6. MONITORING AND ASSESSMENT

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Introduction

Monitoring and assessment are essential to the success of the Region's water quality control program. Monitoring is necessary to assess existing water quality conditions, examine long-term trends, and ensure the attainment and maintenance of beneficial uses consistent with state and federal standards. Monitoring is also necessary to assess the effectiveness of clean-up programs. This chapter contains a description of State and Regional Board programs that have been developed to meet these monitoring objectives.

The State's Monitoring Programs

The Porter-Cologne Water Quality Control Act (§13163) established the State Board as the lead agency for monitoring and assessment of water quality in California. The State Board's monitoring and assessment program is designed to meet the objectives in Table 6-1. In order to fully address these objectives, the State Board developed a comprehensive program in the mid-1970s. Monitoring activities were coordinated with the California Department of Fish and Game (DFG), California Department of Water Resources (DWR), and California Department of Health Services (DHS), and the U.S. Bureau of Reclamation, U.S. Geological Survey (USGS), and U.S. Environmental Protection Agency (USEPA). Descriptions of specific programs are outlined below. Not all of these programs are currently active in the Los Angeles Region, as many are unfunded at this time.

Table 6-1. Objectives of an Adequate State Surveillance and Monitoring Program.

Measure the achievement of water quality objectives specified in the Basin Plans.
Measure effects of water quality changes on beneficial uses.
Measure background conditions of water quality and determine long-term trends.
Locate and identify sources of water pollution that pose an acute, accumulative, and/or chronic threat to the environment.
Provide information needed to relate receiving water quality to mass emissions of pollutants by waste dischargers.
Provide data for determining discharger compliance with permit conditions.
Measure waste loads discharged to receiving waters and identify their effects in order to develop waste load allocations.
Provide the documentation necessary to support the enforcement of permit conditions and waste discharge requirements.
Provide data needed for the continuing planning process.
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.
Provide a clearinghouse for water quality data gathered by other agencies and private parties cooperating in the program.
Report on water quality conditions as required by federal and state regulations or requested by others.

Primary Monitoring Network

The State Board developed a primary water quality monitoring network for California in April 1976. Participants in the network include the California

Department of Health Services, Department of Water Resources, and Department of Fish and Game, and the U.S. Bureau of Reclamation, the U.S. Geological Survey, and U.S. Environmental Protection Agency. The goal of the primary network is to provide a consistent long-term assessment of water quality across the state. This network consists of stations on high priority streams, estuaries, coastal areas, and groundwater basins throughout the state (California Water Resources Control Board, 1975).

The primary network for the Los Angeles Region originally consisted of eight freshwater sampling stations. These eight stations laid the foundation for a consistent surface water monitoring effort in the Region and were regularly monitored by the California Department of Water Resources (DWR). By 1978, DWR regularly monitored 36 stations in the Region. Currently, DWR monitors 11 of these 36 stations.

The regional network for groundwater monitoring originally consisted of seven groundwater basins selected by the State Board. While this monitoring was never fully implemented, the Regional Board as well as other agencies have undertaken several localized groundwater investigations. For example, as part of this Basin Plan Update, the Regional Board contracted with the California State University at Fullerton for an assessment of regional ground waters. The results of this study were used to review and update the groundwater sections of this Basin Plan and will be used to plan for future program development.

Discharger Self-Monitoring

Dischargers regulated under Waste Discharge Requirements (WDRs) are required to "self-monitor," that is, to collect regular samples of their effluent and receiving waters according to a prescribed schedule to determine facility performance and compliance with their requirements. Over 5,500 monitoring reports are submitted to the Regional Board annually. The Regional Board uses these data to determine compliance with requirements, issue enforcement actions, and to perform water quality assessments.

Compliance Monitoring

In addition to self-monitoring by dischargers, the Regional Board makes unannounced inspections and collects samples to determine compliance with discharge requirements and receiving water objectives and to provide data for enforcement actions. In the event of violations, the Regional Board undertakes appropriate enforcement actions as described in Chapter 4. The scope of the Regional Board's compliance monitoring depends on the number and complexity of discharges, the dischargers' history of compliance, and the Regional Board's resources. Over 550 inspections were scheduled for the fiscal year 1993-94. Major surface water dischargers are inspected at least once a year.

Complaint Investigations

The Regional Board responds to a variety of incidents, including accidental and illegal discharges of oil from offshore pipelines, oily waste discharges, and dumping in the storm drains. Complaints and reports of such incidents, that are received from citizens as well as other agencies, often require on-site inspections during which the Regional Board collects samples and obtains other evidence (e.g., photographs) to investigate and document the extent of the problem. In addition, such documentation provides a basis for enforcement of corrective action and/or assessments that are levied on responsible parties.

Lake Surveillance

The Lake Surveillance program stemmed from early requirements set forth in the CWA (§314), that required states to identify the trophic condition of all publicly-owned fresh water lakes. The State Board inventoried about 5,000 freshwater lakes in California and initiated a program to make an estimate of the lakes' trophic status.

Several lakes in the Los Angeles Region are on the federal "314 list," which designates candidates for restoration funds. This information also is included in the State Board's *Water Quality Assessment Report* (see next page). While federal grants from the USEPA have been available in the past to conduct diagnostic or feasibility studies for lake restoration, continued funding is uncertain at this time.

As part of this Basin Plan Update, the Regional Board contracted with the University of California at Riverside (Lund, 1993) for a comprehensive water quality assessment of 24 lakes in the Region.

Visual observations, aerial photographs, water quality data, and analyses of fish tissues were used in the assessments, and observations from this study were used to update this Basin Plan.

Bay Protection and Toxic Cleanup Program

In 1989, state legislation added Sections 13390 through 13396 to the California Water Code which established the Bay Protection and Toxic Cleanup Program (BPTCP). The program has four main goals:

- to provide protection of existing and future beneficial uses of bays and estuarine waters,
- to identify and characterize toxic hot spots,
- to plan for cleanup or other mitigating actions of toxic hot spots, and
- to develop effective strategies to control toxic pollutants, abate existing sources of toxicity, and prevent new sources of toxicity.

Identification and characterization of toxic hot spots involves the implementation of regional monitoring programs at each of the Regions along the coast. Sediment toxicity tests and chemical analyses are being used to classify each bay or estuarine waterbody according to its toxicity. Waterbodies are generally "pre-screened" for contamination, followed by intensive monitoring that confirms both the existence and spatial extent of contamination.

Quality Assurance

Federal regulations require that the State Board establish guidelines and standard methods for quality assurance (QA) and quality control (QC) as it relates to sample collection and analysis carried out by State and Regional Boards. To fulfill this requirement, the State Board prepared a *Quality Assurance Program Plan* (QAPP) which was approved by USEPA on April 20, 1990. This Plan was prepared in accordance with USEPA *Guidelines and Specifications for Preparing Quality Assurance Program Plans* (1980) and *Guidance for Preparation of Combined Work/Quality Assurance Project Plans for Environmental Monitoring* (1985). The QAPP outlines procedures used by the State and Regional Boards for obtaining environmental data. The Regional Board follows these procedures when collecting, transporting, and analyzing water quality samples. Each Regional Board has a QA/QC Officer who must approve all QAPPs prepared for outside studies funded under State and Regional Board Programs.

Data Storage and Retrieval

The monitoring programs implemented by the State and Regional Boards generate considerable data. Unless these data are incorporated into a "usable" form for storage and retrieval, their value is minimal. The State Board chose the USEPA STORET (Storage and Retrieval) database to store data generated under the various monitoring programs. The State Board also maintains separate databases for the Toxic Substances Monitoring and the State Mussel Watch Programs (described below).

Biennial Water Quality Inventory/Water Quality Assessment Report

The CWA (§305(b)) requires all states to prepare and submit a biennial *Water Quality Inventory Report* (commonly referred to as a *305(b) Report*). In California, this report is used by the State Board and the USEPA to prioritize funding for water quality programs. As required by the CWA, the report must contain:

- a description of the water quality of the major navigable waterbodies in the state;
- 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;
- an analysis of the extent to which elimination of the discharge of pollutants has been achieved;
- an estimate of the environmental impact, the economic, and social costs necessary to achieve the objective of the CWA, the economic and social benefits of the achievement, and the date of such achievement; and
- a description of the nature and extent of nonpoint sources of pollutants and recommendations as to the programs which must be taken to control them, with estimates of cost.

Table 6-2. Constituents Analyzed under the State Mussel Watch and Toxic Substances Monitoring Programs.

a) Metals Analyzed.

Aluminum[1]	Lead[3]
Arsenic[2]	Manganese[1]
Cadmium[3]	Mercury[3]
Chromium[3]	Nickel[3]
Copper[3]	Silver[3]
Lead[3]	Zinc[3]

b) Synthetic Organic Compounds Analyzed.

Aldrin	p,p'-DDMU	delta Lindane
Chlorbene	O,P,-DDT	Total Lindane[2]
alpha Chlordane	P,P'-DDT	Methoxychlor
gamma Chlordane	Total DDT	Methyl Parathion
cis Chlordane	Diazinon	Oxadiazon[2]
trans Chlordane	Dieldrin	PCB 1248
Oxychlordane	Endrin	PCB 1254
Total Chlordane	Endosulfan 1	PCB 1260
cis Nonachlor	Endosulfan 2	Total PCB
trans Nonachlor	Endosulfan Sulfate	Pentachlorophenol[1]
Chlorpyrifos	Total Endosulfan	Phenol[1]
Dacthal	Ethyl Parathion	Ronnel[1]
Dicofol[2]	Heptachlor	Tetrachlorophenol[1]
P,P'-DDE	Heptachlor Epoxide	Tetradifon[1]
O,P,-DDE	Hexachlorobenzene	Toxaphene
O,P'-DDD	alpha Lindane	Tributylin[1]
P,P'-DDD	beta Lindane	
P,P'-DDMS	gamma Lindane	

[1] These constituents only analyzed for in the State Mussel Watch program

[2] These constituents only analyzed for in the Toxic Substances Monitoring Program

[3] These constituents analyzed for in both the monitoring programs

Each Regional Board prepares a biennial *Water Quality Assessment (WQA) Report* for its Region using data collected by regional planning, permitting, surveillance, and enforcement programs. The regional reports contain inventories of the major waterbodies in the region including rivers and streams, lakes, bays, estuaries, harbors, coastal waters, wetlands, and ground water. For each waterbody, the report classifies the water quality (as "good," "intermediate," "impaired," or "unknown") and describes general problems and sources of water quality impairment. In addition, the report notes those waterbodies that are included on the federal lists. These lists, which indicate specific types of water quality impairments, are organized by CWA section (§131.11, §303(d), §304(M), §304(S), §304(L), §314, and §319).

After Regional Boards adopt their individual *WQA Reports*, they are compiled into a statewide report entitled *California Water Quality Assessment Report*. Upon adoption of this statewide report by the State Board, the information is converted to the *305(b) Report* format and submitted to the USEPA to satisfy the CWA requirements. The most recent California *Water Quality Assessment Report* was published in May 1992, and is available from the State Board office in Sacramento.

Toxic Substances Monitoring and State Mussel Watch Programs

Water column monitoring for toxic substances can be unreliable since toxic substances are often transported intermittently and can be missed with standard "grab" sampling of water. In addition, harmful levels of toxicants are often present in such low concentrations in water that make them difficult and expensive to detect. In some cases, a more realistic and cost-effective approach is to test the flesh of fish and other aquatic organisms that bioaccumulate these compounds in their tissues and concentrate toxicant through the food web.

In 1977, the State Board added two biomonitoring elements to the State Board's Monitoring Program: the Toxics Substances Monitoring (TSM) Program and the State Mussel Watch (SMW) Program. The Los Angeles Region has active Toxics Substances Monitoring and State Mussel Watch programs. These programs are implemented jointly by the State Board and the California Department of Fish and Game. The field sampling is performed by Fish and Game and Regional Board staff, while the laboratory analyses are performed by Fish and Game. The objectives of the Toxics Substances Monitoring and State Mussel Watch Program Programs are:

- to develop statewide baseline data and to demonstrate trends in the occurrence of toxic elements and organic substance in aquatic biota;
- to assess impacts of accumulated toxicant upon the usability of State waters by humans;
- to assess impacts of accumulated toxicant upon aquatic biota; and
- where problem concentrations of toxicant are detected, to attempt to identify sources of toxicant and to relate concentrations found in biota to concentrations found in water.

Tissue samples collected under the Toxics Substances Monitoring program are usually fish, but can also include benthic invertebrates. Fish and invertebrate tissues are analyzed for trace metals and synthetic organic chemicals, most of which are pesticides (Table 6-2). Toxics Substances Monitoring data have been collected in rivers and lakes throughout the Los Angeles Region since 1978 (Table 6-3). This program primarily monitors inland fresh waters.

The State Mussel Watch Program provides similar documentation of the quality of coastal marine and estuarine waters. Mussels, which are sessile (attached) bivalve invertebrates, serve as indicator organisms and provide a localized measurement of water quality, as they accumulate trace metals and synthetic organic chemicals in their tissues (Table 6-2). Mussels transported from "clean areas" of the State are primarily used, although local mussels are sometimes used. Other types of shellfish can be used at times, and occasionally, sediments are also collected as part of the program. State Mussel Watch Program data have been collected in coastal waters throughout the Region since 1977 (Table 6-4).

After more than 15 years of monitoring, the State Board has accumulated a considerable amount of data from these two programs. These data have been useful in assessing regional waters as they provide a direct measure of beneficial use impairment.

Table 6-3. Toxic Substances Monitoring Stations and Type of Samples Collected (LA Region).

Station No.	Station Name	81	82	83	84	85	86	87	88	89	90	91	92	93
402.10.02	Ventura River	–	EO	EO	O	–	–	–	–	EO	EO	EO	–	–
402.10.00	Ventura River Estuary	–	–	–	–	–	–	–	–	–	–	–	–	EO
402.20.02	Casitas Lake	–	–	–	–	–	–	–	O	–	–	–	EO	–
402.20.21	Ventura R/Ojai	–	–	–	–	–	–	–	–	–	–	–	–	EO
403.21.05	Santa Clara River/Santa Paula	EO	–	–	O	–	–	–	–	–	–	E	O	–
403.51.05	Santa Clara River/Valencia	–	–	–	–	–	–	–	–	–	–	O	EO	–
403.11.04	Revelon Slough	–	–	–	–	O	EO	EO	–	EO	EO	–	O	O
403.11.02	Rio de Santa Clara/Oxnard Drain	–	–	–	–	–	–	–	–	EO	EO	O	–	–
403.11.03	Oxnard Drainage Ditch 2	–	–	–	–	–	–	–	–	–	–	–	–	O
403.11.91	Mugu Lagoon	–	–	–	–	–	–	O	EO	EO	EO	E	EO	EO
403.12.06	Calleguas Creek	–	–	–	–	EO	EO	O	EO	EO	EO	O	O	O
403.67.04	Arroyo Simi	–	–	–	–	–	–	–	–	–	–	EO	–	–
403.64.02	Arroyo Conejo	–	–	–	–	–	–	–	–	–	EO	EO	–	–
403.64.03	Arroyo Conejo (downstream of forks)	–	–	–	–	–	–	–	–	–	–	–	–	EO
403.12.07	Conejo Creek	–	–	–	–	–	–	–	–	–	–	EO	EO	–
404.26.01	Sherwood Lake	–	–	–	–	–	–	–	–	–	–	EO	EO	–
404.26.00	Eleanor Lake	–	–	–	–	–	–	–	–	–	–	EO	–	–
404.25.01	Westlake Lake	–	–	–	–	–	–	–	–	–	–	EO	EO	–
404.23.04	Lindero Lake	–	–	–	–	–	–	–	–	–	–	EO	EO	–
404.21.00	Malibu Lagoon	–	–	–	–	–	–	–	–	–	–	–	–	EO
404.21.01	Malibu Creek	–	–	–	–	EO	–	–	EO	–	–	EO	–	–
404.21.04	Malibu Creek/Tapia Park	–	–	–	–	–	–	–	–	–	–	–	EO	–
404.21.07	Malibou Lake	–	–	–	–	–	–	–	–	–	–	EO	EO	–
405.21.03	Calabasas Lake	–	–	–	–	–	–	–	–	–	–	EO	EO	–
405.13.00	Marina del Rey	–	–	–	–	–	–	–	–	–	–	–	–	EO
405.13.01	Ballona Creek	–	–	–	–	–	–	–	–	–	–	–	–	EO
405.13.03	Ballona Wetlands	–	–	–	–	–	–	–	–	–	–	–	–	EO
405.13.02	Venice Canals/Sherman Ave.	–	–	–	–	–	EO	–	–	–	–	–	–	–
405.12.90	Harbor Park Lake	–	–	EO	EO	EO	O	O	O	EO	EO	O	EO	O
405.12.91	Simms Pond	–	–	–	–	–	–	–	–	–	–	–	–	EO
405.15.98	Hollenbeck Park Lake	–	–	–	–	–	–	–	–	–	–	EO	–	–
405.15.97	Belvedere Park Lake	–	–	–	–	–	–	–	–	–	–	EO	EO	–
405.15.99	Lincoln Park Lake	–	–	EO	–	–	–	–	–	–	–	EO	EO	–
405.15.24	Echo Park Lake	–	–	–	–	–	–	O	–	–	–	EO	EO	–
405.21.11	Hansen Dam Lake	–	–	E	–	–	–	–	–	–	–	–	–	–
405.12.03	Los Angeles River	–	–	EO	–	–	–	–	–	–	–	–	–	–
405.21.06	Los Angeles River/Los Feliz Road	–	–	–	–	–	–	–	–	–	–	–	EO	–
405.21.16	Los Angeles River/Sepulveda Basin	–	–	–	–	–	–	–	–	–	–	EO	EO	–
405.41.00	Peck Road Lake	–	–	–	–	–	EO	–	–	–	–	EO	EO	–
405.12.00	Alamitos Bay	–	–	–	–	–	–	–	–	–	–	EO	–	–
405.12.02	Dominguez Channel	–	–	–	–	–	–	–	–	–	–	–	EO	–
405.12.04	Colorado Lagoon	–	–	–	–	–	–	–	–	–	–	–	EO	–
405.15.04	San Gabriel River	–	–	EO	–	E	–	–	EO	EO	EO	E	EO	EO
–	San Gabriel River/Coyote Creek	–	–	–	–	–	–	–	–	–	–	–	EO	–
405.15.02	El Dorado Park Lake	–	–	–	–	–	–	–	–	–	–	EO	EO	–
405.41.01	Legg Lake	–	–	–	EO	–	–	–	EO	–	–	EO	EO	–
405.52.01	Puddingstone Reservoir	–	–	–	–	–	EO	O	O	–	–	EO	EO	–
405.41.11	Santa Fe Dam Park	–	–	–	–	–	–	–	–	–	–	–	EO	–

E = Trace Elements; O = Organic Chemicals; EO = Trace Elements & Organic Chemicals; – = Not Sampled;

Table 6-4. State Mussel Watch Sampling Stations and Type of Samples Collected (LA Region).

Station No.	Station Name	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
485.00	Ventura Marina	–	–	–	–	–	–	–	–	–	–	EO	–	–	–	–
486.20	Ventura River Estuary	–	–	–	–	–	–	–	–	–	–	–	–	–	–	O
487.10	Santa Clara River Estuary 1	–	–	–	–	–	–	–	–	–	–	–	–	–	–	O
487.30	Santa Clara River Estuary 2	–	–	–	–	–	–	–	–	–	–	–	–	–	–	O
502.00	Santa Cruz Island	EO	EO	–	–	–	–	–	–	–	–	–	–	–	–	–
503.00	Anacapa Island	EO	EO	EO	EO	–	–	–	–	–	–	–	–	–	–	–
504.00	Santa Barbara Island	EO	EO	–	–	–	–	–	–	–	–	–	–	–	–	–
505.00	Channel Island Harbor	–	–	E	EO	O	–	–	–	–	–	–	–	–	–	–
505.20	Channel Island Harbor/North	–	–	–	–	–	–	–	–	–	EO	–	–	–	–	–
506.00	Port Hueneme	–	–	EO	EO	O	–	–	–	–	–	–	–	–	–	–
506.10	Port Hueneme/Wharf B	–	–	–	–	–	–	–	–	O	O	EO	O	–	–	–
506.20	Port Hueneme/Wharf 1	–	–	–	–	–	–	–	–	O	EO	EO	O	–	–	–
506.30	Port Hueneme/Entrance	–	–	–	–	–	–	–	–	–	–	EO	–	–	–	–
507.00	Point Mugu	EO	EO	–	–	–	–	–	–	–	–	–	–	–	–	–
507.10	Mugu Lagoon/L Street	–	–	–	–	–	–	–	–	–	EO	–	–	–	O	–
507.20	Mugu Lagoon/Laguna Road	–	–	–	–	–	–	–	–	O	EO	–	–	–	O	–
507.30	Mugu Lagoon/Calleguas Creek	–	–	–	–	–	–	–	–	O	EO	–	EO	O	O	O
507.40	Ag Drain/Etting Road	–	–	–	–	–	–	–	–	–	–	–	–	–	O	–
507.60	Ag Drain/Pleasant Valley Road	–	–	–	–	–	–	–	–	–	–	–	–	–	O	–
507.70	Revelon Slough/Las Posas Road	–	–	–	–	–	–	–	–	–	–	–	–	–	O	–
507.80	Revelon Slough	–	–	–	–	–	–	–	–	–	EO	O	O	O	O	–
508.10	Mugu Drainage 1	–	–	–	–	–	–	–	–	–	–	–	–	O	–	–
508.20	Mugu Drainage 2	–	–	–	–	–	–	–	–	–	–	–	–	O	–	–
508.30	Mugu Drainage 3	–	–	–	–	–	–	–	–	–	–	–	–	O	–	–
508.40	Mugu Drainage 4	–	–	–	–	–	–	–	–	–	–	–	–	O	–	–
508.50	Mugu Drainage 5	–	–	–	–	–	–	–	–	–	–	–	–	O	–	–
508.60	Mugu Drainage 6	–	–	–	–	–	–	–	–	–	–	–	–	O	–	–
508.70	Mugu Drainage 7	–	–	–	–	–	–	–	–	–	–	–	–	O	–	–
509.00	Calleguas	–	–	–	–	–	–	–	–	–	–	–	–	O	–	–
553.00	Marina Del Rey/Entrance	–	–	–	–	–	–	–	–	–	–	–	EO	–	–	–
554.00	Marina Del Rey/Harbor Patrol Docks	–	–	–	–	–	–	–	–	EO	–	EO	EO	–	–	–
555.00	Marina Del Rey/Basin G	–	–	–	–	–	–	–	–	EO	EO	EO	EO	–	–	–
555.20	Marina Del Rey/Basin D	–	–	–	–	–	–	–	–	–	–	EO	–	–	–	–
556.00	Marina Del Rey/Basin E	–	–	–	–	–	–	–	–	EO	EO	EO	EO	–	–	–
557.00	Marina Del Rey/Ballona Creek	–	–	–	–	–	–	–	–	EO	EO	EO	EO	–	–	–
559.00	King Harbor	–	–	–	–	–	–	–	–	–	–	EO	–	–	–	–
601.00	LA Harbor/National Steel	–	–	–	–	EO	–	EO	EO	EO	EO	EO	EO	O	O	EO
602.00	LA Harbor/West Basin	–	–	–	–	EO	–	E	EO	EO	EO	EO	–	–	–	–
602.50	LA Harbor/Todd Shipyards	–	–	–	–	–	–	–	EO	EO	–	EO	EO	O	O	–
602.60	LA Harbor/Berth 50	–	–	–	–	–	–	–	–	–	–	–	–	E	–	–
602.70	LA Harbor/Pacific Ave/Storm Drain	–	–	–	–	–	–	–	–	–	–	EO	–	–	–	–
602.80	LA Harbor/Berth 49	–	–	–	–	–	–	–	–	–	EO	E	E	E	E	–
602.90	LA Harbor/Berth 51	–	–	–	–	–	–	–	–	–	–	–	–	E	–	–
603.00	LA Harbor/Berth 151	–	–	–	–	EO	–	EO	EO	EO	–	EO	O	–	–	–

Table 6-4. State Mussel Watch Sampling Stations and Type of Samples Collected (LA Region) (cont.)

Station No.	Station Name	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
603.60	LA Harbor/Slip 240	--	--	--	--	--	--	--	--	--	EO	EO	--	--	--	--
603.80	LA Harbor/West Channel	--	--	--	--	--	--	--	--	--	EO	EO	--	--	--	--
604.00	LA Harbor/GATX Terminal	--	--	--	O	EO	O	--	--	EO	--	--	--	--	--	--
604.50	LA Harbor/Berth 212	--	--	--	--	--	--	--	--	--	--	--	E	--	--	--
605.00	LA Harbor/Cabrillo Pier	--	O	O	--	EO	--	EO	--	--	--	--	EO	--	--	O
605.00	LA Harbor/Fish Harbor/Outer	--	--	--	--	EO	--	--	--	--	--	--	--	--	--	--
605.20	LA Harbor/Fish Harbor	--	--	--	--	--	--	--	--	--	EO	EO	--	--	--	--
606.30	LA Harbor/Watchorn Basin	--	--	--	--	--	--	--	--	--	EO	--	--	--	--	--
607.00	LA Harbor/Terminal Island	--	--	--	O	EO	--	E	--	EO	--	--	--	--	--	--
607.40	LA/LB Harbors/Berth 214	--	--	--	--	--	--	--	--	--	EO	--	--	--	--	--
607.60	LA/LA Harbors/Channel 2	--	--	--	--	--	--	--	--	--	EO	--	--	--	--	--
607.70	LA/LB Harbors/Navy Mole Jetty	--	--	--	--	--	--	--	--	--	O	--	--	--	--	--
607.80	LA/LB Harbors/Pier J	--	--	--	--	--	--	--	--	--	EO	--	--	--	--	--
608.00	LA/LB Harbors/Navy Mole	--	--	--	--	EO	--	O	--	--	--	--	--	--	--	--
609.00	LA/LB Harbors/Tide Gauge	--	--	EO	EO	EO	O	EO	--	EO	--	O	--	--	--	--
609.40	Long Beach/Queensway Bay	--	--	--	--	--	--	--	--	--	EO	--	--	--	--	--
610.00	LA River/Mouth	--	--	--	O	--	O	--	EO	--	--	--	--	--	--	--
611.00	Long Beach Harbor/Pier F	--	--	--	--	EO	--	--	--	--	--	--	--	--	--	--
611.50	Long Beach Harbor/LAPD Ramp	--	--	--	O	--	--	--	--	--	--	--	--	--	--	--
612.00	LA/LB Harbors/Navy Channel	--	--	--	O	--	O	--	--	--	--	--	--	--	--	--
613.00	LA/LB Southern California Edison	--	--	--	--	EO	--	EO	--	EO	--	--	--	--	--	--
614.00	Long Beach/Channel 3	--	--	--	--	EO	--	--	--	--	--	--	--	--	--	--
615.00	LA Harbor/Henry Ford Bridge	--	--	--	--	--	EO	--	--	--	--	EO	EO	--	--	--
616.00	LA Harbor/Consolidate Slip	--	--	--	--	EO	O	O	EO	EO	EO	EO	EO	O	O	EO
617.00	White's Point	--	--	--	--	EO	--	--	--	--	--	--	--	--	--	--
618.00	LA Harbor/Angels Gate	--	--	--	--	--	--	--	--	--	--	--	--	--	EO	O
619.00	LA Harbor/San Pedro Boatworks	--	--	--	--	--	--	--	--	--	--	--	--	--	EO	--
620.00	LA/LB Harbor/JH Baxter 80	--	--	--	--	--	--	--	--	--	--	--	--	--	O	--
620.50	LA River/Upstream	--	--	--	--	--	--	--	--	O	--	--	--	--	--	--
621.00	LA Harbor/Berth 120	--	--	--	--	--	--	--	--	--	--	--	--	--	O	--
622.00	LA Harbor/Commer Marine	--	--	--	--	--	--	--	--	--	--	--	--	--	EO	--
625.00	Alamitos Bay/West 2nd Street	--	--	--	--	--	--	--	--	EO	--	--	--	--	--	--
626.00	Alamitos Bay/Cerritos Channel	--	--	--	--	--	--	--	--	EO	--	--	--	--	--	--
627.00	Alamitos Bay/Marina Stadium	--	--	--	--	--	--	--	--	EO	--	--	--	--	--	--
627.40	Alamitos Bay/Marina Stadium/North	--	--	--	--	--	--	--	--	--	EO	--	--	--	--	--
647.00	Point Dume	--	--	--	E	--	--	--	--	--	--	--	--	--	--	--
648.00	Malibu	--	--	--	E	--	--	--	--	--	--	--	--	--	EO	--
648.10	Malibu Lagoon/Channel A	--	--	--	--	--	--	--	--	--	--	--	--	--	--	EO
648.30	Malibu Lagoon/Channel C	--	--	--	--	--	--	--	--	--	--	--	--	--	--	EO
648.50	Malibu Lagoon/PCH	--	--	--	--	--	--	--	--	--	--	--	--	--	--	EO
649.00	Big Rock Beach	--	--	--	E	--	--	--	--	--	--	--	--	--	--	--

Table 6-4. State Mussel Watch Sampling Stations and Type of Samples Collected (LA Region) (cont.)

Station No.	Station Name	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92
650.00	Santa Monica	–	–	–	E	–	–	–	–	–	–	–	E	–	EO	–
651.00	Marina Del Rey/North docks	–	–	E	EO	–	–	–	–	–	–	–	–	–	–	–
652.00	Marina Del Rey/North Docks Jetty	–	–	E	–	–	–	–	–	–	–	–	–	–	–	–
653.00	Marina Del Rey/South Docks Jetty	–	–	–	–	EO	–	–	–	–	–	–	–	–	–	–
654.00	Playa Del Rey	–	–	–	E	–	–	–	–	–	–	–	–	–	–	–
655.00	El Segundo/Grand Avenue	–	–	–	E	–	–	–	–	–	–	–	–	–	–	–
656.00	Manhattan Beach	–	–	–	E	–	–	–	–	–	–	–	TE	–	–	–
657.00	Hermosa Beach	–	–	–	E	–	–	–	–	–	–	–	–	–	–	–
658.00	Redondo Beach	–	–	–	E	–	–	–	–	–	–	–	TE	–	–	–
659.00	Palos Verdes Point	–	–	–	E	–	–	–	–	–	–	–	–	–	–	–
660.00	Point Vincente	–	–	E	EO	–	–	–	–	–	–	–	–	–	–	–
661.00	Royal Palms/North	–	–	E	E	–	–	–	–	–	–	–	–	–	–	–
662.00	Royal Palms	–	EO	EO	EO	O	EO	EO	EO	EO	EO	EO	EO	EO	EO	EO
663.00	Royal Palms/South	–	–	–	E	–	–	–	–	–	–	–	–	–	–	–
664.00	Cabrillo Beach	–	E	O	–	–	–	–	–	–	–	–	–	–	–	O
680.00	Catalina Island/East	–	EO	E	EO	–	–	–	–	–	–	–	–	–	–	E
681.00	Catalina Island/West	EO	EO	E	E	–	–	–	–	–	–	–	–	–	–	–
682.00	Catalina Island/Ribbon Rock	–	–	–	E	–	–	–	–	–	–	–	–	–	E	–
683.00	Catalina Island/Ben Weston	–	–	–	EO	–	–	–	–	–	–	–	–	–	–	–
684.00	Catalina Island/Silver Cny.	–	–	–	E	–	–	–	–	–	–	–	–	–	–	–
685.00	Catalina Island/Church rock	–	–	–	E	–	–	–	–	–	–	–	–	–	–	–
701.00	Colorado Lagoon/West	–	–	–	–	EO	–	–	EO	EO	–	–	–	–	–	–
701.20	Colorado Lagoon/East	–	–	–	–	–	–	–	–	–	EO	–	–	–	–	–
703.00	Alamitos Bay/Pier 22	–	–	–	–	O	–	–	–	–	–	–	–	–	–	–

E = Trace Elements; O = Organic Chemicals; – = Not Sampled

Regional Board Monitoring Programs

The Regional Board conducts its own surface waters monitoring program that supplements the state monitoring programs described above (which are, for the most part, implemented by the Regional Boards).

Regional Board Surface Water Monitoring Network

Many of the State monitoring programs described above are no longer funded and thus many sampling stations have been dropped. Under these circumstances, it has been necessary for the Regional Board to develop and implement its own ambient surface water monitoring program to continue to meet state and regional monitoring and assessment objectives. This monitoring network currently consists of 60 primary stations on rivers and streams throughout the Region. Stations are placed to most effectively assess Regional waters and measure long term trends at certain historic stations developed by the Regional Board or other agencies.

Currently, each station is sampled at least once a year. In addition to water quality sampling, observations are made of existing beneficial uses, surrounding land use(s), potential sources of pollutants, and other conditions. The monitoring network is flexible and stations are added, moved, or deleted as the need arises; the Regional Board, however, maintains a core network of monitoring stations to the extent that funding is available.

Intensive Surveys

The Regional Board has started to perform Intensive Surveys to obtain detailed information on the effects of pollutant loadings from point and nonpoint sources on particular waterbodies. These surveys often involve coordination with other governmental agencies and organizations.

In addition to quantifying the effects of pollutant loadings, data from intensive surveys also augment the regional water quality database and are used for water quality assessments and basin planning updates.

Coordination With Other Agencies

Regional Board staff regularly coordinate with other agencies to share data, reduce overlap in sampling efforts, and use limited monitoring monies in the most efficient way possible.

Biological Criteria

Biological criteria are narrative (and sometimes numeric) expressions that describe the biological integrity of aquatic communities (EPA, 1991). Biological criteria supplement other water quality objectives (physical, chemical, toxicity) by providing a direct measure of aquatic communities at risk from human activities. These criteria can also provide evidence of streams with exceptional water quality. Baseline data must be collected from both reference and impacted streams in the Region. Regular monitoring of these areas can then provide a continual assessment of instream impacts. Over 30 of the 50 states have developed, or are developing, biological criteria programs. Although there is not a current biological criteria program in the Region, Regional Board staff are planning to begin conducting baseline surveys in the coming years.