

CHAPTER 6 - SURVEILLANCE, MONITORING AND WATER QUALITY ASSESSMENT

The effectiveness of a water quality control program cannot be judged without information supplied by a comprehensive surveillance and monitoring program. To protect California's water resources, the State Board and the Regional Boards closely monitor water quality throughout the state.

Historically, a wide variety of interested state, federal and local agencies have sampled, analyzed, and tracked water quality. Local agencies include county health departments, water districts, and irrigation districts. The State Board and Regional Board monitoring programs evaluate existing information, supplementing it where necessary to meet data needs.

I. STATEWIDE MONITORING

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 shall coordinate water quality investigations, recognizing that other State agencies have primary statutory responsibility for such investigations, and shall consult with the concerned Regional Boards in implementing this section.

Pursuant to these mandates, the State Board in 1976 established a coordinated Primary Water Quality Monitoring Network for California. Participants in the Primary Network included the California Departments of Health, Water Resources, and Fish and Game; and the U.S. Bureau of Reclamation, the U.S. Geological Survey and the U.S. Environmental Protection Agency.

The goal of the Primary Network has been 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, and accordingly, the Toxic Substances Monitoring Program is included in the Primary Network.

The State's surveillance and monitoring program is designed to assure the collection of data necessary to: establish and review water quality standards, goals and objectives; determine maximum daily loadings, wasteload allocations, and effluent limitations; perform segment classifications and rankings; and establish the relationship between water quality and individual point and nonpoint sources of pollutants. These data must be verified and properly interpreted to evaluate water quality trends in order to make the necessary changes in the enforcement and planning programs as needed to carry out program objectives. Output based upon data obtained from this program is used to prepare reports satisfying the requirements of the Federal Clean Water Act and the applicable portions of the Porter-Cologne Water Quality Control Act.

The overall objectives of the State's surveillance and monitoring program are:

- To measure the achievement of water quality goals and objectives specified in Water Quality Control Plans.
- To measure specific effects of water quality changes on beneficial uses.
- To measure background conditions of water quality and determine long-term trends in water quality.
- To locate and identify sources of water pollution that pose a threat to the environment.

- To provide information needed to relate receiving water quality to mass emissions of pollutants by waste dischargers.
- To provide data for determining waste discharger's compliance with permit conditions.
- To provide the documentation necessary to support the enforcement of permit conditions and waste discharge requirements.
- To provide data needed to carry on the continuing planning process.
- 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.
- To prepare reports on water quality conditions as required by federal and state regulations or requested by others.

The surveillance and monitoring program is designed to meet the objectives set forth above. An optimum surveillance and monitoring program requires flexibility and must be able to respond to needs specified in the Basin Plan as it is implemented and revised. Statewide water quality assessments performed every two years provide a timely cycle to evaluate the program's effectiveness and make appropriate changes.

The surveillance and monitoring program provides for collection and analysis of samples and the reporting of water quality data. It includes laboratory support and quality assurance, storage of data for rapid and systematic retrieval, and preparation of reports and data summaries. Most importantly, it includes interpretation and evaluation of data leading to recommendations for action.

A. REGIONAL BOARD GOALS AND MANAGEMENT PRINCIPLES

The regulatory activities of the Regional Boards are the primary mechanism for water quality control. In view of this, and in view of the limited water resources in the Colorado River Basin Region and their increasing use, the Regional Board directs its actions toward the following goals and management principles:

II. REGIONAL BOARD MONITORING

The Regional Board participates in the implementation of the statewide surveillance and monitoring program by conducting the following tasks:

- A. Surface Water Monitoring
- B. Compliance Monitoring
- C. Complaint Investigation
- D. Intensive Surveys
- E. Toxic Substances Monitoring
- F. Total Maximum Daily Loads Compliance Assurance and Enforcement

A. SURFACE WATER MONITORING

The Regional Board's Surface Water Monitoring Program was developed in 1980 as an outgrowth of the State's Primary Monitoring Network. Its goal has been to characterize the water quality of the Region's surface water bodies. Quarterly sampling was conducted on major water bodies and annual sampling was conducted on other surface waters. Samples were collected by Regional Board staff as grab samples and were analyzed by either the Regional Board's in-house laboratory or the State Department of Health Services laboratory in Los Angeles. The samples were analyzed for several general water quality parameters but not for toxic substances. Analyses were conducted for pH, turbidity, total dissolved solids, suspended solids, volatile suspended solids, settleable solids, phosphate, nitrate, nitrite, ammonia, MBAS, BOD, COD, and fecal coliform. Field measurements were made for dissolved oxygen, temperature, pH, flow rate, and conductivity. Data from this program has been entered into the statewide database system (SWQIS) from which it is periodically entered into the federal water

quality data system (STORET). A summary of historic sample collections at the surface water monitoring stations is included in Table 6-1. Continued sampling of these water bodies by the Regional Board is dependent on the availability of funding. Sampling of the New River at the International Boundary has been conducted as a separate investigation and is described in Section D. Intensive Surveys.

TABLE 6-1: PRIMARY NETWORK STATIONS

Station Name	Period of Record
<u>Annual Stations</u>	
Piute Creek	12/81-4/91
Millard Canyon Creek	11/81-4/91
Crystal Creek	12/81-4/91
Copper Basin	12/81-4/91
Azalea Creek	11/81-4/91
Antelope Creek	05/85-4/91
Boundary Creek	12/81-6/93
Walker Creek	12/81-6/93
Tule Creek	03/83-6/93
Carrizo Creek	12/81-6/93
Banner Creek	12/81-6/93
San Felipe Creek	12/81-6/93
Borrego Palm Canyon Creek	12/81-6/93
Coyote Creek	12/81-6/93
Salt Creek	12/81-6/93
Tahquitz Creek	11/93-6/93
Twin Pines Creek	11/81-6/93
Mission Creek	12/81-6/93
Big Morongo Creek	12/81-6/93
Little Morongo Creek	12/81-6/93
Arrastre Creek	12/81-6/93
<u>Quarterly Stations</u>	
Colorado River above Morelos Dam	2/80-6/93
Colorado River at Nevada State Line	2/80-5/93
Colorado River at Imperial Dam	2/80-5/93
Salton Sea at County Line	2/80-5/93
Central Drain Outlet	2/80-5/93
Alamo River Outlet	2/80-5/93
New River Outlet	2/80-5/93
Whitewater River above MWD outfall	2/80-5/93
Palo Verde Outfall Drain	2/80-5/93
Reservation Main Drain 4	2/80-5/93
Holtville Main Drain	9/88-5/93
Coachella Valley Stormwater Channel	2/80-5/93
Alamo River at International Boundary	2/80-5/93
Rose Drain at Outlet	2/80-8/89

B. COMPLIANCE MONITORING

1. Regulated Facilities

Data from facilities with waste discharge requirements including NPDES permits are collected and used to determine compliance with requirements and receiving water standards and to support enforcement actions. Data is retrieved from self monitoring reports generated by waste dischargers and from compliance monitoring reports prepared by Regional Board staff. These reports are reviewed and if violations are noted, appropriate action is taken, ranging from administrative enforcement to judicial abatement depending on the circumstances. Self monitoring report data have also been used to calculate pollutant loadings and to indicate the general improvement noted in the receiving water.

2. Recommended Biomonitoring (Toxicity Monitoring) Programs

Compliance with the Regional Board's toxicity objective (see Chapter 3) will be determined through the use of bioassays utilizing standard/approved methodology. For an initial two-year period, biomonitoring will be conducted primarily for informational purposes. The resulting data will be utilized to determine a specific compliance protocol, including methodology and enforcement procedures. Dischargers whose NPDES permits do not include biomonitoring requirements will be encouraged to voluntarily conduct bioassays during this initial two-year period to assist in developing said protocol. Dischargers who wish to experiment with other methods of determining toxicity compliance are welcome to do so and may submit such data to the Regional Board for review and consideration.

Although this initial two-year period would be utilized primarily to collect information, it would not preclude the possibility of enforcement action in cases where significant toxicity is exhibited. Such enforcement would be considered by the Regional Board on a case by case basis.

Pending appropriations of adequate resources, the following three biomonitoring programs are recommended for implementation:

Program A

Bioassay Type: Chronic

Frequency: Quarterly

Sampling Locations:

1. Colorado River near California/Nevada State Line
2. Palo Verde Outfall Drain near South Highway 78 Crossing
3. Colorado River at Imperial Dam
4. Reservation Main Drain near Outlet
5. Colorado River above Morelos Dam
6. Alamo River near International Boundary
7. New River near International Boundary
8. Central Drain near Outlet
9. Holtville Main Drain
10. Alamo River near Outlet
11. New River near Outlet
12. Whitewater River above MWD Outfall
13. Coachella Valley Storm Water Channel at Lincoln Street Crossing

The above-listed sites represent the more important waterways in the Region in regard to flow. Where chronic toxicity is exhibited at any of the above monitoring locations, an investigation would follow to determine the source of the toxicity.

Program B

Bioassay Type:	Chronic
Frequency:	Annually
Sampling Locations:	<ol style="list-style-type: none">1. Tahquitz Creek2. Twin Pines Creek3. Boundary Creek4. Walker Creek5. Tule Creek6. Mission Creek7. Carrizo Creek8. Big Morongo Creek9. Banner Creek10. Little Morongo Creek11. San Felipe Creek12. Arrastre Creek13. Borrego Palm Canyon Creek14. Coyote Creek15. Salt Creek

Where chronic toxicity is exhibited at any of the above monitoring locations, an investigation would follow to determine the source of the toxicity.

Program C

Bioassay Type:	Acute and/or Chronic
Frequency:	To be determined by Regional Board staff on a case-by-case basis, but shall in no case be less frequent than annually.

It is recommended that at a minimum appropriate acute/chronic toxicity bioassays be required in all new or updated NPDES permits. For future permit holders, assignment of such testing will be determined on a case-by-case basis.

C. COMPLAINT INVESTIGATION

This 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 may include preparation of reports, letters, and taking other necessary follow up actions to document observed conditions and to institute appropriate corrective actions.

D. INTENSIVE SURVEYS

Intensive monitoring surveys provide detailed water quality data which is used to locate and evaluate violations of receiving water standards and to develop waste load allocations. They usually involve localized, intermittent sampling at a higher than normal frequency. Intensive surveys should be repeated at appropriate intervals depending on the parameters involved, the variability of conditions, and changes in hydrologic or effluent regimes. The two main Regional Board studies are described below.

1. Imperial Valley Agricultural Drain Study

The agricultural drain study uses bioassays to monitor and assess toxicity in agricultural return flows and in receiving waters. The first samples were collected in September 1991. After the preliminary sampling results from various drains and rivers were reviewed (see Table 6-2), the study was primarily limited to the South Central Drain area in the Imperial Valley. This area was chosen because discharges to the drains in this area were primarily agricultural in nature and the potential for toxicity due to non-agricultural discharges would be reduced. Samples were collected from tailwaters and from the surface drains which received the tailwaters. Field measurements were made for temperature, pH, dissolved oxygen, and specific conductivity. Samples were analyzed at the Regional Board laboratory for TDS, alkalinity, hardness, and ammonia. Samples were shipped to the University of California, Davis for toxicity testing. Acute toxicity tests (48 hour) were conducted using Daphnia magna and Ceriodaphnia dubia. Samples identified as toxic by the acute testing were also analyzed for Organophosphate and Carbamate pesticides. Sample splits were collected on June 15 and 29, 1992 and analyzed by the U.S. Geological Survey laboratory for Organochlorine, Organophosphate, Carbamate, and Triazine pesticides.

During the second year of the study, the toxicity in Imperial Valley waterbodies will be assessed from a broader perspective. The Alamo River was selected for intensive surveying because it contains mainly agricultural runoff from Imperial Valley.

Presently, the upper and lower portions of the Alamo River are sampled once a month. The River is sampled at locations downstream of the major drains and other pertinent locations. Field measurements and analyses by the Regional Board laboratory remain the same as the previous year's study. Samples shipped to U.C. Davis have acute toxicity tests performed on them using Ceriodaphnia dubia and Neomysis. The State Department of Pesticide Regulation analyzes samples (upper or lower Alamo River) for Organophosphate and Carbamate pesticides.

TABLE 6-2: PRELIMINARY BIOMONITORING SCREENING LOCATIONS

Sample Sites

1. New River at outlet
2. Alamo River at outlet
3. Trifolium Drain No. 9
4. Vail 2A Drain at Sinclair Road
5. New River at Worthington Road
6. Alamo River at Worthington Road
7. Palo Verde Intake Canal
8. Palo Verde Outfall Drain
9. Lincoln Street Drain between Ave. 70 & 71
10. Coachella Valley Storm Water Channel (CVSWC) between Ave. 66 & 68
11. Avenue 66/68 Drain above CVSWC
12. Rose Drain
13. Newside Drain
14. South Central Drain #4
15. Barbara Worth Drain at Outlet

2. New River Monitoring

The New River is monitored at the International Boundary to evaluate discharges of untreated and partially treated wastewater from the City of Mexicali, Mexico. Other type of wastes discharged to the River include toxic industrial wastes from industries in the City of Mexicali, garbage from dumpsites within the City, runoff from agricultural land in the Mexicali Valley, and occasionally geothermal wastewater and slaughterhouse wastes.

The New River has been monitored on a quarterly basis since 1989. Prior to 1989, monitoring was done on a monthly basis for several years. Future monitoring will be conducted if funding is available.

Data is collected in the field on an hourly basis for temperature, pH, dissolved oxygen, specific conductance, and settleable solids. Additional samples for turbidity analysis are taken hourly. Samples for Fecal Coliform are taken on the hour during the last 4 hours of sampling.

The following additional analyses are performed on a composite sample comprised of grab samples taken at 60 minute intervals throughout the sampling period:

TDS	TSS
VSS	Total Phosphate
Ammonia	Nitrate
Nitrite	MBAS
BOD	COD
Total Cyanide	Phenol
Arsenic	Boron
Cadmium	Chromium
Copper	Lead
Zinc	

The composites presently consist of samples taken over an 8-hour period. In the past, composites were generally taken over a 10-hour period and annually, a 24-hour composite was taken.

Additionally, 1 or 2 grab samples are taken during each sampling event for analysis by EPA Method 524.2 for Volatile Organic Analyses.

All samples are sent to the state Department of Health Services Southern California Laboratory for analyses except the following analysis which are performed at the Regional Board Laboratory:

Turbidity	VSS
Fecal Coliform	BOD
TDS	COD
TSS	

In January of 1992 the USEPA provided laboratory services for analysis of the following parameters:

Metals	Organophosphorus Pesticides
Volatile Organics	Semi-volatile Organics
Pesticides/PCPs	Chlorinated Herbicides
Triazine Herbicides	

These analyses were performed on a grab sample taken during a regularly scheduled quarterly sampling run.

Additional sampling events have also been conducted at this location in the past for the parameters listed above or for additional parameters. These unscheduled sampling events will be conducted in response to unusual events noted at the New River, when funds or laboratory services are available for additional sampling or in response to specific needs for data.

E. TOXIC SUBSTANCES MONITORING

One method of monitoring for toxic substances 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 tissues of fish and other aquatic organisms are 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. The toxic substances monitoring of resident organisms has been performed by the State Department of Fish and Game under a contract managed by the State Board with the assistance and oversight of the Regional Board. Continuation of this monitoring is dependent upon continued funding of this program.

The objectives of the Toxic Substance Monitoring Program are:

To develop statewide baseline data and to demonstrate trends in the occurrence of toxic elements and organic substances in the aquatic biota.

- To assess impacts of accumulated toxicants upon the usability of State waters by man.
- To assess impacts of accumulated toxicants upon the aquatic biota.
- 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 include benthic invertebrates and fish. Species collected in this Region include (by common name): bardiella, carp, channel catfish, flathead catfish, grass carp, mosquitofish, mozambique mouthbrooder, largemouth bass, orangemouth corvina, tilapia, red shiner, red swamp crayfish, sailfin molly, sargo, spiny soft shelled turtle, yellow bullhead, and zill's cichlid. The history of the TSM Program sampling in this Region through 1990 is summarized in Table 6-3.

TABLE 6-3: TSM PROGRAM – STATION SAMPLING HISTORIES

<u>Station Name</u>	<u>Sample Years</u>
Alamo River/Calipatria	1978-1985, 1987-1990
Alamo River/International Boundary	1985, 1987-88
Central Drain	1988
Coachella Canal	1987
Coachella Valley Stormwater Channel	1986-87
Colorado River/Cibola	1978-1981
Colorado River/International Boundary	1985, 1988
Colorado River/Needles	1987-88
Colorado River/Picacho	1984
Colorado River/u/s Imperial Dam	1987, 1989
Dixie Drain No. 1	1986
Dixie Drain No. 3	1986
Dixie Drain No. 5	1986
Fig Drain	1989-90
Fig Lake	1985, 1989-90
Fig Lake Outlet	1990
Forgetmenot Drain	1986
Greeson Drain	1985
Holtville Main Drain	1989-90
Lake Cahuilla	1987
Lake Havasu	1987
New River/Internat. Bound	1984-85, 87, 1989-90
New River/Westmorland	1978-1990
Palo Verde Outfall Drain	1986-87
Pumice Drain	1990
Reservation Main Drain	1986
Rice Drain	1985-86

Rose Drain	1988
Salt Creek Slough	1985-86
Salt Creek/Mouth	1987
Salton Sea/North	1981
Salton Sea/South	1980-81, 1985, 1987, 1989
Salton Sea/West Shore	1984, 1986
San Felipe Creek/d/s Highway 86 Bridge	1987
San Felipe Creek/San Sebastian Marsh	1986
South Central Drain	1990
Trifolium Drain 7	1985
Verde Drain	1989
Warren Drain	1989-90
West Side Drain	1986
Wiest Lake	1989

F. Total Maximum Daily Loads Compliance Assurance and Enforcement

The Executive Officer shall use, as the circumstances of the case may warrant, any combination of the following actions to ensure that the water pollution threats identified in TMDLs are promptly and effectively corrected:

- Implementation and enforcement of Section 13225, 13267, and 13268 of the California Water Code to ensure that all responsible parties submit in a prompt and complete manner, the Water Quality Management Plan defined in Chapter 4, Section V(E)(1.1).
- Require submission of reports of waste discharge pursuant to CWC §13260.
- Adoption of waste discharge requirements, pursuant to Section 13263 of the California Water Code, as appropriate (i.e., for any responsible party who fails to implement voluntary or regulatory-encouraged sediment controls).
- Adoption of enforcement orders pursuant to Section 13304 of the California Water Code against any responsible party who violates Regional Board waste discharge requirements and/or fails to implement voluntary or regulatory-encouraged sediment control measures to prevent and mitigate sediment pollution or threatened pollution of surface waters.
- Adoption of enforcement orders pursuant to Section 13301 of the California Water Code against those who violate Regional Board waste discharge requirements and/or prohibitions.
- Issuance of Administrative Civil Liability Complaints, pursuant to Section 13261, 13264, or 13268 of the California Water Code, against any responsible party who fails to comply with Regional Board orders, prohibitions, and requests.
- Adoption of referrals of recalcitrant violators of Regional Board orders and prohibitions to the District Attorney or Attorney General for criminal prosecution or civil enforcement.

1. PATHOGEN/BACTERIAL INDICATORS

A. New River

1. A.1. Additional Compliance Assurance and Enforcement

Implement and enforce Section 13267 of the California Water Code to ensure that all dischargers subject to Regional Water Quality Control Board, Colorado River Basin Region, Order No. 01-800, NPDES No. CA0017001, General National Pollutant Discharge Elimination System Permit and General Waste Discharge Requirements for Confined Animal feeding Operations (Order No. 01-800), submit, in a prompt and complete manner, the Engineered Waste Management Plan required by Order No. 01-800.

1.A.2. Water Quality Monitoring

Monitoring activities are contingent upon adequate programmatic funding. Monitoring activities for the New River Pathogen TMDL will be conducted by the Regional Board pursuant to a Regional Board Quality Assurance Project Plan for the New River (QAPP-NR). The QAPP-NR shall be developed by Regional Board staff and be ready for implementation within 180 days following USEPA approval of the TMDL. The objectives of the monitoring program shall include collection of water quality data for:

- assessment of water quality standards attainment,
- verification of pollution source allocations,
- calibration or modification of selected models (if any),
- evaluation of point and nonpoint source control implementation and effectiveness,
- evaluation of in-stream water quality,
- evaluation of temporal and spatial trends in water quality, and
- modification of the TMDL as necessary.

The monitoring program shall include a sufficient number of sampling locations and sampling points per location along the New River and major drain tributaries to the river. Monthly grab samples from the above-mentioned surface waters shall be collected and analyzed for the following parameters:

- Flow (to be obtained from IID or USGS)
- Dissolved Oxygen
- Ph
- Temperature
- Fecal coliform organisms
- E. Coli
- Fecal streptococci
- Enterococci

Activities implemented by dischargers and responsible parties and surveillance conducted for the New River Pathogen TMDL will be tracked pursuant to a Regional Board implementation tracking plan (ITP). Regional Board staff will develop the ITP within 180 days following USEPA approval of the TMDL. The objectives of Regional Board surveillance and implementation tracking are:

- Assess/track/account for practices already in place;
- Measure the attainment of Milestones;
- Determine compliance with NPDES permits, WLAs, and LAs; and
- Report progress toward implementation of NPS water quality control, in accordance with the SWRCB NPS Program Plan (PROSIP).

2. SEDIMENTATION/SILTATION

A. Imperial Valley

2.A.1. Additional Compliance Assurance and Enforcement

As provided in the State Board's Water Quality Enforcement Policy, prompt, consistent, predictable, and fair enforcement are necessary to deter and correct violations of water quality standards, violations of the California Water Code, and to ensure that responsible parties carry out their responsibilities for meeting TMDL allocations. This is particularly necessary to adequately deal with those responsible parties who fail to implement self-determined or regulatory-encouraged sediment control measures, which are the cornerstone of the State's NPS Program.

From the standpoint of measuring progress, any cropland discharge with a concentration of suspended solids, measuring more than 375 mg/L (or about 270 NTU for turbidity) and absent reasonable implementation of MPs would be considered unsatisfactory. Samples will be analyzed for volatile suspended solids at locations where organic loading represents a significant proportion of the total suspended solids or turbidity. The volatile

suspended solids component will be subtracted. Further, in assessing the status of compliance with Load Allocations of any responsible party, the Regional Board shall consider, in addition to water quality results, the degree to which the responsible party has implemented, or is implementing, sediment control measures. In the absence of true progress, the Regional Board directs the Executive Officer to draft requirements that will fulfill sediment control measures. The numeric target is a goal that translates current sediment/silt-related Basin Plan narrative objectives and shall not be used for enforcement purposes.

2.A.2. Monitoring and Tracking

Tracking TMDL and monitoring water quality progress, and modifying TMDLs and implementation plans as necessary to ensure attainment of water quality standards, are important to address uncertainty that may exist in aspects of TMDL development, oversee TMDL implementation to ensure that implementation is being carried out, and to ensure that the TMDL remains effective, given changes that may occur in the watershed after the TMDL is developed. (All monitoring activities are contingent on funding through fund-source specific work plans.)

2.A.3. Water Quality Monitoring and Assessment

Monitoring activities are contingent upon adequate programmatic funding. Regional Board staff will conduct monitoring activities for the Alamo River, New River, and Imperial Valley Drains Sedimentation/Siltation TMDLs pursuant to a Regional Board Quality Assurance Project Plan for the Alamo River (QAPP-AR), New River (QAPP-NR), and Imperial Valley Drains (QAPP-IV Sed) Sediment TMDLs. The QAPPs shall be developed by Regional Board staff. The QAPP-AR and QAPP-NR shall be ready for implementation within 180 days following USEPA approval of these TMDLs. The QAPP-IV Sed shall be ready for implementation by one month following USEPA approval of this TMDL. The Regional Board's Executive Officer shall approve the QAPPs and monitoring plans after determining that they satisfy the objectives and requirements of this Section. The objectives of the monitoring program shall include collection of water quality data for:

- Assessment of water quality standards attainment,
- Verification of pollution sources,
- Calibration or modification of selected models (if any),
- Evaluation of point and nonpoint source control implementation and effectiveness,
- Evaluation of in-stream water quality,
- Evaluation of temporal and spatial trends in water quality, and
- Modification of the TMDLs as necessary.

The monitoring program shall include a sufficient number of sampling locations and sampling points per location along the Alamo River, New River, Imperial Valley Drains, and major drain tributaries to the rivers and Salton Sea. The following parameters will be sampled and analyzed from the above-mentioned surface waters, contingent on funding. Data sources may be outside of the Regional Board. Frequency is in brackets.

- Flow [Quarterly]
- Field turbidity [Monthly]
- Laboratory turbidity (EPA Method No. 180.1) [Monthly]
- Total Suspended Solids (EPA Method No. 160.2) [Monthly]
- Total DDT and DDT metabolites [Quarterly]

The Regional Board will track activities implemented by dischargers and responsible parties and surveillance conducted for the Alamo River, New River, and Imperial Valley Drains Sedimentation/Siltation TMDLs pursuant to an implementation tracking plan (ITP). Regional Board staff will develop and implement the ITP within 180 days following USEPA approval of the Alamo River and New River TMDLs. Regional Board staff will develop and implement the ITP by one month following USEPA approval of the Imperial Valley Drains TMDL. The Regional Board's Executive Officer shall approve the ITP after determining that the ITP satisfies the objectives and requirements of this Section. The objectives of Regional Board Surveillance and implementation tracking are:

- Assess/track/account for practices already in place;

- Measure the attainment of Milestones;
- Report progress toward implementation of NPS water quality control, in accordance with the SWRCB NPS Program Plan (PROSIP).

2.A.4. TMDL Implementation Tracking

Implementation of sediment control activities shall be tracked by Regional Board staff and shall be reported to the Regional Board at least yearly.

2.A.5. TMDL Assessment and Reporting

On a yearly basis, Regional Board staff will prepare a report assessing compliance with the TMDL Goals and Milestones. In the report, staff will assess:

- Water quality improvement (in terms of total suspended sediments, total sediment loads, Total DDT, and DDT metabolites).
- Trends in MP implementation.
- MP effectiveness.
- Whether milestones were met on time or at all. If milestones were not met, provide a discussion of the reasons, and make recommendations.
- Level of compliance with measures and timelines agreed to in Program Plans and Drainshed Plans.

2.A.6. Regular Review

The Regional Board shall hold public hearings at least every three years to review the level of MP implementation, effectiveness of MPs, and overall progress of sediment control practices. At these hearings, the following shall be considered:

- Monitoring results
- Progress toward attainment of milestones
- Trends in implementation of MPs
- Modification/addition of management practices for the control of sediment discharges
- Revision of TMDL components and/or development of site-specific water quality objectives

Review of subcategories of water quality standards related to these TMDLs and/or attainability of the TMDLs also may be appropriate after the parties responsible for TMDL implementation submit appropriate documentation that sediment control practices (e.g., MPs) are being implemented on a widespread-basis in the watersheds, that the control practices are being properly implemented and maintained, and that additional controls would result in substantial and widespread economic and social impact. The Regional Board 303(d) listing of the sediment/silt impairment for the Alamo River, New River, Imperial Valley Drains and/or tributary drains shall also be re-evaluated.

III. WATER QUALITY ASSESSMENT ACTIVITIES

Section 305(b) of the federal Clean Water Act requires States to prepare and submit biennially to the USEPA a Water Quality Inventory. This Inventory 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 achieved 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 the Clean Water Act, the economic and social benefits of such achievement, and estimates of the date of such achievement.

Data collection and analyses already being carried out by the State in the permitting, planning, 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.

IV. QUALITY ASSURANCE AND QUALITY CONTROL

The purpose of the statewide Quality Assurance (QA) Program is to ensure that data generated from environmental studies are technically sound, scientifically valid, and legally defensible.

A federal regulation (EPA order 5360.1))requiring the State to develop and implement a Quality Assurance Program Plan (QAPP) was adopted in April 1993. The program mandate is identified in 40 CFR 30.503 (July 01, 1987).

The State Board has appointed a QA Program Manager to direct, coordinate and administer the State QAPP. Independently, each Regional Board has appointed a QA Officer to administer its Regional responsibilities. The State Board and the Regional Boards jointly administer the program but the State Board has lead responsibility for managing the overall program and for reporting to the USEPA. The duties of the Regional Board QA Officer include overseeing and implementing QA procedures conducted in the Regional Board laboratory, interacting with project managers on the required preparation of QA Project Plans, and evaluating compliance inspection data on all major dischargers.

The Regional Board Laboratory was started in June 1976. Its purpose is to perform water and wastewater analysis for the monitoring and surveillance, enforcement, and planning programs. In order for the laboratory to produce data that can be confidently used by this and other agencies in their programs, a QA Program Plan has been written and is being used by the laboratory. The QA Program Plan is designed to maintain Quality Assurance on the samples from the time of collection until the data is reported. This Plan will be reviewed annually and updated if necessary.