:

Procedures, calibration techniques, and instrument/reagent specifications used to determine compliance with Table B shall conform to the requirements of federal regulations (40 CFR 136). All methods shall be specified in the monitoring requirement section of waste discharge requirements.

Where methods are not available in 40 CFR 136, the Regional Boards shall specify suitable analytical methods in waste discharge requirements. Acceptance of data should be predicated on demonstrated laboratory performance.

The State or Regional Board may, subject to EPA approval, specify test methods which are more sensitive than those specified in 40 CFR 136. Total chlorine residual is likely to be a method detection limit effluent requirement in many cases. The limit of detection of total chlorine residual in standard test methods is less than or equal to 20 ug/l.

* See Appendix I for definition of terms.

Monitoring for the substances in Table B shall be required periodically. For discharges less than 1 MGD (million gallons per day), the monitoring of all the Table B parameters should consist of at least one complete scan of the Table B constituents one time in the life of the waste discharge requirements. For discharges between 1 and 10 MGD, the monitoring frequency shall be at least one complete scan of the Table B substances annually. Discharges greater than 10 MGD shall be required to monitor at least semiannually.

Chapter IV. Compliance with Toxicity Objectives:

Compliance with the acute toxicity objective (TUa) in Table A shall be determined using an established protocol, e.g., American Society for Testing Materials (ASTM), EPA, American Public Health Association, or State Board.

The Regional Board shall require the use of critical life stage toxicity tests specified in this Appendix to measure TUC. Other species or protocols will be added to the list after State Board review and approval. A minimum of three test species with approved test protocols shall be used to measure compliance with the toxicity objective. If possible, the test species shall include a fish, an invertebrate, and an aquatic plant. After a screening period, monitoring can be reduced to the most sensitive species. Dilution and control water should be obtained from an unaffected area of the receiving waters. The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay test and reported with the test results.

Use of critical life stage bioassay testing shall be included in waste discharge requirements as a monitoring requirement for all discharges greater than 100 MGD by January 1, 1991 at the latest. For other major dischargers, critical life stage bioassay testing shall be included as a monitoring requirement one year before the waste discharge requirement is scheduled for renewal. For major dischargers scheduled for waste discharge requirements renewal less than one year after the adoption of the toxicity objective, critical life stage bioassay testing shall be included as a monitoring requirement at the same time as the chronic toxicity effluent limits is established in the waste discharge requirements.

The following tests shall be used to measure TUC. Other tests may be added to the list when approved by the State Board.

<u>Species</u>	<u>Effect</u>	<u>Test Duration</u>	<u>Reference</u>
red alga, <u>Champia parvula</u>	number of cystocarps	7-9 days	1
giant kelp, <u>Macrocystis pyrifera</u>	percent germination; germ tube length	48 hours	2
abalone, <u>Haliotis rufescens</u>	abnormal shell development	48 hours	2

* See Appendix I for definition of terms.

oyster, <u>Crassostrea gigas</u> ; mussel, <u>Mytilus edulis</u>	abnormal shell development; percent survival	48 hours	3
urchins, <u>Strongylocentrotus purpuratus</u> , <u>S. franciscanus</u> ; sand dollar, <u>Dendraster excentricus</u>	percent fertilization	1 hour	4
shrimp, <u>Mysidopsis bahia</u>	percent survival; growth; fecundity	7 days	1
silversides, <u>Menidia beryllina</u>	larval growth rate; percent survival	7 days	1

Bioassay References

1. Weber, C.I., W.B. Horning, II, D.J. Klemm, T.W. Neiheisel, P.A. Lewis, E.L. Robinson, J. Menkedick, and F. Kessler (eds.). 1988. Short-term methods for estimating the chronic toxicity of effluents and receiving waters to marine and estuarine organisms. EPA-600/4-87/028. National Technical Information Service, Springfield, VA.
2. Hunt, J.W., B.S. Anderson, S.L. Turpin, A.R. Conlon, M. Martin, F.H. Palmer, and J.J. Janik. 1989. Experimental Evaluation of Effluent Toxicity Testing Protocols with Giant Kelp, Mysids, Red Abalone, and Topsmelt. Marine Bioassay Project. Fourth Report. California State Water Resources Control Board, Sacramento.
3. American Society for Testing Materials (ASTM). 1987. Standard Practice for conducting static acute toxicity tests with larvae of four species of bivalve molluscs. Procedure E 724-80. ASTM, Philadelphia, PA.
4. Dinnel, P.J., J. Link, and Q. Stober. 1987. Improved methodology for sea urchin sperm cell bioassay for marine waters. Archives of Environmental Contamination and Toxicology 16: 23-32.

* See Appendix 1 for definition of terms.



APPENDIX

**Water Quality Control Policy for the
Enclosed Bays and Estuaries of California
(Bays and Estuaries Policy)**

**WATER QUALITY CONTROL POLICY
FOR THE
ENCLOSED BAYS AND ESTUARIES
OF CALIFORNIA
AS ADOPTED BY RESOLUTION NO. 95-84
ON NOVEMBER 16, 1995**

**STATE OF CALIFORNIA
STATE WATER RESOURCES CONTROL BOARD**
(Amendments shown on page 2, Chapter 1.B, 1.b in underscore)

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 95-84

ADOPTION OF AN AMENDMENT TO THE
WATER QUALITY CONTROL POLICY FOR THE ENCLOSED BAYS
AND ESTUARIES OF CALIFORNIA

WHEREAS:

1. The Water Quality Control Policy for the Enclosed Bays and Estuaries of California (Policy) was adopted by the State Water Resources Control Board (SWRCB) in 1974.
2. Section 13143 of the California Water Code provides that State policy for water quality control may be revised.
3. The San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) proposed that the Policy be amended to allow discharges from ground water cleanup projects to San Francisco Bay south of the Dumbarton Bridge when reclamation or other disposal methods are unavailable or not appropriate and when other SWRCB and SFBRWQCB plans, policies, and regulations are met.
4. At the time of SWRCB adoption of the Policy, ground water cleanup projects were not widely undertaken and, there is no evidence that discharges from these projects were considered in the development of the Policy.
5. Appropriate ground water cleanup projects should be encouraged.
6. The discharges from ground water cleanup projects could be allowed where reclamation is not feasible and the need to dispose of treated ground water outweighs the need to prohibit the discharge south of the Dumbarton Bridge.
7. SWRCB staff prepared public notices and documents and followed procedures satisfying environmental documentation requirements in accordance with the California Environmental Quality Act (Public Resources Code 21000 et seq.) and other State and Federal statutes and regulations.
8. The SWRCB held a public hearing regarding the proposed amendments on November 2, 1995.
9. Amendments to SWRCB policies do not become effective until regulatory provisions are approved by the Office of Administrative Law (OAL).

THEREFORE BE IT RESOLVED THAT

The SWRCB:

1. Approves the following amendment to the Policy:

Add to the end of Chapter I.B., 1b.:

Exceptions to this provision may be granted to allow discharges south of the Dumbarton Bridge of treated ground water from ground water cleanup projects. Prior to allowing such a discharge, the Regional Board must make the following findings:

1. That the discharge will comply with all applicable State and Regional Board plans, policies and regulations.
 2. That the reclamation or other reuse of the treated ground water prior to discharge is not practicable.
 3. That there is no other feasible location to discharge the treated ground water.
 4. That the need to dispose of treated ground water outweighs the need to prohibit the discharge south of the Dumbarton Bridge.
2. The SFBRWQCB shall continue to implement provisions of existing State and Federal laws regarding the discharge of toxic pollutants. In particular, the SFBRWQCB shall issue National Pollutant Discharge Elimination System permits in compliance with the Porter-Cologne Water Quality Control Act and applicable State and Federal regulation, including, but not limited to, 40 CFR, Section 122.44(d).
 3. Within three years after Department of Fish and Game (DFG) notifies the SFBRWQCB that specific water bodies support threatened or endangered species and that scientific evidence indicates that certain existing water quality objectives for these water bodies do not adequately protect such species, the SFBRWQCB shall determine, in consultation with DFG, whether these objectives are adequately protective. In cases where such existing objectives do not provide adequate protection for threatened and endangered species, the SFBRWQCB shall develop and adopt adequately protective site-specific objectives for these constituents.
 4. Has determined after careful consideration of all comments testimony, and written reports, that while the proposed amendment may have some impacts on the environment, those impacts are not significant and will not result in degradation of water quality.

5. Authorizes the SWRCB staff to submit the approved amendment to the U.S. Environmental Protection Agency and regulatory provisions to OAL for approval.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on November 16, 1995.



Maureen Marché
Administrative Assistant to the Board

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WATER QUALITY CONTROL POLICY
FOR THE ENCLOSED
BAYS AND ESTUARIES OF CALIFORNIA¹⁴

INTRODUCTION

The purpose of this policy is to provide water quality principles and guidelines to prevent water quality degradation and to protect the beneficial uses of waters of enclosed bays and estuaries. Decisions on water quality control plans, waste discharge requirements, construction grant projects, water rights permits, and other specific water quality control implementing actions of the State and Regional Boards shall be consistent with the provisions of this policy.

The Board declares its intent to determine from time to time the need for revision this policy.

This policy does not apply to wastes from vessels or land runoff except as specifically indicated for siltation (Chapter III 4.) and combined sewer flows (Chapter III 7.)

CHAPTER I.
PRINCIPLES FOR MANAGEMENT OF
WATER QUALITY IN ENCLOSED BAYS AND ESTUARIES

- A. It is the policy of the State Board that the discharge of municipal wastewaters and industrial process waters ²⁴ (exclusive of cooling waste discharges) to enclosed bays and estuaries, other than the San Francisco Bay-Delta system, shall be phased out at the earliest practicable date. Exceptions to this provision may be granted by a Regional Board only when the Regional Board finds that the wastewater in question would consistently be treated and discharged in such a manner that it would enhance the quality of receiving waters above that which would occur in the absence of the discharge.²⁴
- B. With regard to the waters of the San Francisco Bay-Delta system, the State Board finds and directs as follows:
- 1.a. There is a considerable body of scientific evidence and opinion which suggests the existence of biological degradation due to long-term exposure to toxicants which have been discharged to the San Francisco Bay-Delta system. Therefore, implementation of a program which controls toxic effects through a combination of source control for toxic materials, upgraded wastewater treatment, and improved dilution of wastewaters shall proceed as rapidly as is practicable with the objective of providing full protection to the biota and the beneficial uses of Bay-Delta waters in a cost-effective manner.
- 1.b A comprehensive understanding of the biological effects of wastewater discharge on San Francisco Bay, as a whole, must await the results of further scientific study. There is, however, sufficient evidence at this time to indicate that the continuation of wastewater discharges to the southern reach of San Francisco Bay, south of the Dumbarton Bridge, is an unacceptable condition. The State Board and the San Francisco Bay Regional Board shall take such action as is necessary to assure the elimination of wastewater discharges to waters of the San Francisco Bay, south of Dumbarton Bridge, at the earliest practicable date. Exceptions to this provision may be granted to allow discharges south of the Dumbarton Bridge of treated ground water from ground water cleanup projects. Prior to allowing such a discharge, the Regional Board must make the following findings:

1. That the discharge will comply with all applicable State and Regional Board plans, policies and regulations.
2. That the reclamation or other reuse of the treated ground water prior to discharge is not practicable.
3. That there is no other feasible location to discharge the treated ground water.
4. That the need to dispose of treated ground water outweighs the need to prohibit the discharge south of the Dumbarton Bridge.

1.c In order to prevent excessive investment which would unduly impact the limited funds available to California for construction of publicly owned treatment works, construction of such works shall proceed in a staged fashion, and each stage shall be fully evaluated by the State and Regional Boards to determine the necessity for additional expenditures. Monitoring requirements shall be established to evaluate any effects on water quality, particularly changes in species diversity and abundance, which may result from the operation of each stage of planned facilities and source control programs. Such a staged construction program, in combination with an increased monitoring effort, will result in the most cost-effective and rapid progress toward a goal of maintaining and enhancing water quality in the San Francisco Bay-Delta system.

2. Where a waste discharger has an alternative of in-bay or ocean disposal and where both alternatives offer a similar degree of environmental and public health protection, prime consideration shall be given to the alternative which offers the greater degree of flexibility for the implementation of economically feasible wastewater reclamation options.

C. The following policies apply to all of California's enclosed bays and estuaries:

1. Persistent or cumulative toxic substances shall be removed from the waste to the maximum extent practicable through source control or adequate treatment prior to discharge.
2. Bay or estuarine outfall and diffuser systems shall be designed to achieve the most rapid initial dilution⁴¹ practicable to minimize concentrations of substances not removed by source control or treatment.

3. Wastes shall not be discharged into or adjacent to areas where the protection of beneficial uses requires spatial separation from waste fields.
4. Waste discharges shall not cause a blockage of zones of passage required for the migration of anadromous fish.
5. Nonpoint sources of pollutants shall be controlled to the maximum practicable extent.

CHAPTER II.
QUALITY REQUIREMENTS FOR
WASTE DISCHARGES

1. In addition to any requirements of this policy, effluent limitations shall be as specified pursuant to Chapter 5.5 of the Porter-Cologne Water Quality Control Act, and Regional Boards shall limit the mass emissions of substances as necessary to meet such limitations. Regional Boards may set more restrictive mass emission rates and concentration standards than those which are referenced in this policy to reflect dissimilar tolerances to wastewater constituents among different receiving water bodies.
2. All dischargers of thermal wastes or elevated temperature wastes to enclosed bays and estuaries which are permitted pursuant to this policy shall comply with the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California", State Water Resources Control Board, 1972, and with amendments and supplements thereto.
3. Radiological limits for waste discharges (for which regulatory responsibility is not preempted by the Federal Government) shall be at least as restrictive as limitations indicated in Section 30269, and Section 30355, Appendix A, Table II of the California Administrative Code.
4. Dredge spoils to be disposed of in bay and estuarine waters must comply with federal criteria for determining the acceptability of dredged spoils to marine waters, and must be certified by the State Board of Regional Boards as in compliance with State Plans and Policies.

CHAPTER III.
DISCHARGE PROHIBITIONS

New discharges⁵⁴ of municipal wastewaters and industrial process waters²⁴ (exclusive of cooling water discharges) to enclosed bays and estuaries, other than the San Francisco Bay-Delta system, which are not consistently treated and discharged in a manner that would enhance the quality of receiving waters above that which would occur in the absence of the discharge, shall be prohibited.

The discharge of municipal and industrial waste sludge and untreated sludge digester supernatant, centrate, or filtrate to enclosed bays and estuaries shall be prohibited.

- 3 The deposition of rubbish or refuse into surface waters or at any place where they would be eventually transported to enclosed bays or estuaries shall be prohibited.⁶⁴
- 4 The direct or indirect discharge of silt, sand, soil clay, or other earthen materials from onshore operations including mining, construction, agriculture, and lumbering, in quantities which unreasonably affect or threaten to affect beneficial uses shall be prohibited.
- 5 The discharge of materials of petroleum origin in sufficient quantities to be visible or in violation of waste discharge requirements shall be prohibited, except when such discharges are conducted for scientific purposes. Such testing must be approved by the Executive Officer of the Regional Board and the Department of Fish and Game.
- 6 The discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste shall be prohibited.
- 7 The discharge or by-passing of untreated waste to bays and estuaries shall be prohibited. ²⁴

CHAPTER IV.
GENERAL PROVISIONS

A. Effective Date

This policy is in effect as of the date of adoption by the State Water Resources Control Board.

B. Review and Revision of Plans, Policies and Waste Discharge Requirements

Provisions of existing or proposed policies or water quality control plans adopted by the State or Regional Boards for enclosed bays or estuaries shall be amended to conform with the applicable provisions of this policy.

Each appropriate Regional Board shall review and revise the waste discharge requirements with appropriate time schedules for existing discharges to achieve compliance with this policy and applicable water quality objectives. Each Regional Board affected by this policy shall set forth for each discharge allowable mass emission rates for each applicable effluent characteristic included in waste discharge requirements.

Regional Boards shall finalize waste discharge requirements as rapidly as is consistent with the National Pollutant Discharge Elimination System Permit Program.

C. Administration of Clean Water Grants Program

The Clean Water Grants Program shall require that the environmental impact report for any existing or proposed wastewater discharge to enclosed bays and estuaries, other than the San Francisco Bay-Delta system, shall evaluate whether or not the discharge would enhance the quality of receiving waters above that which would occur in the absence of the discharge.

The Clean Water Grants Program shall require that each study plan and project report (beginning with F.Y. 1974-75 projects) for a proposed wastewater treatment or conveyance facility within the San Francisco Bay-Delta system shall contain an evaluation of the degree to which the proposed project represents a necessary and cost-effective stage in a program leading to compliance with an objective of full protection of the biota and beneficial uses of Bay-Delta waters.

D. Administration of Water Rights

Any applicant for a permit to appropriate from a water course which is tributary to an enclosed bay or estuary may be required to present to the State Board an analysis of the anticipated effects of the proposed appropriation on water quality and beneficial uses of the effected bay or estuary.

E. Monitoring Program

The Regional Board shall require dischargers to conduct self-monitoring programs and submit reports as necessary to determine compliance with waste discharge requirements and to evaluate the effectiveness of wastewater control programs. Such monitoring programs shall comply with applicable sections of the State Board's Administrative Procedures, and any additional guidelines which may be issued by the Executive Officer of the State Board.

FOOTNOTES

- 1/ Enclosed bays are indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outer most harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes, but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles-Long Beach Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

Estuaries, including coastal lagoons, are waters at the mouths of streams which serve as mixing zones for fresh and ocean waters. Mouths of streams which are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to a point upstream where there is no significant mixing of fresh water and seawater. Estuarine waters shall be considered to extend seaward if significant mixing of fresh and saltwater occurs in the open coastal waters. Estuarine waters include, but are not limited to, the Sacramento-San Joaquin Delta, as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

- 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.
- 3/ Undiluted wastewaters covered under this exception provision shall not produce less than 90 percent survival, 50 percent of the time, and not less than 70 percent survival, 10 percent of the time of a standard test species in a 96-hour static or continuous flow bioassay test using undiluted waste. Maintenance of these levels of survival shall not by themselves constitute sufficient evidence that the discharge satisfies the criteria of enhancing the quality of the receiving water above that which occur in the absence of the discharge. Full and uninterrupted protection for the beneficial uses of the receiving water must be maintained. A Regional Board may require physical, chemical, bioassay, and bacteriological assessment of treated wastewater quality prior to authorizing release to the bay or estuary of concern.

- 4/ Initial dilution zone is defined as the volume of water near the point of discharge within which the waste immediately mixes with the bay or estuarine water due to the momentum of the waste discharge and the difference in density between the waste and receiving water.
- 5/ A new discharge is a discharge for which a Regional Board has not received a report of waste discharge prior to the date of adoption of this policy, and which was not in existence prior to the date of adoption of this policy.
- 6/ Rubbish and refuse include any cans, bottles, paper, plastic, vegetable matter, or dead animals or dead fish deposited or caused to be deposited by man.
- 7/ The prohibition does not apply to cooling water streams which comply with the "Water Quality Control Plan for the Control of Temperature in Coastal and Interstate Waters and Enclosed Bays and Estuaries of California" - State Water Resources Control Board.

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 74- 43

WATER QUALITY CONTROL POLICY FOR THE
ENCLOSED BAYS AND ESTUARIES OF CALIFORNIA

WHEREAS:

1. The Board finds it necessary to promulgate water quality principles, guidelines, effluent quality requirements, and prohibitions to govern the disposal of waste into the enclosed bays and estuaries of California;
2. The Board, after review and analysis of testimony received at public hearings, has determined that it is both feasible and desirable to require that the discharge of municipal wastewaters and industrial process waters to enclosed bays and estuaries (other than the San Francisco Bay-Delta system) should only be allowed when a discharge enhances the quality of the receiving water above that which would occur in the absence of the discharge;
3. The Board has previously promulgated requirements for the discharge of thermal and elevated temperature wastes to enclosed bays and estuaries (Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California - SWRCB, 1972);
4. The Board, after review and analysis of testimony received at public hearings, has determined that implementation of a program which controls toxic effects through a combination of source control for toxic materials, upgraded waste treatment, and improved dilution of wastewaters, will result in timely and cost-effective progress toward an objective of providing full protection to the biota and beneficial uses of San Francisco Bay-Delta waters;
5. The Board intends to implement monitoring programs to determine the effects of source control programs, upgraded treatment, and improved dispersion of wastewaters on the condition of the biota and beneficial uses of San Francisco Bay-Delta waters.

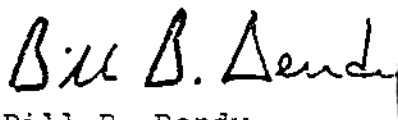
THEREFORE, BE IT RESOLVED, that

1. The Board hereby adopts the "Water Quality Control Policy for the Enclosed Bays and Estuaries of California".
2. The Board hereby directs all affected California Regional Water Quality Control Boards to implement the provisions of the policy.

3. The Board hereby declares its intent to determine from time to time the need for revising the policy to assure that it reflects current knowledge of water quality objectives necessary to protect beneficial uses of bay and estuarine waters and that it is based on latest technological improvements.

CERTIFICATION

The undersigned, Executive Officer of the State Water Resources Control Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on May 16, 1974.



Bill B. Dendy
Executive Officer

APPENDIX

Power Plant Cooling Policy

WATER QUALITY CONTROL POLICY
on the
USE and DISPOSAL of INLAND WATERS
USED for POWERPLANT COOLING

ADOPTED JUNE 19, 1975

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CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 75-58

WATER QUALITY CONTROL POLICY ON THE USE
AND DISPOSAL OF INLAND WATERS USED FOR
POWERPLANT COOLING

WHEREAS:

1. Basin Planning conducted by the State Board has shown that there is presently no available water for new allocations in some basins.
2. Projected future water demands, when compared to existing developed water supplies, indicate that general freshwater shortages will occur in many areas of the State prior to the year 2000.
3. The improper disposal of powerplant cooling waters may have an adverse impact on the quality of inland surface and groundwaters.
4. It is believed that further development of water in the Central Valley will reduce the quantity of water available to meet Delta outflow requirements and protect Delta water quality standards.

THEREFORE, BE IT RESOLVED, that

1. The Board hereby adopts the "Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Powerplant Cooling".
2. The Board hereby directs all affected California Regional Water Quality Control Boards to implement the applicable provisions of the policy.
3. The Board hereby directs staff to coordinate closely with the State Energy Resources Conservation and Development Commission and other involved state and local agencies as this policy is implemented.

CERTIFICATION

The undersigned, Executive Officer of the State Water Resources Control Board, does hereby certify that the forgoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on June 19, 1975.

Bill B. Dendy
Executive Officer

WATER QUALITY CONTROL POLICY
ON THE USE AND DISPOSAL OF INLAND
WATERS USED FOR POWERPLANT COOLING

Introduction

The purpose of this policy is to provide consistent statewide water quality principles and guidance for adoption of discharge requirements, and implementation actions for powerplants which depend upon inland waters for cooling. In addition, this policy should be particularly useful in guiding planning of new power generating facilities so as to protect beneficial uses of the State's water resources and to keep the consumptive use of freshwater for powerplant cooling to that minimally essential for the welfare of the citizens of the State.

This policy has been prepared to be consistent with federal, state, and local planning and regulatory statutes, the Warren-Alquist State Energy Resources Conservation and Development Act, Water Code Section 237 and the Waste Water Reuse Law of 1974.

Section 25216.3 of the Warren-Alquist Act states:

“(a) The commission shall compile relevant local, regional, state, and federal land use, public safety, environmental, and other standards to be met in designing, siting, and operating facilities in the State: except as provided in subdivision (d) of Section 25402, adopt standards, except for air and water quality,....”

Water Code Section 237 and Section 462 of the Waste Water Reuse Law, direct the Department of Water Resources to:

237. “...either independently or in cooperation with any person or any county, state, federal, or other agency, including, but not limited to, the State Energy Resources Conservation and Development Commission, shall conduct studies and investigations on the need and availability of water for thermal electric powerplant cooling purposes, and shall report thereon to the Legislature from time to time....”

462. “...conduct studies and investigations on the availability and quality of waste water and uses of reclaimed waste water for beneficial purposes including, but not limited to ... and cooling for thermal electric powerplants.”

Decisions on waste discharge requirements, water rights permits, water quality control plans, and other specific water quality control implementing actions by the State and Regional Boards shall be consistent with provisions of this policy.

The Board declares its intent to determine from time to time the need for revising this policy.

Definitions

1. Inland Water – all waters within the territorial limits of California exclusive of the waters of the Pacific Ocean outside of enclosed bays, estuaries, and coastal lagoons.
2. Fresh Inland Waters – those inland waters which are suitable for use as a source of domestic, municipal, or agricultural water supply and which provide habitat for fish and wildlife.
3. Salt Sinks – areas designated by the Regional Water Quality Control Boards to receive saline waste discharges.
4. Brackish Waters – includes all waters with a salinity range of 1,000 to 30,000 mg/l and a chloride concentration range of 250 to 12,000 mg/l. The application of the term “brackish” to a water is not intended to imply that such water is no longer suitable for industrial or agricultural purposes.
5. Steam-Electric Power Generating Facilities – electric power generating facilities utilizing fossil or nuclear-type fuel or solar heating in conjunction with a thermal cycle employing the steam-water system as the thermodynamic medium and for the purposes of this policy is synonymous with the word “powerplant”.
6. Blowdown – the minimum discharge of either boiler water or recirculating cooling water for the purpose of limiting the buildup of concentrations of materials in excess of desirable limits established by best engineering practice.
7. Closed Cycle Systems – a cooling water system from which there is no discharge of wastewater other than blowdown.
8. Once-Through Cooling – a cooling water system in which there is no recirculation of the cooling water after its initial use.
9. Evaporative Cooling Facilities – evaporative towers, cooling ponds, or cooling canals, which utilize evaporation as a means of wasting rejected heat to the atmosphere.
10. Thermal Plan – “Water Quality Control Plan for Control of Temperature In the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California”.
11. Ocean Plan – “Water Quality Control Plan for Ocean Waters of California”.

Basis of Policy

1. The State Board believes it is essential that every reasonable effort be made to conserve energy supplies and reduce energy demands to minimize adverse effects on water supply and water quality and at the same time satisfy the State's energy requirements.
2. The increasing concern to limit changes to the coastal environment and the potential hazards of earthquake activity along the coast has led the electric utility industry to consider siting steam-electric generating plants inland as an alternative to proposed coastal locations.
3. Although many of the impacts of coastal powerplants on the marine environment are still not well understood, it appears the coastal marine environment is less susceptible than inland waters to the water quality impacts associated with powerplant cooling. Operation of existing coastal powerplants indicate that these facilities either meet the standards of the State's Thermal Plan and Ocean Plan or could do so readily with appropriate technological modifications. Furthermore, coastal locations provide for application of a wide range of cooling technologies which do not require the consumptive use of inland waters and therefore would not place an additional burden on the State's limited supply of inland waters. These technologies include once-through cooling which is appropriate for most coastal sites, potential use of saltwater cooling towers, or use of brackish water where more stringent controls are required for environmental considerations at specific sites.
4. There is a limited supply of inland water resources in California. Basin planning conducted by the State Board has shown that there is no available water for new allocations in some basins. Projected future water demands when compared to existing developed water supplies indicate that general fresh-water shortages will occur in many areas of the State prior to the year 2000. The use of inland waters for powerplant cooling needs to be carefully evaluated to assure proper future allocation of inland waters considering all other beneficial uses. The loss of inland waters considering all other beneficial uses. The loss of inland waters through evaporation in powerplant cooling facilities may be considered an unreasonable use of inland waters when general shortages occur.
5. The Regional Boards have adopted water quality objectives including temperature objectives including temperature objectives for all surface waters in the State.
6. Disposal of once-through cooling waters from powerplants to inland water is incompatible with maintaining the water quality objectives of the State Board's "Thermal Plan" and "Water Quality Control Plans."
7. The improper disposal of blowdown from evaporative cooling facilities may have an adverse impact on the quality of inland surface and ground waters and on fish and wildlife.

8. An important consideration in the increased use of inland water for powerplant cooling or for any other purpose in the Central Valley Region is the reduction in the available quantity of water to meet the Delta outflow requirements necessary to protect Delta water quality objectives and standards. Additionally, existing contractual agreements to provide future water supplies to the Central Valley, the South Coastal Basin, and other areas using supplemental water supplies are threatening to further reduce the Central Valley outflow necessary to protect the Delta environment.
9. The California Constitution and the California Water Code declare that the right to use water from a natural stream or watercourse is limited to such water as shall be reasonably required for beneficial use and does not extend to the waste or unreasonable use or unreasonable method of use or unreasonable method of diversion. Section 761, Article 17.2, Subchapter 2, Chapter 3, Title 23, California Administrative Code provides that permits or licenses for the appropriation of water will contain a term which will subject the permit or license to the continuing authority of the State Board to prevent waste, unreasonable use, unreasonable method of use, or unreasonable method of diversion of said water.
10. The Water Code authorizes the State Board to prohibit the discharge of wastes to surface and ground waters of the State.

Principles

1. It is the Board's position that from a water quantity and quality standpoint the source of powerplant cooling water should come from the following sources in this order of priority depending on site specifics such as environmental, technical and economic feasibility consideration: (1) wastewater being discharged to the ocean, (2) ocean, (3) brackish water from natural sources or irrigation return flow, (4) inland wastewaters of low TDS, and (5) other inland waters.
2. Where the Board has jurisdiction, use of fresh inland waters for powerplant cooling will be approved by the Board only when it is demonstrated that the use of other water supply sources or other methods of cooling would be environmentally undesirable or economically unsound.
3. In considering issuance of a permit or license to appropriate water for powerplant cooling, the Board will consider the reasonableness of the proposed water use when compared with other present and future needs for the water source and when viewed in the context of alternative water sources that could be used for the purpose. The Board will give great weight to the results of studies made pursuant to the Warren-Alquist State Energy Resources Conservation and Development Act and carefully evaluate studies by the Department of Water Resources made pursuant to Sections 237 and 462, Division 1 of the California Water Code.

4. The discharge of blowdown water from cooling towers or return flows from once-through cooling shall not cause a violation of water quality objectives or waste discharge requirements established by the Regional Boards.
5. The use of unlined evaporation ponds to concentrate salts from blowdown waters will be permitted only at salt sinks approved by the Regional and State Boards. Proposals to utilize unlined evaporation ponds for final disposal of blowdown waters must include studies of alternative methods of disposal. These studies must show that the geologic strata underlying the proposed ponds or salt sink will protect usable groundwater.
6. Studies of availability of inland waters for use in powerplant cooling facilities to be constructed in Central Valley basins, the South Coastal Basins or other areas which receive supplemental water from Central Valley streams as for all major new uses must include an analysis of the impact of such use on Delta outflow and Delta water quality objectives. The studies associated with powerplants should include an analysis of the cost and water use associated with the use of alternative cooling facilities employing dry, or wet/dry modes of operation.
7. The State Board encourages water supply agencies and power generating utilities and agencies to study the feasibility of using wastewater for powerplant cooling. The State Board encourages the use of wastewater for powerplant cooling where it is appropriate. Furthermore, Section 25601(d) of the Warren-Alquist Energy Resources Conservation and Development Act directs the Commission to study, “expanded use of wastewater as cooling water and other advances in powerplant cooling” and Section 462 of the Waste Water Reuse Law directs the Department of Water Resources to “...conduct studies and investigations on the availability and quality of waste water and uses of reclaimed waste water for beneficial purposes including, but not limited to... and cooling for thermal electric powerplants.”

Discharge Prohibitions

1. The discharge to land disposal sites of blowdown waters from inland powerplant cooling facilities shall be prohibited except to salt sinks or to lined facilities approved by the Regional and State Boards for the reception of such wastes.
2. The discharge of wastewaters from once-through inland powerplant cooling facilities shall be prohibited unless the discharger can show that such a practice will maintain the existing water quality and aquatic environment of the State’s water resources.
3. The Regional Boards may grant exceptions to these discharge prohibitions on a case-by-case basis in accordance with exception procedures included in the “Water Quality Control Plan for Control of Temperature In the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California.

Implementation

1. Regional Water Quality Control Boards will adopt waste discharge requirements for discharges from powerplant cooling facilities which specify allowable mass emission rates and/or concentrations of effluent constituents for the blowdown waters. Waste discharge requirements for powerplant cooling facilities will also specify the water quality conditions to be maintained in the receiving waters.
2. The discharge requirements shall contain a monitoring program to be conducted by the discharger to determine compliance with waste discharge requirements.
3. When adopting waste discharge requirements for powerplant cooling facilities the Regional Boards shall consider other environmental factors and may require an environmental impact report, and shall condition the requirement in accordance with Section 2718, Subchapter 17, Chapter 3, Title 23, California Administrative Code.
4. The State Board shall include a term in all permits and licenses for appropriation of water for use in powerplant cooling that requires the permittee or licensee to conduct ongoing studies of the environmental desirability and economic feasibility of changing facility operations to minimize the use of fresh inland waters. Study results will be submitted to the State Board at intervals as specified in the permit term.
5. Petitions by the appropriator to change the nature of the use of appropriated water in an existing permit or license to allow the use of inland water for powerplant cooling may have an impact on the quality of the environment and as such require the preparation of an environmental impact statement or a supplement to an existing statement regarding, among other factors, an analysis of the reasonableness of the proposed use.
6. Applications to appropriate inland waters for powerplant cooling purpose shall include results of studies comparing the environmental impact of alternative inland sites as well as alternative water supplies and cooling facilities. Studies of alternative coastal sites must be included in the environmental impact report. Alternatives to be considered in the environmental impact report, including but not limited to sites, water supply, and cooling facilities, shall be mutually agreed upon by the prospective appropriator and the State Board staff. These studies should include comparisons of environmental impact and economic and social benefits and costs in conformance with the Warren-Alquist State Energy Resources Conservation and Development Act, the California Coastal Zone Plan, the California Environmental Quality Act and the National Environmental Policy Act.

APPENDIX

Reclamation Policy

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 77-1

POLICY WITH RESPECT TO WATER
RECLAMATION IN CALIFORNIA

WHEREAS:

1. The California Constitution provides that the water resources of the State be put to beneficial use to the fullest extent of which they are capable, and that waste or unreasonable use or unreasonable method of use of water be prevented, and that conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare;
2. The California Legislature has declared that the State Water Resources Control Board and each Regional Water Quality Control Board shall be the principal state agencies with primary responsibility for the coordination and control of water quality;
3. The California Legislature has declared that the people of the State have a primary interest in the development of facilities to reclaim water containing waste to supplement existing surface and underground water supplies;
4. The California Legislature has declared that the State shall undertake all possible steps to encourage the development of water reclamation facilities so that reclaimed water may be made available to help meet the growing water requirements of the State;
5. The Board has reviewed the document entitled "Policy and Action Plan for Water Reclamation in California", dated December 1976. This document recommends a variety of actions to encourage the development of water reclamation facilities and the use of reclaimed water. Some of these actions require direct implementation by the Board; others require implementation by the Executive Officer and the Regional Boards. In addition, this document recognizes that action by many other state, local, and federal agencies and the California State Legislature would also encourage construction of water reclamation facilities and the use of reclaimed water. Accordingly, the Board recommends for its consideration a number of actions intended to coordinate with the program of this Board;
6. The Board must concentrate its efforts to encourage and promote reclamation in water-short areas of the State where reclaimed water can supplement or replace other water supplies without interfering with water rights or instream beneficial uses or placing an unreasonable burden on present water supply systems; and

7. In order to coordinate the development of reclamation potential in California, the Board must develop a data collection, research, planning, and implementation program for water reclamation and reclaimed water uses.

THEREFORE, BE IT RESOLVED:

1. That the State Board adopt the following Principles:
 - I. The State Board and the Regional Boards shall encourage, and consider or recommend for funding, water reclamation projects which meet Condition 1, 2, or 3 below and which do not adversely impact vested water rights or unreasonably impair instream beneficial uses or place an unreasonable burden on present water supply systems;
 - (1) Beneficial use will be made of wastewaters that would otherwise be discharged to marine or brackish receiving waters or evaporation ponds,
 - (2) Reclaimed water will replace or supplement the use of fresh water or better quality water,
 - (3) Reclaimed water will be used to preserve, restore, or enhance instream beneficial uses which include, but are not limited to, fish, wildlife, recreation and esthetics associated with any surface water or wetlands.
 - II. The State Board and the Regional Boards shall (1) encourage reclamation and reuse of water in water-short areas of the State, (2) encourage water conservation measures which further extend the water resources of the State, and (3) encourage other agencies, in particular the Department of Water Resources, to assist in implementing this policy.
 - III. The State Board and the Regional Boards recognize the need to protect the public health including potential vector problems and the environment in the implementation of reclamation projects.
 - IV. In implementing the foregoing Principles, the State Board or the Regional Boards, as the case may be, shall take appropriate actions, recommend legislation, and recommend actions by other agencies in the areas of (1) planning, (2) project funding, (3) water rights, (4) regulation and enforcement, (5) research and demonstration, and (6) public involvement and information.
2. That, in order to implement the foregoing Principles, the State Board:

- (a) Approves Planning Program Guidance Memorandum No. 9, "PLANNING FOR WASTEWATER RECLAMATION",
 - (b) Adopts amendments and additions to Title 23, California Administrative Code Sections 654.4, 761, 764.9, 783, 2101, 2102, 2107, 2109, 2109.1, 2109.2, 2119, 2121, 2133(b)(2), and 2133(b)(3),
 - (c) Approves Grants Management Memorandum No. 9.01, "WASTEWATER RECLAMATION",
 - (d) Approves the Division of Planning and Research, Procedures and Criteria for the Selection of Wastewater Reclamation Research and Demonstration Projects,
 - (e) Approves "GUIDELINES FOR REGULATION OF WATER RECLAMATION",
 - (f) Approves the Plan of Action contained in Part III of the document identified in Finding Five above,
 - (g) Directs the Executive Officer to establish an Interagency Water Reclamation Policy Advisory Committee. Such Committee shall examine trends, analyze implementation problems, and report annually to the Board the results of the implementation of this policy, and
 - (h) Authorizes the Chairperson of the Board and directs the Executive Officer to implement the foregoing Principles and the Plan of Action contained in Part III of the document identified in Finding Five above, as appropriate.
3. That not later than July 1, 1978, the Board shall review this policy and actions taken to implement it, along with the report prepared by the Interagency Water Reclamation Policy Advisory Committee, to determine whether modifications to this policy are appropriate to more effectively encourage water reclamation in California.
 4. That the Chairperson of the Board shall transmit to the California Legislature a complete copy of the "Policy and Action Plan for Water Reclamation in California".

CERTIFICATION

The undersigned, Executive Officer of the State Water Resources Control Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a special meeting of the State Water Resources Control Board held on January 6, 1977.

Dated: JAN 6 1977

Bill B. Dendy

Bill B. Dendy
Executive Officer

APPENDIX

Shredder Waste Disposal Policy

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 87- 22

POLICY ON THE DISPOSAL OF SHREDDER WASTE

WHEREAS:

1. Chemical analysis of wastes resulting from the shredding of automobile bodies, household appliances, and sheet metal (hereinafter shredder waste) by methods stipulated by the Department of Health Services (hereinafter DHS) has resulted in the classification of shredder waste as a hazardous waste and the determination that, if inappropriately handled, it could catch fire and release toxic gases.
2. The California Legislature has declared that shredder waste shall not be classified as hazardous for the purposes of disposal if the producer demonstrates that the waste will not pose a threat to human health or water quality if disposed of in a qualified Class III waste management unit, as specified in Section 2533 of Subchapter 15 of Chapter 3 of Title 23 of the California Administrative Code (hereinafter Subchapter 15).
3. DHS has granted shredder waste a variance for the purposes of disposal from hazardous waste management requirements pursuant to Section 66310 of Title 22 of the California Administrative Code.
4. Hazardous waste which has received a variance from DHS for the purposes of disposal is classified as a designated waste pursuant to Section 2522 of Subchapter 15.
5. In general, designated waste must be disposed of in a Class I or Class II waste management unit. However, designated waste may be disposed of in a Class III waste management unit provided that the discharger establishes to the satisfaction of the Regional Water Quality Control Board (hereinafter Regional Board) that the waste presents a lower risk of degrading water quality than is indicated by its classification. (Authority: Section 2520, Subchapter 15)
6. Analysis of shredder waste by the U. S. Environmental Protection Agency's extraction procedure for heavy metals does not normally result in its classification as a hazardous waste.
7. The disposal of shredder waste in a manner such that it is not in contact with putrescible waste or the leachate generated by putrescible waste will not result in the high mobilization of metals indicated by the tests used to determine that shredder waste is hazardous; therefore, such disposal may occur in accordance with Section 2520 of Subchapter 15.

8. Levels of polychlorinated biphenyls (hereinafter PCB) which slightly exceed 50 mg/kg, the level as defined by the U. S. Environmental Protection Agency which requires disposal to an approved site in accordance with the Federal Toxic Substances Control Act, have been measured in some existing shredder waste piles.

THEREFORE BE IT RESOLVED:

1. That shredder waste which is determined hazardous by DHS, but is granted a variance for the purposes of disposal by DHS, is suitable for disposal at Class III waste management units as designated by the Regional Board when it has been demonstrated to the Regional Board that the waste management units at least meet the minimum requirements for a Class III waste management unit as defined by Subchapter 15 provided that:
 - a. The shredder waste producer has demonstrated to the Regional Board that the waste contains no more than 50 mg/kg of PCB.
 - b. The shredder waste is disposed on the last and highest lift in a closed disposal cell or in an isolated cell solely designated for the disposal of shredder waste.
2. That shredder waste which is not determined hazardous by DHS is suitable for disposal at Class III waste management units as designated by the Regional Board without special segregation or management.
3. That this resolution in no way abridges the rights of the Regional Boards to designate appropriate Class III waste management units for disposal of shredder waste consistent with Section 25143.6 of the Health and Safety Code (Chapter 1395, Statutes of 1985).

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on March 19, 1987.



Maureen Marche

Administrative Assistant to the Board

APPENDIX

Underground Storage Tank Pilot Program

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 88- 23

ADOPTION OF THE POLICY REGARDING THE
UNDERGROUND STORAGE TANK
PILOT PROGRAM

WHEREAS:

1. State law requires local governments to implement an underground tank permit program consisting of monitoring requirements for existing underground tanks containing hazardous substances and design, construction and monitoring requirements for new tanks.
2. Monitoring efforts have led to the identification of approximately 5,000 leaking underground storage tank release sites with approximately 150 new cases being discovered statewide each month.
3. To address the problem of funding governmental oversight of remedial actions at these release sites, the Legislature appropriated funds and enacted AB 853 (Chapter 1317, Statutes of 1987).
4. Prior to expending funds from the reserve account established by Subdivision (c) of Section 7, Chapter 1439, Statutes of 1985 the State Water Resources Control Board must adopt administrative and technical procedures for cleanup and abatement action taken under this pilot program.

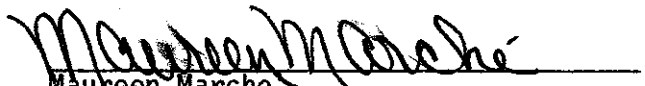
THEREFORE BE IT RESOLVED:

THAT THE STATE BOARD:

1. Adopts the attached policy regarding implementation of the underground tank pilot program.
2. Directs the Executive Director or his designee to take actions needed to implement the policy.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on February 18, 1988.


Maureen Marche
Administrative Assistant to the Board

STATE WATER RESOURCES CONTROL
BOARD POLICY REGARDING THE
UNDERGROUND STORAGE TANK
PILOT PROGRAM

Statutory authority exists at the federal, state and local level to require remedial action at underground storage tank release sites and to rank and fund remedial action at underground storage tank release sites where a responsible party cannot be identified or has insufficient financial resources to accomplish the needed work. Some local agencies have used this authority to respond to some of these releases, as have the nine Regional Water Quality Control Boards. In addition, the Regional Boards are providing technical assistance to local agencies addressing underground storage tank cleanup. However, no specific statewide program for funding governmental oversight of remedial action by responsible parties has been established. As a result, underground storage tank release oversight is not being consistently addressed statewide, leaving site cleanup by responsible parties without adequate guidance.

To address this problem, the State Board, in cooperation with the Department of Health Services, is implementing a pilot program to fund oversight of remedial action at underground storage tank sites. This program will be funded through an appropriation from the state Hazardous Substances Cleanup Bond Fund and the federal Underground Storage Tank Petroleum Trust Fund.

Prior to implementation of this pilot program, the State Board is required by Section 25297.1 of the Health and Safety Code (AB 853, Chapter 1317, Statutes of 1987) to adopt, as state policy for water quality control, administrative and technical procedures to guide local agencies in development of their individual programs.

As participants in the pilot program, local agencies may contract with the State Board to oversee preliminary site assessment and, if necessary, remedial action at leaking underground storage tank sites. The State Board plans to initially enter into 12 contracts with subsequent expansion as appropriate.

Site and Agency Selection

Local agencies will be selected for participation based on their readiness to implement the pilot program and the size of program which the agencies plan to conduct. Those agencies which have existing oversight efforts and plan to expand staff using pilot program funds were ranked highest among eligible candidates. Any local agency which, unless exempted, has failed to implement Chapter 6.7 of the Health and Safety Code and/or which has failed to collect and transmit to the State Board the surcharge fees pursuant to subdivision (b) of Section 25287, was eliminated from consideration.

Under the pilot program, funds may be used at all sites containing leaking tanks which are subject to the state permit program or Subtitle (I) of the federal Resource Conservation and Recovery Act. While contracting local agencies may perform oversight activities at any site within their jurisdictions, agencies may defer lead responsibility for any case affecting, or threatening to affect, ground water to the appropriate Regional Board.

In addition, the local agencies may defer lead responsibility for any case involving a non-petroleum substance to either the appropriate Regional Board or the Department of Health Services. Under terms of the contract between the local agencies and State Board, all cases involving no financially solvent responsible party, no identifiable responsible party or no responsible party willing to conduct remedial action must be reported to the State Board for possible listing on the state Site Expenditure Plan.

Agreements Between the State Board and Local Agencies

The State Board has developed a model contract which will be used as the basis for negotiations between the local agencies and the State Board. This contract outlines in detail the types of activities expected of contracting agencies and the administrative duties of the State and Regional Boards. The model contract (Attachment 1) is hereby made a part of this water quality control policy. Language in the model contract may be modified in negotiations with the local agencies.

Petition for Review

Responsible parties or any other aggrieved persons may petition the State Board for review of actions or decisions made by a local agency as part of the agency's participation in the pilot program. The procedures for such review are contained in "Review by State Board of Action or Failure to Act by Local Agencies" (Attachment 2), which is hereby made a part of this water quality control policy.

Cost Recovery Procedures

Under terms of both the Cooperative Agreement with the federal government transferring money from the Trust Fund and Section 25297.1 of the Health and Safety Code concerning the Bond Fund, local contracting agencies must agree to keep site-specific accounting records and other such records as are necessary to verify all hours worked and expenses incurred at each underground storage tank site. Local contracting agencies will forward to the State Board monthly invoices listing all site-specific and administrative expenses.

The State Board must undertake cost recovery. Procedurally, the cost recovery efforts will be handled in the following manner. The State Board is responsible for ensuring the preparation of cost data and for invoicing responsible parties for all costs incurred by the State Board and/or local contracting agencies in performing activities covered by this agreement. Such costs shall include all additional costs required to be recovered pursuant to Health and Safety Code Section 25360. The State Board will provide guidelines to the local contracting agencies to ensure that necessary cost data are developed, maintained and reported to the State Board.

The State Board will invoice the responsible parties for all costs, both direct and indirect, attributable to that site upon conclusion of the preliminary site assessment phase. If cleanup of the site has not been completed, the State Board will continue invoicing the responsible parties at regular intervals thereafter until conclusion of site cleanup.

Upon receipt of a final invoice for each site, the State Board will invoice the responsible parties for all costs attributable to the site which have not previously been reimbursed by the responsible parties.

Payments received from responsible parties of sites having state-funded oversight will be deposited in the Hazardous Substances Clearing Account. Payments from responsible parties at federally funded sites will be handled according to procedures established by the federal Environmental Protection Agency.

Whenever a responsible party fails to repay all of the costs specified above, the State Board shall request the State Attorney General to bring a civil action to recover these moneys. The State Board shall be responsible for providing all necessary litigation support, including testimony, to the Attorney General and the Department of Health Services in any action to recover costs. The State Board will submit to the Department of Health Services a copy of each referral of state-funded sites to the Attorney General.

Evaluation Criteria

In conjunction with the pilot program, the State Board is developing the Leaking Underground Storage Tank Information System (LUSTIS). This computer tracking system will enable all local agencies and the Regional Boards to report known leaking tank sites and their cleanup status. Using LUSTIS, it will be possible to compare cleanup of sites in the pilot program with sites handled by non-contracting local agencies and the Regional Boards. Comparison criteria will include number of sites cleaned and length of time required to clean up each site. Additional statistics will be tracked by State Board staff to determine costs under the pilot program and success in cost recovery. Staff will report annually on the status of the pilot program including the above criteria. The report will be submitted to the State Board no later than September 1, 1988 and annually thereafter for the duration of the pilot program.

BECAUSE OF ITS TECHNICAL NATURE AND LENGTH, THE MODEL CONTRACT (ATTACHMENT 1) IS NOT INCLUDED IN THIS PACKET. COPIES WILL BE PROVIDED UPON REQUEST. FOR COPIES, PLEASE CONTACT BETTY MORENO, DIVISION OF WATER QUALITY, STATE WATER RESOURCES CONTROL BOARD, P.O. BOX 100, SACRAMENTO, CA 95801-0100, (916) 324-1262.

REVIEW BY STATE BOARD OF ACTION OR FAILURE TO ACT BY LOCAL AGENCIES

- (1) Applicability. This section establishes the procedures by which a responsible party or other aggrieved person may petition the State Board for review of the action or decision a local agency made as part of that local agency's participation in the pilot program. Actions or decisions made by local agencies independent of their participation in the pilot program, and actions or decisions of local agencies that are not participating in the pilot program, are not subject to review by the State Board under this section.
- (2) Petitions. Any responsible party or other aggrieved person may petition the State Board for review of an action or decision of a local agency, including a local agency's failure to act, as part of the pilot program.
 - (A) The petition shall be submitted in writing and received by the State Board within 30 days of the action or decision of the local agency. In the case of a failure to act, the 30-day period shall commence upon refusal of the local agency to act, or 60 days after the request has been made to the local agency to act. The State Board will not accept any petition received after the 30-day period for filing petitions but the State Board may, on its own motion, at any time review any local agency's action or failure to act.
 - (B) The petition shall contain the following:
 - (1) The name and address of the petitioner;
 - (2) The specific action or inaction of the local agency which the State Board is requested to review;
 - (3) The date on which the local agency acted or refused to act or on which the local agency was requested to act;
 - (4) A full and complete statement of the reasons the action or failure to act was inappropriate or improper;
 - (5) The manner in which the petitioner is aggrieved;
 - (6) The specific action by the State Board or the local agency which the petitioner requests;
 - (7) A statement of points and authorities in support of legal issues raised in the petition;
 - (8) A list of persons, if any, other than the petitioner, known by the local agency to have an interest in the subject matter of the petition. Such list shall be obtained from the local agency;
 - (9) A statement that the petition has been sent to the local agency, the appropriate Regional Board, and to any responsible parties other than the petitioner, known to the petitioner or the local agency;
 - (10) A copy of the request to the local agency for preparation of the local agency record.

- (C) If petitioner requests a hearing for the purpose of presenting additional evidence, the petition shall include a statement that additional evidence is available that was not presented to the local agency or that evidence was improperly excluded by the local agency. A detailed statement of the nature of the evidence and the facts to be proved shall also be included. If evidence was not presented to the local agency, the reason it was not presented shall be explained. If the petitioner contends that evidence was improperly excluded, the request for a hearing shall include a specific statement of the manner in which the evidence was excluded improperly.
 - (D) Upon receipt of a petition which does not comply with this subdivision, the petitioner will be notified in what respect the petition is defective and the time within which an amended petition may be filed. If a properly amended petition is not received by the State Board within the time allowed, the petition shall be dismissed unless cause is shown for an extension of time.
 - (E) The State Board may dismiss the petition at any time if the petition is withdrawn or the petition fails to raise substantial issues that are appropriate for review.
- (3) Responses. Upon receipt of a petition which complies with subdivision (2), the State Board shall give written notification to the petitioner, the responsible party or parties, if not the petitioner, the local agency, the Regional Board, the Toxic Substances Control Division Office of Legal Counsel in the Department of Health Services, and other interested persons that they shall have 20 days from the date of mailing such notification to file a response to the petition with the State Board. Respondents to petitions shall also send copies of their responses to the petitioner and the local agency, as appropriate. The local agency shall file the record specified in paragraph (B)(10) of subdivision (2) within this 20-day period. Any response which requests a hearing by the State Board shall comply with paragraph (C) of subdivision (2). The time for filing a response may be extended by the State Board. When a review is undertaken on the State Board's own motion, all affected persons known to the State Board shall be notified and given an opportunity to submit information and comments, subject to such conditions as the State Board may prescribe.
- (4) Proceedings before the State Board. After review of the record, the State Board may deny the petition or grant the petition in whole or in part.
- (A) The State Board may order one or more proceedings which are legally or factually related to be considered or heard together unless any party thereto makes a sufficient showing of prejudice.
 - (B) The State Board may, in its discretion, hold a hearing for the receipt of additional evidence. If a hearing is held, the State Board shall give reasonable notice of the time and place and of the issues to be considered to the responsible party or parties, if not the petitioner, the local agency, any interested persons who have

filed a response to the petition pursuant to subdivision (3) and such other persons as the State Board deems appropriate. The State Board in its discretion may require that, not later than ten days before the hearing, all interested parties intending to participate shall submit to the State Board in writing the name of each witness who will appear, together with a statement of the qualifications of each expert witness who will appear, the subject of the proposed testimony, and the estimated time required by the witness to present direct testimony. The Board may also require that copies of proposed exhibits be supplied to the State Board not later than ten days before the hearing.

- (C) The State Board may discuss a proposed order in a public workshop prior to final action at a State Board meeting. At the workshop meeting, the State Board may invite comments on the proposed order from interested persons. These comments shall be based solely upon factual evidence contained in the record or upon legal argument.
- (D) The evidence before the State Board shall consist of (i) the record before the local agency; (ii) any evidence admitted by the State Board at a hearing and (iii) any other relevant evidence which, in the judgment of the State Board, should be considered to effectuate and implement the pilot program. Upon the close of a hearing, the presiding officer may keep the hearing record open for a definite time, not to exceed thirty days, to allow any party to file additional exhibits, reports or affidavits. If any person desires to submit factual evidence not in the local agency record or hearing record, and the proposed order will be discussed at a workshop meeting such person may take this request to the State Board prior to or during the workshop. This request shall include a description of the evidence, and a statement and supporting argument that the evidence was improperly excluded from the record or an explanation of the reasons why the factual evidence could not previously have been submitted. If the State Board in its discretion approves the request, the evidence must be submitted in writing by the person requesting consideration of the evidence to the State Board, and to any other interested person who filed the petition or a response to the petition, within five days of such approval. The evidentiary submittal shall be accompanied by a notification that other interested parties shall be allowed an additional five days from the submittal date to file responsive comments in writing. A copy of the notification shall be filed with the State Board.
- (E) Any order granting or denying the petition will be adopted at a regularly scheduled State Board meeting. At the meeting the State Board may invite comments on the matter from interested persons. These comments shall be based solely upon factual evidence contained in the record, including any evidence accepted by the State Board pursuant to paragraph (D), or legal argument. No new factual evidence shall be submitted at the State Board meeting. If new

legal argument is to be submitted at the State Board meeting, this argument is to be filed in writing with the State Board and other interested persons at least five working days prior to the State Board meeting in order for such argument to be considered by the State Board.

- (F) An order adopted by the State Board may:
 - (i) Deny the petition upon a finding that the action or failure to act of the local agency was appropriate and proper;
 - (ii) Set aside or modify the local agency's action;
 - (iii) Direct the local agency to take appropriate action; or
 - (iv) Request appropriate action by the Regional Board or the Department of Health Services.
 - (G) If the State Board does not adopt an order or dismiss the petition within 270 days of written notification provided in subdivision (C), the petition is deemed denied. This time limit may be extended for a period not to exceed 60 days by written agreement between the State Board and the petitioner.
- (5) Stay Orders. The State Board may stay in whole or in part, pending final disposition of any petition or any proceedings for review on the State Board's own motion, the effect of the action or decision of the local agency. The filing of a petition shall not operate as a stay of the local agency's action or decision, or effect of the local agency's authority to implement or amend that action or decision, unless a stay is issued by the State Board.
- (A) A stay order may be issued upon petition of an interested person, or on the State Board's own motion. The stay order may be issued by the State Board, upon notice and a hearing, or by the State Board's Executive Director. If the stay order is issued by the Executive Director, the State Board shall conduct a hearing within 60 days after the stay order is issued by the Executive Director, to consider whether the stay order should be rescinded or modified, unless the State Board makes final disposition of the petition within that 60-day period. A request for a stay may be denied without a hearing.
 - (B) A petition for a stay shall be supported by affidavit of a person or persons having knowledge of the facts alleged. The requirement of an affidavit may be waived by the State Board in case of an emergency. A petition for a stay will be denied unless the petitioner alleges facts and produces proof of:
 - (i) Substantial harm to petitioner or to the public interest if a stay is not granted;
 - (ii) A lack of substantial harm to other interested persons and or the public interest if a stay is granted;
 - (iii) Substantial questions of law or fact regarding the action or decision of the local agency.

APPENDIX

**Sewerage Facilities and Septic Tanks in Urbanizing Areas in the
Central Coast Region**

CENTRAL COASTAL REGIONAL WATER QUALITY CONTROL BOARD

RESOLUTION NO. 69 - 1

ADOPTING POLICY STATEMENT REGARDING SEWERAGE FACILITIES AND
SEPTIC TANKS IN URBANIZING AREAS IN THE CENTRAL COASTAL REGION.

WHEREAS, Section 13052(e) of the California Water Code states that each regional board, with respect to its region, shall:

"Formulate and adopt long-range plans and policies with respect to water pollution control and water quality control within the region to conform with the policies set forth in Chapter 1 (commencing at Section 13000) and any water quality control policy adopted at any time by the state board."; and,

WHEREAS, Section 13052(a) of the California Water Code states that each regional board, with respect to its region, shall:

"Obtain coordinated action in water quality control and in the abatement, prevention and control of water pollution and nuisance by means of formal or informal meetings of the persons involved."; and,

WHEREAS, Section 13052(d) of the California Water Code states that each regional board, with respect to its region, shall:

"Request enforcement of laws concerning water pollution or nuisance by appropriate federal, state and local agencies."; and,

WHEREAS, Section 13052(c) of the California Water Code states that each regional board, with respect to its region, shall:

"Require any state or local agency to inspect and report on any technical factors involved in water pollution or nuisance."; and,

WHEREAS, within the context of this policy the term "urbanizing areas" refers to areas subject to rapid and/or concentrated development and subdivision areas of less concentrated development with individual parcels of land less than 2.5 acres; and,

WHEREAS, this board has evidence that many past, present and potential water pollution problems in the region result from the practice of serving new residential subdivisions and other urbanizing areas with individual septic tanks and leaching systems or with small, community sewerage systems that fail to provide satisfactory service; and,

WHEREAS, this board has observed that water pollution problems do not develop where local government recognizes the potential for such problems well in advance and takes steps to prevent them; and,

WHEREAS, after adequate notice, public hearings were held to receive testimony from all persons present and desiring to be heard concerning this matter; and,

WHEREAS, the board has reviewed the testimony received at the public hearings and the written statements from interested persons; now therefore, be it

RESOLVED, that it is the policy of this Board that city and county governments are requested to:

1. Prohibit the use of septic tanks and leaching systems for sewage disposal:
 - a. For any subdivision of land which comes under the provisions of the Subdivision Map Act of California unless the subdivider clearly demonstrates to the satisfaction of the governing body having jurisdiction that the use of septic tanks will be in the best public interest and that the beneficial uses of water of the state will not be adversely affected;
 - b. For any area where minimum lot sizes, dwelling densities, construction standards, percolation rates and minimum physiographic conditions have not been established by county ordinance; and
 - c. For any other area where the continued use of septic tanks constitutes a public health hazard, or existing or threatened condition of water pollution or nuisance.
2. Prohibit the development of any subdivision, trailer park, or similar development that will use its own community system for the disposal of sewage unless:
 - a. The subdivision, trailer park, or similar development is within or has access to a pre-existing governmental entity (city or district) that has authority to and has stated its intent to assume responsibility for the planning, construction, operation, and maintenance of the sewerage system or has authority to and has stated its intent to review plans and construction and assume operation and maintenance of the sewerage system upon certification by the appropriate health officer that the system is failing; and,

- b. The governmental entity (county, city or district) has developed a master plan for sewerage, pursuant to Section 65300, et seq. of the California Government Code, which includes the subdivision, trailer park, or similar development; and, be it further

RESOLVED, that this Board intends:

1. To continue to observe the progress made by local government in the Central Coastal Region toward prevention of water pollution and nuisance problems which may result from individual sewage disposal systems and from small community sewerage systems; and,
2. To seek enforcement action if and when it appears to the Board that such action is needed to prevent water pollution, nuisance or contamination because of inadequate control of development in urbanizing areas by local government; and be it further


RESOLVED, that this Board instructs its Executive Officer to transmit this resolution to all interested parties, including but not limited to the governing body of each city and county and to appropriate districts in the Central Coastal Region, and urges each body to give its full support to the policy enunciated above; and be it further

RESOLVED, that this Board requests each agency which has power to regulate the types of development that are covered by this resolution to make copies of this resolution available to all persons proposing such developments at the earliest practicable time so that each will be advised of the policy of the Regional Board in this matter.

Adopted by the Central Coastal Regional Water Quality Control Board on February 14, 1969.


BERTRAM H. MUDGETT, Chairman

ATTEST:


KENNETH R. JONES, Executive Officer

APPENDIX

**Acceptance of Monterey County Board of Supervisor's Ordinance
Applying Development Restrictions to the Bays Hills
(Bay Farms/Hillcrest)**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION
1102 A Laurel Lane
San Luis Obispo, California 93401

RESOLUTION NO. 86-02

Acceptance of Monterey County Board of Supervisor's
Ordinance Applying Development Restrictions to the
Bay Hills Area

WHEREAS, the California Regional Water Quality Control Board, Central Coast Region (hereafter Regional Board), adopted the Water Quality Control Plan for the Central Coast Basin (hereafter Basin Plan), on March 14, 1975; and,

WHEREAS, in a meeting on May 16, 1984, the Monterey County Supervisor for the Bay Farms/Hillcrest area (also known as Bay Hills) discussed the area's sewage disposal problems with Regional Board staff; and,

WHEREAS, in a letter to the County dated June 8, 1984, Regional Board staff recommended the County further investigate wastewater problems and consider a local building moratorium in lieu of a Regional Board Basin Plan amendment prohibiting individual septic system discharges in Bay Hills; and,

WHEREAS, the Bay Farms/Hillcrest area of Northern Monterey County has been designated Bay Hills County Water District, and is recognized by the State of California as such; and,

WHEREAS, the County conducted investigations and prepared a report entitled "Bay Farms Groundwater & Septic Tank Report, May, 1985," providing documentation for a moratorium; and,

WHEREAS, the State Water Resources Control Board (hereafter State Board), adopted Resolution No. 84-3, which accepts locally imposed moratoriums in lieu of Regional Board prohibitions; and,

WHEREAS, the County has declared the Bay Farms/Hillcrest area in Pajaro, California, as a "Health Hazard Area" because of contamination of domestic water systems from existing septic tank systems and endangerment of public health due to surfacing septic system effluent; and,

WHEREAS, the County, on June 25, 1985, adopted "An Ordinance of the County of Monterey, State of California, Applying Development Restrictions to the Area Generally Within the Proposed Bay Hill County Water District;" and,

WHEREAS, the Regional Board accepted public testimony and considered the County's Ordinance at the Regional Board's regularly scheduled meeting on January 10, 1986, in the Salinas City Council Chambers Rotunda, 200 Lincoln Avenue, Salinas, California.

NOW, THEREFORE, BE IT RESOLVED, that the Regional Board accepts the County's moratorium for Bay Hills adopted under its Ordinance, in lieu of a Regional Board prohibition.

BE IT FURTHER RESOLVED, that the County of Monterey is requested to coordinate a project to eliminate discharge from individual sewage disposal systems in Bay Hills according to the following schedule:

<u>Task</u>	<u>Compliance Date</u>
Begin Planning	February 1, 1986
Complete Planning	September 1, 1986
Begin Design	November 1, 1986
Complete Design	June 1, 1987
Begin Construction	March 1, 1988
Complete Construction	March 1, 1989
Cease Discharge	June 1, 1989

BE IT FURTHER RESOLVED, the Regional Board assumes authority for approval of any exemptions to the moratorium, consistent with exemption criteria contained in the Basin Plan.

BE IT FURTHER RESOLVED, that the State Water Resources Control Board is hereby requested to amend forthwith all appropriate Clean Water Grant Project Priority Lists to recognize the necessary structural solution for Bay Hills Area as a Class "A" project.

BE IT FURTHER RESOLVED, that the State Board is hereby requested to assist the local agencies in finding means to finance the design and construction of the recommended project (e.g., favorable consideration for a State Water Quality Control Fund loan or Small Communities Supplemental Assistance for the local share of project costs).

I, KENNETH R. JONES, Executive Officer of the California Regional Water Quality Control Board, Central Coast Region, do hereby certify that the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Central Coast Region, on January 10, 1986.


Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

RESOLUTION NO. 73-5

ADOPTING POLICY REGARDING BENEFICIAL USE OF
OIL FIELD WASTE MATERIALS IN THE SANTA
MARIA VALLEY OIL FIELDS, SANTA BARBARA COUNTY

WHEREAS, Water Code Section 13224 states:

"Each Regional Board may issue policy statements relating to any water quality matter within its jurisdiction."; and,

WHEREAS, oil field waste materials, including but not limited to "drilling muds", oily wastes and brines, generally contain toxic substances and materials which could significantly impair the quality of usable waters and generally constitute Group I wastes as defined by California Administrative Code, Title 23, Chapter 3, Subchapter 15, Article 3, Section 2520; and

WHEREAS, Group I wastes, such as oil field waste materials, may ordinarily be deposited only at a Class I or Class II-1 disposal site; and

WHEREAS, California Administrative Code, Title 23, Chapter 3, Subchapter 15, Article 5, Section 2540, provides:

"The regional board may waive the reporting of solid waste discharge, or approval and classification of disposal sites or types of sites, or the establishment of waste discharge requirements as provided by Section 13259 of the Water Code when an operation will not unreasonably affect water quality because of the type of waste and disposal operation, or an operation is in compliance with ordinances or regulations of other governmental agencies which adequately protect water quality. Such waivers shall be conditional and may be terminated by the regional board at any time."; and

WHEREAS, Water Code Sections 14040 and 14041 state:

"Each regional board shall approve sites suitable for the disposal of different kinds of liquid wastes, consistent with the classifications that shall be adopted by the state board, and may adopt regulations for disposal of liquid waste at such approved sites that it deems are necessary for the protection of the quality of the waters of the state."

"The hauler of liquid waste shall dispose of liquid waste in accordance with the regulations adopted by the Regional Board and shall dispose of only such type of waste as was designated for a particular site."; and

WHEREAS, under appropriate circumstances, certain clean fresh water "drilling muds" may be usable for beneficial purposes such as sealing of agricultural reservoir sites, improving tillability of certain soils, and stabilizing sandy soils without causing water quality problems or nuisance conditions; and,

WHEREAS, under appropriate circumstances, certain oily wastes may be usable for beneficial purposes such as dust control, weed abatement and road construction without causing water quality problems or nuisance conditions; and

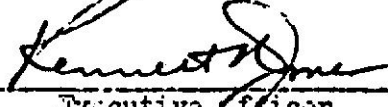
WHEREAS, in the Santa Maria Valley oil fields, it appears possible, with appropriate care, to separate those oil field waste materials which may be appropriate for beneficial uses from those materials not suitable for beneficial uses;

NOW THEREFORE BE IT RESOLVED that the following shall constitute the policy of this Board regarding beneficial use of oil field waste materials in the Santa Maria Valley oil fields, Santa Barbara County:

1. Except as hereafter expressly provided, all oil field waste materials, including but not limited to "drilling muds", oily wastes, and brines, shall be deposited at an appropriate and approved Class I or Class II-1 disposal site.
2. The following oil field waste materials may be deposited for an appropriate beneficial use at sites other than a Class I or Class II-1 disposal site provided that such site has been approved in advance by the Executive Officer of this Board, the amount of oil field waste material to be deposited and used at such site is reasonable, and adequate use practices for and control of oil field waste materials on such site are assured:
 - (a) Clean, fresh-water drilling mud removed from the drilling of an oil well prior to the time that the first production string of casing is installed.
 - (b) Clean oil, not mixed with contaminants such as salt brines or toxic materials.
3. The Executive Officer may, upon written request, approve a site for a specified use or uses of those oil field waste materials specified in Paragraph 2 above, when the Executive Officer is reasonably assured that use of such site in the manner and for the purpose proposed will not adversely affect water quality or lead to nuisance conditions. Requests for site approval shall contain such information as may be required by the Executive Officer, and at a minimum shall contain:
 - (a) A description of the site at which deposit and use of oil field waste materials will be made, and assurance that such materials will be used solely at and retained on such site.

- (b) A description of the type of oil field waste material which will be used, the purpose or purposes for which it will be used, and the maximum quantity or quantities which will be used.
 - (c) Assurance that the applicant or a competent agent, will be present at the time of each delivery of oil field waste material.
 - (d) A proposed plan of use, specifically including cultivation practices and/or other appropriate control uses and measures, which will be taken to protect water quality and prevent nuisance.
 - (e) Certification that the proposed use or uses of oil field waste materials comply with all city, county, or other local use and zoning requirements and that all necessary use permits will be obtained and maintained.
 - (f) Certification that the applicant will submit such monitoring and technical reports as may be required by the Executive Officer.
 - (g) Certification that the applicant is the owner of the site at which deposit and use of oil field waste materials will be made, or written consent of the owner of such site to the proposed use.
4. In the event that the Executive Officer determines that there is reasonable assurance that the use of oil field waste materials at the site proposed and in the manner proposed will not adversely affect water quality or lead to nuisance conditions, the Executive Officer may, in writing, approve such site. The approval shall be contingent upon full and exact compliance with all statements, representations and assurances contained in the request, and shall further provide that:
- (a) Site approval may be withdrawn at any time, in the discretion of the Executive Officer, upon a determination that further use of the site for deposit or use of oil field waste materials will or may adversely affect water quality or create nuisance conditions.
 - (b) Site approval does not relieve the landowner, or any other person, from otherwise complying with all state and local laws, rules, regulations and ordinances, and specifically does not constitute a license for use of oil field waste materials except in strict accord with the request and approval.
5. The Executive Officer shall remove site approval in the event of violation of any of the statements, representations, and assurances contained in the request.

I, Kenneth R. Jones, Executive Officer, do hereby certify the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Central Coast Region, on December 14, 1973.


Executive Officer

APPENDIX

**Recommendation to the State Water Resources Control Board
Concerning the Designation of Terrace Point in Santa Cruz County as an
Area of Special Biological Significance**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

RESOLUTION NO. 76-10

RECOMMENDATION TO THE STATE WATER RESOURCES
CONTROL BOARD CONCERNING THE DESIGNATION OF
TERRACE POINT IN SANTA CRUZ COUNTY AS AN AREA
OF SPECIAL BIOLOGICAL SIGNIFICANCE

WHEREAS:

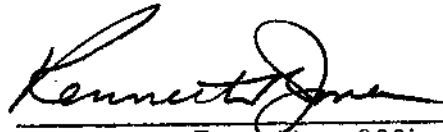
1. The State Water Resources Control Board has adopted a Water Quality Control Plan, Ocean Waters of California;
2. This plan established the concept of designating some ocean waters as Areas of Special Biological Significance to afford special protection for marine life to the extent that waste discharge requirements or other procedures will not insure;
3. Such areas are to be designated by the State Water Resources Control Board after public hearings by the Regional Board and review of the Regional Board's recommendation;
4. Testimony was received by the Central Coast Regional Board concerning the Terrace Point area of Santa Cruz County as an Area of Special Biological Significance at hearings on February 9, 1973 and March 9, 1973;
5. The Regional Board did not include Terrace Point in its list of areas recommended to the State Board for consideration because of insufficient evidence;
6. The State Water Resources Control Board received further testimony regarding Terrace Point as an Area of Special Biological Significance at its hearing on March 21, 1974, but remanded it to the Regional Board for further hearing and recommendation;
7. After due notice, including publication in the Santa Cruz Sentinel, a third hearing was held by the Regional Board on November 19, 1976, pertaining to the designation of Terrace Point as an Area of Special Biological Significance;
8. Testimony for and against designating Terrace Point as an Area of Special Biological Significance was received at that hearing;
9. After considering all testimony received, the hearing panel did agree upon a recommendation to be submitted to the Regional Board.
10. At its regular meeting on December 10, 1976, the Board did receive the recommendation of the hearing panel and did review the record of the hearings concerning this matter;
11. The Board finds that adequate protection of water quality and beneficial uses can be provided through waste discharge requirements, permits, and aforementioned

activities, and that designation of the Terrace Point area as an Area of Special Biological Significance is not warranted;

NOW, THEREFORE, BE IT RESOLVED:

1. The California Regional Water Quality Control Board, Central Coast Region, recommends to the State Water Resources Control Board that Terrace Point not be considered for the designation of Area of Special Biological Significance; and, furthermore,
2. That copies of this resolution and the Board's staff report and copies of all other evidence presented, be transmitted to the State Water Resources Control Board.

I, KENNETH R. JONES, Executive Officer of the California Regional Water Quality Control Board, Central Coast Region, do hereby certify the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Central Coast Region, on December 10, 1976.



Executive Officer

APPENDIX

**Supporting Approval of the Clean Water and Water Conservation Bond
Law of 1978**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

RESOLUTION NO. 78-04

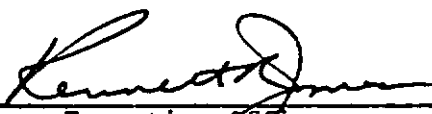
SUPPORTING APPROVAL OF THE CLEAN
WATER AND WATER CONSERVATION BOND
LAW OF 1978

- WHEREAS, the people of the State of California repeatedly have expressed their interest in ending water pollution in this State; and
- WHEREAS, the Legislature passed the Porter-Cologne Water Quality Control Act which provides the authority and policy to require rapid compliance with high water quality standards; and
- WHEREAS, the Board is determined to protect and enhance the quality of all waters of the State; and
- WHEREAS, in order to carry out these objectives it is essential that new and improved facilities for the treatment, disposal and reclamation of sewage and other wastes be constructed at the earliest possible date; and
- WHEREAS, the United States Congress has passed legislation which requires improved standards in water pollution control facilities, and provides Federal grants to assist in achieving such objectives; and
- WHEREAS, in accelerating the needed waste treatment construction program of municipalities, inordinate financial burdens will be placed on the property taxpayers in a relatively short period of time unless the State assumes a share of the cost; and
- WHEREAS, all of the citizens of the State benefit from improved water quality; and
- WHEREAS, the drought of 1976 and 1977 demonstrated the need for conservation of freshwater and greater reuse of wastewater; and
- WHEREAS, the Legislature has passed and the Governor has signed the Clean Water and Water Conservation Bond Law of 1978, which will provide needed financial aid to local governments; and
- WHEREAS, this law will be considered by the voters of the State as Proposition 2 on June 6, 1978; and
- WHEREAS, some public agencies will be unable to construct necessary wastewater treatment, disposal and/or reclamation systems without State assistance; and
- WHEREAS, discontinuance of State assistance will cause delays in the construction of some necessary treatment works, reclamation systems, and water conservation projects; and

WHEREAS, the California Regional Water Quality Control Board, Central Coast Region, is the State agency with primary responsibility for the coordination and control of water quality in the Region;

NOW, THEREFORE, BE IT RESOLVED, that the California Regional Water Quality Control Board, Central Coast Region, expresses its support for Proposition 2 and urges every California voter to vote "yes" so that pollution control and environmental enhancement activities of local agencies can be continued.

I, KENNETH R. JONES, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Central Coast Region on April 14, 1978.


Executive Officer

APPENDIX

**Regarding Marina County Water District's Petition to Delete the Southern
Monterey Bay Discharge Prohibition Zones from the Basin Plan**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

RESOLUTION NO. 79-06

Resolution Regarding Marina County Water District's
Petition to Delete the Southern Monterey Bay Discharge
Prohibition Zone from the Basin Plan

WHEREAS, The California Regional Water Quality Control Board, Central Coast Region, (hereafter Regional Board), adopted the Water Quality Control Plan for the Central Coastal Basin (hereafter Basin Plan) on March 25, 1975, pursuant to Section 13240, et. seq. of the California Water Code and,

WHEREAS, The Basin Plan was reviewed and approved by the California State Water Resources Control Board and the United States Environmental Protection Agency; and,

WHEREAS, The Basin Plan prohibits waste discharges to the southern extreme of Monterey Bay, inshore from an imaginary line extending from Point Pinos (36°-38.3' N., 121°-56.0' W.) to the mouth of the Salinas River (36°-44.9' N., 121°-48.3' W.), effective July 1, 1983, and

WHEREAS, the Marina County Water District discharges treated wastewater to the southern Monterey Bay prohibition zone, and

WHEREAS, in April, 1979, Marina County Water District challenged the southern Monterey Bay prohibition zone, as contained in the Basin Plan, and waste discharge requirements and enforcement orders based on this prohibition, and

WHEREAS, during a public hearing on June 18, 1979, the Regional Board received testimony and reconsidered factors which prompted prohibition zone establishment, including:

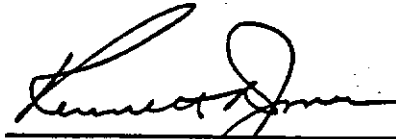
1. Weak ocean currents and sluggish circulation
2. High ammonia concentrations and nutrient build-up
3. Adverse affects on designated Areas of Biological Significance
4. History of beach contamination
5. Importance of water-contact recreation and marine habitat
6. Projected wastewater flow increases
7. Political, social, and economic concerns, and

NOW, THEREFORE, be it resolved, that the Regional Board finds the following:

1. The establishment of the southern Monterey Bay prohibition zone in the Basin Plan was appropriate, based on information available at that time.
2. Data available since Basin Plan adoption supports the southern Monterey Bay discharge prohibition.

3. Amendment of the Basin Plan with respect to the southern Monterey Bay discharge prohibition zone is unwarranted.

I, Kenneth R. Jones, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a Resolution duly and regularly adopted by the California Regional Water Quality Control Board, Central Coast Region, on June 18, 1979.



Executive Officer

APPENDIX

**Certification of Santa Cruz County's Wastewater Management Program
for the San Lorenzo River Watershed**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

RESOLUTION NO. 87-04

CERTIFICATION OF SANTA CRUZ COUNTY'S
WASTEWATER MANAGEMENT PROGRAM
FOR THE
SAN LORENZO RIVER WATERSHED

WHEREAS, Chapter 962 of the Statutes of 1986 states it is the intent of the Legislature to assist the San Lorenzo Valley Water District with its cash-flow problem by providing a loan; and,

WHEREAS, one condition of the state making the loan is "the County of Santa Cruz shall agree to undertake a program which will adequately ensure that the use of on-site waste water disposal systems will not pollute waters of the state;" and,

WHEREAS, the County of Santa Cruz developed a multifaceted wastewater management program for the San Lorenzo River Watershed; and,

WHEREAS, the County of Santa Cruz submitted the program to the Regional Board; and,

WHEREAS, the Regional Board has reviewed the program and the progress of its implementation through reports, including periodic presentations by county staff to the Board; and,

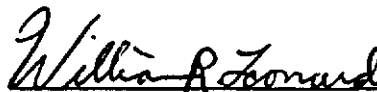
WHEREAS, prior to the state making a loan the Regional Board must certify the adequacy of the County's program; and,

WHEREAS, Resolution No. 339-87, "Concerning Continued Implementation of a Wastewater Management Program for the San Lorenzo River Watershed," adopted by the Santa Cruz County Board of Supervisors on May 12, 1987, assures continued implementation of that wastewater management plan; and,

WHEREAS, the wastewater management plan contains the elements necessary to ensure protection of the waters of the state.

THEREFORE BE IT RESOLVED: the Regional Water Quality Control Board, Central Coast Region, certifies Santa Cruz County's Wastewater Management Program for the San Lorenzo Valley is adequate to satisfy the condition for the loan authorized by Chapter 962 of the Statutes of 1986.

I, WILLIAM R. LEONARD, Executive Officer of the California Regional Water Quality Control Board, Central Coast Region, do hereby certify that the foregoing is a full, true, and correct copy of a resolution adopted by the California Regional Water Quality Control Board, Central Coast Region, on June 12, 1987.


Executive Officer

APPENDIX

Policy Regarding Disposal of Highway Grooving Residues

POLICY REGARDING DISPOSAL OF HIGHWAY GROOVING RESIDUES

1. Each highway grooving residue site shall be approved by the Executive Officer prior to use.
2. Waste Discharge Requirements may be waived, provided the following conditions are met:
 - a. Grooving residues are confined to the trenches without overflow.
 - b. Trenches do not intercept ground water.
 - c. Disposal activities do not occur during the rainy season (December through April).

APPENDIX

Waiver of Regulations of Specific Types of Waste Dischargers

State of California
California Regional Water Quality Control Board
Central Coast Region

April 15, 1983

ITEM: 7

SUBJECT: Review of Staff Procedures Regarding Waiver of Regulation of Specific Types of Waste Discharges.

DISCUSSION: Water Code Section 13263 provides Regional Boards with authority to issue waste discharge requirements for any discharge, other than into a community sewer system, that could affect the quality of the waters of the State. However, Water Code Section 13269 allows the Boards to waive regulation of a specific discharge or specific types of discharges where such action is in the public interest. This paragraph in the code allows flexibility to the Regional Boards so regulatory resources can be directed toward potential problems rather than consumed through regulation of waste discharges that will have no affect on quality of the state's waters.

Historically, staff has made most decisions regarding which discharges to regulate. Those decisions were based upon the size, type, duration, location, and significance of each existing or proposed waste discharge as well as staff resources available. All waivers granted by staff have been conditional and could be terminated at any time. Types of discharges which have received waivers from regulation by staff have usually fallen into one of the categories listed in Appendix A of this agenda item.

A recent opinion from the State Board's Office of Chief Counsel states that only the Regional Board itself can waive regulation of any discharge. One method of complying with this opinion would be for staff to schedule every waste discharge for a hearing before the Regional Board. However, because of limited resources, both Board and staff time must be directed to the more significant water quality problems. There are hundreds of waste discharges in the Region which have little or no impact on water quality. Many discharges are regulated through development of Best Management Practices rather than waste discharge requirements. For scattered sources of relatively minor quantities of pollutants, this management by exception is a more cost-effective method of regulation.

In order to meet the terms of the legal opinion and still effectively use resources that are available, the Executive Officer proposes the following procedure:

A proposed discharge or an existing unregulated discharge, which can be categorized as one of the types of discharges shown on the list in Appendix A, will be evaluated by staff. Discharges without perceivable significant impacts on water quality or public health will receive a tentative waiver from staff. With some exceptions, these tentative waivers will be reported to the Board on its next available agenda. Regional Board will be requested to ratify the staff's preliminary decisions and thus the Board can grant waivers from direct regulation generally on a case-by-case basis. Exceptions to this procedure are those types of discharge marked by an asterisk. These discharges are too small, insignificant, or numerous to list on the Board's agenda; or they are discharges for which regulating authority has been delegated by the Regional Board. For example, Regional Board Resolution 82-09 establishes applicable criteria for individual on-site sewage disposal systems. When a valid memorandum of understanding exists between the Regional Board and the local agency, permitting authority is delegated to the local agency.

Those dischargers which (1) cannot be categorized as one of the types of discharges on the attached list, or (2) may have significant water quality impacts (e.g., due to low flow rate of receiving water, or unique location of discharge), or (3) where any questions or uncertainty concerning conditions or facts remain, will be required to submit a Report of Waste Discharge with appropriate filing fee, and proposed requirements will be brought to the Board for consideration under normal procedures. After evaluating the facts, the Board may in some cases still determine that a waiver of direct regulation is appropriate.

Where waste discharge requirements have been issued by the Regional Board and have not expired, a waiver of that regulation cannot be obtained without a decision by the Board following a hearing. Thus, the procedure described above cannot be used to modify any existing order of the Board during the life of the permit. When a permit expires, staff will follow the procedure outlined above. Past self-monitoring reports and inspection reports will be used in evaluating the need for permit renewal. If staff determines that a tentative waiver is appropriate, that recommended action will be subject to Board ratification.

ATTACHMENT: Appendix A

RECOMMENDATION: Unless the Regional Board objects, staff will operate as described above.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

TYPES AND NATURE OF WASTE DISCHARGES
WHICH WILL BE CONSIDERED
FOR WAIVER OF REGULATION

<u>Type of Waste Discharge</u>	<u>Limitations</u>
1. Air conditioner, cooling and elevated temperature waters	Discharged to storm drains, to land, or in small volumes which will not change temperature of receiving water more than one degree C.
2. Drilling muds	Discharged to sump with at least two feet of freeboard. Sump must be dried by evaporation or pumping. Drilling muds may remain in sump only if discharger demonstrates mud is non-toxic. Sump area shall be restored to preconstruction state within sixty (60) days of completion or abandonment of well. Clean, oil-free, freshwater drilling mud removed from the oil well drilling operation prior to the time the first production casing is installed.
3. Oilfield waste materials	Clean oil not mixed with contaminants such as salt brines or toxic materials, (Reference: Staff Guidelines) used for beneficial purposes such as dust control, weed control and mosquito abatement where oil cannot reach State waters.
4. Minor dredge operations	When operation is short-term and spoil is nontoxic, and discharged to land.
5. Group 3 solid wastes	Small-scale operations using good disposal and erosion control practices.
*6. Test pumpings of fresh water wells	When pollutants are neither present nor added.
7. Storm water runoff	Where no water quality problems are contemplated and no federal NPDES permit is required.
*8. Erosion from construction projects	Where Best Management Practice (BMP) plans have been formulated and implemented or the local entity has an approved program for implementing BMP's (Reference: Resolution No. 79-09).

9. Pesticide rinse waters from applicators
Where discharger complies with State Board's Pesticides Guidance Document, (January, 1982)
10. Confined animal wastes
Where discharger complies with the Basin Plan and no federal NPDES permit is required.
11. Minor stream channel alterations and suction dredging
Where regulated by Department of Fish and Game conditions.
12. Short-term sand and gravel operations
Operations where washwaters are confined to land.
13. Metals mining operations
Operations confined to land where toxic materials are not used in recovery operations.
- *14. Swimming pool discharges
Where adequate dilution exists to offset chlorine toxicity or where beneficial uses will not be affected.
15. Food processing wastes spread on land
Small, seasonal, confined to land, and removed from populated areas.
16. Agricultural commodity wastes
Small, seasonal, confined to land, and removed from populated areas.
17. Industrial wastes utilized for soil amendments
Where industry certifies nontoxic and non-hazardous content and BMP for agricultural application used.
- *18. Timber harvesting
Operating under approved Timber Harvest Plan.
19. Minor hydro projects
Operating under water rights permit from State Water Resources Control Board or Fish and Game conditions.
20. Irrigation return water
Where sediment meets Basin Plan turbidity objectives and discharge is not toxic fish or wildlife. (Exempted from NPDES permit as per consolidated regulations)
- *21. Project where application for Water Quality Certification is required
Where project (normally minor construction) is not expected to have a significant water quality effect, and project complies with Fish and Game conditions.

22. Brine disposal
To ocean without toxic constituents or to impermeable ponds.
- *23. Individual sewage disposal systems
Where project is required to meet standard criteria of county or city that is implementing Basin Plan requirements pursuant to MOU, or an individual project that complies with Basin Plan.
24. Treatment and disposal systems for sanitary waste from small community, institutional, commercial, industrial operations.
Small community systems (serving five or less residential units) or institutional, commercial, or industrial systems (less than 2500 gallons per or day) with subsurface disposal, regulated by local agency that is implementing the Basin Plan through MOU with Regional Board, or an individual project that complies with the Basin Plan.
25. Flow-thru seawater systems and aquacultural operations.
Where no water quality problems are anticipated and no federal NPDES permit is provided.
- *26. Injection wells
Where waste is produce water (CDOG/SWRCB MOA)

*The Board will not be requested to ratify staff waivers for these discharge types.

APPENDIX

**Support Material for Calculating Adjusted
Sodium Absorption Ratio (SAR)**

TABLES FOR CALCULATING pHc VALUES OF WATERS

pHc can be calculated, using the table below; $pHc = (pK_2 - pK_1) + p(Ca+Mg) + pAlk$ where $pK_2 - pK_1$ is obtained from Ca+Mg+Na
 $p(Ca+Mg)$ " " " Ca+Mg
 $pAlk$ " " " CO_3+HCO_3

Tables for Calculation pHc

Conct. Ca+Mg+Na (me/l)	$pK_2 - pK_1$	Conct. Ca+Mg (me/l)	$p(Ca+Mg)$	Conct. CO_3+HCO_3 (me/l)	$pAlk$
.5	2.11	.05	4.60	.05	4.30
.7	2.12	.10	4.30	.10	4.00
.9	2.13	.15	4.12	.15	3.82
1.2	2.14	.2	4.00	.20	3.70
1.6	2.15	.25	3.90	.25	3.60
1.9	2.16	.32	3.80	.31	3.51
2.4	2.17	.39	3.70	.40	3.40
2.8	2.18	.50	3.60	.50	3.30
3.3	2.19	.63	3.50	.63	3.20
3.9	2.20	.79	3.40	.79	3.10
4.5	2.21	1.00	3.30	.89	3.00
5.1	2.22	1.25	3.20	1.25	2.90
5.8	2.23	1.58	3.10	1.57	2.80
6.6	2.24	1.98	3.00	1.98	2.70
7.4	2.25	2.49	2.90	2.49	2.60
8.3	2.26	3.14	2.80	3.13	2.50
9.2	2.27	3.90	2.70	4.0	2.40
11	2.28	4.97	2.60	5.0	2.30
13	2.30	6.30	2.50	6.3	2.20
15	2.32	7.90	2.40	7.9	2.10
18	2.34	10.00	2.30	9.9	2.00
22	2.36	12.50	2.20	12.5	1.90
25	2.38	15.80	2.10	15.7	1.80
29	2.40	19.80	2.00	19.8	1.70
34	2.42				
39	2.44				
45	2.46				
51	2.48				
59	2.50				
67	2.52				
76	2.54				

Example: To calculate adj.SAR of water from

$$adj.SAR = \frac{Na}{\sqrt{\frac{Ca+Mg}{2}}} [1 + (8.4 - pHc)]$$

With report of water analysis
 Na = 3.5 me/l
 Ca+Mg = 1.0 me/l
 Ca+Mg+Na = 4.5 me/l
 CO_3+HCO_3 = 3.0 me/l

$$pHc = 2.21 + 3.30 + 2.5 = 8.01 \text{ (from tables)}$$

$$adj.SAR = \frac{3.5}{\sqrt{1/2}} [1 + (8.4 - 8.01)] = 4.95 (1 + .39)$$

$$adj.SAR = 6.88$$

NOTE: Values of pHc above 8.4 indicate tendency to dissolve lime from soil through which the water moves; values below 8.4 indicate tendency to precipitate lime from waters applied.

(ref: L.V. Wilcox, U.S. Salinity Laboratory, mimeo Dec. 30, 1966)

APPENDIX A-21

**NIPOMO INDIVIDUAL SEWAGE DISPOSAL
SYSTEM PROHIBITION #1A**

NIPOMO INDIVIDUAL SEWAGE DISPOSAL SYSTEM PROHIBITION #1A

BEGINNING at the point of the southernmost property corner of Assessor's Parcel Number (APN) 92-331-8 near the intersection of Southland Street and Orchard Road; thence north-easterly along the northerly boundary line at Southland Street to intersect the easterly boundary line of U.S. Highway 101; thence northwesterly along said line to the westernmost property corner of APN 92-301-12; thence along a bearing approximately N 48° 15' to intersect the easterly boundary line of Oakglen Avenue; thence northwesterly along said line to the southerly boundary line of Division Street; thence along an extension of said line to the easterly boundary line of Thompson Avenue; thence northwesterly along said line to the south property corner of APN 90-081-10; thence northeasterly along southeastern boundary of said parcel to the east property corner; thence northwesterly along an extension of the westerly boundary line of Cedar Street to the northerly boundary line of Tefft Street; thence northeasterly along said line to the easternmost property corner of APN 90-371-58; thence northwesterly along an extension of the boundary of said parcel to the southerly boundary line of Chestnut Street; thence southwesterly along said line to the westerly boundary line of Thompson Avenue; thence northwesterly along said line to the easternmost property corner of APN 90-151-13; thence along a bearing approximately S 48° W to intersect the easterly boundary line of Willow Road; thence southeasterly along said line to the southerly boundary line of Juniper Street; thence northeasterly along said line to the westernmost property corner of APN 92-131-06; thence along a bearing S 34° 30'E to the southerly boundary line of Tefft Street; thence southwesterly along said line to the west corner of APN 92-132-34; thence along a bearing of S 34° 30'E to the southerly boundary line of Hill Street; thence northeasterly along said line to the west corner of APN 92-133-26; thence along a bearing of S 34° 30'E to intersect the northerly boundary line of Division Street; thence southwesterly along said line to the easternmost property corner of APN 92-172-02; thence along a bearing approximately N 67° 28'W to the northernmost property corner of APN 92-454-20; thence along a bearing approximately S 22° 26'W to the westernmost property corner of APN 9-111-25; along a bearing approximately S 67° 28'E to intersect the easterly boundary line of Division Street; thence northeasterly along said line to the westernmost property corner of APN 92-181-13; thence along a bearing approximately S 64° 33'E to the southernmost property corner of APN 92-181-13; thence along a bearing approximately N 37° 30'E to the easterly boundary line of Orchard Road; thence southeasterly along said line to the true POINT OF BEGINNING.

APPENDIX A-22

**NIPOMO INDIVIDUAL SEWAGE DISPOSAL
SYSTEM PROHIBITION #1B**

APPENDIX A-23

SAN LORENZO VALLEY CLASS I AREA

SAN LORENZO VALLEY CLASS I AREA

Ben Lomond Book 77, Pages*

04, (Block 1, Lots 15, 16, 17, 20, 21, 27, 28, 29, 30, 31, 36, 37, 40, 41, 42, 47, 48, 50, 51, 52), 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 20, 21, 22, 23, 24 (Block 1 only), 25, 26, 27, 28.

Book 78, Pages* 162-03

Boulder Creek Book 81, Pages*

06, 07, 08, 09, 11, 12, 13, 14, 15 (all Block 1 and Block 2, Lots 1, 2, 3, 4, 8, 9, 11, 12), 16, 17, 20, 21, 22, 25, 26, 27, 28, 29.

Book 82, Pages*

20, 21, 22, 23, 27, (Block 1, Lot 12 only)

Book 89, Pages*

16 (Block 3, Lot 1 and Block 5, Lots 3, 4, 5), 17 (Block 1, Lots 4, 5), 18.

Book 90, Pages*

01, 02, 11 (Block 1, Lots 17, 19, 21, 22, 23, 24, 25)

Lower Kings/Wildwood

Book 83, Pages*

04, 07, 08, 11, 12, 13, 1, Lots 1, 2, 4, 5, 6, 18, 19 and Block 2)

Book 84, Pages*

01, 02, 03, 04, 05, 06, 07, 08, 09, 11

Book 85, Pages*

13, 14, 16, 17, 18, 19

Glen Arbor

Book 72, Pages*

07, 11, 14, 15, 17, 18, (Block 1, Lots 25, 26; Block 2, Lots 1, 2, 3)

Felton Book 65, Pages*

01, 02, 03, 04, 05, 06, 07, 08, 09, 11, 12, 13, 14, 15, 16, 17, 18, 21, 22

Book 71, Pages*

03 (Block 01, Lots 3, 13, 15, 16, 17, 18, 23, 24, 25, 26, 30, 38, 49, 50, 51, 52, 63, 64, 65), 04, 05, 06, 07, 15 (school district property only), 16, 17, 17, 18, 19, 25, 26, 29

* Parcel numbers are indicated by complete pages, unless otherwise noted.

APPENDIX A-24

SAN LORENZO VALLEY CLASS II AREA

SAN LORENZO VALLEY CLASS II AREA

Forest Lakes Book 64, Pages*

5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16 (Block 1, Lots 1, 2, 3), 17, 22, 29, 30 (All Block 1), 31, 32, 33, 34

Book 65, Pages*

19, 20, 23, 24, 25

Mount Hermon Book 66, Pages*

1, 2, 3

East Glen Arbor Book 72, Pages*

12, 18 (Block 1, Lots 1, 2, 8, 10, 11, 12, 13, 14, 18, 19, 20, 21, 23, 24, 27), 19, 24, 25, 27, 28, 29, 30, 35, 37

Brook Lomond Book 78, Pages*

6, 7, 8

Brookdale Book 79, Pages*

9, 10 (Block 1, Lots 6, 8, 9, 10, 12, 13, 14, 15, 18; Block 2, Lots 1, 2, 3, 4)

Forest Springs/Forest Park/ Brackenbrae Book 81, Pages*

2 (Block 1, Lots 1, 2, 3, 4, 5, 6, 7, 8, 12, 14, 15), 3 (Block 1, Lots 5, 6, 11, 12), 4, 5 (Block 1, Lots 1, 2)

Book 82, Pages*

1, 2 (Block 1, Lots 2, 3, 4, 5, 6, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20, 21, 24, 26, 27, 28) 3, 4, 5, 7, 12, 31

Book 83, Pages*

16 (Block 1, lots 5, 7, 8, 13, 14, 15, 16, 18), 17 (Block 1, Lot 4), 18, 19, 20, 21, 22, 23

Riverside Grove Book 85, Pages*

2, 3, 4, 5, 6, 8

San Lorenzo Woods/Ramona

Woods Book 87, Pages*

16, 18, 19, 20, 21

San Lorenzo Park Book 87, Pages*

7, 8, 9, 10, 11, 12

Zayante Book 74, Pages*

2, 3, 4, 5, 7, 9, 10, 12, 13, 14, 15, 16

Lompico Book 75, Pages*

1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30

APPENDIX

**Los Osos Baywood Park Individual and Community
Sewage Disposal System Prohibition Area**

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL COAST REGION

RESOLUTION NO. 83-13

Revision and Amendment of Water Quality Control
Plan by the Addition of a Prohibition of Waste
Discharge from Individual Sewage Disposal
Systems Within the Los Osos/Baywood Park Area,
San Luis Obispo County

- WHEREAS, the California Regional Water Quality Control Board, Central Coast Region (hereafter Regional Board), adopted the Water Quality Control Plan for the Central Coastal Basin (hereafter Basin Plan) on March 14, 1975; and,
- WHEREAS, the Regional Board, after notice and public hearing in accordance with Water Code Section 13244, periodically revises and amends the Basin Plan to ensure reasonable protection of beneficial uses of water and prevention of pollution and nuisance; and,
- WHEREAS, in protecting and enhancing water quality, the Basin Plan specifies certain areas where the discharge of waste, or certain types of waste, is prohibited; and,
- WHEREAS, Article 5, Chapter 4, Division 7, of the California Water Code defines criteria for such prohibition areas (Section 13240 et seq.); and,
- WHEREAS, Los Osos/Baywood Park is an unincorporated community, with a 1980 population of 10,933 persons located south of the City of Morro Bay, in San Luis Obispo County; and,
- WHEREAS, current zoning will accommodate a population in excess of 27,000 people and an average residential lot size of about 6600 ft²; and,
- WHEREAS, on-site soil absorption or evapotranspiration systems are the sole means of wastewater disposal in the Los Osos/Baywood Park area; and,
- WHEREAS, the Los Osos/Baywood Park area soil permeability is rapid and there are substantial areas with high groundwater; and,
- WHEREAS, the majority of lots are too small to provide adequate dispersion of individual sewage disposal system effluent; and,

- WHEREAS, the San Luis Obispo County Environmental Health Department has provided documentation concerning the problem of liquid waste disposal in the Los Osos/Baywood Park area; and,
- WHEREAS, the County of San Luis Obispo is preparing an environmental impact report (EIR) in accordance with the California Environmental Quality Act and a project report that identifies adverse environmental impacts from continued use of septic tanks in the Los Osos/Baywood Park area and discusses alternatives to existing wastewater management practices; and,
- WHEREAS, "Los Osos-Baywood Park/Phase I Water Quality Management Study" cites conditions which constitute contamination and pollution as defined in Section 13050 of the California Water Code; and,
- WHEREAS, chemical analyses of wells in Los Osos/Baywood Park indicates 38% of the shallow wells tested in the Phase I study, taking water from the Old Dune Sands deposits portion of the aquifer, contain nitrate concentrations which exceed State Health Department Drinking Water Standards of 45 milligrams per liter; and,
- WHEREAS, bacterial analyses of 42 wells tested in the Phase I study resulted in 26 wells indicating total coliform in violation of State Health Drinking Water Standards, and 2 wells indicating fecal coliform in violation of Basin Plan limits for groundwater; and,
- WHEREAS, surface water bacterial analyses tested in the Phase I study indicated total and fecal coliform levels exceeding Basin Plan recommended limits for water contact recreation (REC-1); and,
- WHEREAS, a letter from the California Health and Welfare Agency, Department of Health Services, states their concerns regarding the high nitrate levels in the waters of Los Osos/Baywood Park area, and recommends adequate measures be taken to correct the nitrate problems to bring the waters into compliance with California Drinking Water Standards; and,
- WHEREAS, a letter from the San Luis Obispo County Health Agency Director cites violation of the public health limit for nitrates and recommends elimination of shallow groundwater usage and adoption of a discharge prohibition; and,
- WHEREAS, the Regional Board is obligated to include a program of implementation for achieving water quality objectives in its Basin Plan; and,
- WHEREAS, present and anticipated future beneficial uses of Los Osos/Baywood Park creeks include recreation and aquatic habitat; and,

WHEREAS, Los Osos Basin groundwaters are suitable for agricultural, municipal, domestic, and industrial water supply; and,

WHEREAS, a Regional Board staff report finds beneficial uses of Los Osos ground and surface waters are adversely affected by individual sewage disposal system discharges, there appears to be a trend of increasing degradation, and public health is jeopardized by occurrences of surfacing effluent; and,

WHEREAS, drafts of proposed revisions and amendments of the Basin Plan, prohibiting discharges from Los Osos/Baywood Park individual sewage disposal systems, have been prepared and provided to interested persons and agencies for review and comment; and,

WHEREAS, Regional Board staff has prepared documents and followed appropriate procedures to satisfy the environmental documentation requirements of both the California Environmental Quality Act, under Public Resources Code Section 21080.5 (Functional Equivalent), and the Federal Clean Water Act of 1977 (PL 92-500 and PL 95-217), and the Regional Board finds adoption of this prohibition area will not have a significant adverse effect on the environment; and,

WHEREAS, on September 16, 1983, in the San Luis Obispo City Council Chambers, 990 Palm Street, San Luis Obispo, California, after due notice, the Regional Board conducted a public hearing at which evidence was received pursuant to Section 13281 of the California Water Code concerning the impact of discharges from individual sewage disposal systems on water quality and public health; and,

WHEREAS, pursuant to Section 13280 of the California Water Code, the Regional Board finds that discharges of wastes from new and existing individual disposal systems which utilize subsurface disposal in the affected area will result in violation of water quality objectives; will impair beneficial uses of water; will cause pollution, nuisance, or contamination; and will unreasonably degrade the quality of waters of the State; and,

WHEREAS, the Regional Board finds the aforesaid conditions in need of remedy to protect present and potential beneficial uses of water and to prevent pollution and nuisance.

NOW, THEREFORE, BE IT RESOLVED, that the Water Quality Control Plan, Central Coastal Basin, be amended as follows:

Page 5-66, after Item 7, following the legal description for Pasatiempo Pines (added by Resolution 83-09), insert the following prohibitions:

- "8. Discharges of waste from individual and community sewage disposal systems are prohibited effective November 1, 1988, in the Los Osos/Baywood Park area, and more particularly described as:

"Groundwater Prohibition Zone

(Legal description to be provided for area prescribed by Regional Board).

"Failure to comply with any of the compliance dates established by Resolution 83-13 will prompt a Regional Board hearing at the earliest possible date to consider adoption of an immediate prohibition of discharge from additional individual and community sewage disposal systems."

Discharges from individual or community systems within the prohibition area in excess of an additional 1150 housing units (or equivalent) are prohibited, commencing with the date of State Water Resources Control Board approval.

BE IT FURTHER RESOLVED, that the above area is consistent with the recommendations of the staff report as shown on "Attachment A."

BE IT FURTHER RESOLVED, that the Regional Board does intend standard exemption criteria, first paragraph of Page 5-67 of the Basin Plan, to apply to this action.

BE IT FURTHER RESOLVED, that compliance with the above prohibition of existing individual or community sewage disposal systems shall be achieved according to the following time schedule:

<u>Task</u>	<u>Compliance Date</u>
Begin Design	November 1, 1984
Complete Design	November 1, 1985
Obtain Construction Funding	December 1, 1985
Begin Construction	April 1, 1986
Complete Construction	November 1, 1988

BE IT FURTHER RESOLVED, that reports of compliance or noncompliance with schedules shall be submitted to the Regional Board within 14 days following each scheduled date unless otherwise specified, where noncompliance reports shall include a description of the reason, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance.

BE IT FURTHER RESOLVED, the County will continue a monitoring program, approved by the Regional Board staff, that will monitor ground water quality within the prohibition boundaries as set forth in this resolution, and also a monitoring program which covers areas outside the prohibition boundaries but within the urban reserve line as shown in Attachment A.

BE IT FURTHER RESOLVED, that the Regional Board has determined this action will not have a significant adverse impact on the environment and the Executive Officer of the Regional Board is hereby directed to file a Notice of Decision to this effect with the Secretary of the Resources Agency.

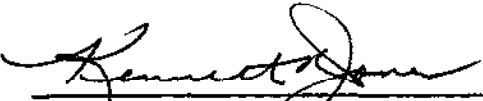
BE IT FURTHER RESOLVED, that the State Water Resources Control Board is hereby requested to amend forthwith the Clean Water Grant Project Priority List to recognize the necessary structural solution for Los Osos/Baywood Park as a Priority "A" project.

BE IT FURTHER RESOLVED, that if the Board holds a hearing and adopts an immediate prohibition as described above, the prohibition is effective as of the date the Regional Water Quality Control Board adopts a prohibition of discharge from additional individual and community sewage disposal systems.

BE IT FURTHER RESOLVED, the Executive Officer of the Regional Board is hereby directed to submit this revision of the Basin Plan to the State Water Resources Control Board for approval pursuant to Section 13245 of the California Water Code.

BE IT FURTHER RESOLVED, upon approval by the State Water Resources Control Board, Chapter 5 of the Water Quality Control Plan is revised by the addition of the above prohibition.

I, KENNETH R. JONES, Executive Officer of the California Regional Water Quality Control Board, Central Coast Region, do hereby certify the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, Central Coast Region, on September 16, 1983.


Executive Officer

