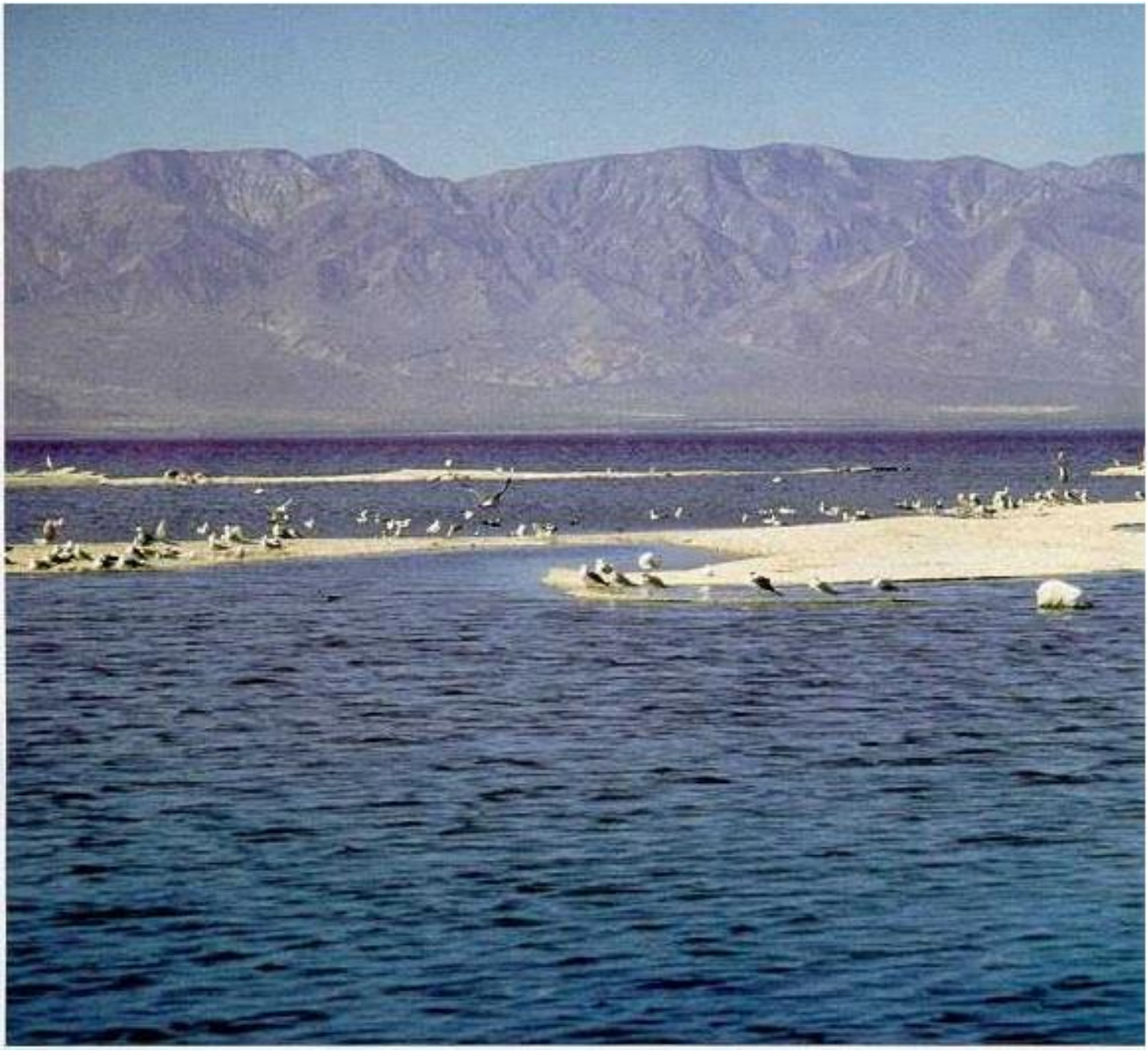
Attachment C

The revised Water Quality Control Plan for the Colorado River Basin Region (Basin Plan) is presented below as a “clean copy.” This attachment may not include minor, non-substantive corrections made for clarity and consistency during the approval process.

WATER QUALITY CONTROL PLAN
FOR THE
COLORADO RIVER BASIN REGION

Includes amendments effective on or before [INSERT DATE WHEN AMENDMENT GOES INTO EFFECT]



CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, COLORADO RIVER BASIN REGION
STATE WATER RESOURCES CONTROL BOARD

FOREWORD

This Water Quality Control Plan (Basin Plan) was prepared by the California Regional Water Quality Control Board, Colorado River Basin Region (Regional Water Board), in accordance with criteria contained in the California Porter-Cologne Water Quality Control Act, the federal Clean Water Act, and other pertinent state and federal rules and regulations.

The Basin Plan is designed to preserve and enhance water quality in the Colorado River Basin Region and to protect the beneficial uses of all regional waters for the benefit of present and future generations. More specifically, the Basin Plan: (i) identifies beneficial uses for surface and ground waters, (ii) includes narrative and numerical water quality objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's anti-degradation policy, and (iii) describes implementation programs and other actions that are necessary to achieve the water quality objectives established in the Basin Plan.

The Basin Plan is a dynamic rather than fixed document and is always subject to modification. The Regional Water Board will periodically consider changes to this Basin Plan as necessary and at a minimum of every three years. Updated sections of the Basin Plan may appear as periodic Basin Plan amendments, which are also subject to approval by the State Water Resources Control Board and the Office of Administrative Law.

This edition of the Basin Plan includes amendments adopted by the Regional Water Board and approved by aforementioned agencies through [INSERT MONTH AND YEAR AMENDMENT GOES INTO EFFECT].

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CHAPTER 1 - INTRODUCTION

I. THE STATE AND REGIONAL WATER BOARDS

Responsibility for the protection of surface water and ground water quality in California rests primarily with the State Water Resources Control Board (State Water Board) and nine Regional Water Quality Control Boards (Regional Water Boards) (collectively, Water Boards). The Water Boards are part of the California Environmental Protection Agency, along with the Air Resources Board, the Department of Resources Recycling and Recovery, the Department of Pesticide Regulation, the Department of Toxic Substances Control, and the Office of Environmental Health Hazard Assessment.

The State Water Board establishes statewide water quality control policy and regulation. The State Water Board also coordinates Regional Water Board efforts and reviews Regional Water Board actions for consistency with statewide policy and regulation.

The Regional Water Boards are semi-autonomous and make critical water quality decisions for their region. All duties and responsibilities of the Regional Water Boards are directed at providing reasonable protection and enhancement of the quality of all regional surface and ground waters. The programs by which these duties and responsibilities are carried out include, but are not limited to:

- Preparing new or revised policies addressing region-wide quality concerns;
- Adopting, monitoring compliance with, and enforcing waste discharge requirements (WDRs) and National Pollutant Discharge Elimination System (NPDES) permits;
- Providing recommendations to the State Water 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.

Given the highly diverse environmental and land use characteristics of regions within the state, region-specific water quality regulations are contained in Water Quality Control Plans (Basin Plans) that recognize regional beneficial uses, water quality characteristics, and water quality problems.

The California Regional Water Quality Control Board, Colorado River Basin Region (Regional Water Board) regulates surface and ground water quality in the Colorado River Basin Region (Region). The Regional Water Board consists of seven members appointed by the Governor for staggered, four-year terms. Members must reside or maintain a place of business within the Region, and most of the members must have a demonstrated interest or proven ability in the field of water quality. Members of the Regional Water Board conduct their business at regular meetings and public hearings at which public participation is encouraged.

II. FUNCTION OF THE BASIN PLAN

The Basin Plan contains the water quality regulations for the Colorado River Basin Region and programs to implement those regulations. The Basin Plan is designed to preserve and enhance water quality in the Region and to protect the beneficial uses of all regional waters for the benefit of present and future generations. Specifically, the Basin Plan: (i) identifies beneficial uses for surface and ground waters, (ii) includes narrative and numerical water quality objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state's anti-degradation policy, and (iii) describes implementation programs and other actions that are necessary to achieve the water quality objectives established in the Basin Plan.

Water uses and water benefits vary. Water quality is an important factor in determining use and benefit. For example, drinking water generally must be of higher quality than the water used to irrigate agricultural land. Both of these are beneficial uses of water, but the quality requirements for irrigation water are different from those for drinking water. The Basin Plan recognizes the variations of water quality and water uses.

The Basin Plan is divided into six chapters. Chapter 1 provides a summary overview of the functions of the State and Regional Water Boards, the legal basis and authority for the Basin Plan, and the physical features of the Colorado River Basin Region. Chapter 2 designates the beneficial uses for surface and ground waters in the Region. Chapter 3 designates the water quality objectives necessary to ensure the reasonable protection of the beneficial uses. Chapter 4 describes the implementation plans for achieving and maintaining the beneficial uses and water quality objectives. Chapter 5 summarizes the various plans and policies which protect water quality and also describes water quality issues requiring special attention. Chapter 6 provides a summary description of the water quality monitoring and surveillance program of the Regional Water Board.

The Regional Water Board implements the Basin Plan by issuing and enforcing waste discharge requirements to personsincluding individuals, communities, or businesses whose waste discharges may affect water quality. These requirements can be either state WDRs or federally-delegated NPDES permits for discharges to waters of the United States. Dischargers are required to meet water quality objectives and thus protect beneficial uses.

This Basin Plan also encourages water users to improve the quality of their water supplies, particularly where the wastewater they discharge is likely to be reused. Public works and other projects, which can affect water quality, are reviewed and their impacts are identified. Proposals which implement or help achieve the goals of the Basin Plan are supported.

The Basin Plan is a dynamic rather than fixed document and is always subject to modification. The Regional Water Board will periodically consider changes to this Basin Plan as necessary and at a minimum of every three years. Updated sections of the Basin Plan may appear as periodic amendments, which are also subject to approval by the State Water Board and the Office of Administrative Law. Amendments to the Basin Plan are also often subject to review by the United States Environmental Protection Agency (USEPA).

III. LEGAL BASIS AND AUTHORITY

The Porter-Cologne Water Quality Control Act, which is contained in division 7 of the California Water Code, establishes the responsibilities and authorities of the nine Regional Water Boards and the State Water Board. The Act names these Regional Water Boards "...the principal state agencies with primary responsibility for the coordination and control of water quality." (Water Code, § 13001.) Each Regional Water Board is directed to "...formulate and adopt water quality control plans for all areas within the region." (*Id.* § 13240.) A water quality control plan for the waters of an area is defined as having these three components: beneficial uses which are to be protected, water quality objectives which protect those uses, and an implementation plan which accomplishes those objectives. (*Id.* § 13050.) Further, "such plans shall be periodically reviewed and may be revised." (*Id.* § 13240.) The federal Clean Water Act (33 U.S.C. section 1251 et seq.) provides for the delegation of certain responsibilities of water quality control and water quality planning to the states. Where the USEPA and the State Water Board have agreed to such delegation, the Regional Water Boards implement portions of the Clean Water Act, such as the NPDES program and toxic substance control programs.

The Porter-Cologne Water Quality Control Act and Clean Water Act also describe how enforcement of requirements pertaining to discharges of waste is to be carried out. Enforcement tools available to the Regional Water Board range from simple letters to the discharger, through formal Regional Water Board orders and direct assessments of administrative civil liability and penalties, to judicial civil and/or criminal enforcement, including civil liability, penalties, fines, and/or injunctive relief. Legally-noticed public hearings are required for most actions, but some enforcement actions (e.g., Cleanup and Abatement Orders) may be issued by the Executive Officer of the Regional Water Board to allow for a quicker response than regularly scheduled board meetings can provide.

This Basin Plan was prepared to comply with all applicable federal and state laws, regulations, plans, policies, and guidelines. The laws, regulations, and guidelines are summarized below. The plans and policies are summarized in Chapter 5. Also, future amendments thereto, are hereby included in this Basin Plan by reference.

A. FEDERAL REQUIREMENTS

One federal law specifically and directly addresses the matter of water pollution control. This law is known as the federal Clean Water Act (33 U.S.C. section 1251 et seq.). Several other federal laws, classifiable as "environmental" laws, may also apply to water pollution control activities. These laws include the National Environmental Policy Act, the Clean Air Act, and the Resource Conservation and Recovery Act.

1. Federal Clean Water Act

The objective of the Act (33 U.S.C. section 1251 et seq.) is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. The Act further states that it is the policy of Congress to recognize, preserve, and protect the primary responsibilities, and rights of the states to prevent, reduce, and eliminate pollution, to plan the development and use (including restoration, preservation, and enhancement) of land and water resources, and that full public participation in the development and/or revision of regulations, plans and programs be provided for, encouraged, and assisted. The responsibility to administer the Act is placed with the Administrator of the U.S. Environmental Protection Agency.

2. National Environmental Policy Act (NEPA)

In general, this Act (42 U.S.C. section 4321 et seq.) proposes to satisfactorily preserve the environment and to restore that which has been degraded. The method devised to accomplish this is to require evaluation of the effect of each action proposed upon the environment, and to consider the results in making decisions regarding such action. NEPA applies to the actions of the federal government.

NEPA declares a continuing policy for all levels of government and concerned public and private organizations to create and maintain conditions under which people and nature can exist in productive harmony and fulfill the social, economic, and other needs of present and future generations. The Act directs an interdisciplinary approach to integrated use of all talents in planning and decision-making that impact on the environment. (42 U.S.C. § 4332.) Each report or recommendation must be accompanied by a detailed statement prepared by the responsible official on:

- The environmental impact of the proposed action;
- Any adverse environmental effects which cannot be avoided if the action is taken;
- Alternatives to the action;
- Relationship between local short-term uses of the environment, and maintenance and enhancement of long-term productivity; and
- Any irreversible and irretrievable commitments of resources if the proposed action is taken.

Appropriate alternatives to proposed actions must be studied and developed when conflicts in use of available resources are encountered.

B. CALIFORNIA STATUTORY AND ADMINISTRATIVE LAWS

The laws in California are organized into the state constitution, statutes, and administrative codes encompassing all facets of the state's governmental controls. Laws that directly affect water resources planning are contained principally in the Water Code, with additional specificity in those administrative codes which are titled Water Resources Code, Health and Safety Code, Public Resources Code, and Fish and Game Code.

1. California Water Code

One division of statutory law is directed primarily towards the control of water quality. This is division 7 of the California Water Code, also referred to as the "Porter-Cologne Water Quality Control Act." Those portions of said division 7 which relate to or govern the preparation of basin plans are summarized below.

This Act establishes that the waters of the state shall be protected for use and enjoyment by the people of the state; that the activities and factors which may affect the quality of the waters of the state shall be regulated to attain the highest water quality which is reasonable, considering all demands being made or to be made and the total values involved, beneficial and detrimental, economic and social, tangible and intangible; that the health, safety, and welfare of the people require that there be a statewide program for control of the quality of all waters of the state; that quality and quantity of water shall be administered conjunctively; and that the statewide program for water quality can most effectively be administered regionally within a framework of statewide coordination and policy. The State Water Board and the nine Regional Water Boards are established under the Act as the principal state agencies with primary responsibility for control of water quality.

The State Water Board is responsible for the formulation and adoption of state policy for water quality control. State policy consists of:

- Water quality principles and guidelines for long-range planning for ground waters and surface waters, and the use of reclaimed water;
- Water quality objectives at key locations; and
- Other principles and guidelines deemed essential for water quality control.

The State Water Board may adopt water quality control plans for waters for which water quality standards are required by the federal Clean Water Act. The Regional Water Quality Control Plans are prepared to conform with policies of the State Water Board.

Each Regional Water Board must formulate and adopt, for its region, water quality control plan(s) which establish such water quality objectives as in its judgment will ensure reasonable protection of beneficial uses.

Article 4 of chapter 4 of division 7 of the Water Code establishes basic procedures for prescription of waste discharge requirements upon dischargers of waste. Any person who is discharging, or proposes to discharge waste other than into a community sewer, that could affect the quality of water, shall file a report with the Regional Water Board containing information required by the Board. After any necessary hearing, the Regional Water Board may impose waste discharge requirements based on the nature of the proposed discharge relative to conditions existing in the disposal area or receiving waters. Discharge requirements may be reviewed and revised as appropriate, upon application by any affected person or by the Regional Water Board on its own motion. The discharge of wastes does not create any vested right to continue such discharge.

Section 2100 of the Water Code provides for adjudication to protect ground water quality. The State Water Board, upon a finding of existing or threatened irreparable damage, may file an action in the superior court to restrict pumping or to impose physical solutions, or both, to the extent necessary to prevent destruction of or irreparable injury to the quality of ground water. The State Water Board may take such action only if an affected local agency charged with this responsibility fails to take appropriate action.

The Water Code contains provisions which control almost every consideration of water and its use. Division 2 of the Water Code provides that the State Water Board shall consider and act upon all applications for permits to appropriate waters. The State Water Board's authority includes water quality considerations in granting a water right; division 3

deals with dams and reservoirs; division 5 pertains to flood control; division 6 controls conservation, development and utilization of the state water resources; division 7, as described above, covers water quality; and divisions 11 through 21 provide for the organization, operation, and financing of various types of local water-oriented agencies.

2. California Environmental Quality Act (CEQA)

CEQA is contained in Public Resources Code section 21000 et seq. CEQA, which is the state-level equivalent of the federal NEPA, requires all state agencies, boards, and commissions to include, in any report on any project having a significant effect on the environment, an environmental impact report (EIR). CEQA also requires, in addition to the five items set forth in section 102 of NEPA, that the EIR include a discussion of mitigation measures proposed to minimize the impact. The responsibility for development of objectives, criteria, and procedures to assure proper preparation and evaluation of the EIR is placed with the state Office of Planning and Research.

3. California Code of Regulations

The administrative procedures of the State Water Board are contained in title 23, chapter 3 of the California Code of Regulations. Regulations relating to the many facets of water rights and water quality are contained in the several subchapters of said chapter 3. Title 17 (Public Health) of the California Code of Regulations contains requirements for quality of water for domestic uses. Restrictions on the uses of waters reclaimed from wastewater are contained in title 22 (Environmental Health) of the California Code of Regulations.

4. Other State Statutes

Portions of various other codes, such as the Health and Safety Code, Fish and Game Code, Public Resources Code, and Revenue and Taxation Code, impose various regulations that are to be considered in the basin planning process. The Health and Safety Code contains regulations relating to the formation and operation of county sanitation and sewer maintenance districts, sewer revenue bonds, the use by the public of reservoirs, and ocean water-contact sports. The Fish and Game Code provides for the preservation, protection, and enhancement of birds, mammals, fish, amphibians, and reptiles, and their habitats.

C. OTHER PLANNING AGENCIES

There are various other regional and local governmental agencies whose policies are considered during any Water Quality Control Plan update. These include but are not limited to the following:

- Southern California Association of Governments
- Coachella Valley Association of Governments
- Imperial Valley Association of Governments
- San Bernardino Association of Governments
- Agencies, districts, and other public bodies responsible for collection, treatment, and disposal of wastewaters and for water conservation and production.

IV. THE PLANNING PROCESS

A. BASIN PLAN AMENDMENT PROCESS

Both federal and state laws require public participation in the development of Water Quality Control Plans and amendments thereto. The principal laws governing public participation with respect to development of water quality control plans are listed below:

- Federal Clean Water Act (33 U.S.C. § 1251 et seq.)
- Porter-Cologne Water Quality Control Act (Water Code, § 13000 et seq.)
- California Environmental Quality Act (CEQA) (Public Resources Code, § 21000 et seq.)

In addition to these laws, both federal and state regulations and guidelines have been developed to ensure compliance with the intent of the laws.

This Regional Water Board uses the following procedures for adoption of Water Quality Control Plans:

- Proposed Plans are prepared by Regional Water Board staff, under the direction of the Regional Water Board's Executive Officer.

- An Environmental Checklist Form for the proposed Plan is prepared.

- Staff prepares a summary report containing:

    - A brief description of the proposed Plan;
    - Reasonable alternatives to the proposed Plan; and
    - Mitigation measures to minimize any significant adverse environmental impacts.

- A Notice of Filing and Notice of Public Hearing is mailed to all interested agencies (federal, state, and local), organizations, and individuals at least 45 days prior to the scheduled Regional Water Board hearing on the proposed Plan. Those agencies, organizations, and individuals who are presumed to have special interest in the proposed Plan are forwarded copies of the proposed plan, the Environmental Checklist Form, and the summary report.

- At least 45 days prior to the scheduled Regional Water Board Public Hearing, a copy of the Notice of Filing and Notice of Public Hearing is published in newspapers for major circulation in areas affected by the proposed Plan.

- Copies of the proposed Plan, environmental checklist, and summary report are provided upon request to other agencies and persons.

- The Regional Water Board staff prepares written responses to comments concerning significant issues raised during the public review period. If a comment is received less than 15 days prior to the date of the Regional Water Board hearing on the proposed Plan, an oral response is presented at the hearing. The oral response, as well as comments and responses at the Board meeting, are included in the meeting minutes.

- Following Regional Water Board adoption of the Plan, the Regional Water Board's Executive Officer will forward the Plan for consideration of approval to the State Water Board.

- Following State Water Board approval of the Plan, a Notice of Decision will be filed by the Regional Water Board with the Secretary of the Resources Agency for public posting for a period of at least 30 days.

In addition to the above procedure, other provisions are made to allow for public involvement. All Regional Water Board files containing information regarding the proposed plan are open to public inspection at the office of the California Regional Water Quality Control Board, Colorado River Basin Region, 73-720 Fred Waring Drive, Suite 100, Palm Desert, California, 92260, during the hours of 9 a.m. to 4 p.m. of each business day. Also, appointments can be made with Regional Water Board staff to discuss the proposed plan and answer any questions.

B. TRIENNIAL REVIEW PROCESS

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 objectives necessary to protect those uses. The Porter-Cologne Water Quality Control Act requires the 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 exist.

At the conclusion of the triennial review public hearing, Regional Water Board staff prepares a priority list of potential problems with the Basin Plan that may result in amendments. Placing a potential problem on the priority list will only require Regional Water 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 Water Board identification of issues that can be completed within existing resource allocations over a three-year period; and
- List of projects requiring additional resources to complete.

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

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

V. THE COLORADO RIVER BASIN REGION

A. GEOGRAPHICAL SETTING

The Colorado River Basin Region covers approximately 13 million acres (20,000 square miles) in the southeastern portion of California (Figure 1-2, Page 1-18). It includes all of Imperial County and portions of San Bernardino, Riverside, and San Diego Counties. It is bounded for forty miles on the northeast by the State of Nevada, on the north by the New York, Providence, Granite, Old Dad, Bristol, Rodman, and Ord Mountain ranges, on the west by the San Bernardino, San Jacinto, and Laguna Mountain ranges, on the south by the Republic of Mexico, and on the east by the Colorado River and State of Arizona. Geographically, the Region represents only a small portion of the total Colorado River drainage area, which includes portions of Arizona, Nevada, Utah, Wyoming, Colorado, New Mexico, and Mexico.

A significant geographical feature of the Region is the Salton Trough, which contains the Salton Sea and the Coachella and Imperial Valleys. The Salton Trough is a landward extension of the Gulf of California structural depression. In prehistoric times, it contained the Ancient Lake Cahuilla (not to be confused with the present Lake Cahuilla, located at the terminus of the Coachella Branch of the All-American Canal). Much of the agricultural economy and industry of the Region is located in the Salton Trough. The Salton Trough contains the Salton Sea Known Geothermal Resource Area, which as of 2017, consisted of 10 generating geothermal plants.

Developments along California's 230-mile reach of the Colorado River, which flows along the eastern boundary of the Region, include agricultural areas in Palo Verde Valley and Bard Valley, urban centers at Needles, Blythe, and Winterhaven, several transcontinental gas compressor stations, and numerous small recreational communities. Some mining operations are located in the surrounding mountains. Also situated along the Colorado River are the Fort Mojave, Chemehuevi, Colorado River, and Yuma Indian Reservations.

B. GEOLOGY

The mountains of the Region consist mainly of metamorphic and igneous rocks of pre-Cambrian to Tertiary age, and the sediments in the intervening valleys are generally weakly consolidated to unconsolidated sediments of late Cenozoic age. Northwest-trending faults are extensive and are a major factor in determining the configuration of the land. The well known San Andreas Fault Zone cuts diagonally across the southwesterly portion of the Region and borders the highlands on the northeast side of the Salton Trough. Borrego Valley is a typical valley formed by the San Jacinto Fault. The valleys, mountains, and dry lakes generally trend toward the northwest as oriented by the major fault systems.

The Coachella and Imperial Valleys were created when the Colorado River formed a delta that isolated the Salton Trough from the Gulf of California. Subsequently, under desert conditions, the inland sea dried up. Later, the trough was occupied by lakes for various periods, and deposition into these lakes gives the valleys their characteristic flat lands and fertile soils.

The Anza-Borrego planning area is made up of the Old California batholith that has been weathered and eroded. Today only low dissected hills remain.

The East Colorado River Basin planning area consists of a sediment-filled structural trough. Deep alluvial deposits composed of silt, clay, and sand were laid down by ancestral streams of the present Colorado River system.

C. MAJOR HYDROLOGIC FEATURES

The Colorado River is the most important waterway in the Region. The River supplies water for use within the Region and elsewhere. Regional drainage to the River is from a strip about 200 miles long, with a watershed which (in California) ranges from 7 to 40 miles in width. This watershed strip is referred to as the East Colorado River Basin.

Near Parker Dam, water is diverted by the Metropolitan Water District for export through the Colorado River Aqueduct to coastal counties. The dam forms Lake Havasu, a major recreational development. At Palo Verde Diversion Dam, water is diverted for irrigation in Palo Verde Valley. At Imperial Dam, water is diverted to the All-American Canal, which conveys water in California to the Bard Valley, and to the agricultural areas of the Imperial and Coachella Valleys.

Apportionment of water available for diversion from the River is made in accordance with a number of documents collectively referred to as the Law of the River. These include interstate compacts, federal legislation, water delivery contracts, state legislation, a treaty with Mexico, United States Supreme Court decrees, and federal administrative actions. Presently, California is receiving waters unused by other states. When Arizona is diverting its full apportionment, it is anticipated that there will be only infrequent periods of surplus, and California's diversions will be limited to its basic apportionment of 4.4 million acre-feet per year.

Regional drainage waters resulting from Colorado River diversions and use, and which do not return to the Colorado River, drain into the Salton Sea. That portion of the Region that does not drain into the Colorado River is referred to as the Colorado River Basin (West) or West Basin.

Much of the northern portion of the West Basin drains to several individual internal sinks or playas, while the southern portion generally drains to the Salton Sea. The Imperial and Coachella Valleys contain numerous drains that transport irrigation return flows and stormwater, as well as canals for importation and distribution of Colorado River water.

The Salton Sea, which is replenished principally by irrigation drainage and stormwater, is the largest body of water in the West Basin. The Sea serves as a reservoir to receive and store agricultural drainage and seepage waters, but also provides important wildlife habitat and is used for recreational purposes which include boating and fishing. Several smaller constructed recreational lakes are located in the Imperial Valley. In addition, Lake Cahuilla in Coachella Valley is used to store Colorado River water for irrigation and recreational purposes.

D. CLIMATE

The Region has the driest climate in California. The winters are mild and summers are hot. Temperatures range from below freezing to over 120ºF. In the Colorado River valleys and the Salton Trough frost is a rare occurrence, and crops are grown all year round.

Snow falls in the Region's higher elevations, with mean seasonal precipitation in the upper San Jacinto and San Bernardino Mountains ranging from 30 to 40 inches. The lower elevations receive relatively little rainfall. An average of about four inches of precipitation occurs along the Colorado River, with much of this coming from late summer thunderstorms moving north from Mexico.

Typical mean seasonal precipitation in the desert valleys is 3.6 inches at Indio and 3.2 inches at El Centro. Precipitation over the entire area occurs mostly from November through April, and August through September, but its distribution and intensity are often sporadic. Local thunderstorms may contribute all the average seasonal precipitation at one time or only a trace of precipitation may be recorded at any locale for the entire season.

E. FISH AND WILDLIFE RESOURCES

The Region provides habitat for a variety of native and introduced species of wildlife. Increasing human population and its associated development have adversely affected the habitat for some species, while enhancing it for others.

Large areas within the Region are inhabited by animals tolerant of arid conditions, including small rodents, coyotes, foxes, birds, and a variety of reptiles. Along the Colorado River and in the higher elevations of the San Bernardino and San Jacinto Mountains, where water is more abundant, deer, bighorn sheep, and a diversity of small animals exist.

Practically all of the fishes inhabiting the Region are introduced species. The most abundant species in the Colorado River and irrigation canals include largemouth bass, smallmouth bass, flathead and channel catfish, yellow bullhead, bluegill, redear sunfish, black crappie, carp, striped bass, threadfin shad, red shiner, and in the colder water above Lake Havasu, rainbow trout. Grass carp were introduced into sections of the All American Canal system for aquatic weed control. Fishes inhabiting agricultural drains in the Region generally include mosquito fish, mollies, red shiners, carp, and tilapia, although locally significant populations of catfish, bass, and sunfish occur in some drains. The Salton Sea formerly hosted a considerable sportfishery of introduced species, including Gulf croaker, orangemouth corvina, and sargo. During the late 1960's and 1970's, a hybrid tilapia invaded the Salton Sea and became dominant by number and weight. Fish surveys conducted in 2017 showed that tilapia are still present at the Salton Sea, but it is uncertain how long the population will be able to sustain itself with rising salinity.

National wildlife refuges in the Region include the Sonny Bono Salton Sea National Wildlife Refuge Complex (Sonny Bono Complex) in the West Colorado River Basin, and three refuges in the East Colorado River Basin (Cibola, Havasu and Imperial National Wildlife Refuges). The Sonny Bono Complex consists of the Sonny Bono Salton Sea National Wildlife Refuge and the Coachella Valley National Wildlife Refuge. The three Colorado River refuges have territory on either side of the Colorado River in both Arizona and California. Wildlife lands managed by the California Department of Fish and Wildlife within the Region are the Marble Mountains, Santa Rosa, San Felipe Valley, and Imperial wildlife areas.

The Region provides habitat for certain wildlife species listed as endangered or threatened under the California Endangered Species Act (CESA) and/or the federal Endangered Species Act. These species include, but are not limited to, desert pupfish, razorback sucker, Yuma clapper rail, black rail, least Bell's vireo, yellow-billed cuckoo, desert tortoise, and peninsular bighorn sheep.

VI. PLANNING AREAS

For planning and reporting purposes, the Region has been divided into the following seven major planning areas on the basis of different economic and hydrologic characteristics (Figure 1-2):

- Lucerne Valley
- Hayfield
- Coachella Valley
- Anza-Borrego
- Imperial Valley
- Salton Sea
- East Colorado River Basin

A. LUCERNE VALLEY PLANNING AREA

The Lucerne Valley planning area comprises many small internal drainage basins which cover 6,500 square miles, approximately the northern third of the West Basin. In the upper desert, which contains Lucerne Valley, Yucca Valley, Joshua Tree, and Twentynine Palms, precipitation is higher, and frost often occurs. The San Bernardino Mountains on the northwest have the highest peaks in the planning area, with elevations exceeding 7,000 feet.

1. Surface Water Hydrology

Precipitation occurs mostly as rainfall, with some snowfall in the San Bernardino Mountains. Rainfall is sporadic, and amounts vary widely with location. Mean annual precipitation ranges from 16 inches in the San Bernardino Mountains to less than three inches in the Bristol Lake (dry) area. The average annual rainfall over the entire planning area is five inches. Little of the rainwater percolates into the ground water table and most is lost by evaporation and by evapotranspiration. Arrastre and Crystal Creeks are the most significant streams in the planning area.

2. Ground Water Hydrology

Ground water is stored principally in the unconsolidated alluvium. Except for areas near some of the dry lakes, ground water is unconfined. The depth of the water bearing deposits is not known, but the basins have accumulated hundreds of feet of sediments (e.g. 1,200 feet of sediments have been measured in the Dale Hydrologic Subunit).

Wells yield from a few gallons-per-minute (gpm) to 3,000 gpm. In 1970, depth to ground water ranged from flow at the surface to 445 feet in the Copper Mountain hydrologic unit.

There may be some flow (less than an average 100 acre-feet per year) from the Lucerne Hydrologic unit into the Upper Mojave River Hydrologic Subunit in the South Lahontan Basin. There is also an undetermined amount of outflow from the Cadiz Hydrologic Unit into the Palen Hydrologic Subunit of the Hayfield Planning Area.

Ground water flow follows the general gradient of the land surface except in areas of heavy extraction and where subsurface flow may be affected by faults. The Baseline Fault along the south side of Twentynine Palms Valley causes a long linear zone of rising water covered by dense vegetation, which includes the Twentynine Palms Oasis. Another fault, the Mesquite Dry Lake Fault, intersects the Baseline Fault four miles east of Twentynine Palms and impedes ground water movement locally, causing a higher water table on the southwest side of the fault. Other faults have less effect on the hydrology, but may be responsible for high fluoride in the water and for high water temperatures. Wells in the Dale hydrologic unit yield water with temperatures ranging from 70° to 118°F.

B. HAYFIELD PLANNING AREA

The Hayfield Planning Area lies primarily in Riverside County and covers approximately 1,860 square miles. The Hayfield Planning Area is a desert, with barren mountains and valleys and with dry lake beds at the lower elevations.

The area is bounded on the south by the Chuckwalla Mountains, and on the east by the McCoy Mountains. The highest elevation in the Planning Area is close to 5,000 feet, but most of the mountain tops are at lower elevations.

1. Surface Water Hydrology

Average annual precipitation ranges from less than three inches in the lower valley to eight inches in the higher elevations of the Little San Bernardino Mountains. The average annual runoff for the area, which occurs principally during thunderstorms, is 5,000 acre-feet. No perennial streams flow in the planning area. Almost all the moisture from rain is lost through evaporation and evapotranspiration.

2. Ground Water Hydrology

Runoff from the higher elevations is the main source of recharge of the ground water basins. Small amounts might percolate to the ground water table from direct precipitation. Water in storage is generally unconfined in the sediments that fill the valleys.

Water levels range from ground surface down to 400 feet. Wells in the planning area yield from a few gpm to over 5,000 gpm. The water-bearing sediments have been penetrated to a depth of 1,200 feet. Most of the pumping in the area has been done by the Kaiser Steel Corporation for industrial use.

Ground water flow generally follows the gradient of the land surface but may be affected by pumping depressions and by the local geology of the non-water-bearing rocks. An example is the subsurface basalt dike that impedes ground water movement at the east end of the Pinto hydrologic subunit and prevents flow into the adjoining Palen Hydrologic Subunit.

C. COACHELLA VALLEY PLANNING AREA

This planning area contains the Whitewater Hydrologic Unit and the East Salton Sea Hydrologic Unit. It lies almost entirely in Riverside County and covers 1,920 square miles in the west central portion of the Region. The San Bernardino Mountains and the Little San Bernardino Mountains form the northern boundary.

The San Jacinto and Santa Rosa Mountains and the Salton Sea shoreline form the western and southern boundaries. Elevations range from over 230 feet below sea level at the Salton Sea shoreline to over 10,000 feet above sea level in the San Jacinto Mountains.

The higher elevations of the San Bernardino and San Jacinto Mountains have evergreen forests with perennial streams. A contrasting scene is presented on the Coachella Valley floor where the land contains desert vegetation, except where the land has been irrigated with pumped ground water or with imported Colorado River water.

1. Surface Water Hydrology

Average annual precipitation ranges from less than three inches in the valleys to 40 inches in the San Bernardino Mountains. Seasonal snows fall on the higher elevations in the San Bernardino and San Jacinto Mountains. In the valleys, precipitation from summer thunderstorms often exceeds that of winter.

Runoff resulting from rains and snowmelt at the higher elevations is the major source of ground water replenishment. Perennial streams include the upper reaches of the San Gorgonio and Whitewater Rivers, and Palm Canyon, Tahquitz, Snow, Deep Canyon, Chino, and Andreas Creeks.

The Whitewater River is the major drainage course in the Planning Area. There is perennial flow in the mountains, but because of diversions and percolation into the basin, the River becomes dry further downstream. The constructed downstream extension of the River channel known as the Coachella Valley Storm Water Channel, serves as a drainage way for irrigation return flows, treated community wastewater, and storm runoff.

There is one relatively large surface water impoundment. Lake Cahuilla, at the terminus of the Coachella Canal, serves as a storage reservoir to regulate irrigation water demands, and is also used for recreational purposes.

2. Ground Water Hydrology

Ground water is stored principally in the unconsolidated Pleistocene sediments. Wells yield up to 4,000 gpm. Maximum thickness of the water-bearing sediments is not known; however, it exceeds 1,000 feet in Coachella Valley.

Ground water is generally unconfined except in the lower areas of the Coachella Valley. A clay aquitard, a result of past sedimentation in the old lake bed, extends from the Salton Sea to some distance west of Indio, overlying the domestic-use aquifers. The clay layer underlies lenses of permeable sediments and perched ground waters which are replenished by percolating irrigation water.

The planning area is faulted extensively, altering ground water movement. The Mission Creek, Banning, and San Andreas Faults form effective barriers to ground water movement. The Indio Hills, Garnet Hills, and Mecca Faults form partial barriers.

The Indio and Mecca Hills have been uplifted along the northwest-trending San Andreas Fault system. The alignment of oases on the flanks of those hills results from faults that impede the movement of ground water. The most prominent of these oases is the Thousand Palms Oasis on the Mission Creek Fault.

Efforts to recharge the ground water basin in the Coachella Valley began in 1919 when the Coachella Valley County Water District constructed facilities to capture natural flows from the Whitewater River channel to recharge the upper portion of the Whitewater River Subbasin. In 1973, the Coachella Valley Water District (CVWD) and Desert Water Agency (DWA) began importing Colorado River water to the Whitewater recharge facility. The imported water was obtained from Metropolitan Water District of Southern California via the Colorado River Aqueduct in exchange for State Water Project water, for the purpose of increasing ground water recharge in the upper portion of the Whitewater River Subbasin. In 2002, CVWD and DWA completed construction of the Mission Creek recharge facility and began recharging the Mission Creek Subbasin with imported Colorado River water via the Colorado River Aqueduct. Colorado River water transported by the Coachella Canal is used by CVWD to recharge the lower portion of the Whitewater River Subbasin at two sites in the Eastern Coachella Valley. Recharge at the pilot Dike 4 recharge facility located in La Quinta began in 1997 and in 2009, recharge began at the full-scale Thomas E. Levy Groundwater Replenishment facility at this location. Recharge at the pilot Martinez Canyon recharge facility located near the community of Oasis began in 2005. Ground water producers throughout the Coachella Valley are cooperating partners in these ground water recharge projects, which are funded by the replenishment assessment programs.

D. ANZA-BORREGO PLANNING AREA

This Planning Area includes the Clark, West Salton Sea, and Anza-Borrego Hydrologic Units. It comprises 1,000 square miles in the southwest corner of the Region, mostly in San Diego and Imperial Counties, with a small segment in Riverside County.

Elevations range from over 230 feet below sea level at the Salton Sea to over 6,000 feet along the western boundary. The principal communities in the planning area are Salton City and Borrego Springs.

1. Surface Water Hydrology

Drainage flows to the Salton Sea except for two small areas of internal drainage in Clark and Borrego Valleys in the northwest corner of the planning area.

Average annual precipitation ranges from less than three inches along the eastern boundary, near Imperial Valley, to 25 inches in the mountain divide between the Salton Sea and Pacific Ocean drainages. Runoff occurs from winter precipitation especially in the higher elevations and from summer thunderstorms. Perennial flow includes reaches of Coyote and San Felipe Creeks.

2. Ground Water Hydrology

Ground water is pumped principally from the unconsolidated Pleistocene sediments, but some is pumped from low-yield wells that extend to weathered and fractured bedrock.

Ground water flows in the same general direction as surface water to Clark Lake, Borrego Sink, and the Salton Sea. However, this subsurface flow is affected by pumping and may be impeded by faults. About 10,000 acre-feet of

subsurface flow reaches the Salton Sea annually. A safe yield of 22,000 acre-feet/year is estimated for the Planning Area. Storage capacity of the ground water basin is estimated at seven million acre-feet.

E. IMPERIAL VALLEY PLANNING AREA

This Planning Area comprises 2,500 square miles in the southern portion of the Region, almost all of it in Imperial County. The easterly and westerly boundaries are contiguous with the westerly and easterly boundaries of the East Colorado River Basin and the Anza-Borrego Planning Area, respectively. Its northerly boundary is along Salton Sea and the Coachella Valley Planning Area and its southerly boundary follows the International Boundary with Mexico. The Planning Area's central feature is the flat, fertile Imperial Valley. The principal communities are El Centro, Brawley, and Calexico.

1. Surface Water Hydrology

Surface waters mostly drain toward the Salton Sea. The New and Alamo Rivers convey agricultural irrigation drainage, surface runoff, and lesser amounts of treated municipal and industrial waste waters from the Imperial Valley. The flow in the New River also contains agricultural drainage, treated and untreated sewage, and industrial waste discharges from Mexicali, Mexico.

Average annual precipitation ranges from less than three inches over most of the planning area to about eight inches in the Coyote Mountains on the western border.

Colorado River water, imported via the All American Canal, is the predominant water supply and is used for irrigation, industrial, and domestic purposes.

2. Ground Water Hydrology

Ground water is stored in the Pleistocene sediments of the valley floor, the mesas on the west, and the East Mesa and sand hills on the east. However, the fine-grained lake sediments in the central portion of Imperial Valley inhibit ground water movement, and tile-drain systems are utilized to dewater the sediments to a depth below the root zone of crops and to prevent the accumulation of saline water on the surface.

Few wells have been drilled in these lake sediments because the yield is poor and the water is generally saline. The few wells in the Valley are for domestic use only. In the Coyote Wells Hydrologic Subunit and Davies Hydrologic Unit, which are at higher elevations, the water yield from wells is higher, and the waters are of lower salt concentration. Ground water is the main water supply in those areas.

Factors that diminish ground water reserves are consumptive use, evapotranspiration, evaporation from soils where ground water is near the surface, and losses through outflow and export.

F. SALTON SEA PLANNING AREA

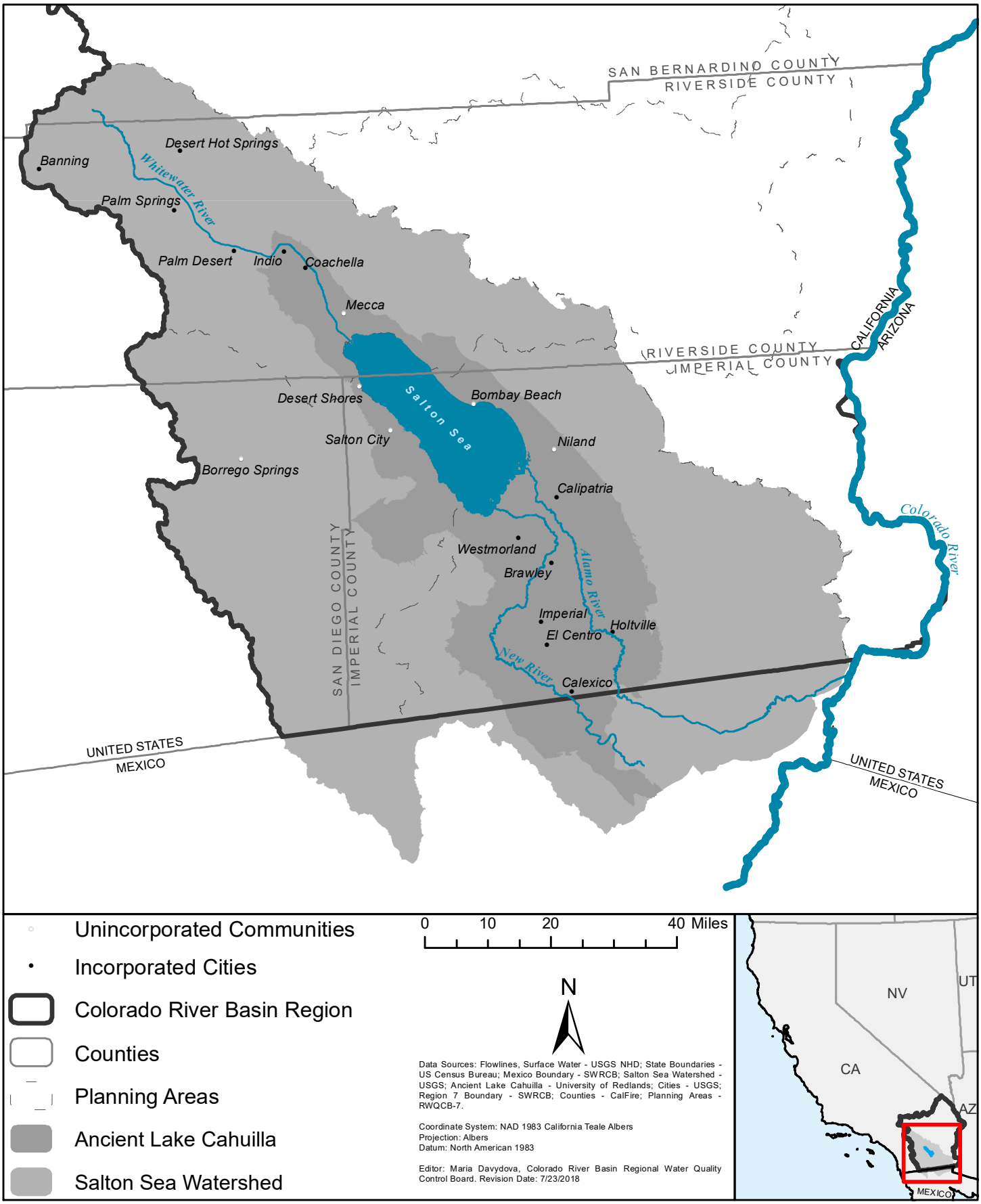
This planning area consists entirely of the Salton Sea, a saline lake located within the lowest portion of the Salton Trough depression at the confluence of the Coachella Valley, Anza Borrego, and Imperial Valley Planning Areas, which together make up the Salton Sea Transboundary Watershed. The northern end of the water body is in Riverside County and the southern portion is in Imperial County, while a section of the watershed extends to Mexicali Valley south of the United States-Mexico border. As a terminal lake with limited and diminishing recharge consisting predominantly of agricultural drainage, the sea has been shrinking in size, resulting in a surface elevation drop from approximately 228 feet below sea level in 1988 to 235 feet below sea level in 2016. The Salton Sea stretches between

Coachella and Imperial valleys and is roughly 30 miles long and about 10 to 15 miles wide. It has a surface area of approximately 360 square miles. (See Figure 1-1.)

The lakebed of the Salton Sea was formed by the Ancient Lake Cahuilla and has been filled with water and dried out repeatedly throughout the past ten thousand years. The present-day Salton Sea formed between 1905 and 1907, when a temporary diversion of the Colorado River was breached by floodwaters, causing the river to change course and flow into the depression. By the time the breach was closed, the surface water of the newly formed lake became California's largest inland body of water by surface area. Over the course of the twentieth century, the Salton Sea became an important recreation destination and wildlife habitat, while serving as an irrigation drainage reservoir for agriculture in the Coachella, Imperial, and Borrego valleys. Wildlife and recreational uses of the sea have been declining as the water body recedes and salts concentrate. The legislative and regulatory efforts to restore the sea are discussed in Chapter 4, IV.B.

The climate is arid, and average annual precipitation is about 2.6 inches. Replenishment of the Salton Sea is predominantly from farm drainage and seepage, with occasional inflows from storm runoff from the gross contributing watershed of about 7,500 square miles (see figure 1-1).

FIGURE 1-1: SALTON SEA WATERSHED



G. EAST COLORADO RIVER BASIN PLANNING AREA

The East Colorado River Basin Planning Area encompasses the eastern portion of San Bernardino, Riverside, and Imperial Counties. It is bounded on the north by Nevada, on the east by the Colorado River, which generally forms the Arizona-California state line, on the south by Mexico, and on the west by the drainage division of the California streams and washes directly tributary to the Colorado River. The planning area is 200 miles long, with a maximum east-west width of 40 miles. The area is characterized by desert valleys and low mountains that are generally less than 4,000 feet above sea level. The Palo Verde and Bard Valleys are within this planning area.

1. Surface Water Hydrology

Precipitation is 3-4 inches annually with about half of this occurring from summer thunderstorms, and the other half from generally weak winter storms.

All drainage flows to the Colorado River except for a minor amount which flows into the Colorado River aqueduct via Gene Wash and Copper Basin Reservoirs.

Perennial flow is limited to the Colorado River, and associated drains, canals, and aqueducts. Piute Creek, a small stream northwest of Needles, flows perennially for about a mile before infiltrating into the ground.

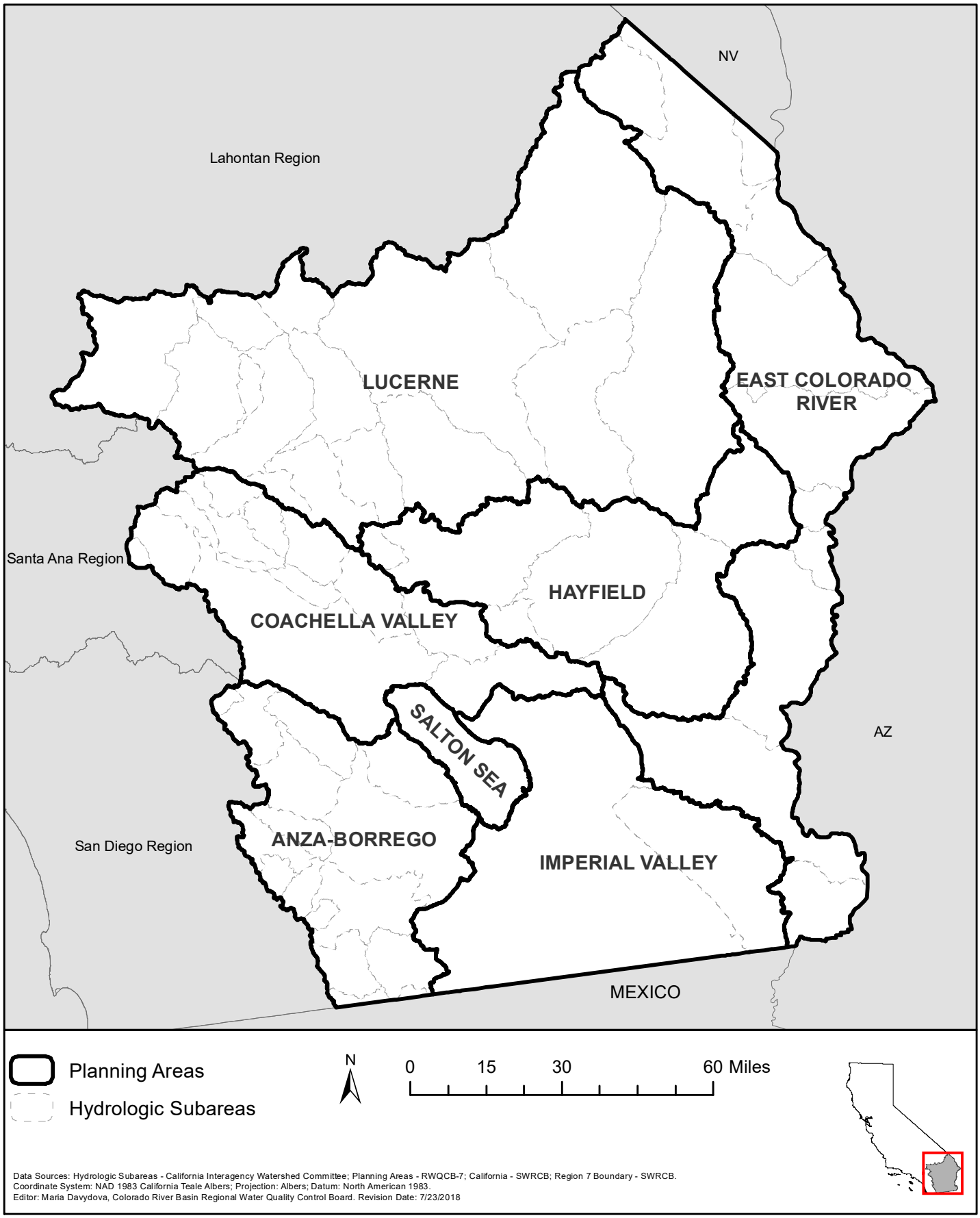
2. Ground Water Hydrology

Ground water is generally unconfined in all four hydrologic units of the Planning Area. However, some confined zones probably exist in the more than 700 feet of alluvial sediments that form the aquifers in three of the units.

Some subsurface water probably enters the Planning Area from other than the Colorado River. However, no data is available upon which to base an estimate. The subsurface inflow from Nevada into the Piute Hydrologic Subunit and from the Chuckwalla and Rice Hydrologic Units into the Palo Verde and Vidal Hydrologic Subunits, respectively, may be significant in terms of the limited capacity of these subunits.

About 10,000 acre-feet of precipitation deep-percolates annually. The combined total storage capacity of all hydrologic units is about 35 million acre-feet within a selected 200-foot zone that lies above the base of the deepest well in each hydrologic unit. In three hydrologic units, wells are 300 feet or more deep.

FIGURE 1-2: COLORADO RIVER BASIN PLANNING AREAS



CHAPTER 2 - BENEFICIAL USES

Division 7 of the Water Code (also known as the Porter-Cologne Water Quality Control Act) requires the Regional Water Board to consider past as well as present and probable future beneficial uses when establishing water quality objectives. Section 13050, subdivision (f), of division 7 describes "beneficial uses" as follows:

> "Beneficial uses of the waters of the State that may be protected against quality degradation include, but are not necessarily limited to, domestic, municipal, agricultural, and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves."

Beneficial water uses are of two types - consumptive and nonconsumptive. Consumptive uses are those normally associated with people's activities, primarily municipal, industrial and irrigation uses that consume water and cause corresponding reduction and/or depletion of water supply. Nonconsumptive uses include swimming, boating, waterskiing, fishing, hydropower generation, and other uses that do not significantly deplete water supplies. Maintenance of fish and wildlife may be either a consumptive or a nonconsumptive use. Because each use may be best served by a specific set of water quality conditions, beneficial uses are a controlling factor in establishing water quality objectives for a particular body of water.

Section 13263 of the Water Code requires that Waste Discharge Requirements be prescribed for any discharge or proposed discharge that could affect the quality of the waters of the state, other than into a community sewer system. All industrial discharges that meet this definition are regulated with Waste Discharge Requirements.

I. PAST OR HISTORICAL BENEFICIAL USES

Historical beneficial uses of water within the Colorado River Basin Region have largely been associated with irrigated agriculture and mining. With the discovery of gold in the East Colorado River Basin about 1860, mining activities began at Picacho, California. Crops were also grown along the Colorado River to graze livestock.

In 1877, the first request was filed for use of the Colorado River water in Palo Verde Valley, California, for agricultural, mining, manufacturing, domestic, and commercial purposes.

In 1901, water was first delivered to Imperial Valley through the Canal del Alamo and was used to irrigate land. With the completion of Hoover Dam in 1935 and the All-American Canal in 1940, most of the land in the Imperial Valley was developed for agriculture. In 1949, the Coachella branch of the All-American Canal was completed which delivers water for irrigation and other beneficial uses in Coachella Valley. Today approximately 500,000 acres in Imperial Valley and about 70,000 acres in Coachella Valley are under cultivation.

Executive Order of Withdrawal (Public Water Reserve No. 114, California No. 26), signed by the President of the United States on February 26, 1928, withdrew from all forms of entry all public lands of the United States in the Salton Sea area lying below the elevation of 220 feet below sea level for the purpose of creating a reservoir in Salton Sea for storage of wastes and seepage water from irrigated land in the Imperial Valley.

By the 1920's, large acreages of land in Palo Verde Valley were being irrigated with Colorado River water. A few years later, canals were constructed to irrigate land within the Bard Valley. At present, about 92,000 acres in Palo Verde Valley and about 14,000 acres in Bard Valley are under cultivation.

Availability of good quality ground water has been very important in the development of many areas including Coachella Valley, Borrego Springs, Morongo Valley, Twentynine Palms, Joshua Tree, Yucca Valley, Lucerne Valley, and Desert Center.

Industrial use of water has become increasingly important in the Region, particularly in the agricultural areas. Recreational use (both contact and non-contact uses) of the Colorado River and Salton Sea is a very important use of these waters; and this use supports millions of dollars' worth of recreational oriented businesses.

The surface waters in the Region provide habitat for the support of a variety of fish and wildlife.

Definitions and abbreviations of beneficial use categories are listed in Table 2-1.

II. PRESENT BENEFICIAL USES

From a quantity standpoint, agricultural use is the predominant beneficial use of water in the Colorado River Basin Region, with the major irrigated acreage being located in the Coachella, Imperial, and Palo Verde Valleys. The use of water for municipal and industrial purposes, which is second in quantity of usage, is also located largely in these valleys and in the Joshua Tree and Dale Hydrologic Units of the Lucerne Valley Planning Area. The third major category of beneficial use, recreational use of surface waters, represents another important segment of the Region's economy.

The beneficial uses found in many areas/hydrologic units today are the result of not only naturally occurring resources, but also of improved technology and the importation of water into the Region. The importation of Colorado River water, via the Canal del Alamo, which began shortly after the turn of the century, and subsequently via the All-American Canal, has resulted in numerous supply canals, drainage channels, and water bodies where previously surface waters were non-existent, intermittent, or limited in nature. The development of deep well drilling and pumping technology allowed development in areas of the Region where water supplies were previously not available. Since the mid-1970's, a portion of the Colorado River water which is imported via the California Aqueduct by the Metropolitan Water District of Southern California is used for ground water recharge in the upper portions of Coachella Valley.

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A. SURFACE WATER BENEFICIAL USES

Beneficial uses for surface waters listed in Tables 2-2, 2-3, and 2-4 were identified based on data contained in the following reports:

- Surface Water Survey, March 1984 (revised September 1988);
- Survey of Springs, 1984; and
- Survey of Springs, 1986.

Present beneficial uses are designated by X; potential beneficial uses are designated by P, and intermittent uses by I. Intermittent uses include those uses which occur only seasonally because of limiting environmental conditions (e.g. provide habitat for trout during colder months of the year), and uses which are dependent on and occur only when sufficient flow exists.

Identification of beneficial uses of surface waters is based strictly on documentation of the existence of those uses and should not in any way be construed to indicate Regional Water Board authorization or approval of the uses. In some instances water quality may not be adequate to support beneficial uses indicated, or beneficial uses may be occurring illegally[1] or without authorization (for example: fishing in Coachella Valley drains[2]).

B. GROUND WATER BENEFICIAL USES

[1] "Illegal" means that the access to the surface waters is not allowed by the agency which owns, operates and maintains those bodies of waters.

[2] Documentation of unauthorized fishing in Coachella Valley drains is cited in: 208 Planning Study, Agricultural Wastewater Practices, 1978, CVWD.

The beneficial uses for ground water which are contained in Table 2-5 are for each hydrologic unit as an entirety, unless otherwise specified. Some hydrologic units contain multiple aquifers which may each support different beneficial uses.

III. POTENTIAL BENEFICIAL USES

Beneficial uses of surface water and ground water in the Region are expected to change little, if at all, between now and the year 2000. Tables 2-2, 2-3 and 2-4 are also valid for potential beneficial uses. However, the relative amount of water resource used for each category of beneficial use may change during the above period.

The existing quality of water in the New and Alamo Rivers limits the present beneficial uses of these waters. Existing beneficial uses for these Rivers are indicated in Table 2-3. When Mexico corrects its present discharges of raw and inadequately treated sewage and other wastes into the New River, beneficial uses of New River water are expected to increase, particularly fish and wildlife, and non-contact water recreational use. The Rivers also have potential for hydropower generation and as cooling/replenishment water for production of geothermal energy.

Where REC I and II are indicated as potential uses in Tables 2-2, 2-3, and 2-4, the designations are solely intended to indicate that water quality of the designated waterways are believed to be satisfactory to support REC I or II usage, but not that REC I or II usage is either appropriate or suitable. For example, although a potential REC I use for the MWD aqueduct is indicated in Table 2-3, actual usage would be extremely dangerous and also illegal. For the purpose of applying water quality objectives, a potential REC I use would have the same significance as an existing REC I use.

IV. SOURCES OF DRINKING WATER POLICY[1]

The following "Sources of Drinking Water" policy as adopted by the State Water Board on May 19, 1988 (Resolution No. 88-63) shall apply to all waters of the Region:

> All surface and ground waters are considered to be suitable, or potentially suitable, for municipal or domestic water supply with the exception of:

a. Surface and ground waters where:
   1. The total dissolved solids (TDS) exceed 3,000 mg/L (5,000 us/cm, electrical conductivity), and it is not reasonably expected by the Regional Water Board to supply a public water system, or
   2. 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 Management Practices or best economically achievable treatment practices, or
   3. 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.

b. Surface waters where:
   1. 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 Water Board; or,
   2. 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 Water Board.

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[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 water impoundment after June 30, 1988, pursuant to section 25208.4 of the Health and Safety Code.

c. Ground waters where:

1. 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 Code of Federal Regulations section 261.3.

d. Regional Water Board authority to amend use designations:

Any body of water which has a current specific designation previously assigned to it by the Regional Water Board in the Water Quality Control Plan may retain that designation at the Regional Water Board's discretion. Where a body of water is not currently designated as MUN but, in the opinion of the Regional Water Board, is presently or potentially suitable for MUN, the Regional Water Board shall include MUN in the beneficial use designation. The Regional Water Board shall 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 U.S. Environmental Protection Agency. Tables 2-4 and 2-5 have not yet been modified to reflect this policy, but may be modified in future updates of this Plan after sufficient information has been collected to make determinations based on this policy.

TABLE 2-1: DEFINITIONS OF THE BENEFICIAL USES OF WATER

CATEGORY		DEFINITION
MUN	Municipal and Domestic Supply	Uses of water for community, military, or individual water supply systems including, but not limited to, drinking water supply.
AGR	Agriculture Supply	Uses of water for farming, horticulture, or ranching including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.
AQUA	Aquaculture	Uses of water for aquaculture or mariculture operations including, but not limited to, propagation, cultivation, maintenance, or harvesting of aquatic plants and animals for human consumption or bait purposes.
IND	Industrial Service Supply	Uses of water for industrial activities that do not depend primarily on water quality including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization.
GWR	Ground Water Recharge	Uses of water for natural or artificial recharge of ground water for purposes of future extraction, maintenance of water quality, or halting salt water intrusion into fresh water aquifers.
REC I	Water Contact Recreation	Uses of water for recreational activities involving body contact with water, where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, white water activities, fishing, and use of natural hot springs.
REC II	Non-Contact Water Recreation	Uses of water for recreational activities involving proximity to water, but not normally involving contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.
WARM	Warm Freshwater Habitat	Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
COLD	Cold Freshwater Habitats	Uses of water that support cold water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.
WILD	Wildlife Habitat	Uses of water that support terrestrial ecosystems including, but not limited to, the preservation and enhancement of terrestrial habitats, vegetation, wildlife (e.g., mammals, birds, reptiles, amphibians, invertebrates), or wildlife water and food sources.

POW	Hydropower Generation	Uses of water for hydropower generation.
FRSH	Freshwater Replenishment	Uses of water for natural or artificial maintenance of surface water quantity or quality.
RARE	Preservation of Rare, Threatened, or Endangered Species	Uses of water that support habitats necessary, at least in part, for the survival and successful maintenance of plant or animal species established under state or federal law as rare, threatened or endangered.

TABLE 2-2: BENEFICIAL USES OF SURFACE WATERS IN THE EAST COLORADO RIVER BASIN

(Listing of the beneficial uses is indicated by X for existing uses, P for potential uses, and I for intermittent uses)

	MUN	AGR	AQUA	FRSH	IND	GWR	REC I	REC II	WARM	COLD	WILD	POW	RAR E
Rivers/Streams													
Colorado River and associated lakes and reservoirs	X	X	X		X	X	X	X	X	X[1]	X	X	X
Copper Basin Creek	P					X	X[2]	X[2]	X		X		X
Piute Creek	P	X				X	X	X	X		X		X
Lakes													
Haughtelin Lake	P	X					X	X	X		X		
West Pond	P						X	X	X		X		X
Canals/Aqueducts													
Bard Valley Canals	X	X				X	X[2]	X	X		X	P	
Palo Verde Valley Canals	P	X	X			X[3]	X[2]	X[2]	X		X		
Drains													
Bard Valley Drains							X[8]	X	X		X		
Palo Verde Valley Drains							X[8]	X[2]	X		X		
Palo Verde Lagoon and Outfall Drain							X[4]	X[4]	X		X		X
Other													
Unlisted Perennial and Intermittent Streams	P[5]					I X	I P X	I X	I X		I X		[6]
Washes (Ephemeral Streams)						I		I	[7]		I		

Footnotes for Table 2-2

1. Limited to reach from Parker Dam to Nevada State Line.

2. Unauthorized Use.

3. Palo Verde Irrigation District regards any loss of water through seepage from the canals as entirely detrimental to their operations, despite any corollary benefit which occurs from recharging the local ground water basin.

4. Unauthorized use within Riverside County portion of flow.

5. Potential use designation will be determined on a case-by-case basis as necessary in accordance with the "Sources of Drinking Water Policy" in this chapter.

6. Rare, endangered, or threatened wildlife may exist in or utilize some of these waterways. If the RARE beneficial use may be affected by a water quality control decision, responsibility for substantiation of the existence of rare, endangered, or threatened species on a case-by-case basis is upon the California Department of Fish and Wildlife on its own initiative and/or at the request of the Regional Water Board; and such substantiation must be provided within a reasonable time frame as approved by the Regional Water Board.

7. Use, if any, to be determined on a case-by-case basis.

8. The only REC I usage known to occur is from fishing activity.

TABLE 2-3: BENEFICIAL USES OF SURFACE WATERS IN THE WEST COLORADO RIVER BASIN

(Listing of the beneficial uses is indicated by X for existing uses, P for potential uses, and I for intermittent uses)

	MUN	AGR	AQUA	FRSH	IND	GWR	REC I	REC II	WARM	COLD	WILD	POW	RAR E
Canals/Aqueducts													
All American Canal System	X	X	X	X[1]	X	X	X[2]	X[2]	X		X	X	X[13]
Coachella Canal	P	X				X	X[2]	X[2]	X		X		X[13]
MWD Aqueduct and Associated reservoirs	X					X	P[3]		X		X	P	
Drains													
Alamo River				X			X[16]	X	X		X	P	X[13]
Coachella Valley Drains				X			X[2]	X[2]	X		X		X[13]
Coachella Valley Storm Water Channel[4]				X			X[2]	X[2]	X		X		X[13]
Imperial Valley Drains				X			X[2,16]	X[2]	X		X		X[13]
New River				X	P		X[5]	X	X		X		X[13]
Lakes													
Finney Lake							X[15]	X	X		X		X
Lake Cahuilla	P	X					X	X	X	I	X		
Ramer Lake							X	X	X		X		X
Salton Sea			X		P		X	X	X		X		X
Sunbeam Lake	P	X					X	X	X	I[6]	X		
Wiest Lake	P						X	X	X	I[6]	X		
Wister Unit							X[15]	X	X		X		X
Streams													
Andreas Creek	P	X				X	X	X	X		X		
Arrastre Creek	X				X	X	X	X	X		X		
Azalea Creek	P	X				X	X	X	X		X		
Banner Creek	P	X			X	X	X	X	X		X		
Big Morongo Creek	P	X				X	X[8]	X	X		X		

TABLE 2-3 (Cont.)
BENEFICIAL USES OF SURFACE WATERS IN THE WEST COLORADO RIVER BASIN

	MUN	AGR	AQUA	FRSH	IND	GWR	REC I	REC II	WARM	COLD	WILD	POW	RAR E
Streams (Cont.)													
Borrego Palm Canyon Creek	P					X	X	X	X		X		X
Boundary Creek	P	X				X	X	X	X		X		
Brown Creek	P	I				I	I	I	I		I		
Carrizo Creek		X				X	X	X	X		X		X
Chino Canyon Creek	X					X	P	X	X		X		
Coyote Creek	P					X	X	X	X		X		X
Crystal Creek	X	X				X	X	X	X		X		
Dutch Creek	P	I				I	I	I	I		I		
Falls Creek	X					X	P	X[9]		X	X		
Grapevine Canyon Creek	P					X	X	X	X		X		
Hathaway Creek	P	X				X	P	X	X		X		
Little Morongo Creek	P	X				X	X	X	X		X		
Millard Canyon Creek	X	X				X	X	X	X		X		
Mission Creek	P	X				X	X	X	X		X		
Palm Canyon Creek	P	X				X	X	X	X		X		
Pipes Canyon Creek	P					I	I	I	I		I		
Potrero Creek	P	X				X	X	X	X		X		
Salt Creek				X		X	X	X	X		X		X
San Felipe Creek		X		X		X	X	X	X		X		X
San Gorgonio River	P	X				X	X	X		X	X		
Snow Creek	X					X	X	X[9]		X	X		
Tahquitz Creek	P					X	X	X		X	X		
Thousand Palms Canyon Creek	P	X				X	X[2]	X	X		X		
Tubb Canyon Creek	X					X	P	X	X		X		X
Tule Creek	P	X				X	X	X	X		X		

TABLE 2-3 (Cont.)
BENEFICIAL USES OF SURFACE WATERS IN THE WEST COLORADO RIVER BASIN

	MUN	AGR	AQUA	FRSH	IND	GWR	REC I	REC II	WARM	COLD	WILD	POW	RAR E
Streams (Cont.)													
Twin Pines Creek	X	X				X	X	X	X		X		
Vallecito Creek	P	I				I	I	I	I		I		
Walker Creek	P	X				X	X	X	X		X		
Whitewater River[10]	X	X				X	X	X	I	X	X	X	
Willow Creek	P					X	X	X		X	X		
Other													
Unlisted Perennial and Intermittent Streams	P[11]			X[12]		I X	I P X	I X	I X		I X		I X[13]
Washes[14] (Ephemeral Streams)				I[12]		I		I	[7]		I		

Footnotes for Table 2-3

1. Some very limited spillage of canal water occurs providing freshwater replenishment to Salton Sea.

2. Unauthorized use.

3. The water quality is satisfactory to support REC I use, although such use is strictly prohibited and would be extremely dangerous.

4. Section of perennial flow from approximately Indio to the Salton Sea.

5. Although some fishing occurs in the downstream reaches, the presently contaminated water in the river makes it unfit for any recreational use. An advisory has been issued by the Imperial County Health Department warning against the consumption of any fish caught from the river and the river has been posted with advisories against any body contact with the water.

6. The lake was experimentally stocked with trout during the winter of 1987/88. The results from this stocking will be evaluated to see if future stocking will be recommended.

7. Use, if any, to be determined on a case-by-case basis.

8. Although it is not encouraged, children play in the water infrequently on the wildlife reserve.

9. Most of the creek is on National Forest Service land except one section which is owned by Desert Water Agency. This section provides the only reasonable access to the area. To enter Falls or Snow Creek through Desert Water Agency's land, a permit is required. The permit stipulates that persons entering through DWA's land must agree not to swim, fish, or wade in any portion of the creek.

10. Includes the section of flow from the headwaters in the San Gorgonio Mountains to (and including) the Whitewater Recharge Basins near Indian Avenue crossing in Palm Springs.

11. Potential use designations will be determined on a case-by-case basis as necessary in accordance with the "Sources of Drinking Water Policy" in this chapter.

12. Applies only to tributaries to Salton Sea.

13. Rare, endangered, or threatened wildlife exists in or utilizes some of these waterway(s). If the RARE beneficial use may be affected by a water quality control decision, responsibility for substantiation of the existence of rare, endangered, or threatened species on a case-by-case basis is upon the California Department of Fish and Wildlife on its own initiative and/or at the request of the Regional Water Board; and such substantiation must be provided within a reasonable time frame as approved by the Regional Water Board.

14. Including the section of ephemeral flow in the Whitewater River Storm Water Channel and Coachella Valley Storm Water Channel from Indian Avenue to approximately 1/4 mile west of Monroe Street crossing.

15. The California Department of Fish and Wildlife manages these lakes and does not permit swimming in them.

16. The only REC I usage that is known to occur is from infrequent fishing activity.

TABLE 2-4: BENEFICIAL USES OF WATERS FROM SPRINGS IN THE COLORADO RIVER BASIN

(Listing of the beneficial uses is indicated by X for existing uses and P for potential uses.
Flow in some springs is intermittent)

	MUN[3]	AGR	AQUA	FRSH	IND	GWR	REC I	REC II	WARM	COLD	WILD	POW	RAR E
Lucerne Hydrologic Unit													
Bousic Spring 3N/1E - 7QS					X	X	P	P	X		X		
Veale Spring 3N/1E - 18NS					X	X	P	P		X	X		
Nett Spring 3N/1E - 18NS					X	X	P	P		X	X		
Box Spring 4N/1E - 33RS	X					X	P	P	X		X		
Gordon Spring 3N/1W - 13GS					X	X	P	P		X	X		
Furnace Spring 3N/1W - 12JS		X				X	P	X	X	X	X		
Arctic Canyon Spring 3N/1E - 17RS				X	X	X	P	P		X	X		
Rabbit Spring 4N/1W - 11DS		X				X	P	X		X	X		
Crystal Spring 3N/1W - 11RS	X	X		X		X	P	X	X	X	X		
Johnson Hydrologic Unit													
Rattlesnake Spring 3N/3E - 19HS1		X				X	P	P		X	X		
Two Hole Spring 3N/3E - 20CS1		X				X	P	P		X	X		
Old Woman Spring 4N/3E - 31FS1	X	X				X	X	X	X		X		
Anza-Borrego Hydrologic Unit													
Santa Rosa Spring 7S/5E - 28AS				X		X	X	X		X	X		
CYCC #1 Spring 11S/5E - 22CS1		X				X	X	X	X		X		

TABLE 2-4 (Cont.)
BENEFICIAL USES OF WATERS FROM SPRINGS IN THE COLORADO RIVER BASIN

	MUN	AGR	AQUA	FRSH	IND	GWR	REC I	REC II	WARM	COLD	WILD	POW	RAR E
Anza-Borrego HU (Cont.)													
CYCC #2 Spring 11S/5E - 22CS2		X				X	X	X	X		X		
Dubber Spur Spring 17S/8E - 29LS1X				X		X	P	X	X		X		
Jacumba Spring 18S/8E - 7JS				X		X	P	X	X		X		
Palm Spring 14S/7E - 25PS						X	P	X	X		X		X
Agua Caliente Spring 14S/7E - 18PS		X				X	X	X	X		X		
Route Sixty Six Hydrologic Unit													
Van Winkle Spring 8N/13E - 23DS		X				X	P	X		X	X		
Cove Spring 8N/13E - 18FS	X					X	P	P	X		X		
Mitchell Caverns Spring 10N/14E - 21GS	X					X	P	P		X	X		
Bonanza Spring 7N/15E - 22DS	X					X	P	X	X		X		
Rock Spring 12N/15E - 1DS		X				X	X	X		X	X		
Cave Spring[1, 2] 11N/15E - 32DS1		X				X	P	P	X		X		
Hackberry Spring[1, 2] 11N/16E - 1PS1		X				X	P	P	X		X		
Bathtub Spring[1] 13N/15E - 9NS1		X				X	P	P	X		X		
Roth Spring[1] 11N/14E - 11FS1		X				X	P	P	X		X		
Desert Spring[1] 10N/16E - 18GS1		X				X	P	P	X		X		

TABLE 2-4 (Cont.)
BENEFICIAL USES OF WATERS FROM SPRINGS IN THE COLORADO RIVER BASIN

	MUN	AGR	AQUA	FRSH	IND	GWR	REC I	REC II	WARM	COLD	WILD	POW	RAR E
Route Sixty Six HU (Cont.)													
Forshay Spring[1, 2] 10N/14E - 32GS2		X				X	P	X	X		X		
Imperial Hydrologic Unit													
Mountain Spring 17S/8E - 24JS				X		X	P	X	X		X		
Whitewater Hydrologic Unit													
Agua Caliente Spring 4S/4E - 14ES	X					X	X	P	X		X		
Thousand Palms Oasis (Lower) 4S/6E - 12LS		X		X		X	P	X	X		X		
West Fork Spring 5S/4E - 14FS				X		X	X	X	X		X		
Cottonwood Spring 5S/11E - 14LS						X	P	X	X		X		X
Twin Pines Spring 3S/2E - 33AS		X				X	P	X	X		X		
Hidden Palms Spring 6S/6E - 30FS				X		X	X	X	X		X		X
Sheldon Bass Spring 1S/4E - 18BS1			X	X		X	X	X	X		X		P
Unnamed Spring 1S/4E - 18LS2		X		X		X	P	X	X		X		
Homer Hydrologic Unit													
Sacramento Spring 9N/21E - 3RS		X				X	P	X	X		X		
Kleinfelter Spring 9N/21E - 3JS	X	X				X	P	P	X		X		
Piute Spring 12N/18E - 24DS		X				X	P	X	X		X		
Von Trigger Spring[1] 11N/17E - 4RS1	X					X	P	P	X		X		

TABLE 2-4 (Cont.)
BENEFICIAL USES OF WATERS FROM SPRINGS IN THE COLORADO RIVER BASIN

	MUN	AGR	AQUA	FRSH	IND	GWR	REC I	REC II	WARM	COLD	WILD	POW	RAR E
Homer Hydrologic Unit (Cont.)													
Coates Spring[1] 15N/17E - 27HS1		X				X	P	P	X		X		
Malpais Spring[1, 2] 15N/17E - 22AS1	X	X				X	P	P	X		X		
Indian Spring[1, 2] 15N/17E - 16RS1		X				X	P	P	X		X		
Ward Hydrologic Unit													
Wilhelm Spring 5N/18E - 33FS		X				X	P	X	X		X		
Sunflower Spring 5N/18E - 7BS	X	X				X	P	X	X	X	X		
Colorado Hydrologic Unit													
Arrowweed Spring 11S/21E - 28AS		X				X	P	X	X		X		X
Miscellaneous													
Unlisted Springs						X	X P	X P	X[4]		X		X[5]

(see Footnotes Page 2-17)

The following springs have the same beneficial uses noted for Unlisted Springs (above):

<u>Anza-Borrego Hydrologic Unit</u>
Mountain Home Spring, 7S/5E - 29HS
Chimney Spring, 11S/5E - 15NS1
Jim Spring, 11S/5E - 16LS1
Pena Spring, 11S/5E - 10NS1
Carizzo Creek Spring, 17S/8E - 29NS
Arsenic Spring, 17S/8E - 32FS
Cotttonwood Spring, 11S/5E - 21HS1
Johnnie Spring, 11S/5E - 15MS3
By Jim Spring, 11S/5E - 16MS1
Kane Spring, 12S/11E - 21MS
Bankhead Spring, 17S/7E - 34JS
Lews Spring, 11S/5E - 15MS4
Rusty Spring, 11S/5E - 15MS2
Parali Spring, 11S/5E - 16CS1
Mountain Palm Spring, 15S/7E - 13PS
Sacatone Spring, 17S/7E - 2QS

East Salton Sea Hydrologic Unit
Canyon Spring, 7S/13E - 20MS1[1]

Route Sixty Six Hydrologic Unit

Woods Spring, 12N/15E - 34AS1[1, 2]
Blind Spring, 10N/14E - 28PS1[1]
Mail Spring, 14N/16E - 28JS2[1, 2]
Willow Well Spring, 11N/14E - 2B1[1]
Gold Valley Spring, 12N/15E - 31LS1[1, 2]
Goldstone Spring, 10N/14E - 31QS1[1, 2]
No Name Spring, 9N/14E - 3FS2[1]
Boulder Spring, 12N/15E - 27BS1[1, 2]
Keystone Spring, 14N/16E - 29MS1[1]
Bighorn Spring, 9N/14E - 29ES1[1]

Imperial Hydrologic Unit

Unnamed Spring, 9S/12E - 15AS
Frink Spring, 9S/13E - 20LS
Dos Cabezas Spring, 17S/8E - 3RS

Whitewater Hydrologic Unit

Willis Palms Spring, 4S/6E - 14DS
Rarick Spring, 7S/4E - 18FS
Mockingbird Spring, 1S/3E - 36BS1
Thousand Palms Oasis (upper), 4S/6E - 1PS
Cotton Spring, 5S/11E - 14CS
Magnesia Spring, 5S/5E - 23CS
Stubby Spring, 2S/7E - 27QS1

Homer Hydrologic Unit

Stagecoach Spring, 15N/17E - 25DS1[1, 2]

Joshua Tree Hydrologic Unit

Coyote Hole Spring, 1S/6E - 1GS

Dale Hydrologic Unit

Forty-Nine Palms Springs, 1S/8E - 12DS
Johnson Spring, 1S/8E - 16ES
Oasis of Mara, 1N/9E - 33GS
Footnotes for Table 2-4

1. U.S. Geological Survey Data
2. Bureau of Land Management Data
3. Many springs may have the potential to support a MUN beneficial use in accordance with the "Sources of Drinking Water Policy" (page 2-3). Only the springs with an existing MUN use are noted in this table.
4. And/or COLD
5. The RARE beneficial use occurs in at least some of these springs. If the RARE beneficial use may be affected by a water quality control decision, responsibility for substantiation of the existence of rare, endangered or threatened species on a case-by-case basis is upon the California Department of Fish and Wildlife on its own initiative and/or at the request of the Regional Water Board; and such substantiation must be provided within a reasonable time frame as approved by the Regional Water Board.

TABLE 2-5: BENEFICIAL USES OF GROUND WATERS IN THE COLORADO RIVER BASIN[1]

Area Code	Hydrologic Unit	MUN[2]	IND	AGR
	Lucerne Valley Planning Area			
701.00	Lucerne hydrologic unit	X	X	X
702.00	Johnson hydrologic unit	X	X	X
703.00	Bessemer hydrologic unit			
704.00	Means hydrologic unit	X		
705.00	Emerson hydrologic unit	X		X
706.00	Lavic hydrologic unit			
707.00	Deadman hydrologic unit	X		
708.00	Joshua Tree hydrologic unit	X	X	
709.00	Dale hydrologic unit	X	X	X
710.00	Route Sixty Six hydrologic unit	X	X	X
711.00	Cadiz hydrologic unit	X	X	
712.00	Ward hydrologic unit	X		X
	Hayfield Planning Area			
716.00	Rice hydrologic unit	X		
717.00	Chuckwalla hydrologic unit	X	X	X
718.00	Hayfield hydrologic unit			
	Coachella Valley Planning Area			
719.00	Whitewater hydrologic unit			
719.10	Morongo hydrologic subunit[3]	X		
719.20	Shavers hydrologic subunit	X		
719.30	San Gorgonio hydrologic subunit	X	X	X
719.40	Coachella hydrologic subunit	X	X	X
725.00	East Salton Sea hydrologic unit	X		X
	Imperial Valley Planning Area			
723.00	Imperial hydrologic unit	X	X	
724.00	Davies hydrologic unit			
726.00	Amos-Ogilby hydrologic unit	X		

TABLE 2-5 (Cont.)
BENEFICIAL USES OF GROUND WATERS IN THE COLORADO RIVER BASIN[1]

Area Code	Hydrologic Unit	MUN[2]	IND	AGR
	Anza-Borrego Planning Area			
720.00	Clark hydrologic unit	X		
721.00	West Salton Sea hydrologic unit	X		X
722.00	Anza-Borrego hydrologic unit	X	X	X
	Colorado River Planning Area (East Colorado River Basin)			
713.00	Homer hydrologic unit	X	X	X
714.00	Chemehuevi hydrologic unit	X		X
715.00	Colorado hydrologic unit	X	X	X
727.00	Yuma hydrologic unit	X		X

Footnotes for Table 2-5

1. Ground waters are important to sustain vegetation for wildlife habitat in some areas where surface waters are not present.

2. At such time as the need arises to know whether a particular aquifer which has no known existing MUN use should be considered as a source of drinking water, the Regional Water Board will make such a determination based on the criteria listed in the "Sources of Drinking Water Policy" in Chapter 2 of this Basin Plan. An "X" placed under the MUN in this Table for a particular hydrologic unit indicates only that at least one of the aquifers in that unit currently supports a MUN beneficial use. For example, the actual MUN usage of the Imperial hydrologic unit is limited only to a small portion of that ground water unit.

3. The term "hydrologic subunit" has the same meaning as the term "hydrologic area."

CHAPTER 3 - WATER QUALITY OBJECTIVES

Section 13241, division 7 of the Water Code, specifies as follows:

> "Each regional board shall establish such water quality objectives in water quality control plans as in its judgement will ensure the reasonable protection of beneficial uses and the prevention of nuisance; however, it is recognized that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses..."

"Water quality objectives," as defined in said division 7 are "limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area." Water quality objectives contained herein are designed to be in accordance with all pertinent state and federal requirements.

Existing Statewide Plans and Policies of the State Water Board that must be considered in establishing and implementing water quality objectives in the Colorado River Basin Region are listed in Chapter 5. Some of these statewide plans contain water quality objectives that apply to waters in this Region. However, most statewide objectives are not listed in this chapter but can be obtained by referring to the text of the statewide plans. In the event that statewide and region wide objectives conflict the most stringent objective will apply.

The water quality objectives contained in this Plan supersede and replace those contained in the Water Quality Control Plan, dated May 1991, and any amendments thereto.

Controllable water quality factors shall conform to the water quality objectives contained herein. When other factors result in the degradation of water quality beyond the levels or limits established herein as water quality objectives, the controllable factors shall not cause further degradation of water quality. Controllable water quality factors are those actions, conditions, or circumstances resulting from people's activities which may influence the quality of the waters of the state and which may feasibly be controlled.

Actions to be taken by the Regional Water Board to achieve compliance with water quality objectives are described in the Implementation section of this Plan (see Chapter 4). Implementation actions directed toward nonpoint source discharges will be in conformance with the State Water Board's Nonpoint Source Management Plan, will be reasonable, and will consider economic and technical feasibility.

I. GENERAL OBJECTIVES

The following objective shall apply to all waters of the Region:

Wherever the existing quality of water is better than the quality established herein as objectives, such existing quality shall be maintained unless otherwise provided for by the provisions of the State Water Board Resolution No. 68-16, "Statement of Policy with Respect to Maintaining High Quality of Waters in California."

II. GENERAL SURFACE WATER OBJECTIVES

Regarding controllable sources of discharge, in the absence of site specific objectives established herein, the following objectives apply to all surface waters of the Colorado River Basin Region:

A. AESTHETIC QUALITIES

All waters shall be free from substances attributable to wastewater of domestic or industrial origin or other discharges which adversely affect beneficial uses not limited to:

- Settling to form objectionable deposits;
- Floating as debris, scum, grease, oil, wax, or other matter that may cause nuisances; and
- Producing objectionable color, odor, taste, or turbidity.

B. TAINTING SUBSTANCES

Water shall be free of unnatural materials which individually or in combination produce undesirable flavors in the edible portions of aquatic organisms.

C. TOXICITY [1]

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 indigenous aquatic life. Compliance with this objective will be determined by use of indicator organisms, analyses of species diversity, population density, growth anomalies, 96-hour bioassay or bioassays of appropriate duration or other appropriate methods as specified by the Regional Water Board. Effluent limits based upon bioassays of effluent 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 will be encouraged.

The survival of aquatic life in surface waters subjected to a waste discharge or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge, or other control water which is consistent with the requirements for "experimental water" as described in Standards Methods for the Examination of Water and Wastewater, 18th Edition. As a minimum, compliance with this objective as stated in the previous sentence shall be evaluated with a 96-hour bioassay.

As described in Chapter 6, the Regional Water Board will conduct toxic monitoring of the appropriate surface waters to gather baseline data as time and resources allow.

D. TEMPERATURE

The natural receiving water temperature of surface waters shall not be altered by discharges of wastewater unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in temperature does not adversely affect beneficial uses.

E. pH

Since the regional waters are somewhat alkaline, pH shall range from 6.0-9.0. Discharges shall not cause any changes in pH detrimental to beneficial water uses.

F. DISSOLVED OXYGEN

The dissolved oxygen concentration shall not be reduced below the following minimum levels at any time:

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[1] Certain exceptions for herbicides apply to irrigation supply canals which are discussed under the heading "Irrigation Supply Canals" in this Chapter.

Waters designated:

WARM .....5.0 mg/l
COLD..... 8.0 mg/l
WARM and COLD.....8.0 mg/l

G. SUSPENDED SOLIDS AND SETTLEABLE SOLIDS

Discharges of wastes or wastewater shall not contain suspended or settleable solids in concentrations which increase the turbidity of receiving waters, unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in turbidity does not adversely affect beneficial uses.

H. TOTAL DISSOLVED SOLIDS

Discharges of wastes or wastewater shall not increase the total dissolved solids content of receiving waters, unless it can be demonstrated to the satisfaction of the Regional Water Board that such an increase in total dissolved solids does not adversely affect beneficial uses of receiving waters.

Additionally, any discharge, excepting discharges from agricultural sources, shall not cause concentration of total dissolved solids (TDS) in surface waters to exceed the following limits:

	TDS (mg/L)	
	Annual Average	Maximum
New River	4000	4500
Alamo River	4000	4500
Imperial Valley Drains	4000	4500
Coachella Valley Drains	2000	2500
Palo Verde Valley Drains	2000	2500

I. BACTERIA

In waters designated for water contact recreation (REC I) or noncontact water recreation (REC II), the following bacterial objectives apply. Although the objectives are expressed as fecal coliforms, E. coli, and enterococci bacteria, they address pathogenic microorganisms in general[1](e.g., bacteria, viruses, and fungi).

Based on a statistically sufficient number of samples (generally not less than five samples equally spaced over a 30-day period), the geometric mean of the indicated bacterial densities should not exceed one or the other of the following:

	REC I	REC II
E. coli	126 per 100 ml	630 per 100 ml
enterococci	33 per 100 ml	165 per 100 ml

nor shall any sample exceed the following maximum allowables:

	REC I	REC II
E. coli	400 per 100 ml	2000 per 100 ml
enterococci	100 per 100 ml	500 per 100 ml

[1] Fecal coliforms and E. coli bacteria are being used as the indicator microorganisms in the Region until better and similarly practical tests become readily available in the region to more specifically target pathogens.

except that for the Colorado River, the following maximum allowables shall apply:

	REC I	REC II
E. coli	235 per 100 ml	1175 per 100ml
enterococci	61 per 100 ml	305 per 100 ml

In addition to the objectives above, in waters designated for water contact recreation (REC I), the 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 MPN per 100 ml, nor shall more than ten percent of total samples during any 30-day period exceed 400 MPN per 100 ml.

J. 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. Nitrate and phosphate limitations will be placed on industrial discharges to New and Alamo Rivers and irrigation basins on a case-by-case basis, taking into consideration the beneficial uses of these streams.

K. SEDIMENT

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

L. TURBIDITY

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

M. RADIOACTIVITY

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

Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of radionuclides in excess of the limits specified in Tables 64442 and 64443 of sections 64442 and 64443, respectively, of title 22 of the California Code of Regulations, which are incorporated by reference into this plan. This incorporation by reference is prospective, including future revisions to the incorporated provisions as the revisions take effect.

Constituent	Maximum Contaminant Level, pCi/L
Combined Radium-226 and Radium-228	5
Gross Alpha Particle activity (excluding Radon and Uranium)	15
Tritium	20,000*
Strontium-90	8**
Beta / photon emitters	4 MREM***
Uranium	20

* Equivalent to 4 millirem / year dose to total body
** Equivalent to 4 millirem / year dose to bone marrow
*** 4 millirem / year annual dose equivalent to the total body or any internal organ

N. CHEMICAL CONSTITUENTS

No individual chemical or combination of chemicals shall be present in concentrations that adversely affect beneficial uses. There shall be no increase in hazardous chemical concentrations found in bottom sediments or aquatic life. Waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) based upon drinking water standards specified in the following provisions of title 22 of the California Code of Regulations, which are incorporated by reference into this plan: Table 64431-A of section 64431 (Inorganic Chemicals), Table 64444-A of section 64444 (Organic Chemicals), and Table 64678-A of section 64678 (Determination of Exceedances of Lead and Copper Action Levels). This incorporation is prospective, including future revisions to the incorporated provisions as the revisions take effect. The Regional Water Board acknowledges that specific treatment requirements are imposed by state and federal drinking water regulations on the consumption of surface waters under specific circumstances. To protect all beneficial uses, the Regional Water Board may apply limits more stringent than MCLs.

Maximum Contaminant Levels (MCLs) for Organic and Inorganic Chemicals

Inorganic Chemical Constituents:	MCL, mg/L
Arsenic	0.01
Barium	1.0
Cadmium	0.005
Chromium	0.05
Floride	2.0
Lead	0.015[1]
Mercury	0.002
Nitrate (as NO3)	45.0
Nitrate +Nitrite (sum of nitrogen)	10.0
Selenium	0.05
Silver	0.10

Organic Chemical Constituents	MCL, mg/L
(a) Chlorinated Hydrocarbons	
Endrin	0.002
Lindane	0.0002
Methoxychlor	0.03
Toxaphene	0.003
(b) Chlorophenoxys	
2,4-D	0.07
2,4,5-TP Silvex	0.05

O. PESTICIDE WASTES

The discharge of pesticidal wastes from pesticide manufacturing processing or cleaning operations to any surface water is prohibited.

[1] Limit given is "Action Level." USEPA's Lead and Copper Rule requires drinking water systems to monitor for lead from customer taps. If ten percent of the homes tested have lead levels greater than the action level of 15 ppb, the system must increase monitoring, undertake additional efforts to control corrosion, and inform the public. For each monitoring period, a system (or the state) must calculate the lead level at the 90th percentile of homes monitored.

III. SPECIFIC SURFACE WATER OBJECTIVES

A. COLORADO RIVER

1. Colorado River (Above Imperial Dam)

In response to requirements in section 303 of the Federal Water Pollution Control Act Amendments of 1972 (P.L. 92-500), the Seven States Colorado River Salinity Control Forum developed water quality standards in 1975 for salinity consisting of numeric criteria and a basinwide plan of implementation for salinity control. The Forum recommended that each of the Basin States adopt the proposed standards. California along with the other Basin States adopted the Forum's recommended standards which were subsequently approved by the U.S. Environmental Protection Agency. The standards were reviewed in 1978, 1981, 1984, 1987, and 1990. While the numeric criteria have not changed, the plan of implementation was updated in those years to reflect changes in the salinity control program since 1975.

The flow-weighted average annual numeric criteria for salinity (total dissolved solids) were established at three locations on the lower Colorado River:

	Salinity in mg/l
Below Hoover Dam, AZ-NV	723
Below Parker Dam, AZ-CA	747
Imperial Dam, AZ-CA	879

The plan of implementation consists of a number of federal and non-federal measures throughout the Colorado River system to maintain the adopted numeric criteria while the Basin States continue to develop their compact apportioned waters. There are four areas of the implementation plan which have direct applicability to California. The first is the control of the discharge of total dissolved solids from point sources through the NPDES Permit program on industrial and municipal discharges. The plan's policy has as its primary objective no-salt return from industrial sources wherever practicable. Reasonable incremental increases of salinity from municipal sources shall be permitted so long as they do not exceed 400 mg/l above the flow-weighted average salinity of the supply water. The second recommends that each state encourage and promote the use of brackish and/or saline waters for industrial purposes. The third deals with an improved water delivery system and on-farm water management system. Finally, the plan encompasses those portions of the 208 Water Quality Management plans dealing with salinity control once adopted by the state and approved by USEPA.

2. Colorado River (Below Imperial Dam)

Below Imperial Dam, the River's salinity will be controlled to meet the terms of the agreement with Mexico on salinity in Minute No. 242 of the International Boundary and Water Commission, entitled "Permanent and Definitive Solution to the International Problem of the Salinity of the Colorado River." This agreement states that measures will be taken to assure that the waters delivered to Mexico upstream from Morelos Dam will have annual average salinity concentration of no more than 115 ppm ($\pm$ 30 ppm) total dissolved solids greater than the annual average salinity concentration of Colorado River water arriving at Imperial Dam. Title I of Public Law 93-320 is the legislation which implements the provisions of Minute No. 242. Minute No. 242 and Title I constitute a federal numeric criterion and plan of implementation for the River below Imperial Dam.

B. NEW RIVER

Minute No. 264 of the Mexican-American Water Treaty titled "Recommendations for Solution of the New River Border Sanitation Problem at Calexico, California - Mexicali, Baja California Norte" was approved by the Governments of the United States and Mexico effective on December 4, 1980. Minute No. 264 specifies qualitative

and quantitative standards for the New River at the International Boundary and upstream of the International Boundary in Mexico.

The quantitative standards of Minute No. 264 are contained in Table 3-1. Following are the qualitative standards of Minute No. 264 for the New River at the locations specified below (interim solution).

1. The waters of the River shall be free of untreated domestic and industrial waste waters.

2. The waters shall be free from substances that may be discharged into the River as a result of human activity in concentrations which are toxic or harmful to human, animal or aquatic life or which may significantly impair the beneficial uses of such waters.

3. The waters of the River shall be essentially free from trash, oil, scum, or other floating materials resulting from human activity in amounts sufficient to be injurious, unsightly, or to cause adverse effects on human life, fish, and wildlife. Persistent foaming shall be avoided.

4. The waters of the River shall be free of pesticides in concentrations which could cause harmful effects to human life, fish, and wildlife.

5. The channel of the River shall be free of residual sludge deposits from domestic or industrial wastes.

TABLE 3-1: NEW RIVER AT INTERNATIONAL BOUNDARY

Quantitative Standards per Minute 264[1] of the Mexican/American Water Treaty
(Applicable at Indicated Sampling Location)

Parameters	New River at Boundary[2]	Lagoon Discharge Canal	New River Upstream of Discharge Canal
BOD_5	-	30 mg/l filtered (Monthly grab sample)	30 mg/l unfiltered (Monthly 12-hr. composite sample)[3]
COD	-	70 mg/l filtered	100 mg/l unfiltered (Monthly 12-hr. composite sample)[3]
pH	6.0 to 9.0 (Weekly grab sample)	-	-
DO	5.0 mg/l (Daily grab sample)	- (weekly grab sample)	-
Fecal Coliform Organisms	-	-	30,000 colonies per 100 ml, with no single sample to exceed 60,000 colonies per 100 ml.

Footnotes for Table 3-1

1. It is the intent of the Regional Water Board to pursue long-range quantitative water quality standards for New River at the International Boundary beyond those contained in Minute No. 264. Such standards are anticipated to include further reduction of fecal coliform organisms and of pesticidal and toxic discharges.

2. For necessary and adequate monitoring, samples should be taken of the New River waters at the International Boundary monthly or more frequently if necessary, and these should be analyzed for BOD_5, COD, pH, DO, and fecal coliform organisms. Samples should also be analyzed for toxic substances as considered necessary.

3. Twelve consecutive hourly samples once a month (24-hour composite to be taken as needed to establish correlation with 12-hour composite).

   Monitoring data collected by the Regional Water Board and the United States section of the International Boundary and Water Commission indicate that with the exception of pH, all quantitative and qualitative standards of Minute No. 264 have been violated since they were established. Moreover, with the exception of pH and DO, the standards do not protect or achieve the New River water quality given that: (1) they are inconsistent with the General Surface Water Objectives of this Basin Plan (p. 3-1), and (2) they are actually applicable to the New River in Mexico, not at the International Boundary. It is therefore appropriate for the Regional Water Board, as the agency responsible for protecting the quality of the waters in this region of the United States, to develop and enforce water quality objectives for the New River that are consistent with State and USEPA criteria for surface waters and that protect the waters of the region as follows:

Bacteria Water Quality Objectives

1. The bacterial standards identified in the General Surface Water Objectives section of this Basin Plan (p. 3-3) are applicable to the entire stretch of the New River in the United States.

2. The Pathogen Total Maximum Daily Load (TMDL) and associated implementation actions are described in Chapter 4, Section V.A. Compliance Monitoring activities for the TMDL are described in Chapter 6, Section

3. II.B.

C. SALTON SEA

1. Total Dissolved Solids (Salinity)

The total dissolved solids concentration of Salton Sea in 1992 was approximately 44,000 mg/L and over 61,000 mg/L in 2017. The water quality objective for Salton Sea is to reduce the present level of salinity and stabilize it at 35,000 mg/L, unless it can be demonstrated that a different level of salinity is optimal for the sustenance of the sea's wild and aquatic life. However, the achievement of this water quality objective shall be accomplished without adversely affecting the primary purpose of the Salton Sea, which is to receive and store agricultural drainage, seepage, and storm waters. Also, because of economic considerations, 35,000 mg/L may not be realistically achievable. In such case, any reduction in salinity which still allows for survival of the sea's aquatic life shall be deemed an acceptable alternative or interim objective. Because of the difficulty and predicted costliness of achieving salinity stabilization of Salton Sea, it is unreasonable for the Regional Water Board to assume responsibility for implementation of this objective. That responsibility must be shared jointly by all of the agencies which have direct influence on the sea's fate. Additionally, there must be considerable public support for achieving this objective, without which it is unlikely that the necessary funding for Salton Sea salinity control will ever be realized.

2. Selenium

The following objectives apply to all surface waters that are tributaries to the Salton Sea:

a. A four-day average value of selenium shall not exceed .005 mg/L;

b. A one-hour average value of selenium shall not exceed .02 mg/L.

These numerical limits are based on the United States Environmental Protection Agency's National Ambient Water Quality Criteria.

D. IRRIGATION SUPPLY CANALS

Herbicide spraying in irrigation canals must be conducted in coordination with the county agricultural commissioner, California Department of Fish and Wildlife (DFW), and California Department of Health Services. In canals used for domestic supply, no herbicides shall be applied in concentrations which are toxic or otherwise harmful to humans; also no herbicides shall be applied in concentrations which are toxic or otherwise harmful to aquatic life, except that herbicides may be used in cases where the herbicide only impacts the targeted species, is a legally registered product, and is used in accordance with label requirements and in accordance with all applicable laws and regulations.

E. COACHELLA VALLEY STORM WATER CHANNEL

The following bacterial objectives apply to a limited section of the Coachella Valley Storm Water Channel (CVSC) where perennial flow exists specifically, that part of the channel that begins at the Valley Sanitary District Waste Water Treatment Plant in the City of Coachella, and extends to the south for approximately 17 miles, where it discharges into the Salton Sea at the northern shore. The bacterial water quality objectives for this reach of the CVSC are expected to protect human health against gastro-intestinal illness caused by exposure to pathogenic organisms present in surface waters. These objectives are based on several epidemiological studies sponsored by USEPA, which determined that Escherichia coli (E. coli) is the most reliable indicator bacteria for protecting human health, given that E. coli is more specifically intestinal in origin than fecal coliform. E. coli density limits for the CVSC are as follows:

Based on a minimum of five samples equally spaced over a 30 day period, the geometric mean of E. coli densities must not exceed the following:

	REC I	REC II
E. coli	126 MPN[1] per 100 ml	630 MPN per 100 ml

Nor shall any single sample exceed the following:

	REC I	REC II
E. coli	400 MPN[1] per 100 ml	2000 MPN per 100 ml

IV. GROUND WATER OBJECTIVES

Establishment of numerical objectives for ground water involves complex considerations since the quality of ground water varies significantly with depth of well perforations, existing water levels, geology, hydrology and several other factors. Unavailability of adequate historical data compounds this problem. The Regional Water Board believes that detailed investigation of the ground water basins should be conducted before establishing specific ground water quality objectives.

[1] MPN represents “Most Probable Number,” which is defined as an index of the number of bacteria that, more probably than any other number, will give the results shown by the laboratory examination (APHA, 2005).

Ideally the Regional Water Board's goal is to maintain the existing water quality of all nondegraded ground water basins. However, in most cases ground water that is pumped generally returns to the basin after use with an increase in mineral concentrations such as total dissolved solids (TDS), nitrate etc., that are picked up by water during its use. Under these circumstances, the Regional Water Board's objective is to minimize the quantities of contaminants reaching any ground water basin. This could be achieved by establishing management practices for major discharges to land. Until the Regional Water Board can complete investigations for the establishment of management practices, the objective will be to maintain the existing water quality where feasible.

A. TASTE AND ODORS

Ground waters for use as domestic or municipal supply shall not contain taste or odor-producing substances in concentrations that adversely affect beneficial uses as a result of human activity.

B. BACTERIOLOGICAL QUALITY

In ground waters designated for use as domestic or municipal supply (MUN), the concentration of coliform organisms shall not exceed the limits specified in section 64426.1 of title 22 of the California Code of Regulations.

C. CHEMICAL AND PHYSICAL QUALITY

Ground waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of chemical constituents in excess of the maximum contaminant levels (MCLs) specified in the following provisions of title 22 of the California Code of Regulations, which are incorporated by reference into this plan: Table 64431-A of section 64431 (Inorganic Chemicals), Table 64444-A of section 64444 (Organic Chemicals), and Table 64678-A of section 64678 (Determination of Exceedances of Lead and Copper Action Levels). This incorporation is prospective, including future revisions to the incorporated provisions as the revisions take effect. The Regional Water Board acknowledges that specific treatment requirements are imposed by state and federal drinking water regulations on the consumption of surface waters under specific circumstances. To protect all beneficial uses, the Regional Water Board may apply limits more stringent than MCLs.

D. BRINES

Discharges of water softener regeneration brines, other mineralized wastes, and toxic wastes to disposal facilities which ultimately discharge in areas where such wastes can percolate to ground waters usable for domestic and municipal purposes are prohibited.

E. RADIOACTIVITY

Ground waters designated for use as domestic or municipal supply (MUN) shall not contain radioactive material in excess of the maximum contaminant levels (MCLs) specified in Tables 64442 and 64443 of sections 64442 and 64443, respectively, of title 22 of the California Code of Regulations (CCR), which are incorporated by reference into this plan. This incorporation by reference is prospective, including future revisions to the incorporated provisions as the revisions take effect.

F. GROUND WATER OVERDRAFT

A number of ground water basins in the Region are in overdraft, and in some areas there have been indications of possible increase of mineral content of the ground water. Investigative studies will be conducted to develop ground water objectives and implementation plans for the following ground water basins:

- Indio Subarea of the Whitewater Hydrologic Unit
- Warren Subunit of the Joshua Tree Hydrologic Unit
- Twentynine Palms Subunit of the Dale Hydrologic Unit
- Borrego Subarea of the Anza-Borrego Hydrologic Unit
- Lucerne Hydrologic Unit
- Terwilliger Subarea of the Anza-Borrego Hydrologic Unit
- Ocotillo Subunit of the Anza-Borrego Hydrologic Unit

CHAPTER 4 - IMPLEMENTATION

I. INTRODUCTION

The Porter-Cologne Water Quality Control Act states that basin plans consist of Beneficial Uses, Water Quality Objectives and an Implementation Program for achieving the water quality objectives. The Implementation Program is required to include, but is not limited to:

- A description of the nature of actions which are necessary to achieve the water quality objectives, including any recommendations for appropriate action by any entity, public or private;
- A time schedule for actions to be taken;
- A description of surveillance to be undertaken to determine compliance with the objectives.

A. REGIONAL WATER BOARD GOALS AND MANAGEMENT PRINCIPLES

The regulatory activities of the Regional Water 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 Water Board directs its actions toward the following goals and management principles:

- Preserve and enhance the quality of waters, both ground and surface, fresh and saline, for present and anticipated beneficial uses, taking social and economic factors into consideration.
- Encourage reclamation of wastewaters, wherever feasible, in order to preserve freshwater supplies and to protect water quality to the maximum extent possible.
- Preserve the integrity of ground water basins, so that the basins remain capable of storing water for beneficial uses.
- Seek improvement in the quality of international and interstate waters entering the Region.
- Waste collection, treatment, and discharge systems in addition to their primary function, shall also be oriented towards optimization of the quality of state waters and the reclamation of wastewaters for beneficial use.
- The optimization of water quality, where feasible, will be considered in relation to environmental goals.
- Controllable water quality factors will be regulated to ensure preservation of the integrity of usable ground water basins.
- Source control and pretreatment of wastes will be required wherever necessary to minimize degradation of water quality.
- The transport of hazardous materials should be controlled to prevent spillage and leakage.
- Wastes which have a long-term capability of polluting water will be disposed of at approved sites, and in such a manner as to not enter usable waters of the state.
- The administration of grants and loans to public entities shall be in accordance with applicable rules and regulations, including determination of implementation of adequate source control and industrial waste control ordinances.
- Ground water recharge with water of adequate quality is encouraged, wherever feasible.
- Evaporative loss of reclaimable wastewater is to be minimized.

B. GENERAL IMPLEMENTATION

The Regional Water Board will implement this Water Quality Control Plan by taking the following actions:

- Encourage water conservation and reuse of reclaimable water in situations where water quality and beneficial uses are not adversely impacted. The Regional Water Board considers that by proper management of reclaimable wastewater, possible adverse impacts on ground water quality as well as potential ground water overdraft could be minimized. The Regional Water Board encourages local agencies responsible for water supply and/or wastewater treatment and disposal to investigate conservation measures, and to maximize utilization of reclaimed water for greenbelt irrigation where socially and economically feasible.
- Protect ground waters against land operations, particularly discharges of soluble minerals, toxicants, and taste-producing materials on permeable soils, so that beneficial uses will not be impaired. This is normally accomplished by prescription and enforcement of Waste Discharge Requirements.
- Review local ordinances relating to individual waste treatment and disposal systems and request that local agencies adopt ordinances which are compatible with State Water Board and Regional Water Board policies and guidelines for those systems.
- Eliminate discharges of wastes that threaten water quality or create nuisance conditions. This includes elimination of discharges from individual subsurface sewage disposal facilities, unless Regional Water Board policies and/or guidelines are followed.

II. POINT SOURCE CONTROLS

Section 13263 of the Water Code requires that Waste Discharge Requirements be prescribed for any discharge or proposed discharge that could affect the quality of the waters of the state, other than into a community sewer system. All industrial discharges that meet this definition are regulated with Waste Discharge Requirements.

In addition to Waste Discharge Requirements (WDRs), a National Pollutant Discharge Elimination System (NPDES) permit may be required for the discharge. Part 122 of 40 Code of Federal Regulations (40 C.F.R.) requires that NPDES permits be obtained for all point source discharges to "waters of the United States." Waters of the United States is defined in section 122.2 and is generally interpreted to mean any surface water in the state, including lakes, rivers, streams, wetlands, mudflats, sandflats, sloughs, or playa lakes.

The NPDES program objective is to regulate the discharge of wastewaters and storm waters to surface waters of the state so that the beneficial uses of these waters are protected and enhanced. NPDES permits are federal permits, but California has been delegated authority by the USEPA to administer NPDES permits.

In order to implement the above stated objective, individual and general NPDES permits are developed and adopted by the Regional Water Board. The Regional Water Board has adopted a general NPDES permit to regulate the discharge of extracted and treated ground water resulting from the cleanup of ground water polluted by fuel and other related waste leaks. Also, the discharge of hydrostatic test water to surface waters is regulated through a general NPDES permit. The State Water Board adopted general NPDES permits to regulate the discharge of stormwater resulting from industrial and construction sites to surface waters. The issuance of general permits provide for more efficient and economical regulation of discharges of wastewaters that require the same type of control and monitoring, as opposed to issuing individual permits for each discharger.

In addition to regulating discharges of wastewater to surface waters, NPDES permits also require municipal sewage treatment systems to conduct pretreatment programs if their design capacity is greater than 5 million gallons-per-day. Smaller municipal treatment systems may be required to conduct pretreatment programs if there are significant industrial users of their systems. The pretreatment programs must comply with the federal regulations in 40 Code of Federal Regulations part 403.

The NPDES program involves the issuance of new permits, reissuance of expired permits, conducting compliance inspections, review of monitoring reports, and taking enforcement actions against dischargers who fail to comply with

the conditions of their permit. Potential enforcement actions include letters of noncompliance, notices of violation, cleanup and abatement orders, cease and desist orders, imposition of administrative civil liabilities, and referral to the State Attorney General.

A. GEOTHERMAL DISCHARGES

The Regional Water Board closely monitors the activities of those companies that are developing geothermal resources. The Regional Water Board issues waste discharge requirements that regulate the drilling of geothermal wells, the operations at the power plants, and the disposal of geothermal wastes produced during these operations. The Regional Water Board works closely with the California Division of Oil and Gas to regulate these facilities in accordance with the Memorandum of Agreement between the State Water Board and the California Department of Conservation, Division of Oil and Gas, as amended by State Water Board Resolution No. 88-61. This agreement generally requires the Division of Oil and Gas to issue permits to regulate subsurface discharges and requires the Regional Water Board to issue waste discharge requirements to regulate surface discharges.

B. SLUDGE APPLICATION

The U.S. Environmental Protection Agency recently promulgated new regulations for sludge use and disposal. These regulations are applicable to land application, surface disposal, and incineration of municipal sludge. These regulations are contained in 40 Code of Federal Regulations part 503.

There is increasing interest in the beneficial use of municipal wastewater treatment plant sludges as an agricultural soil amendment. State and federal regulations establish heavy metals application rates for sludge used in the growing of crops. The new federal regulations establish heavy metals and pathogen limitations for "clean" sludge.

The Regional Water Board's primary concerns related to sludge are contamination of groundwater by sludge composting facilities and potential contamination of surface waters from tailwater discharges off fields where sludge has been applied. Sludge composting facilities are attracted to this Region because of the sunny climate, low cost of land, relatively low population density, and close proximity to major Southern California population centers.

Regional Water Board measures for regulating sludge use are as follows:

- Permits issued to domestic wastewater treatment facilities will be modified to incorporate the requirements of 40 Code of Federal Regulations part 503.
- Sludge composting facilities will be regulated through the prescription and enforcement of WDRs.
- Waste Discharge Requirements or waivers will be issued to land appliers of sludge on a case by case basis, although properly composted sludge may be exempted.

C. MUNICIPAL WASTEWATER TREATMENT PLANTS

Regulating discharges from municipal wastewater treatment plants is done through either the issuance of National Pollutant Discharge Elimination System (NPDES) permits where the discharge is to surface water or through Waste Discharge Requirements (WDRs) where the discharge is to land. The discharge of wastewater effluent to surface water will meet the effluent limitations prescribed by the U.S. Environmental Protection Agency. The current USEPA effluent limitations for secondary treatment are as follows:

Constituent	30-Day Arithmetic Mean Discharge Rate	7-Day Arithmetic Mean Discharge Rate
20°C BOD_5	30 mg/L	45 mg/L

Suspended Solids	30 mg/L	45 mg/L

pH - The effluent values for pH shall remain within the limits of 6.0 to 9.0

The arithmetic mean of the values for effluent samples collected for 20^0C BOD_5 and Suspended Solids (SS) in a period of 30 consecutive days shall not exceed 15 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (85 percent removal).

D. WASTEWATER RECLAMATION AND REUSE

Wastewater reclamation and reuse is encouraged by this Regional Water Board. However, for wastewater reclamation and reuse facilities it is necessary to meet the water quality standards set by the Regional Water Board. Also, all state, federal, and local standards must be adhered to when reclaimed wastewater is used in this Region. Waste Discharge Requirements would be necessary where potential public and worker contact is high and where reclaimed water is used in large amounts. Currently, the primary use of reclaimed wastewater is golf course irrigation.

E. CONFINED ANIMAL FACILITIES

The State and Regional Water Boards have authority under federal regulations and under the Water Code (in general), and regulations contained in title 23, chapter 15, article 6 (in particular), to fully regulate waste disposal activities at confined animal facilities. Additional and/or more stringent measures may be required in those areas overlying threatened or impaired sources of drinking water.

There are three types of confined animal facilities operating in this Region: fish farms, dairies, and feedlots. City and county offices have been notified to provide information to the Regional Water Board about the location of facilities in this Region. All these facilities are required to submit a Report of Waste Discharge to the Regional Water Board. Facilities may request a waiver from Waste Discharge Requirements which may be granted as long as the discharge does not create pollution, contamination, or nuisance as described by section 13050 of the Water Code. Periodic inspections are conducted to observe the performance of the facilities under the program.

F. STORMWATER

Federal regulations require National Pollutant Discharge Elimination System (NPDES) permits for discharges of stormwater associated with:

- municipalities with populations of 100,000 persons or more;
- construction activities that disturb one or more acres of land; and
- certain specified industrial activities.

California is a delegated NPDES state, and has authority to administer the NPDES program within its borders. Two general NPDES stormwater permits have been adopted by the State Water Board to administer two parts of the stormwater program; one for industrial activity discharges and one for construction activity discharges. Discharges of stormwater from municipalities are regulated with individual NPDES permits.

Enforcement of the two general NPDES stormwater permits is the responsibility of the Regional Water Board. The number of facilities and projects applicable to these permits is expected to be large. The first priority of the Regional Water Board is to assure that all applicable industrial facilities and construction projects have filed for their respective general NPDES permits. The next priority is to assist the dischargers in achieving and maintaining compliance with the general NPDES permits. Emphasis will be placed on maintaining a cooperative approach with the dischargers.

The Municipal Storm Water Permitting Program regulates storm water discharges from Municipal Separate Storm Sewer Systems (MS4s). MS4 permits, as described in the State Water Board's web site (http://www.waterboards.ca.gov/water_issues/programs/stormwater/municipal.shtml), were issued in two phases.

Under Phase I, which started in 1990, the nine Regional Water Boards adopted NPDES storm water permits for medium municipalities with populations between 100,000 and 250,000 people, and for large municipalities with populations of 250,000 people or more. On March 14, 1991, the Executive Officer of the Colorado River Basin Regional Water Board designated the Whitewater River region as an area required to have a Phase I NPDES MS4 permit. The first MS4 permit (Order No. 96-015, NPDES No. CAS 617002) expired on May 22, 2001. The permit was renewed by Regional Water Board Order No. 01-077 (NPDES No. CAS617002) on September 5, 2001.

The County of Riverside and the Riverside County Flood Control and Water Conservation District, in cooperation with the Coachella Valley Water District and incorporated cities, including the cities of Banning, Cathedral City, Coachella, Desert Hot Springs, Indian Wells, Indio, La Quinta, Palm Desert, Palm Springs and Rancho Mirage (permittees), jointly submitted an NPDES application on March 9, 2006. Along with the application, they submitted a report of waste discharge for re-issuance of the MS4 permit to carry out the activities, regional compliance programs, and responsibilities prescribed in the previously issued NPDES permit (Order No. 01-077). The most recent MS4 permit for permittees was adopted by the Regional Water Board (Order No. R7-2008-0001) on May 21, 2008.

As part of Phase II, the State Water Board adopted a general permit for the discharge of storm water from small MS4s (WQ Order No. 2003-0005-DWQ) to provide permit coverage for smaller municipalities, including non-traditional Small MS4s, which are government facilities such as military bases, public school campuses, and prison and hospital complexes. In March 2009, the County of Imperial and the cities of El Centro, Imperial, Brawley, and Calexico enrolled in the Small MS4 program. Their permit can be viewed at:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/phase_ii_municipal.shtml/.

Discharges of storm water runoff from lands owned by Caltrans are currently regulated under a separate NPDES permit (Order No. 99-06-DWQ: NPDES No. CAS 000003) issued by the State Water Board. The complete description of this program can be found at the following link:
http://www.waterboards.ca.gov/water_issues/programs/stormwater/caltrans.shtml/.

G. BRINE DISCHARGES

Discharges of water softener regeneration brine are prohibited to facilities which ultimately discharge in areas where such wastes can percolate to ground water usable for domestic and municipal purposes. The Regional Water Board requests that local agencies adopt ordinances to prohibit discharges of these brines to ground waters, surface waters, or into community sewers.

H. SEPTIC SYSTEMS

1. Statewide Onsite Wastewater Treatment System Requirements

Requirements for siting, design, operation, maintenance, and management of onsite wastewater systems are specified in the State Water Board's Water Quality Control Policy for Siting, Design, Operation, and Maintenance of Onsite Wastewater Treatment Systems (OWTS Policy). The OWTS Policy sets forth a tiered implementation program with requirements based upon levels (tiers) of potential threat to water quality. The OWTS Policy includes a conditional waiver of waste discharge requirements for onsite systems that comply with the policy.

The OWTS Policy, including future revisions, is incorporated into this Basin Plan and shall be implemented according to the OWTS Policy's provisions.

2. Prohibitions

i. Cathedral City Cove

On and after January 1, 2012, the discharge of wastewater into the ground through the use of individual subsurface disposal systems in the Cove area of Cathedral City in Riverside County is prohibited. Cathedral City Cove is that area of the city bound to the south by Cathedral City city limits as of January 1, 2012, to the east by the East Cathedral Canyon Channel, to the west by the West Cathedral Canyon Channel, and to the north east by the extension of the West Cathedral Canyon Channel, as depicted in the USGS Cathedral City Quad Map photorevised in 1981.

(a) Cathedral City Cove - Reports

On October 17, 2002, the State Water Board approved a $2,809,000.00 grant to the city of Cathedral City for Cove area septic system elimination. Pursuant to section 13225 of the Water Code, by May 21, 2004 the City of Cathedral City shall submit to the Regional Water Board a report describing an implementation plan to comply with the January 1, 2012 prohibition date. Thereafter, the city shall submit annual reports to the Regional Water Board regarding any actions taken by the city of Cathedral City or any other person or entity in order to achieve compliance by January 1, 2012.

ii. Mission Creek or Desert Hot Springs Aquifers

The following language implements Water Code section 13281.

Effective January 21, 2005:

- The discharge of waste from new or existing individual disposal systems on parcels of less than one-half acre that overlie the Mission Creek Aquifer or the Desert Hot Springs Aquifer in Riverside County is prohibited, if a sewer system is available.

- For parcels of one-half acre or greater that overlie the Mission Creek Aquifer or the Desert Hot Springs Aquifer in Riverside County, the maximum number of equivalent dwelling units with individual disposal systems shall be two per acre, if a sewer system is available. The discharge of waste from additional new or existing individual disposal systems is prohibited, if a sewer system is available. The term “equivalent dwelling unit” means a building designed to be used as a home by the owner of such building, which shall be the only dwelling located on a parcel of ground with the usual accessory buildings. This definition is from Section 221.0 of the 1997 edition of the Uniform Plumbing Code of the International Association of Plumbing and Mechanical Officials, and any authority interpreting that section shall be relevant in interpreting this prohibition.

If a sewer system becomes available after January 21, 2005, Prohibitions (1) and (2) in the preceding paragraph shall apply to discharges of waste from all new or existing individual disposal systems on all parcels to which the sewer system becomes available.

A sewer system is “available” if a sewer system, or a building connected to a sewer system, is within 200 feet of the existing or proposed dwelling unit, in accordance with Section 713.4 of the 1997 edition of the Uniform Plumbing Code of the International Association of Plumbing and Mechanical Officials.

State Water Board awarded two grants to Mission Springs Water District for a total of $2,800,000 for the elimination of disposal systems (septic tanks) on parcels less than one-half acre overlying the Desert Hot Springs and Mission Creek Aquifers if sewer is available. Pursuant to section 13225 of the Water Code, by November 18, 2005, the Mission Springs Water District shall submit to the Regional Water Board a report describing actions taken to implement the subject prohibition.

iii. Town of Yucca Valley

Pursuant to section 13280 of the Water Code, the discharge of wastewater from new or existing individual disposal systems on parcels within Phase 1, Phase 2, and Phase 3 of the Hi-Desert Water District Sewer Master Plan (Final Report, January 2009) is prohibited with certain exceptions noted below.

(a) Time Schedule for Implementation

This prohibition shall become effective for all parcels within the boundaries of the prohibition in accordance with the following time schedule:

Phase	Deadline*
Phase 1	June 30, 2021
Phase 2	December 31, 2025
Phase 3	

* Or when a municipal sewage collection system becomes available, whichever comes first. A municipal sewage collection system is defined as "available" once the system is operational, and is located within 500 lineal feet of an existing or proposed new disposal system discharge.

Construction of the Hi-Desert Water District (HDWD) municipal sewage collection system and wastewater treatment and reclamation facility (WRF) for the Town of Yucca Valley shall proceed in accordance with the following milestones and schedule:

Package	Start Construction	Complete Construction
Package A: Collection System East	July 31, 2016	February 28, 2018
Package B: Pumping Stations	September 30, 2016	April 30, 2018
Package C: Collection System Central	October 31, 2017	April 30, 2019
Package D: Collection System West	December 31, 2018	March 31, 2020
WRF	February 28, 2017	July 31, 2019

Regarding the availability of and need to connect to the centralized sewer system, the District shall provide property owners in Phase 1 at a minimum the following two notifications:

1st Notification: a 90-day advance notice (by mail), as to when the approximate date the sewage collection system will become "available" for them to connect; and

2nd Notification: another written notification, within 10 days of when the system is actually "available," that the system is "available," and they need to connect to it.

Within one-hundred (100) days following the first round of the 2nd Notification , and every month thereafter on the 15th day of the month, HDWD shall submit to the Colorado River Basin Water Board a technical report in the form of a letter with the names and address of property owners who have not connected to the sewage collection system as required even though the system is available for them to connect. Further, a detailed progress schedule to connect property owners to the sewage collection system shall be available on the HDWD's Project webpage (www.protectgroundwater.org) throughout the Project.

(b) Deferred Parcels

Parcels identified in Appendix A of the March 2016 Staff Report prepared in support of this amendment (hereafter "March 2016 Staff Report") shall connect to the HDWD's centralized sewage collection system and WRF when they meet any of the following criteria:

1. An area of Deferred Parcels has experienced enough development to meet a threshold of 1.7 equivalent dwelling units (EDU) per 100 feet of pipe;
2. A street or area is 80 percent developed; or
3. An area has experienced enough development to generate flows resulting in a minimum of 2 feet per second (fps) flushing velocity.

(c) Internal Boundaries for Phases 1 through 3

The internal boundaries for Phases 1 through 3 shall be realigned and defined as recommended in the March 2016 Staff Report. Parcels in Alternative Area 1, which are identified in Appendix B of the March 2016 Staff Report, shall be moved from Phase 1 into Phase 2; Parcels in Alternative Area 2, which are identified in Appendix B of the March 2016 Staff Report, shall be moved from Phase 1 into Phase 3; and Parcels in Phases 2 and 3, which are identified in Appendix C of the March 2016 Staff Report, shall be moved into Phase 1, as recommended in the March 2016 Staff Report. Thus, the internal boundaries of each Phase of the Prohibition shall be as shown in Figure 7 of the March 2016 Staff Report and are defined as follows:

1. The Phase 1 area shall be bounded by Barron Drive to the north, Highland Trail to the south, La Contenta Road to the east, and Camino Del Cielo Trail to the west;

2. The Phase 2 area shall be bounded by Onaga Trail to the north, Golden Bee Drive to the south, La Contenta Road to the east, and Rockaway Avenue to the west; and

3. The Phase 3 area shall cover the remaining residential customers on the west end of HDWD's service area, along with some low to medium density residential customers located north of the Yucca Wash up to Cobalt Road; and some low to medium density residential customers located south of Golden Bee Drive and north of South Park Road.

(d) Monitoring and Reporting

Pursuant to section 13225 of the Water Code, by June 2016, and every calendar quarter thereafter on the 15th, HDWD shall submit to the Regional Water Board a report regarding the construction of the centralized sewage collection system and WRF. The report shall describe overall progress to build the centralized system and WRF; number of parcels connected to the system; and overall progress to achieve compliance with the Prohibition. HDWD shall also submit bi-annual reports to the Regional Water Board by January 1st and July 1st of each year regarding the status of Deferred Parcels. Specifically, the report shall address whether any Deferred Parcel and/or areas where Deferred Parcels are located meet any of the criteria specified in paragraph (b), above.

(e) Prohibition Exemptions

Exemptions to this Prohibition shall be considered and may be granted by the Regional Water Board on a case-by-case basis pursuant to an application submitted to the Executive Officer by any person or entity that is subject to the Prohibition (Discharger). Such exemptions shall be based upon the weight of the evidence demonstrating the existence of unique conditions applicable to the Discharger, its discharge, and its property in question. These conditions include, but are not limited to, technical, environmental, or economic conditions that would make connection to the collection system or installation of an on-site advanced treatment and

disposal system technically impracticable or economically excessively burdensome. To be considered for an exemption, the Discharger shall apply to the Executive Officer for relief in writing and document the conditions that would make connection to the collection system or installation of an advanced on-site treatment and disposal system technically impracticable or economically excessively burdensome. The application shall also include:

a) Written quotes from three state-licensed commercial contractors regarding the estimated cost to install, operate, and maintain the advanced on-site treatment and disposal system; and
b) A financial statement regarding the applicant's average income for the last five years, and the applicant's most recent property value assessment.

The Executive Officer shall have thirty (30) days from receipt of the application to notify the Discharger in writing whether the application is complete. Following receipt of a complete application, the Executive Officer shall make a preliminary determination of whether the Discharger qualifies for an exemption and shall make a recommendation to the Regional Water Board based on that determination whether the exemption should be granted or denied. The Executive Officer shall then notify the Discharger in writing regarding that recommendation and when the matter will be scheduled for the Regional Water Board's consideration at a public hearing.

(f) Compliance Assurance and Enforcement

It is the Regional Water Board's objective to work cooperatively with the Dischargers who are subject to this Prohibition to help them achieve compliance with the terms of the Prohibition. Consistent with this objective, the Executive Officer shall assist the Dischargers achieve compliance with the terms of this Basin Plan amendment. In this regard, the Executive Officer shall continue to assist the Town of Yucca Valley and HDWD obtain financial assistance and, within forty-five (45) days following approval of the amendment by the California Office of Administrative Law (OAL), shall notify in writing all Dischargers regarding:

a) the key deadlines of this Prohibition,
b) options available to comply with the amendment, and
c) sources of potential financial and technical assistance.

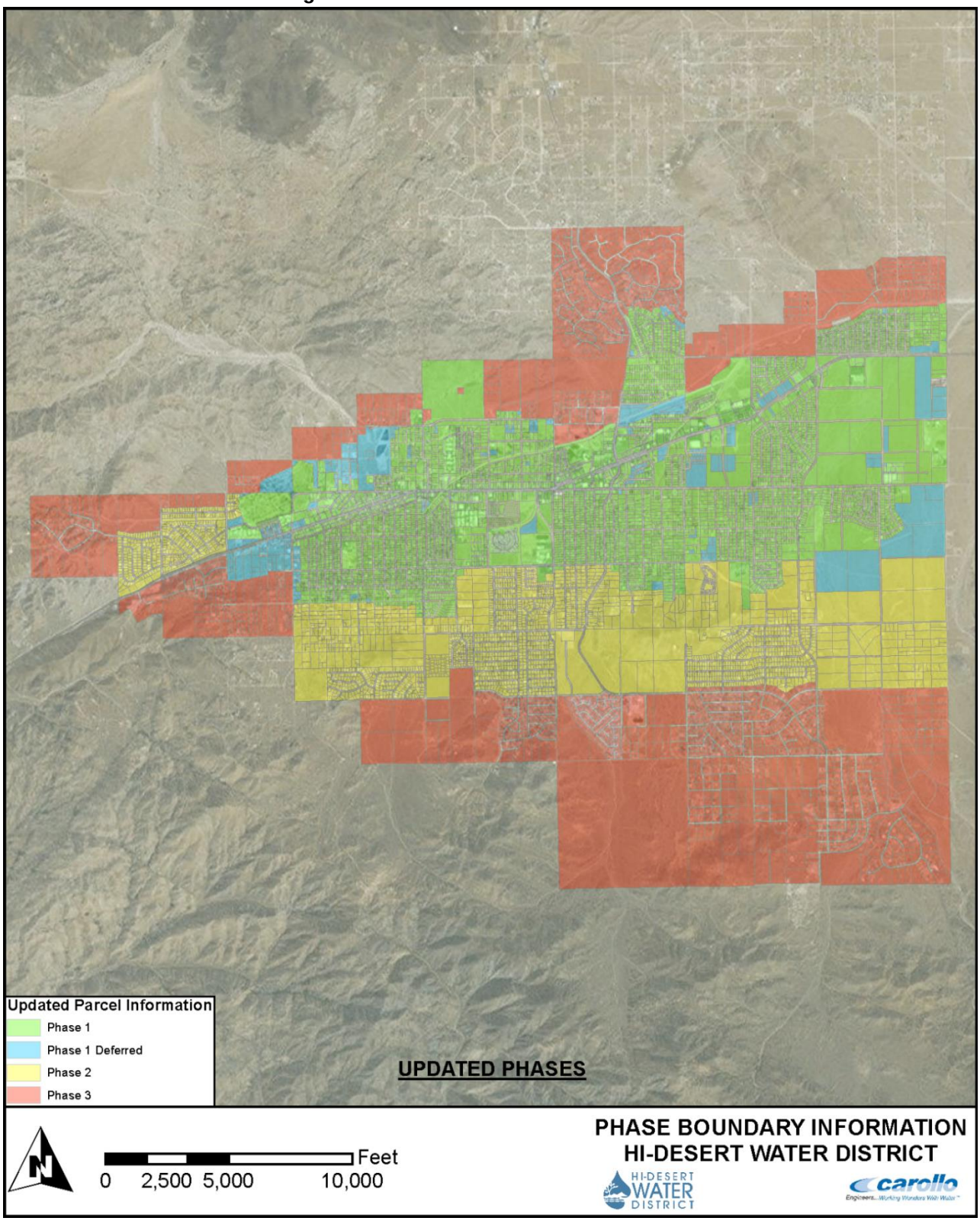
The Regional Water Board recognizes that there may be circumstances where a Discharger is not responsive to staff compliance efforts. In these cases, the State Water Board's Water Quality Enforcement Policy provides clear guidance on the options available to the Regional Water Board to bring the Discharger into compliance. In these circumstances, the Regional Water Board enforcement staff shall implement prompt, consistent, predictable, fair, and progressive enforcement to bring the Discharger into compliance at the earliest practicable date with the terms of this Prohibition. Towards this end, the Regional Water Board staff may take any combination of the following actions, as the circumstances of the case may warrant:

- Issue Notice of Non-Compliance letters;
- Issue an order pursuant to section 13267 of the Water Code to ensure that a Discharger submits, in a prompt and complete manner, a technical report to bring its discharge into compliance with this Prohibition;
- Issue a Cleanup and Abatement order pursuant to section 13304 of the Water Code against any Discharger who violates the Prohibition and/or threatens a condition of nuisance or pollution;
- Prepare for consideration of adoption by the Regional Water Board, a Cease and Desist order pursuant to section 13301 of the Water Code against any Discharger who violates the Prohibition;
- Issue Administrative Civil Liability Complaints, as provided for by the Water Code, against any responsible party who fails to comply with Regional Water Board orders and/or the Prohibition.

The Executive Officer is hereby directed to provide the Regional Water Board an annual written report regarding overall progress to achieve compliance with the terms of this prohibition. The first annual report shall be due on May 23, 2012.

The Executive Officer is hereby further directed to work with the Town and HDWD to revise the existing Memorandum of Agreement between the Town, HDWD, and Regional Water Board as soon as practicable but by no later than June 30, 2016, so that it includes specific outreach and education activities targeting discharges from septic systems within the Prohibition boundaries so that they are operated and maintained properly while the centralized municipal sewage collection system and WRF are being constructed.

Figure 4-1: PROHIBITION PHASE BOUNDARIES



III. NONPOINT SOURCE CONTROLS

Despite California's significant achievements in controlling point source discharges, such as wastewater from municipal treatment plants and industrial facilities, many of the state's valuable water resources continue to be polluted by nonpoint sources (NPS). NPS water pollution is generally caused by poor land use practices and the collective effects of individual behavior. It is distinguished from point sources which discharge wastewater of predictable concentrations and volumes. NPS pollution is diffuse throughout a watershed, variable in nature, and most significant in its cumulative effects. Management of NPS water pollution is also distinguished from point source management because it requires an array of control techniques customized to local watershed conditions, rather than relying exclusively on waste discharge requirements as with individual point source facilities. Land uses associated with NPS water pollution include agriculture, forestry, urban development, grazing, water development, inactive mines, and boating and marinas.

Impacts from land uses to California's water resources continue. Unless these uses are managed in a way which will minimize NPS impacts, the resource values will diminish, lowering land values and discouraging future use. The challenge of nonpoint source pollution management is to implement economically achievable protections which will preserve the resources upon which California's quality of life and economic vitality depend.

The federal Clean Water Act, as amended in 1987, includes section 319 titled "Nonpoint Source Management Programs." Section 319 requires the states to develop assessment reports and management programs describing the states' nonpoint source problems and setting forth a program to address the problems. The State Water Board adopted its "Nonpoint Source Management Plan" in November 1988. The Plan was updated in December 1999 with adoption of the "Plan For California's Nonpoint Source Pollution Control Program," (hereafter referred to as "State NPS Program"), including "Volume I: Nonpoint Source Program Strategy and Implementation Plan for 1998-2013 (PROSIP)" and "Volume II: California Management Measures for Polluted Runoff (CAMMPR)" (adopted December 14, 1999, State Water Board Resolution No. 99-114). This Plan has an approach to NPS water quality control whereby the following are implemented as needed:

1. Self-determined implementation of Management Practices (MPs);

2. Regulatory-based encouragement of Management Practices; and

3. Effluent requirements.

Depending on water quality impacts and severity of NPS problem, the Regional Water Board may move directly to full regulatory and complementary enforcement actions. It is the preference of the Regional Water Board to regulate nonpoint sources of pollution using the least stringent methods possible, while attaining water quality standards.

The Porter-Cologne Water Quality Control Act is also used by the State Water Board and Regional Water Boards to direct nonpoint source pollution control activities. The Porter-Cologne Act is California's comprehensive water quality control program and applies to both ground waters and surface waters. Its principal means of implementing water quality controls is through issuance of waste discharge requirements which can be applied to both point source and nonpoint source discharges.

There is close cooperation between the State Water Board's Nonpoint Source Program and this Region's Nonpoint Source Program. Much of the funding for these programs comes from federal grants which are designed to assist in implementation of the federal Clean Water Act provisions on nonpoint source pollution control. Some of the important activities of these nonpoint source programs include development of water quality assessments, development and oversight of NPS pollution control demonstration projects, active cooperation with other affected state, local and federal agencies, identification, development and implementation of MPs, program development activities, public participation, and educational outreach activities.

The Regional Water Board adopted an updated Clean Water Act section 303(d) list, which, in part, identifies the quality of the waters of the Salton Sea, Alamo River, New River, and Imperial Valley agricultural drains as being impaired by discharges of wastes from nonpoint sources, primarily of agricultural origin. The Alamo River and New River are the two largest drains in this Region that are significantly impaired by agricultural pollution. Nonpoint

source pollution in this Region also originates from sources other than agriculture including abandoned mines, stormwater runoff, boating activities, alterations to land (e.g. urban development), and animal production activities. Storm water discharges have been discussed earlier in this chapter. Alterations to land are discussed below under "State Water Quality Certification." The other sources of nonpoint source pollution will be investigated and appropriate actions taken pending the availability of funding.

Consistent with the 1999 State NPS Program, the Regional NPS Management Program includes:

- Implementation of the “Plan for California’s Nonpoint Source Pollution Control Program”
- Implementation of this Basin Plan
- Implementation of other applicable statewide plans and policies
- Development and implementation of Total Maximum Daily loads for impaired and threatened surface waters
- Implementation of Regional planning and prioritization through the California Watershed Management Initiative
- Completion of annual workplans
- Public participation and coordination with stakeholders and cooperating agencies
- Coordination with local governments in the development of General Plans
- Formal agreements (Memoranda of Understanding and Management Agency Agreements)
- Implementation of the NPS Regulation
- Financial and technical assistance
- Water Quality Monitoring and Assessment and Regular Reporting, and
- Assessment of Management Measure Effectiveness

A. AGRICULTURE

1. Introduction

Agricultural wastewater discharges, primarily irrigation return flows, constitute the largest volume of pollution entering surface waters in this Region. The agricultural drains/drain systems in this Region support significant beneficial uses as identified in Chapter 2 of this Plan. In an effort to protect and enhance these uses, the Regional Water Board adopted the "Agricultural Drainage Management (ADM) Report for the Colorado River Basin Region" in March 1992. This report established priorities for dealing with the drain systems based on a watershed approach. Drainage entities (e.g., water districts), including Imperial Irrigation District, Coachella Valley Water District, and Palo Verde Irrigation District, were identified in each of four watersheds, and the Regional Water Board will work closely with these entities to implement agricultural pollution controls.

The preferred approach toward addressing nonpoint source pollution is to deal with the problem on a watershed basis. The Salton Sea Transboundary Watershed has been identified as this Region's highest priority for control of agricultural pollution, based mainly on its relatively large size, the beneficial uses of waters in the watershed, the volume of discharge, and the severity of water quality degradation. California's 1998 Unified Watershed Assessment identified the Salton Sea Transboundary Watershed as a Category 1 (impaired) watershed. The 2013 California Integrated Assessment of Watershed Health also identified Coachella and Imperial valleys, which make up the Salton Sea Watershed, as among the California regions with the highest watershed vulnerability scores.

The effectiveness over time of agricultural pollution controls is much more likely if all involved parties (e.g., farmers, local officials, the public) are informed of these activities and play a role in their development and implementation. In recognition of this, the state and federal nonpoint source programs contain significant outreach and educational components. In addition to working with the identified drainage entities, the Regional Water Board will continue to work with local Resource Conservation Districts, the U.S. Natural Resource Conservation Service, the California Department of Pesticide Regulation, the California Department of Food and Agriculture, county agricultural commissioners, college and university agricultural extension services, local Farm Bureaus, and stakeholder groups. The Regional Water Board also has the responsibility of coordinating and overseeing implementation of federal and state grants and loans programs that provide resources to local entities for control of nonpoint source pollution. The

Regional Water Board will provide technical and educational assistance on pollution control as requested by local groups and will collect and make available information on successful pollution control activities in other regions and other states.

2. Conditional Discharge Prohibitions for Agriculture

i. Imperial Valley Sedimentation/Siltation

A prohibition of sediment/silt discharge is hereby established for the Imperial Valley, including the Alamo River, New River, all Imperial Valley Drains, and their tributaries. Specifically, beginning three months after USEPA approval, the direct or indirect discharge of sediment into the Imperial Valley is prohibited, unless

The Discharger is:

- In compliance with applicable Sedimentation/Siltation TMDL(s), including implementation provisions (e.g., Discharger is in good standing with the ICFB Watershed Program or has a Drain Water Quality Monitoring Plan (DWQMP) approved by the Executive Officer); or
- Has a monitoring and surveillance program approved by the Executive Officer that demonstrates that discharges of sediment/silt into the aforementioned waters do not violate or contribute to a violation of the TMDL(s), the anti-degradation policy (State Water Board Resolution No. 68-16), or water quality objectives; or
- Is covered by Waste Discharge Requirements (WDRs) or a Waiver of WDRs that applies to the discharge.

TMDL compliance groups have formed to address issues regarding wastewater discharge from irrigated lands to waters of the state. Individual Dischargers are not required by the Regional Water Board to join in TMDL compliance groups. Individual Dischargers who choose not to participate in TMDL compliance groups must file a Report of Waste Discharge for general or individual Waste Discharge Requirements. Compliance with the prohibition will be determined with respect to each individual Discharger, whether or not the Discharger is a member of a compliance group. The intent of this prohibition is to control to the degree practicable sediment/silt discharges from irrigated lands in amounts that violate or contribute to a violation of state water quality standards

B. STATE WATER QUALITY CERTIFICATION

The Water Quality Certification program is authorized by Clean Water Act section 401. Certification, or waiver of Certification is required for any activity which requires a federal permit or license and which may result in a discharge to waters of the United States. Issuance or waiver of Certification is based on a determination that state water quality standards will not be violated. Federal regulations define water quality standards as including a state's water quality objectives, designated beneficial uses, and anti-degradation policy, which requires that "existing instream water uses and the level of water quality necessary to protect the existing uses shall be maintained and protected." (40 C.F.R. part 131.) Section 13160 of the Porter-Cologne Water Quality Control Act designates the State Water Board as the state's water pollution control agency for all purposes stated in the federal Clean Water Act (CWA) and any other federal act, including issuance of Certification. Section 13160.1 authorizes the state to establish a reasonable fee schedule to cover the cost of processing Certification requests.

Except for discharges associated with hydroelectric activities, the State Water Board has delegated to the Regional Water Board the authority to evaluate projects for Certification. The Regional Water Boards have been delegated the authority to determine whether or not to waive Certification, or to recommend that the State Water Board issue Certification, a denial of Certification, or a conditional Certification for the project. This delegated authority covers U.S. Army Corps of Engineers (ACOE) CWA 404 Permits which consist of Individual and General Permits covering dredge and fill operations to waters of the United States.

Implementation of the 401 Water Quality Certification Program in this Region starts with a review of the following documentation for each activity for which Certification is required:

- A formal request for CWA 401 Water Quality Certification for the project submitted by the applicant

- A copy of the final environmental document prepared in compliance with the California Environmental Quality Act (CEQA)
- A full description of the project
- A complete copy of the application for the federal permit or license
- A copy of the California Department of Fish and Wildlife Streambed Alteration permit
- The filing fee specified in the California Code of Regulations

IV. SPECIFIC IMPLEMENTATION ACTIONS

A. NEW RIVER POLLUTION BY MEXICO

The New River rises in Mexico, flows northward across the International Boundary and through California's Imperial Valley before ultimately discharging into the Salton Sea. The River conveys agricultural drainage from the Imperial and Mexicali Valleys to the Salton Sea. The River also conveys community and industrial wastewaters. In Imperial Valley, waste discharge requirements are prescribed and enforced by this Regional Water Board for discharges of treated community and industrial wastewater. However, Mexico discharges raw and inadequately treated sewage, toxic industrial wastes, garbage and other solid wastes, animal wastes, and occasionally geothermal wastewaters from the Mexicali area into the United States via the New River. These discharges of raw and inadequately treated sewage and industrial wastes have continued for over 40 years. The resulting pollution of the New River at the International Boundary is such that sewage solids continue to be plainly visible in the River at the International Boundary. Also, toxic chemicals have been detected in the River water. Responsibility within the United States for dealing with Mexico on the New River pollution problem is with the United States Section of the International Boundary and Water Commission (IBWC) and the USEPA.

The IBWC is a US-Mexican federal agency with roots in the "Treaty of Guadalupe Hidalgo of Peace, Limits and Settlement," which was signed by both Countries in February 1848. IBWC was established as the "International Boundary Commission" (IBC) in 1889 to deal with boundary issues. In 1944, the US and Mexico signed the Treaty entitled "Utilization of Waters of the Colorado and Tijuana Rivers and of the Rio Grande" (a.k.a. the "Mexican-American Water Treaty"), which was ratified by the US Congress in 1945. The Mexican-American Water Treaty changed the name of IBC to IBWC, and expanded their jurisdiction and responsibilities. The IBWC's jurisdiction extends along the boundary and into both countries where international projects have been constructed. The agencies responsibilities include the implementation of boundary and water treaties and mediating disputes that arise in their application. The treaty specifically charged the IBWC with solving border sanitation and water quality problems.

In August 1983, the Presidents of Mexico and the United States signed the La Paz Agreement to protect and improve the environment in the border area. The La Paz Agreement designates the USEPA as the US coordinator for pursuing practical, legal, institutional and technical measures necessary to protect the environment. The agreement originally named Mexican Secretaría de Desarrollo Urbano y Ecologia (SEDUE) as the coordinator for Mexico. In 1992, Mexico transferred responsibility for border problems to the Secretaría de Desarrollo Social (SEDESOL). Currently, the Comision Nacional del Agua (CNA) has primary responsibility for water quality problems along the border for Mexico.

For over 30 years, this Regional Water Board has been encouraging the United States Commissioner on the IBWC to obtain corrections of this gross problem. Since 1975, the Regional Water Board has monitored water pollution in the New River in an effort to identify the pollutants coming from Mexico. This information has been forwarded to the United States Commissioner and to others to aid and encourage Mexico in implementing corrective actions.

For sewage service purposes, the Mexicali metropolitan area is divided into the Mexicali I and Mexicali II areas. Mexicali I includes most of the old, well established neighborhoods to the west, the existing municipal sewage collection and treatment system (excluding the Gonzalez-Ortega lagoon system) and the Zaragoza lagoons. The Mexicali II service area includes the new residential and industrial development to the east of the Gonzalez-Ortega lagoons, and the proposed new 20-mgd WWTF. The City of Mexicali is undergoing unprecedented growth. In the year 2000, the “Instituto Nacional de Estadisticas Geografia e Informatica” (INEGI) estimated the population within the Municipality of Mexicali to be 765,000 people, and projected a 2.6% annual growth rate. Based on this, the

production of domestic and industrial wastewater is projected to increase to 58-67 mgd over the next 20 years. However, Mexicali lacks an adequate sewage collection, conveyance, and treatment system for current and projected flows. It is currently served by two stabilization lagoon systems, which lack disinfection facilities. The systems have a combined design capacity of about 20-25 mgd, however sewage flows calculated by CH2M Hill in 1997 ranged from 35 to 40 mgd.

The Regional Water Board staff has conducted investigations of the New River watershed in Mexico to determine the type(s) and extent of waste discharges into the New River and its tributaries so that possible corrective measures could be considered. The investigations have been successful in identifying the problems that must be addressed to obtain adequate corrections. These problems include the following:

- Breakdowns in Mexicali's sewer system from either occasional pump failure or line incapacity/collapse resulting in the discharge of raw sewage to the River
- Discharge of untreated industrial wastes to the River including highly toxic chemical wastes, many of which are on EPA's list of 129 priority pollutants and some of which are carcinogens
- Inadequate treatment of sewage and industrial wastes by the Mexicali lagoon systems
- Discharge of solid waste in or near the River and its tributaries
- Discharge of raw sewage to the River from adjacent unsewered residences
- Occasional discharge of wastes to the River by septic tank pumpers
- Periodic direct discharges of untreated wastes from a slaughterhouse, dairy, and hog farms
- Discharges from residential hog and cattle pens located adjacent to the River and its tributaries, and
- Occasional discharges of geothermal wastes to the River.

Described below is a summary of actions taken by various agencies (federal and state) to correct the international pollution problems in the New River watershed.

In August 1980, Minute No. 264 to the Mexican-American Water Treaty was signed which specified time schedules for completing works that were to result in a full cleanup of the river. In addition, minimal water quality standards were specified for New River water quality at the International Boundary. Unfortunately, the specified schedules and standards of Minute No. 264 were not met and the need for further improvements to Mexicali's sewage work became evident.

In 1987, Montgomery Engineers Inc., was contracted by the Regional Water Board to investigate pollution abatement measures within the United States for the New and Alamo Rivers. A final report entitled New River Pollution Abatement Report - Recommended Projects, December 1987, recommended that a screening device and chlorination/aeration facility be constructed near the International Boundary. A proposed appropriation of $1,525,000 for follow-up work including actual engineering designs was rejected by the Governor of California on July 8, 1988. The Administration's position was that pollution emanating from Mexico is a complex international problem which demands an international solution and that the federal government must address this issue rather than the state.

On April 15, 1987, Minute No. 274 to the Mexican-American Water Treaty was approved by the governments of Mexico and the United States. The Minute provided for a $1,200,000 United States/Mexico jointly funded project to construct certain works in Mexico to reduce pollution in the New River. The project included construction of a major new pumping plant and sewer line, placement of standby pumps and rehabilitation of existing pumps at Pumping Plants No. 1 and 2, and purchase of sewer line cleaning equipment. Although efforts were made by the Government of Mexico to rehabilitate and expand the sewage system in Mexicali, the accelerated urban growth surpassed the capacity of these works and discharges of untreated industrial and domestic wastewaters into the New River continued.

Minute No. 288 was signed by the Commissioners in October of 1992 titled "Conceptual Plan for the Long Term Solution to the Border Sanitation Problem of the New River at Calexico, CA - Mexicali, Baja California." It was the result of a recommendation by the United States and Mexico at the IXth US/Mexico Binational Commission that priority attention should be given to the cleanup of the New River. Minute No. 288 established short and long-term solutions for the sanitation of the New River at the International Boundary. These short-term measures, known as "Quick Fixes," were designed to be compatible with the long-term solution, and were funded through a cost sharing

agreement between both countries. The U.S. and Mexico funded 55% and 45% respectively, of the total $7.5 million required for the Quick Fixes. The Binational Technical Advisory Committee (BTAC) implemented the quick fix and is comprised of representatives from IBWC, Mexican Section (CILA), State Public Services Commission of Mexicali (CESPM), National Water Commission (CAN) (, Secretary of Human Settlements and Public Works (SAHOPE), the Municipality of Mexicali for Mexico, the United States IBWC Section, US EPA, State Water Board, Regional Water Board, Imperial County, and the Imperial Irrigation District. The BTAC improved communication and technology transfer between the two countries. The Quick Fixes are summarized below:

- Improvements to the sewage collection system, either by lining or replacing existing sewer pipes and acquiring modern sewer line cleaning equipment;
- Rehabilitation and upgrading of pumping facilities that lift and deliver wastewater to treatment facilities; and
- Improvements to the existing lagoons at the Ignacio Zaragoza (Mexicali I) and Gonzalez-Ortega wastewater treatment facilities in Mexicali to increase their reliability and capacity.

As of May 2000, nearly 100% of the Quick Fixes were completed and operating successfully.

The long-term strategy consists of a series of sewage infrastructure projects for Mexicali I and Mexicali II service areas to address New River pollution. The Mexicali I projects consist of the replacement/rehabilitation of about 44,000 feet of sewage pipes, rehabilitation of sewage pump stations, and expansion of the Mexicali I wastewater treatment plant to 30 mgd. The Mexicali II projects entail the construction of a new 20-mgd wastewater treatment plant (a.k.a. Mexicali II WWTP), the sewage Pumping Plant No. 4 for the new WWTP, installation of telemetry equipment for the WWTP and pumping plants, construction of 31,170 feet of discharge forcemain[1] for Pumping Plant No. 4, construction/rehabilitation of about 96,000 feet of sewer lines, and rehabilitation of two sewage lift stations. In December 2003, the Border Environment Cooperation Commission (BECC) granted conditional certification for construction of the Mexicali II WWTP at a site known as “Las Arenitas,” which is outside the Salton Sea Transboundary Watershed. Effluent from Las Arenitas is discharged to a tributary of the Rio Hardy in Mexico. In October 2006, Mexico completed installation of the 48inch force main for Las Arenitas WWTP, the modifications to Pumping Plant No. 4 to meet the new pumping requirements for Las Arenitas, and construction of the Las Arenitas WWTP. The WWTP was fully functional in December 2008. The cost for this project was approximately 26 million dollars.

Las Arenitas WWTP was designed to prevent any remaining untreated municipal sewage in Mexicali from discharging into the New River. As a result of Las Arenitas, 15-20 million gallons per day of raw sewage routinely present in the New River at the International Boundary (U.S. and Mexico) have been eliminated. Regional Water Board staff and USIBWC staff will continue to monitor the New River monthly, participate in bi-national technical committee meetings to address New River pollution from Mexico, and participate in bi-national tours to assess and enhance water quality improvements. Regional Water Board monitoring data (Table 4.1) indicate a 10-fold reduction in New River bacteria, and a reduction in volatile organic compounds to levels below detection as a result of Las Arenitas. The dissolved oxygen in the River at the International Boundary has also improved dramatically, eliminating the stench that characterized the New River at this location. Furthermore, the improvements and new WWTP have reduced nutrient loading into the Salton Sea by about twenty percent. Water quality impairments still occur at the International Boundary due to trash, and various non-point source pollution, such as pesticides from agricultural runoff, and nutrients and pathogens from confined animal feeding operations and slaughterhouses in Mexicali. The tables below compare New River water quality at the International Boundary before and after completion of the bi-national projects, including Las Arenitas.

[1] CNA is responsible for this project. As of December 1997, a CNA contractor had already installed approximately 1.5 miles of the force main, a 54-inch steel pipe. However, as of January 1998, the project has been on hold reportedly due to problems between CNA and its contractor.

TABLE 4.1 COMPARISON OF MONITORING RESULTS BEFORE AND AFTER BI-NATIONAL PROJECTS

Issue	Pre Bi-national Projects	Post Bi-national Projects
Fecal, E. Coli	> 1,000,000 MPN	~ 100 – 60,000 MPN
Dissolved Oxygen	< 1.0 mg/L	~ 5.0 mg/L
Nutrients (PO4)	40% of Load to Salton Sea	20% of Load to Salton Sea
VOCs	Some detected	Non-detect
Trash	> 150 cu yds/year	> 150 cu yds/year
Pesticides	Detected	Still a problem

The Regional Water Board will continue to work with state and federal authorities in an effort to bring about a solution to this longstanding problem. However, the cooperation of Mexico is crucial in solving this problem. The Regional Water Board presently supports correction of the problem in Mexico as the most viable solution. The successful implementation of Minutes No. 264 and 288 to the Mexican American Water Treaty would represent an important step in progressing toward this goal.

Water quality sampling and analyses of the New River at the International Boundary by the Regional Water Board will continue as funding permits. However, the conditions and characteristics of the river at the International Boundary are a federal responsibility. Since the data is forwarded to all the agencies in Mexico and the United States that share responsibility for corrective action, it serves as a constant reminder that there is concern to keep the river clean, and that pressure will continue to be administered by the Regional Water Board. Monitoring results will be utilized as follows:

- Informing the United States Environmental Protection Agency and other appropriate agencies of pollution problems in the New River at the International Boundary requiring attention;
- Gauging the effectiveness of cleanup measures in Mexico;
- Evaluating Mexico's compliance with the standards set forth in Minute No. 264;
- Formulating plans for construction and operation of facilities needed to assure permanent correction of this New River pollution problem;
- Providing information on the appropriateness of New River water for specific beneficial uses;
- Alerting the state and local health authorities of health hazards associated with New River water; and
- Identifying new pollutants
- Determining compliance with the waste load and load allocation.

B. SALTON SEA

The Salton Sea has experienced many regulatory and environmental changes and numerous restoration proposals have been made in over a century of its existence. The first major interagency effort to restore the Salton Sea was initiated in 1986 when the California Resources Agency[1] created a Salton Sea Task Force (1986 Task Force) to bring together stakeholders that had an interest in maintaining and improving the environment of the Salton Sea. The 1986 Task Force was formed and operated with the assistance of the California Department of Fish and Game.[2]

This 1986 Task Force dissolved shortly after the Salton Sea Authority (SSA) was formed in 1993 as a Joint Powers Authority. SSA was established with the goal of overseeing the comprehensive restoration of the Salton Sea in

[1] The California Resources Agency was renamed the "California Natural Resources Agency" in 2008.

[2] The California Department of Fish and Game was renamed to "California Department of Fish and Wildlife" in 2012.

consultation and cooperation with the State of California. The Board of the Salton Sea Authority consists of officials representing Riverside County, Imperial County, Imperial Irrigation District (IID), Coachella Valley Water District (CVWD), and the Torres-Martinez Desert Cahuilla Indians. The Regional Water Board and numerous partner agencies provide support to the Authority in its ongoing efforts to address water quality and other environmental issues at the Salton Sea.

In 2002, the State Water Board issued Order WRO 2002-0013. The final order approved the long-term transfer of up to 300,000 acre-feet of Colorado River water per year authorized for diversion and use by IID to San Diego County Water Authority (SDCWA), CVWD, and Metropolitan Water District of Southern California (MWD). The transfer was enacted in 2003 when the parties signed the Quantification Settlement Agreement (QSA). The QSA requires water to be made available for transfer through a number of water conservation measures, including temporary land fallowing, which would result in diminished discharges to the Salton Sea. Order WRO 2002-0013 required mitigation of this impact for 15 years in the form of water releases to the Salton Sea. Between 2003 and 2017, a total of 800,000 acre feet of water were scheduled for release by IID in annual increments, commonly referred to as the "mitigation water transfer." The 15-year period was meant to provide the state enough time to study the feasibility of long-term restoration actions and begin implementation of any feasible restoration projects.

In the decade that followed, numerous studies were conducted to help meet the state's obligation to restore the Salton Sea. In 2007, the California Department of Water Resources (DWR) published the final Programmatic Environmental Impact Report (PEIR) on Salton Sea Restoration. In July 2015, DWR released the Final Environmental Impact Statement/Report for the Species Conservation Habitat Project. The preferred alternative consists of 3,770 acres of shallow saline ponds at the mouth of the New River.

In May of 2015, Governor Edmund G. Brown formed the Salton Sea Task Force with principle staff and appointed members of the Governor's Office, Natural Resources Agency, California Environmental Protection Agency, State Water Resources Control Board, Air Resources Board and Energy Commission. The Task Force was directed to identify realistic short and medium-term goals to respond to air quality and ecological threats at the sea resulting from scheduled reduced flows of fresh water to the sea. The new Salton Sea Task Force recommended the initiation of the Salton Sea Management Program (SSMP) as an inter-agency effort headed by the California Natural Resources Agency (CNRA). The SSMP partner agencies released a report titled "Phase I: SSMP 10-year plan" in March 2017, outlining proposed projects designed to meet restoration goals set forth by the Salton Sea Task Force and the 2016 Memorandum of Understanding between the U.S. Department of Interior and CNRA. The Regional Water Board is actively coordinating with CNRA, the Salton Sea Authority, and individual Salton Sea stakeholders on the development and implementation of the Salton Sea Management Program.

At present, the primary water quality problem facing Salton Sea is increasing salinity. Salinity and total dissolved solids are considered equivalent for this discussion. The salinity of the sea was approximately 44,000 mg/L in 1992 and over 61,000 mg/L in 2017. Most of the recreationally important species of fish that have inhabited the sea in the past were originally transplanted from the Gulf of California, where the salinity level is approximately 35,000 mg/L. Previous tests have indicated that spawning of these transplanted fishes is adversely affected at salinity levels above 40,000 mg/L. As of 2017, all fish populations have collapsed with the exception of tilapia, which has also declined significantly.

Because the Salton Sea is in a closed basin and is replenished primarily by agricultural drainage water with elevated total dissolved solids concentrations, the salinity will continue to rise unless a means of salinity control is devised and successfully implemented. Upon completion of the fifteen-year Salton Sea mitigation water delivery requirement associated with the QSA water conservation and transfer in 2017, the inflows to the Salton Sea are projected to decrease significantly. Any reduction in inflows to the sea causes the salinity to rise more rapidly. The volumes of flow contributed from Mexico and from stormwater runoff also have a bearing on the rate of salinity increase in Salton Sea.

In addition to salinity, other pollutants are also present at the Salton Sea at elevated concentrations that impair beneficial uses. As of 2012, the Clean Water Act section 303(d) list of impaired water bodies also identifies the Salton Sea as impaired due to nutrients, bacteria, pesticides, toxicity, and arsenic. Nutrients and pesticides are likely to originate from agricultural runoff, while bacteria is found in raw sewage. Arsenic is a common water pollutant that can have both natural and anthropogenic sources. Toxicity in aquatic life is a form of pollution that can be caused by a variety of contaminants. The Salton Sea was also formerly listed as impaired by selenium, but this pollutant was removed from the list of this water body's impairments in 2012. The Salton Sea's major tributaries, the New River and Alamo River, were still listed as impaired by selenium as of 2012.

1. Salinity Control

Based on past studies and findings, the following salinity control strategies have received the most attention among Salton Sea stakeholders:

a. Pump-out Options

Pump-out options for salinity control propose to pump water out of the sea in volumes that would remove the desired amount of salt.

One option for salt removal is to pump the necessary amount of water from the Salton Sea to the Gulf of California or Laguna Salada. Such a project would require an agreement with Mexico. Alternate locations for disposal of the salty water include the Pacific Ocean, underground injection, and pumping to other enclosed desert basins, although the technical difficulties and costs would be significantly higher.

Another option would pump the necessary amount of water from the Salton Sea into constructed ponds where an enhanced evaporation system would concentrate salt. These ponds could potentially be used to generate electricity through solar heat trapping. To stabilize the salinity levels in the sea, at least 4-5 square miles would be needed for such ponds, in addition to disposal of up to 5 million tons of salt per year.

b. In-Sea Impoundments

This option would divide the Sea into basins separated by dikes. Parts of the Sea would then be allowed to get very salty while other areas would receive most of the freshwater inflows and could maintain a favorable salinity. It would be very costly to construct and maintain the dikes. As with the solar pond option, salt disposal would have to be dealt with at some point.

The Phase I: SSMP 10-Year Plan outlines measures which feature a version of the in-sea impoundments option as the main method for salinity control, dust suppression, and habitat restoration in the initial stages of the program. The 10-Year Plan describes a series of ponds to be constructed on portions of the exposed playa, where the lake's saline water and freshwater inflows will be mixed at varying concentrations to support different types of habitats.

2. Pollution Control

Investigations by the Regional Water Board, U.S. Geological Survey, U.S. Bureau of Reclamation, U.S. Fish and Wildlife Service, California Department of Fish and Wildlife, and others have identified pollutants from upstream sources which threaten the beneficial uses of the Salton Sea. These pollutants include nutrients, pesticides, bacteria, and silt. Most of these pollutants are from runoff from agricultural lands in the Salton Sea Watershed. The largest contribution is from the Imperial Valley with smaller amounts coming from the Coachella and Mexicali Valleys. Controls on these pollutants are most effectively implemented at their source. The major control activity is implementation of Management Practices (MPs) on farmlands, conducted in accordance with the State's Nonpoint Source Program as discussed in Chapter 4. The Regional Water Board is also working with the USEPA, U.S. Bureau of Reclamation, Colorado River Basin Salinity Control Forum, and upstream states to identify sources of pollutants entering the Colorado River from locations upstream of California. The Regional Water Board continues to monitor water quality at the Salton Sea and its tributaries as described in Chapter 6.

C. TOXICITY OBJECTIVE COMPLIANCE

Compliance with the Regional Water Board's toxicity objective (see Chapter 3) will be determined through the use of bioassays utilizing standard/approved methodology. A three-part biomonitoring program to determine compliance is described in Chapter 6, Section II.B. Compliance may also be determined by reviewing data generated by the Toxic Substances Monitoring Program (see Chapter 6, Section II.E) and other water quality monitoring programs. Implementation measures to address violations of the toxicity objective will be conducted in compliance with applicable state and federal policies and regulations.

D. DISPOSAL OF WASTE TO INDIAN LAND

In an effort to protect the Region's water quality it is proposed that resources be requested to undertake the following tasks:

- Identification of Indian Reservation land within the Region where disposal of wastes could threaten Regional surface and ground waters off the Reservation.
- Creation of a Regional Water Board liaison to communicate with the Bureau of Indian Affairs, USEPA, and appropriate tribal representatives pertaining to disposal of wastes on Indian land.
- In conjunction with the California Environmental Protection Agency cooperative agreements could be made with tribes to address water quality protection from construction and operation of hazardous waste and solid waste facilities on the Reservation. The agreements would provide for the regulation of the facility at a level that is functionally equivalent to that provided under State Law.
- Address other non-hazardous waste discharges on tribal land which may threaten the waters of the state, but for which State law presently does not apply for the purposes of entering into cooperative agreements.

V. TOTAL MAXIMUM DAILY LOADS (TMDLs) AND IMPLEMENTATION PLANS

A. NEW RIVER PATHOGEN TMDL

1. TMDL Elements

New River pathogen TMDL elements are shown on Table 4-2 below

Table 4-2: NEW RIVER PATHOGEN TMDL ELEMENTS

ELEMENT	DESCRIPTION
Problem Statement (impaired water quality standard)	The New River headwaters start about 12-16 miles south of Calexico in the Mexicali Valley, Mexico. Bacteria, which are pathogen-indicator organisms, impair the entire segment of the New River in the United States. Pollution is severest at the International Boundary due to discharges of wastes from Mexico. The bacterial concentrations exceed the water quality objectives established to protect mainly the water contact and non-contact water recreational beneficial uses of the New River.

ELEMENT	DESCRIPTION
Numeric Target	The following are the in-stream numeric water quality targets for **this TMDL:** **Indicator Parameters** — **30-Day Geometric Mean[a]** — **Maximum** Fecal Coliforms — 200 MPN[b]/100 ml — [c] E. Coli — 126 MPN/100 ml — 400 MPN/100 ml Enterococci — 33 MPN/100 ml — 100 MPN/100 ml _____ a. Based on a minimum of no less than 5 samples equally spaced over a 30-day period b. Most probable number, and c. No more than 10% of total samples during any 30-day period shall exceed 400 MPN/100 ml.
Source Analysis	The main sources of pathogens as indicated by fecal coliforms and E. coli bacteria in the New River are discharges of municipal wastes from the Mexicali Valley, Mexico and undisinfected but treated wastewater discharges from five domestic wastewater treatment plants in the Imperial Valley. Natural sources of pathogens appear to play a relatively insignificant role, but their actual contribution, and contributions from other nonpoint sources of pollution in general require proper characterization.
Allocations and Margin of Safety	Discharges from point sources and nonpoint sources of pollution shall not exceed the following waste load allocations (WLAs) and load allocations (LAs), respectively: **Indicator Parameters** — **30-Day Geometric Mean[a]** — **Maximum** Fecal Coliforms — 200 MPN[b]/100ml — [c] E. coli — 126 MPN/100 ml — 400 MPN/100 ml Enterococci — 33 MPN/100 ml — 100 MPN/100 ml _____ a. Based on a minimum of no less than 5 samples equally spaced over a 30-day period b. Most probable number, and c. No more than 10% of total samples during any 30-day period shall exceed 400 MPN/100 ml. The allocations are applicable throughout the entire stretch of the New River in the U.S. The numeric target concentrations are based on extensive epidemiological studies conducted by the USEPA and others. By setting the TMDL and each of the load and waste load allocations equal to the standards, the proposed TMDL approach results in very limited uncertainty about whether attainment of the TMDL and the individual allocations will result in attainment of the applicable numeric standards. Moreover, the TMDL analysis takes a conservative approach of providing load and wasteload allocations even for relatively minor loading sources, which helps to ensure that the selected source control approach will result in attainment of the numeric objectives. Finally, to help address uncertainty concerning the bacterial die-off and regrowth dynamics in the River, the TMDL provides implicit margin of safety by including a relatively aggressive monitoring and review plan which will help ensure that needed data are collected and that, if necessary, the TMDL will be revised in the relatively near future.

2. Implementation Actions for Attainment of TMDL

The pathogen load allocations, waste load allocations, and water quality objectives shall be applicable to the New River for the protection of the REC-I and REC-II beneficial uses and shall be achieved within three years of USEPA approval of the TMDL. To this end, the following actions shall be implemented.

i. Wastewater Treatment Plants

All point source dischargers discharging, potentially discharging, or proposing to discharge waste with bacteria into the New River and/or surface waters tributary to the New River, at concentrations that violate or threaten to violate waste load allocations (WLAs), shall provide adequate disinfection to meet the WLAs specified in Table 4-2.

Currently, there are five (5) NPDES permitted facilities discharging undisinfected municipal wastewater into the New River: the City of Brawley WWTP, Seeley County Water District (SCWD) WWTP; Date Gardens Mobile Home Park (DGMHP) WWTP; City of Westmorland WWTP, and McCabe Union School District (MCUSD) WWTP. Both the City of Westmorland and City of Brawley have been issued Time Schedule Orders (TSOs) requiring them to upgrade their WWTPs by January 2002 and March 2002, respectively. The City of Westmorland is already upgrading its WWTP and expects to complete the upgrade by 2002. The City of Brawley is securing financing from the North America Development Bank to upgrade its WWTP. The NPDES permit for the City of Brawley already prescribes effluent disinfection limits consistent with this TMDL. However, neither the TSO nor the NPDES permits for the City of Westmorland contains requirements for disinfection.

It is essential that the referenced facilities that are not disinfecting provide adequate effluent disinfection at the earliest possible date. Towards this end, the Executive Officer shall direct staff to draft revised NPDES permits for these facilities incorporating the WLAs prescribed in Table 4-2 and monitoring requirements for the WLAs. Draft revised permits shall be ready for Regional Water Board consideration in accordance with the following schedule (see Table 4-3) or sooner as resources allow.

Table 4-3. SCHEDULE FOR DRAFT REVISED NPDES PERMITS

Facility Name	NPDES Permit No.	Expiration Date	Revision Date
City of Westmorland WWTP	CA0105007	1/28/03	{Year 1}*
Seeley County Water District WWTP	CA0105023	6/25/02	{Year 1}*
Date Gardens Mobile Home Park WWTP	CAO104841	9/24/02	{Year 1}*
McCabe Union High School District WWTP	CA0104281	11/29/00	{Year 1}*

*Year 1 refers to the effective date to revise the permits for these plants, which shall be 30 days after USEPA approval of the TMDL. (USEPA approval date: August 14, 2002)

Additionally, SCWD, DGMHP, and MCUSD shall each:

a. By November 14, 2002 and pursuant to section 13267 of the Water Code, submit a technical report in the form of plans, specifications, and proposed measures to be taken to secure funds to comply with their WLAs by no later than May 14, 2005, and

b. Submit quarterly reports to the Executive Officer describing their progress towards meeting their WLAs. Quarterly reports shall be due on the 15th day of the month following the reporting calendar quarter, and begin the first calendar quarter immediately following USEPA approval.

ii. United States Government

Neither the existing lagoon systems nor the proposed wastewater treatment facilities for the Mexicali metropolitan area include disinfection. Also, there are a significant number of unregulated point and nonpoint sources of bacteria which discharge directly into the New River watershed in Mexicali, and an unknown number of raw sewage bypasses, which are not addressed by the certified projects. Therefore, the projects by themselves will not result in attainment of the bacterial load allocations downstream of the International Boundary. Consequently, it is necessary for the U.S. Government to pursue additional steps to ensure this TMDL complies with the requirements of section 303(d) of the Clean Water Act and ensure discharges of wastes from Mexico will not cause or contribute to a violation of this TMDL.

Therefore, pursuant to section 13225 of the Water Code, the U.S. Section of the International Boundary and Water Commission and USEPA shall:

a. By February 14, 2003, submit a technical report to the Regional Water Board with proposed measures (e.g., plans and specifications for disinfection facilities) to ensure that discharges of wastes from Mexico do not cause or contribute to a violation of this TMDL. The report shall specify the parties responsible for implementation of the measures and include a time schedule for implementation and completion of the measures within three years of USEPA approval of this TMDL.

b. By May 14, 2003, submit a report identifying financial options for implementation of the measures discussed in Task No. “a,” above.

c. Submit semi-annual progress reports to the Regional Water Board regarding progress towards completion of the measures. The semi-annual reports shall be due by the 15th day of the month, and shall begin in the 6th month following submission of the technical report required in 2.2, a.

B. ALAMO RIVER SEDIMENTATION/SILTATION TMDL

1. TMDL Elements

SUMMARY

This TMDL was adopted by:

The California Regional Water Quality Control Board, Colorado River Basin Region on June 27, 2001.
The California State Water Resources Control Board on February 19, 2002.
The Office of Administrative Law on May 3, 2002.
The U.S. Environmental Protection Agency on June 28, 2002.

Table 4-4: ALAMO RIVER SEDIMATATION/SILTATION TMDL ELEMENTS[1]

ELEMENT	DESCRIPTION
Problem Statement (impaired water quality standard)	Excess delivery of sediment to the Alamo River has resulted in degraded conditions that impair the following designated beneficial uses: warm freshwater habitat; wildlife habitat; preservation of threatened, rare, and endangered species habitat; contact- and non-contact recreation; freshwater replenishment. As the Alamo River discharges into the Salton Sea, sediment also threatens the same beneficial uses of the Salton Sea. Specifically, sediment serves as a carrier for DDT, DDT metabolites, and other insoluble pesticides including toxaphene, which pose a threat to aquatic and avian communities and people feeding on fish from the Alamo River; and suspended solids concentrations, sediment loads, and turbidity levels are in violation of water quality objectives. These current concentrations, loads, and levels are also forming objectionable bottom deposits, which are also adversely affecting the beneficial uses of Alamo River.
Numeric Target	200 mg/L Total Suspended Solids (annual average)[2]
Source Analysis	**Source** — **tons/year** Agricultural Drain Discharges: 322,493 In-Stream Erosion & Wind Deposition: 6,623 NPDES Permitted Facilities: 215 International Boundary 146 Total: 329,477
Margin of Safety	8,737 tons/year, (corresponds to 10 mg/L)[3]
Seasonal Variations and Critical Conditions	Both the flow and sedimentation regimes within the Alamo River watershed are relatively stable, and the sediment and water sources within the watershed are relatively uniform and widespread; therefore, this TMDL does not include provisions other than the established load allocations and implementation plan for seasonal variations or critical conditions. Staff's analysis of potential water transfers out of the watershed indicate that the transfers are not likely to affect compliance with this TMDL, but could cause other water quality problems that will need to be addressed by the parties responsible for the transfers.
Loading Capacity	177,247 tons/year[4]

(This table is continued on the following page. Table footnotes are contained at the bottom of the Table.)

Table 4-4: ALAMO RIVER SEDIMATATION/SILTATION TMDL ELEMENTS[1] (continued)

ELEMENT	DESCRIPTION		
Load Allocations and Wasteload Allocations	**Load Allocations:** • Natural sources of sediment to the Alamo River, including erosion and wind deposition, are allocated 8,737 tons/year. • Waste discharges from nonpoint sources into the Alamo River shall not exceed the load allocations specified below:		
	River Reach	**# of IID Drains Identified within Reach**	**Sediment Load Allocation (tons/year)[5,6]**
	Alamo River immediately downstream of the International Boundary, at the IID gauging station just north of the All American Canal, a point identified hereafter at “AR-0”	None	146
	Reach 1: Downstream from the International Boundary to a point approximately 100 feet downstream of the Ninth Street Drain outfall into the river, a point identified hereafter as "AR-1"	8	17,488
	Reach 2: This reach encompasses the river from AR-1 to a point downsteam of the Pomello Drain outfall into the river and upstream of the Graeser Drain outfall into the river, a point hereafter referred to as "AR-2."	7	25,255
	Reach 3: This reach covers the river from AR-2 to a point downstream of the Holtville Main Drain outfall into the river and upstream of the Olive Drain outfall into the river, a point hereafter referred to as "AR-3";	8	24,501
	Reach 4: This reach covers from AR-3 to a point downstream of the Wills Drain outfall into the river and upstream of the Moss Drain outfall into the river, a point hereafter referred to as "AR-4";	12	31,887
	Reach 5: This reach covers the river from AR-4 to a point downstream of Rockwood Drain outfall into the river and upstream of the C Drain outfall into the river, a point hereafter referred to as "AR-5";	22	30,002
	Reach 6: This reach covers the river from AR-5 to the point where it intersects the Garst Road, a point hereafter referred to as "AR-Outlet.”	12	19,469
	Tailwater outfalls discharging directly to the Alamo River.	a	7,830
	Natural Sources		8,737
	Waste Load Allocations: The discharge from point sources shall not exceed the total suspended limits specified under 40 C.F.R. part 122 et seq., and the corresponding mass loading rates.	N/A	3,196

Footnotes for Table No. 4-4:

1. For purposes of measuring compliance, all 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 for determining compliance.

2. The numeric target is a goal that translates current silt/sediment-related Basin Plan narrative objectives and shall not be used for enforcement purposes.

3. The margin of safety is roughly equal to the estimated load from natural sources to the Alamo River. This margin of safety allows for the loading of sediment from natural sources to the river to be double the natural source loading estimated in the Source Analysis without exceeding the Numeric Target.

4. Previously reported as 174,747 due to typographical error.

5. The sediment load allocation for any particular reach shall be distributed proportionately amongst the agricultural drains within that particular reach based on the relative flow contribution of each drain to the total flow contribution to the reach from the drains within the reach. The sediment load allocation will be reviewed every three years following TMDL implementation. The sediment load allocation will vary depending on drain flow.

6. The sediment load allocations herein have been calculated based on the estimated individual average drain flows within the reach for the 1994-1999 period. At lower or higher drain flows, the average annual load allocation for a particular reach shall not exceed the load given by:
   $LA_R = (180)*(Q_R)*(0.0013597)$, where:
   LA_R = Load Allocation for any of the Alamo River reaches identified above (tons/yr).
   Q_R = Reach Flow (ac-ft) = Total flow contribution to the reach from the drains within the reach (ac-ft)

[a] The number of outfalls has not been determined.

Table 4-5[1]: WASTE LOAD ALLOCATIONS FOR POINT SOURCES IN THE ALAMO RIVER WATERSHED

Facility	NPDES #	Discharge Location	NPDES Permit Limits as of 6-2001[2] (tons of suspended solids per year)	Waste Load Allocation[3] (tons of suspended solids per year)
City of Calipatria WWTP	CA 0105015	G Drain	246.0	491.9
City of El Centro WWTP	CA 104426	Central Drain	365.5	731.1
City of Holtville WWTP	CA 0104361	Pear (Palmetto) Drain	38.8	77.7
City of Imperial MWTP	CA 0104400	Rose Drain	64.0	127.9
Heber Public Utilities District WWTP	CA 0104370	Central Drain	20.6	41.1
Imperial Community College District WWTP	CA 104299	Central Drain	4.6	9.1
Sunset Mutual Water Co	CA 104345	Central Drain	2.3	4.6
Country Life MHP	CA 0104264	Central Drain	5.7	11.4
Covanta Heber Geothermal	CA 0104965	Central Drain	195.6	391.1
El Centro Steam Plant	CA 104248	Central Drain	NA	95.0
New Charleston Power Plant	CA 101990	Rose Drain	6.9	13.7
IID Grass Carp Hatchery	CA 7000004	Central Drain	NA	182.8
Rockwood Gas Turbine Station	CA 0104949	Bryant Drain	1.3	2.6
Imperial Valley Resources Biomass Waste Fuel Power Plant	CA 0105066	Rose Drain	NA	15.5
Future Point Sources	NA	NA	NA	1000.0
TOTAL			**1098**	**3196**

Footnotes for Table No. 4-5:

1. Does not include volatile suspended solids determination.
2. Calculated using design flows and 30-day mean TSS limits.
3. Determined using double the current effluent limits to allow for facility expansion. For the three energy generating facilities without current TSS limits, a 30 mg/L TSS limit is used for current effluent limit in this calculation.

2. Implementation Actions for Attainment of TMDL

TMDL attainment shall be in accordance with the schedule contained in Table 4-6:

Table 4-6: INTERIM NUMERIC TARGETS FOR ATTAINMENT OF THE SEDIMENT/SILTATION TMDL[1] FOR THE ALAMO RIVER

Phase	Time Period[2]	Estimated Percent Load Reduction[3]	Interim Target (mg/L)[4]
Phase 1	Years 1 – 3	15%	320
Phase 2	Years 4 – 7	25%	240
Phase 3	Years 8 – 10	10%	216
Phase 4	Years 11 – 13	8%	200

Footnotes for Table No. 4-6:

1. For purposes of measuring compliance, all 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 will be subtracted for determining compliance.

2. Year 1 refers to the effective date to start TMDL implementation, which shall be one year after USEPA approves the TMDL. For example, if USEPA approves the TMDL on November 15, 2001, Year 1 is November 15, 2002, which makes Year 3 November 15, 2005, which makes Year 4 November 15, 2006, and so on.

3. Percent reductions indicate the reduction required in total suspended sediment load from the average concentration of the Alamo River at the beginning of each phase, beginning with the 1980-2000 average concentration of 377 mg/L.

4. These interim targets are goals which translate current silt/sediment related Basin Plan narrative objectives and are not intended to specifically be used for enforcement purposes.

C. NEW RIVER SEDIMENTATION/SILTATION TMDL

SUMMARY

This TMDL was adopted by the California Regional Water Quality Control Board, Colorado River Basin Region in June 2002; approved by the Office of Administrative Law in January 2003; and approved by the U.S. Environmental Protection Agency on March 31, 2003.

1. TMDL ELEMENTS

Table 4-7: NEW RIVER SEDIMENTATION/SILTATION TMDL ELEMENTS

ELEMENT	DESCRIPTION
Problem Statement (impaired water quality standard)	Excess delivery of sediment to the New River has resulted in degraded conditions that impair designated beneficial uses: warm freshwater habitat; wildlife habitat; preservation of threatened, rare, and endangered species habitat; contact- and non-contact recreation; freshwater replenishment. As the New River discharges into the Salton Sea, sediment also threatens the same beneficial uses of the Salton Sea. Sediment serves as a carrier for DDT, DDT metabolites, and other insoluble pesticides including toxaphene, which pose a threat to aquatic and avian communities and people feeding on fish from the New River; and suspended solids concentrations, sediment loads, and turbidity levels are in violation of water quality objectives. These current concentrations, loads, and levels are also forming objectionable bottom deposits, which are also adversely affecting the beneficial uses of New River.
Numeric Target	200 mg/L Total Suspended Solids (annual average)[1]
Source Analysis	**Source** — **tons/year** Agricultural Drain Discharges: 137,715 In-Stream Erosion & Wind Deposition: 6,409 NPDES Permitted Facilities: 356 International Boundary 11,265 Total: 155,745
Margin of Safety	6,409 tons/year (corresponds to 10 mg/L)
Seasonal Variations and Critical Conditions	Both the flow and sedimentation regimes within the New River watershed are relatively stable, and the sediment and water sources within the watershed are relatively uniform and widespread; therefore, this TMDL does not include provisions other than the established load allocations and implementation plan for seasonal variations or critical conditions. Staff's analysis of potential water transfers out of the watershed indicate that the transfers are not likely to affect compliance with this TMDL, but could cause other water quality problems that will need to be addressed by the parties responsible for the transfers.
Loading Capacity	127,881 tons/year

(This table is continued on the following page.)

[2] The numeric target is a goal that translates current silt/sediment-related Basin Plan narrative objectives and shall not be used for enforcement purposes.

Table 4-7: NEW RIVER SEDIMENTATION/SILTATION TMDL ELEMENTS (cont'd.)

ELEMENT	DESCRIPTION		
Load Allocations and Wasteload Allocations	**Load Allocations:** • Natural sources of sediment to the New River, including erosion and wind deposition, are allocated 6,409 tons/year. • Waste discharges from nonpoint sources into the New River shall not exceed the load allocations specified below:		
	River Reach	**# of IID Drains Identified within Reach**	**Sediment Load Allocation (tons/year)[1,2]**
	New River immediately downstream of the International Boundary, at the USGS gauging station, a point identified hereafter at "NR-0"	None	
	Reach 1: Downstream from the International Boundary to the intersection of the Evan Hewes Road Bridge and the New River Channel, a point identified hereafter as "NR-1"	14	20,730
	Reach 2: This reach encompasses the river from NR-1 to Drop Structure 2, a point upstream of the Rutheford Road Bridge hereafter referred to as "NR-2."	17	32,350
	Reach 3: This reach covers the river from NR-2 to the point where it intersects the Lack Road Bridge, a point hereafter referred to as "NR-Outlet."	23	35,835
	Direct Outfalls to River	**# of IID Drains Identified**	**Sediment Load Allocation (tons/year)[1,2]**
	Tailwater outfalls discharging directly to the New River	[a]	14,884
	Natural Sources		
	Natural sources		6,409
	Waste Load Allocations: The discharge from point sources (NPDES permits) shall not exceed the total suspended solids limits specified under 40 C.F.R. part 122 et seq., and the corresponding mass loading rates.		

Footnotes for Table No. 4-7:

1. The sediment load allocation for any particular applicable reach shall be distributed proportionately amongst the agricultural drains within that particular reach based on the relative flow contribution of each drain to the total flow contribution to the reach from the drains within the reach. The sediment load allocation will be reviewed every three years following TMDL implementation. The sediment load allocation will vary depending on drain flow.

2. The sediment load allocations have been calculated based on the estimated individual average drain flows within the reach for the 1995-2000 period. At lower or higher drain flows, the average annual load allocation for a particular reach shall not exceed the load given by:

$LA_R = (180)*(Q_R)*(0.0013597)$, where:
LA_R = Load Allocation for any of the New River reaches identified above (tons/yr).

Q_R = Reach Flow (ac-ft) = Total flow contribution to reach from the drains within the reach (ac-ft). The sediment load allocation will be reviewed by the Executive Officer every three years following TMDL implementation.

[a] The number of outfalls has not been determined.

2. Implementation Actions for Attainment of TMDL

TMDL attainment shall be in accordance with the schedule contained in Table 4-8:

Table 4-8: INTERIM NUMERIC TARGETS FOR ATTAINMENT OF THE SEDIMENTATION/SILTATION TMDL FOR THE NEW RIVER

Phase	Time Period[1]	Estimated Percent Load Reduction[2]	Interim Target (mg/L)[3]
Phase 1	Years 1 – 3	5%	229
Phase 2	Years 4 – 6	7%	213
Phase 3	Years 7 – 9	4%	204
Phase 4	Years 10 – 12	2%	200

Footnotes for Table No. 4-8:

1. Year 1 refers to the effective date to start TMDL implementation, which shall be one year after USEPA approves the TMDL. For example, if USEPA approves the TMDL on November 15, 2002, Year 1 is November 15, 2003, which makes Year 3 November 15, 2005, which makes Year 4 November 15, 2006, and so on.

2. Percent reductions indicate the reduction required in total suspended sediment load from the average concentration of the New River at the beginning of each phase, beginning with the 1980-2001 average concentration of 306 mg/L.

3. These interim targets are goals which translate current silt/sediment related Basin Plan narrative objectives and are not intended to specifically be used for enforcement purposes.

D. IMPERIAL VALLEY DRAINS SEDIMENTATION/SILTATION TMDL

SUMMARY

This TMDL was adopted by the California Regional Water Quality Control Board, Colorado River Basin Region in January 2005.

1. TMDL ELEMENTS

The Imperial Valley Drains Sedimentation/Siltation TMDL contains allocations that apply to three Imperial Valley drains (Niland 2, P, and Pumice) and their tributary drains (Vail 4A, Vail 4, Vail 3A, Vail 3, and Vail 2A feed into Pumice). These drains (among others) empty directly into the Salton Sea. Figure 4-2 is a map of the three drains (and their tributary drains) for which allocations have been specified in this TMDL.

Figure 4-2: DRAINS (NILAN 2, P, AND PUMICE AND THEIR TRIBUTARY DRAINS) FOR WHICH ALLOCATION HAVE BEEN SPECIFIED IN THIS TMDL

Table 4-9: IMPERIAL VALLEY DRAINS (NILAND 2, P, AND PUMICE) SEDIMENTATION/SILTATION TMDL ELEMENTS

ELEMENT	DESCRIPTION
Problem Statement (impaired water quality standard)	Excess delivery of sediment to Niland 2, P, and Pumice Imperial Valley drains has resulted in degraded conditions that impair designated beneficial uses: warm freshwater habitat; wildlife habitat; preservation of threatened, rare, or endangered species; water contact and non-contact water recreation; and freshwater replenishment. As the drains discharge into the Salton Sea, sediment also threatens the same beneficial uses of the Salton Sea. Sediment serves as a carrier for DDT, DDT metabolites, and other insoluble pesticides including toxaphene, which pose a threat to aquatic and avian communities and people feeding on fish from the drains. Suspended solids concentrations, sediment loads, and turbidity levels are in violation of water quality objectives. These current concentrations, loads, and levels also are forming objectionable bottom deposits, which are adversely affecting the beneficial uses.
Numeric Target	200 mg/L Total Suspended Solids (annual average)[3]
Source Analysis	**Source** — **tons/year** Agricultural Tailwater — 11,602.4 Natural Sources (In-Stream Erosion, Wind Deposition, Wildlife) — 277.4 Storm Event Runoff from Farm Land — 50.5 Total — 11,930.0
	LOAD ALLOCATIONS
Margin of Safety	277.4 tons/year, (corresponds to TSS of 10 mg/L)
Seasonal Variations and Critical Conditions	Seasonal differences exist regarding local water flow, but not local climate (e.g., rainfall). Sediment becomes suspended in tailwater regardless of the season. However, more flow at certain times of year means that more sediment becomes suspended in drains at certain times of year. To address this seasonal variation, the numeric target is expressed in terms of an annual average. If data for certain months exceeds the load allocation, this may be tempered by low data readings in other months. Therefore, variability is accounted for and addressed by use of an annual average.
Loading Capacity (Total Assimilative Capacity)	5,547.2 tons/year, (corresponds to TSS of 200 mg/L)

(This table is continued on the following page.)

[3]The numeric target is a goal that translates current sediment/silt-related Basin Plan narrative objectives and shall not be used for enforcement purposes.

Table 4-9: IMPERIAL VALLEY DRAINS (NILAND 2, P, AND PUMICE) SEDIMENTATION/SILTATION TMDL ELEMENTS (continued)

ELEMENT	DESCRIPTION		
Load Allocations and Wasteload Alloocations	**Load Allocations:** • Natural sources of sediment to Niland 2, P, and Pumice Imperial Valley Drains are allocated 277.4 tons/year. • Waste discharges from nonpoint sources into Niland 2, P, and Pumice Imperial Valley Drains shall not exceed load allocations specified below:		
	Drain Sources	**# of Drains Included in Segment**	**Sediment Load Allocation (tons/year)[1]**
	Niland 2	1	300.1
	P	1	638.2
	Pumice, including 5 Vail drains (Vail 4A, Vail 4, Vail 3A, Vail 3, and Vail 2A) that drain into it	6	3,904.3
	Future Growth	None	149.8
	Total Load Allocation for drains (corresponds to TSS of 180 mg/L)	8	4,992.4
	Other Sources		
	Natural Sources	Not applicable	277.4
	Margin of Safety	Not applicable	277.4
	Total Load Allocation for other sources (corresponds to TSS of 20 mg/L)	Not applicable	554.8
	Waste Load Allocations: • The discharge from point sources (NPDES permits) shall not exceed the total suspended solids limits specified under 40 C.F.R. part 122 et seq., and the corresponding mass loading rates.		

Footnote for Table No. 4-9:

1. The sediment load allocation for any particular drain shall be distributed proportionately amongst the agricultural drains in the project area, based on the relative flow contribution of each drain to the total flow contribution of all drains in the project area. The sediment load allocation will be reviewed every three years following TMDL implementation. The sediment load allocation will vary depending on drain flow.

2. Implementation Actions for Attainment of TMDL

The Implementation Plan for this TMDL applies not just to the three drains (Niland 2, P, and Pumice) for which allocations are specified, but to all Imperial Valley drains that empty directly into the Salton Sea. This is necessary because all of the drains contribute, albeit in varying degrees, to sediment/silt impacts on water quality standards of the drains and the Salton Sea, and are so listed pursuant to section 303(d) of the Clean Water Act. This approach ensures Valley-wide consistency in controlling sediment in all drains that empty directly into the Salton Sea,

prevents a piece-meal approach in controlling sediment, and will enable de-listing of all the drains simultaneously upon successful completion of the control measures.

TMDL attainment shall be in accordance with the schedule contained in Table 4-10:

Table 4-10: INTERIM NUMERIC TARGETS FOR ATTAINMENT OF THE SEDIMENT/SILTATION TMDL FOR IMPERIAL VALLEY DRAINS

Phase	Time Period	Estimated Percent Load Reduction[1]	Interim Target (mg/L)[2]
Phase 1	2005 through 2006	10%	376
Phase 2	2007 through 2009	25%	282
Phase 3	2010 through 2012	20%	226
Phase 4	2013 through 2015	12%	200

Footnotes for Table No. 4-10:

1. The reduction required in the average concentration at the end of each phase, beginning with the current (2002) average concentration of 418 mg/L.

2. The interim numeric target is a goal that translates current sediment/silt-related Basin Plan narrative objectives and shall not be used for enforcement purposes.

E. FURTHER IMPLEMENTATION ACTIONS AND REGULATIONS FOR ALL IMPERIAL VALLEY SEDIMENTATION/SILTATION TMDLs

1. Designated Management Actions

Consistent with the State NPS Program, sediment pollution shall be controlled by responsible parties through implementation of Management Practices (MPs). For the purpose of this Section, responsible parties include

- Farmers/landowners, renters/lessees, and operators/growers discharging waste into Imperial Valley Drains, New River, and Alamo River in a manner that causes or could cause violation of load allocations and/or exceedance of the Sediment/Silt numeric target;
- The Imperial Irrigation District;
- The United States Environmental Protection Agency and U.S. Section of the International Boundary and Water Commission, for wastes discharged from Mexico into the Alamo River and New River.

Responsible parties who already have complied with the requirements of previously-adopted Sedimentation/Siltation TMDLs are not required to re-submit reports, workplans, or other information already submitted to the Regional Water Board. Responsible parties who are subject to multiple TMDLs are encouraged, but not required, to combine submissions so that a single report or workplan satisfies the requirements of all applicable TMDLs. Early implementation of actions by responsible parties will be welcomed by the Regional Water Board, to simplify timelines between all Imperial Valley Sedimentation/Siltation TMDLs.

i. Farm Landowners, Renters/Lessees, Operators/Growers

Farm landowners, renters/lessees, and/or operators/growers shall submit self-determined Sediment Control Programs (Water Quality Management Plans) to the Regional Water Board by:

Table 4-11 SEDIMENT CONTROL PROGRAM DUE DATES

TMDL	Date
Alamo River	September 28, 2003
New River	June 30, 2004
Imperial Valley Drains	6 months after U.S. Environmental Protection Agency (USEPA) approval

and on an annual basis thereafter.

The Sediment Control Program may be submitted by an individual farm landowner, renter/lessee, or operator/grower (hereafter "Individual Program") or by a group of farm landowners, renters/lessees, and/or operators/growers (hereafter "Group Program"). Individual and Group Sediment Control Programs (Water Quality Management Plans) are required pursuant to Water Code section 13267. These programs are necessary to achieve compliance with these TMDLs and applicable water quality objectives, and to monitor/assess MP effectiveness. Regional Water Board staff strongly recommends that individual farm landowners, renters/lessess, and/or operators/growers work with the Imperial County Farm Bureau (ICFB) to submit a Group Plan through the ICFB's Watershed Program. Group Plans offer landowners the ability to work together to solve their erosion problems, while also affording a measure of privacy to the members of the Group. A Group Program must provide information on a drain- or drainshed basis regarding which responsible parties are enrolled in the program. Additionally, a group may provide a single monitoring and reporting plan as long as results are representative of the efficiency of the group's various control practices, in order to measure overall water quality improvements.

In either case (whether a Group or Individual Plan), the program shall, at a minimum, address the following in their Sediment Control Programs:

1. Name of farm landowner, business address, mailing address, and phone number
2. Name of farm operator/grower, business address, mailing address, and phone number
3. Problem assessment, including site conditions(s), crop(s), potential or current NPS problems, problem severity, and problem frequency
4. Statement of goals (measurable outcomes or products)
5. Existing and/or alternative sediment management practices (technical/economic feasibility, desired outcome, etc.)
6. Timetable for implementation of management practices (measured in either water quality improvement or level of implementation)
7. Monitoring, including progress toward goals, and effectiveness of management decisions
8. Mechanism for reporting planned and completed implementation actions to the Regional Water Board.

A group program may address Item Nos. 1 through 6, above, for the individuals enrolled in the program as a group. The program shall nevertheless provide sufficient information so that the Regional Water Board can: (a) determine at a minimum on a drain- or drainshed-basis which responsible parties are enrolled in the program; (b) the types of sediment problems (i.e., severity, magnitude, and frequency) either the group as a whole or the drain/drainshed face; (c) the proposed sediment management practices for the group; and (d) the time table for implementation of the management practices (measured in either water quality improvement and/or level of implementation). Regarding Item Nos. 7 and 8, a single monitoring and reporting plan may also be proposed for a group provided that the monitoring and reporting will provide results that are representative of the efficiency of various control practices within the group and representative enough to measure overall water quality improvements. Reported implementation of MPs shall be submitted to the Regional Water Board under penalty of perjury.

All programs and reports specified herein are requested pursuant to section 13267 of the Water Code. In accordance with section 13267, subdivision (b)(2) of the Water Code, when requested by the responsible party or group furnishing a program, the portions of a program, which might disclose trade secrets or secret processes, shall

not be made available for inspection by the public but shall be made available to governmental agencies for use in making studies. However, these portions of a program shall be available for use by the Regional Water Board or any state agency in judicial review or enforcement proceedings involving the person or group of persons furnishing the report.

ii. Imperial Irrigation District

Table 4-12 REVISED DWQIP DUE DATES

*TMDL	Date
Alamo River	September 28, 2003
New River	June 30, 2004
Imperial Valley Drains	6 months after USEPA approval

The Imperial Irrigation District shall submit to the Regional Water Board a revised Drain Water Quality Improvement Plan (DWQIP) with a proposed program to control and monitor water quality impacts caused by drain maintenance operations within the Alamo and New River and Imperial Valley Drains Watersheds and dredging operations in the Alamo and New River and Imperial Valley Drains. The revised DWQIP shall be subject to the approval of the Executive Officer and shall address, but need not be limited to, items “a” and “b,” below:

(a) Drain and River Deltas Maintenance

- Reduction in drain cleaning and dredging activities to the practical extent allowed by the implementation of on- and off-field sediment control MPs by farmers landowners, renters/lessees, operators/growers and the MP effectiveness in reducing silt built up in the drains and the New and Alamo River Deltas and Imperial Valley Drains to avoid impacts on sensitive resources.
- Mechanism(s) to assess effectiveness of such reduction

(b) Drain Water Quality Monitoring Plan

The revised DWQIP shall consist of a proposed program to monitor the New and Alamo Rivers and Imperial Valley Drains:

- Water quality impacts caused by dredging operations in the drains and to monitor the effects that dredging operations in the New and Alamo River Deltas and Imperial Valley Drains have on compliance with the rivers' and drains’ water quality standards;
- Representative samples from the water column of all major drains and a representative number of the small drains tributary to the New and Alamo Rivers and those drains emptying directly to the Salton Sea for analyses of flow, TSS, Turbidity, and nutrients. Samples collected from the last drain weir before the drain outfalls to the river shall be considered representative of the water column;
- A representative number of source water locations for TSS;
- A representative number of drains at a location sufficiently upstream of the outfalls to the river so as to provide an idea of how much of the silt is being reduced by field MPs; and
- Sediment impacts from storm events.

(c) Information on Agricultural Dischargers

Table 4-13 IID SUBMISSION OF DATA ON AGRICULTURAL DISCHARGERS DUE DATES

TMDL	Date
Alamo River	October 28, 2003
New River	July 31, 2004
Imperial Valley Drains	6 months after USEPA approval

On a semi-annual basis after the completion of deadlines in Table 4-13, the IID shall submit the following information to the Regional Water Board on the agricultural dischargers within the District:

- The names and mailing addresses for all the owners of properties within the IID service area that are being used for irrigated agriculture, as well as the location of their properties.
- The names and mailing addresses for all water account holders within the IID service area, and the location of all fields that they irrigate.
- For each parcel within the IID service area, the location of the parcel, the irrigation canal and gates serving the parcel, the drop boxes draining the parcel, the drains that these drop boxes empty into, and the fields located within each parcel.
- For each field within the IID service area, the parcel within which each field is located, the area and location of each field within the parcel, the irrigation canal and gates serving each field, the drop boxes draining each field and the drains to which these drop boxes drain.
- The above information should be submitted in an electronic, tabular, and easily geo-referenced format.

No later than 60 days following the Executive Officer's approval of the revised DWQIP, the IID shall submit to the Executive Officer a Quality Assurance Project Plan (QAPP) prepared in accordance with Requirements for Quality Assurance Project Plans for Environmental Data Operations, EPA QA/R-5, 1994 for the revised DWQIP. The QAPP is subject to the approval of the Executive Officer. No later than 30 days following the Executive Officer's approval of the QAPP, the IID shall implement the QAPP and submit quarterly and annual monitoring reports to the Executive Officer. The quarterly reports shall be due on the month following the calendar's quarter and shall transmit a quarterly summary of the results for the previous three months. The annual reports shall be due on February 15 and summarize the year's data, quality control reports, and any trends in the data.

The DWQIP and QAPP are required pursuant to Water Code sections 13225 and 13267. These are necessary to achieve compliance with this TMDL and the applicable water quality objectives and to monitor/assess effectiveness of MPs in a cost-effective manner. IID is required to provide this information because it operates and maintains the subject drains and because it is the only entity with access to some of the information required in the DWQIP.

All plans and reports requested herein are requested pursuant to section 13267 of the Water Code and shall be prepared under the direct supervision of a California registered civil engineer and/or agricultural engineer, with experience in the preparation of this type of program.

iii. United States Environmental Protection Agency (USEPA) and U.S. Section of the International Boundary and Water Commission (USIBWC)

The USEPA and USIBWC are not responsible parties for the Imperial Valley Drains Sedimentation/Siltation TMDL. The USEPA and USIBWC are responsible parties for the Alamo River and New River Sedimentation/Siltation TMDLs.

Table 4-14 TECHNICAL REPORT DUE DATES

TMDL	Date
Alamo River	September 28, 2003
New River	June 30, 2004

The USEPA and/or the U.S. Section of the IBWC shall submit to the Regional Water Board a technical report pursuant to section 13225 of the Water Code describing the proposed control measures, monitoring plan and reporting procedures, and quality assurance procedures the U.S. Government proposes to take to ensure that discharges of wastes from Mexico do not violate or contribute to a violation of these TMDLs, particularly a violation of the Load Allocation immediately downstream of the International Boundary, at the points identified as "AR-0." and "NR-0." The report shall be prepared under the direct supervision of a California registered civil engineer, with experience in the preparation of these types of reports and shall include a time schedule for implementation.

2. RECOMMENDED MANAGEMENT PRACTICES (MPS)

Implementation of MPs should normally include: (1) consideration of specific site conditions; (2) monitoring to assure that practices are properly applied and are effective; (3) improvement of a MP or implementation of additional MPs or other management practices when needed to resolve a deficiency and; (4) mitigation of a problem where practices are not effective. The practices listed herein are a compilation of MPs recommended by the Imperial Valley Sedimentation/Siltation TMDL Technical Advisory Committee (Silt TMDL TAC), Natural Resources Conservation Services Field Office Technical Guide (NRCS FOTG), IID, and University of California Cooperative Extension (Holtville Field Station). Inclusion of practices herein is not meant to imply or establish a prescriptive list of 'one size fits all' preferred practices for the Imperial Valley Drains, Salton Sea, and Alamo and New River Basins. These recommendations do not preclude dischargers from implementing other proven sediment management practices. Identification of the most appropriate controls to achieve the TMDL for site- and crop-specific conditions is best made by the dischargers relying on technical resource agencies and organizations. The listed practices are recommended because they have been documented to be effective under a variety of circumstances. Under many circumstances, implementation of a combination of MPs may be necessary to ensure that discharges do not adversely impact water quality. In addition, the effectiveness of many MPs can be greatly increased when used in conjunction with other MPs.

i. On-Field Sediment Control MPs

The following practices have been recommended for implementation as on-field sediment-control MPs (references are in brackets):

- **Tailwater Drop Box with Raised Grade Board (Imperial Irrigation District Regulation No. 39)**
  This practice involves maintenance of the grade board at an elevation high enough to minimize erosion. In many situations the grade board elevation can be set higher than required by IID Regulations, especially when anticipated tailwater flows will not reach an elevation that will cause crop damage.

  Imperial Irrigation District's Regulation 39 (required by IID) calls for maintenance of field drainage structures, and states in part, "It is the responsibility of each water user to maintain a tailwater structure and approach channel in acceptable condition, in order to qualify for delivery of water. An acceptable structure shall have vertical walls and a permanent, level grade board set a maximum of 12 inches below the natural surface. If the situation warrants, and at the discretion of the district, 18 inches maximum may be allowed."

  See also: Imperial Irrigation District Regulation No. 39, NRCS FOTG Conservation Practice "Structure for Water Control" (Code 587).

- **Improved Drop Box with Widened Weir and Raised Grade Board**
  This practice involves widening the drop box overpour weir and maintaining the grade board at an elevation high enough to minimize erosion. Widening the drop box overpour weir enables the weir elevation to be set higher without raising the surface elevation of the water above the acceptable level. Higher weir elevations allow for an increased tailwater ditch cross section, and reduced erosion when water leaving the field enters the tailwater ditch. See also: NRCS FOTG Conservation Practice "Structure for Water Control" (Code 587).

- **Pan Ditch (Enlarged Tailwater Ditch Cross Section)**
  This practice involves widening the tailwater ditch and making it very shallow, which will result in decreased tailwater velocity and depth. The water must be checked downstream of the oversized area to make the cross section of the water as large as practical. The slower the velocity, the more sediment will settle out of the water and stay in the field, and the less will be picked up by the moving water. Effectiveness can be further improved by planting grass filter strips in the tailwater ditch and/or installing tailwater ditch checks.

- **Tailwater Ditch Checks or Check Dams**
  Tailwater Ditch Checks are temporary or permanent dams that hold the water level well above the ground. They can be placed at intervals in tailwater ditches, especially those with steeper slopes. They increase the cross section of the stream of water, decrease the water velocity and reduce erosion, and may cause sediment

already in the water to settle out. Tailwater Ditch Checks can be constructed of plastic, concrete, fiber, metal or other suitable material. If plastic sheets are used, care must be taken not to allow pieces of the plastic to be carried downstream with the water. In order to be effective, this practice must be utilized in condition where water velocities will not wash out the check dams or the sides of the tailwater ditch around the dams. Tailwater ditch checks or check dams are expected to work best in wide "pan ditches" where the width of tailwater stream can be effectively increased.

- **Field to Tailditch Transition**
  This practice involves use of spillways or pipes where water moves from fields into tailwater ditches, allowing the tailwater to fall down into the tailwater ditch from the field without washing across and eroding the soil. Spillways might be constructed of plastic, concrete, metal, or other suitable material. If plastic sheets are used, care must be taken not to allow deterioration to cause pieces of the plastic to be carried downstream with the water. This procedure may be useful on fields irrigated in bordered-strips and furrows. Care must be taken to address erosion that may be caused in the tailditch at the location where the spillway discharges to the tailditch.

- **Irrigation Land Leveling**
  This practice involves maintaining or adjusting field slope so as to avoid excessive slopes or low spots at the tail end of a field. In some cases it might be advantageous to maintain a reduced main or cross slope, which facilitates more uniform distribution of irrigation water and can result in reduced salt build-up in the soil, increased production, reduced tailwater, and decreased erosion. See also: NRCS FOTG Conservation Practice "Irrigation Land Leveling" (Code 464).

- **Filter Strips**
  This practice involves elimination of borders on the last 20 to 200 feet of the field. Planted crop is maintained to the end of the field and tailwater from upper lands is used to irrigate the crop at the ends of the adjacent lower lands. It is important that the main slope on the lower end of the field is no greater than on the balance of the field. A reduced slope might be better. With no tailwater ditch, there should be very little erosion as the water slowly moves across a wide area of the field to the tailwater box. Some sediment might settle out as the crop slows the water while it moves across the field. This could be used with water tolerant crops or special soil conditions. See also: NRCS FOTG Conservation Practice "Filter Strip" (Code 393).

- **Irrigation Water Management**
  Irrigation Water Management is defined as determining and controlling the rate, amount, and timing of irrigation water in a planned manner. Effective implementation of this practice can result in minimizing on-farm soil erosion and the subsequent transport of sediments into receiving waters. S Specific methods of Irrigation Water Management include: Surge Irrigation, Cut-Back Irrigation, Irrigation Scheduling, and the Runoff Reduction Method. In some cases, irrigation water management could include the employment of an additional irrigator to assist in better monitoring and managing irrigation water and addressing potential erosion problems. Irrigator Water Quality Training could provide irrigators with the knowledge necessarily to implement IWM and other sediment control practices. See also: NRCS FOTG Conservation Practice "Improved Water Application" (Code 197, CA Interim) and NRCS FOTG Conservation Practice "Irrigation Water Management" (Code 449).

- **Sprinkler Irrigation**
  Sprinkler irrigation involves water distribution by means of sprinklers or spray nozzles. The purpose of this practice is to efficiently and uniformly apply irrigation water to maintain adequate soils moisture for optimum plant growth without causing excessive water loss, erosion, or reduced water quality. See also: NRCS FOTG Conservation Practice "Irrigation System, Sprinkler" (Code 442).

- **Drip Irrigation**
  Drip irrigation consists of a network of pipes and emitters that apply water to the surface or subsurface of the soil in the form of spray or a small stream.

- **Reduced Tillage**
  This practice involves limiting the use of heavy farm machinery to only the operations required for crop growing and harvesting. The goal is to eliminate at least one cultivation per crop. Reduced tillage practices include working seed beds only enough to properly plant, avoiding work in wet soil, varying tillage depth from year to

year, cultivating only to control weeds, and chiseling when dry to break up plow plan. Such practices minimize erosion and sedimentation that may occur in furrows.

- **Furrow Dikes (also known as "C-Taps")**
  Furrow dikes are small dikes created in furrows to manage the velocity of the water in the furrow. They can be either constructed of earth and built with an attachment to tillage equipment, pre-manufactured "C-Taps," or other material, including rolled fiber mat, plastic, etc.

ii. Off-Field Sediment Control MPs

The following practices have been recommended as off-field sediment-control BMPs (references are in brackets):

- **Channel Vegetation/Grassed Waterway**
  This practice involves establishing and maintaining adequate plants on channel banks and associated areas to stabilize channel banks and adjacent areas and reduce erosion and sedimentation, and establishing maximum side slopes. This practice serves to stabilize the channel bank, reducing the potential for bank failure. See also: NRCS FOTG Conservation Practice "Channel Vegetation" (Code 322) and NRCS FOTG Conservation Practice "Grassed Waterway" (Code 412).

- **Irrigation Canal or Lateral**
  This practice applies to irrigation drainage channels. One objective of the practice is to prevent erosion or degradation of water quality. Drainage channels should be designed to develop velocities that are non-erosive for the soil materials of which the channel is constructed. See also: NRCS FOTG Conservation Practice "Irrigation Canal or Lateral" (Code 320).

- **Sediment Basins**
  Sediment basins are constructed to collect and store debris or sediment. The capacity of the sediment basin should be sufficient to store irrigation tailwater flows for long enough to allow most of the sediments within the water to settle out. The sediment basins also must be cleaned regularly to maintain their capacity and effectiveness.

iii. Estimated Cost of Implementation And Sources Of Financing For Imperial Valley Drains, And New And Alamo Rivers

The estimated total cost of implementing MPs range from just over $2.00 to $52.50 per acre per year, which is estimated to be less than or about 2% of production cost. The development of Farm Water Quality Management Plans are estimated to be less than $200.00 per field. Monitoring costs are estimated to range from $100.00 to $500.00 depending on the monitoring program. The preparation of the IID monitoring plan is estimated to be $25,000. Implementation of the IID monitoring plan is estimated to be $70,000 per year, and the characterization of dredging impacts is estimated to be $20,000.

Potential sources of financing are: Private financing by individual sources; Bond indebtedness or loans from government institutions; Surcharge on water deliveries to lands contributing to the sediment pollution problem; Taxes and fees levied by the Irrigation District that provides drainage management; state and/or federal grants and low-interest loans, including State Proposition 13 (Costa-Machado Act of 2000) grant funds and federal Clean Water Act section 319(h) grant funds; and, Single purpose appropriations from Federal and/or state legislative bodies.

iv. Recommended Actions for Cooperating Agencies

(a) <u>Imperial County Farm Bureau Watershed Program</u>

The Imperial County Farm Bureau (ICFB) initiated a "Watershed Program" in 1999, in which it committed to development of program elements, including "outreach programs and mechanisms to encourage and foster an effective self-determined approach to attainment of TMDL load applications." To implement the program, the ICFB has committed to make contact with every farm landowner, renter/lessee, and operator/grower, and to supply material related to the TMDL process, its ramifications, and implementation alternatives. The specific goals of the

Watershed Program include: (1) coordination of grass roots educational program to make farmers aware of the TMDL process, and educate farmers on how to reduce sediment/silt leaving their fields, (2) maintenance of informational and data website, (3) coordination of workshops with local technical assistance agencies, and (4) cooperation with Regional Water Board staff to track and report MP effectiveness. The ICFB has designated the geographical areas for ten (10) subwatershed groups, each covering approximately 50,000 acres of irrigated land. These geographical designations are to be utilized in the ICFB Watershed Program's approach to education and implementation. Although the Imperial County Farm Bureau is not a regulatory agency, it has committed to develop and implement a "Watershed Program" that can play a vital role in achieving TMDL waste load allocations. Therefore, it is appropriate to recommend that the ICFB prepare, submit, and implement the following:

(1) ICFB Watershed Program Plan

The Imperial County Farm Bureau should:

- By:

Table 4-15 LETTER ISSUE DUE DATES

TMDL	Date
Alamo River	July 28, 2003
New River	April 30, 2004
Imperial Valley Drains	3 months after USEPA approval

issue letters to all potential program participants within the project area that are enrolled in the ICFB Watershed Program, informing them that the TMDL is being implemented and stating what is required of them.

- By:

Table 4-16 LIST OF PROGRAM PARTICIPANTS DUE DATES

TMDL	Date
Alamo River	September 28, 2003
New River	June 30, 2004
Imperial Valley Drains	5 months after USEPA approval

provide the Regional Water Board with a list of program participants, organized by subwatershed ("drainshed").

- By:

Table 4-17 ICFB WATERSHED PROGRAM PLAN DUE DATES

TMDL	Date
Alamo River	September 28, 2003
New River	June 30, 2004
Imperial Valley Drains	6 months after USEPA approval

submit the ICFB Watershed Program Plan to the Regional Water Board. The Plan should (1) identify measurable environmental and programmatic goals; (2) describe aggressive, reasonable milestones and timelines for development and implementation of TMDL outreach plans; (3) describe aggressive, reasonable milestones and timelines for development of sub-watershed ("drainshed") plans; (4) describe a commitment to develop and implement a tracking and reporting program.

- Submit semi-annual reports to the Regional Water Board's Executive Officer that describe the progress of each subwatershed groups, any technical assistance workshops that are planned or were conducted, and any pertinent information.

(2) ICFB Tracking and Reporting Procedures

The Imperial County Farm Bureau should also:

- By:

Table 4-18 TRACKING IMPLEMENTATION PLAN DUE DATES

TMDL	Date
Alamo River	October 28, 2003
New River	July 31, 2004
Imperial Valley Drains	7 months after USEPA approval

submit a plan to the Regional Water Board's Executive Officer describing tracking and reporting process for (1) implementation of MPs (and other proven management practices) and (2) MP performance.

- Implement the tracking and reporting procedures in accordance with the Implementation Plan.
- Submit a yearly summary report to the Regional Water Board's Executive Officer by 15th of February of each year.

(b) University of California Cooperative Extension

The Regional Water Board supports efforts of the University of California Cooperative Extension to provide interested growers information on sediment control MPs, implement projects qualitatively assessing MP performance, and develop farm water quality planning programs.

(c) NRCS

The Regional Water Board recommends that the NRCS require control of irrigation-induced erosion as part of the Farm Plans developed under the Environmental Quality Incentives Program (EQIP) or other federal grant programs.

F. NEW RIVER AT THE INTERNATIONAL BOUNDARY TRASH TMDL

1. TMDL Elements

For the purpose of this TMDL, trash is defined as human-caused litter. "Litter" is defined in California Government Code section 68055.1(g) as follows:

"Litter means all improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the state, but not including the properly discarded waste of the primary processing of agriculture, mining, logging, sawmilling or manufacturing […]."

Table 4-19: NEW RIVER AT THE INTERNATIONAL BOUNDARY TRASH TMDL ELEMENTS

ELEMENT	DESCRIPTION
Problem Statement (impaired water quality standard)	Trash deposited in the New River and its tributaries in Mexico has degraded U.S. water quality and impaired the following designated beneficial uses of the U.S. section of the New River: warm freshwater habitat; wildlife habitat; preservation of threatened rare, or endangered species; water contact recreation; non-contact water recreation; and freshwater replenishment. Trash adversely affects fish and wildlife communities. Trash also causes secondary water quality impacts to the River's terminus at the Salton Sea because trash serves as a carrier for pathogens, dissolved organic matter, and volatile organic compounds that pose a public health threat to people and fish and wildlife communities. Trash in the New River violates Basin Plan water quality objectives, including: (a) general surface water objectives (Aesthetic Qualities, Tainting Substances, Dissolved Oxygen, Suspended Solids and Settleable Solids, Biostimulatory Substances, and Turbidity), and (b) specific surface water objectives for the New River at the International Boundary (qualitative standards 1 through 5 of Minute No. 264 of the Mexican-American Water Treaty).

Numeric Target[1]	The numeric target established by this TMDL is zero pounds/day of trash.
Source Analysis **Source Analysis (continued)**	**Source** — **pounds/year** Mexican wastewater drains/reaches — 240,000 Natural Sources — 0 Total — 240,000 pounds/year (or 658 pounds/day)
Margin of Safety	There is an implicit margin of safety for this TMDL, meaning that the margin of safety is incorporated into the conservative processes used to develop the TMDL (i.e., numeric target is zero), and is not quantified.
Seasonal Variations and Critical Conditions	Strong seasonal differences do not exist regarding rainfall. Mexicali Valley irrigation practices differ between summer and winter. More irrigation water flow in summer months means that more trash may be carried by the New River in summer. Less irrigation water flow in winter means that concentrations of some pollutants (e.g., pathogens, dissolved organic matter, volatile organic compounds) may increase in winter.
Loading Capacity (Total Assimilative Capacity)	Zero pounds/day of trash
Load Allocations and Wasteload Allocations	As stated in 40 C.F.R. section 130.2, a TMDL is the sum of load allocations for nonpoint sources, individual wasteload allocations for point sources, and natural sources. In the New River, load allocations (e.g., wastewater drains) and wasteload allocations (e.g., wastewater treatment plants) are zero pounds of trash per day because the numeric target and loading capacity are zero. Load allocations apply to discharges at the Mexican border as well as to all nonpoint sources of trash along the New River in the United States. Each NPDES facility discharging to the New River in the United States has an individual wasteload allocation of zero pounds of trash per day.

Footnote for Table No. 4-19:

[1] The numeric target is a goal that translates current Basin Plan narrative objectives into quantitative values.

2. Implementation Actions for Attainment of TMDL

TMDL attainment for interim and final numeric targets shall be in accordance with the schedule in Table 4-20.

Table 4-20: TIME SCHEDULE FOR IMPLEMENTATION PLAN PHASES AND NUMERIC TARGETS FOR TRASH IN THE NEW RIVER AT THE INTERNATIONAL BOUNDARY

Phase	Time Period	Reduction from Existing Conditions	Allowable Load* (pounds/day)
Phase I	Within 2 years of USEPA Approval of TMDL	75%	165 (Interim Numeric Target)
Phase II	Within 3 years of USEPA approval of TMDL	100%	0 (Final Numeric Target)

* Percent reduction required at the end of each phase, starting with the current (2005) average of 240,000 pounds/year or 658 pounds/day.

Implementation Plan measures should be sufficient to achieve the TMDL so long as the third parties mentioned above are willing to complete the requested tasks below within the timeframes specified.

i. Actions to be Taken by Third Party Cooperating Agencies and Organizations

Consistent with the California Porter-Cologne Water Quality Control Act, the Basin Plan may identify requested implementation actions for agencies other than the Regional Water Quality Control Board. (Water Code, § 13242, subd. (a).) Accordingly, the Regional Water Board requests that the following cooperating agencies sign a Memorandum of Understanding (MOU) to ensure coordination of International Boundary projects: U.S. members of the New River/ Mexicali Sanitation Program Binational Technical Advisory Committee (BTAC), North American Development Bank (NADBank), Border Environment Cooperation Commission (BECC), California Border Environment Cooperation Commission (CalBECC), City of Calexico New River Committee (CCNRC), and Citizens Congressional Task Force on the New River (CCRFNR). The MOU should address:

- Establishment of a coordination committee consisting of one representative from each agency and the Regional Water Board;
- Establishment of a coordination committee charter to ensure cooperation and communication between all agencies;
- Compilation of a list of potential/ongoing projects and funding sources to address pollution in the New River/ International Boundary area; and
- Submission of semi-annual progress reports to the Regional Water Board.

The MOU should be signed, and progress reports submitted, in accordance with the schedule in Table 4-21.

Table 4-21: REQUESTED ACTIONS FOR THIRD PARTY COOPERATING AGENCIES AND ORGANIZATIONS

Task	Due Date
1. Submit signed MOU to the Regional Water Board.	Six (6) months after USEPA approval of TMDL
2. Submit progress reports (through coordination committee) to the Regional Water Board describing status of projects and recommend actions to address pollution in the New River at the International Boundary.	Semiannually, with the first report due 12 months after USEPA approval of TMDL

ii. Actions Requested to be Taken by the U.S. Government

The Regional Water Board does not have the authority to require Mexico or the U.S. Government to reduce trash that crosses the International Boundary. Accordingly, this TMDL requests that the USIBWC and the USEPA:

- Specify and implement measures to ensure that trash discharges from Mexico do not violate or contribute to a violation of this TMDL;
- Remove trash from Mexico that has accumulated at Imperial County Calexico Landfill culverts; and
- Conducts water quality and trash monitoring in the New River at the International Boundary to evaluate for water quality impacts from trash.

It is critical that the U.S. Government coordinates activities with the other third party coordinating agencies and organizations:

- to implement reasonable, timely measures to mitigate trash impacts on U.S. water quality in the New River/International Boundary area;
- to ensure bi-national standards of Minute No. 264 are met, and

- to persuade Mexico to prevent littering of Mexican surface waters that impact water quality in the New River/ International Boundary area[2]

The Regional Water Board requests that the USIBWC and USEPA complete the trash reduction actions listed in Table 4-22.

Table 4-22: REQUESTED TRASH REDUCTION ACTIONS FOR THE USIBWC AND USEPA

Task	Requested Target Date
Describe in a report* current and/or proposed measures to ensure Mexico complies with this TMDL. The report should specify parties responsible for implementation, financial options, and implementation time schedule.	Three (3) months after USEPA approval of TMDL
Describe in a report* the current and/or proposed measures to remove trash from Mexico that has accumulated at Imperial County Calexico Landfill culverts. The report should specify the parties responsible for implementation, financial options, and implementation time schedule.	Three (3) months after USEPA approval of TMDL
Begin implementation measures identified in Tasks 1 and 2.	Six (6) months after USEPA approval of TMDL
Describe in a report* the progress achieved towards completion of implementation measures identified in Tasks 1 and 2.	Semiannually, beginning 12 months after USEPA approval of TMDL
Complete implementation measures identified in Tasks 1 and 2.	Three (3) years after USEPA approval of TMDL

* The report should be prepared under the direct supervision of a California registered civil engineer, with experience in the preparation of these types of reports.

The Regional Water Board also requests that the USIBWC and the USEPA implement the water quality and trash monitoring in the New River at the International Boundary that is summarized in Table 4-23 below, and submit monitoring reports to the Regional Water Board according to the schedule specified in the table. The Regional Water Board requests that monitoring be conducted in accordance with a Quality Assurance Project Plan (QAPP). Water Quality samples from the New River shall be collected at the closest practical site on the U.S. side of the International Boundary.[3]

[2] Removing trash from the New River at or immediately downstream of the International Boundary does not eliminate all water quality impacts because pollutants leached from trash in Mexico may contaminate the New River in the U.S. Pollutants dissolved from trash will be addressed if it is determined that water quality objectives at the International Boundary are still being exceeded after implementation of this TMDL and the New River TMDLs for VOCs, DO, and pathogens.

[3] It may be impractical to take water quality samples immediately at the International Boundary because wastewater infrastructure (e.g., treatment lagoons, raw sewage bypasses, and drains) empties into the New River at this location, causing mixing/aeration of water that could yield misleading monitoring results. The closest water quality monitoring site currently in use (for International Boundary Line and the State Water Board's Surface Water Ambient Monitoring Program, SWAMP) is located in the New River at the Imperial Irrigation District Bridge, near the U.S. Geological Survey water quality gage, about 0.5 miles from the International Boundary. The party that conducts monitoring for this TMDL should explore using locations closer than the currently used water quality monitoring site.

Table 4-23: REQUESTED MONITORING ACTIONS FOR THE USIBWC AND USEPA

Task	Requested Target Date
Prepare a monitoring plan and QAPP to monitor water quality and trash in the New River at the International Boundary.	Three (3) months after USEPA approval of TMDL
Implement water quality and trash monitoring in the New River at the International Boundary, pursuant to the QAPP.	Six (6) months after USEPA approval of TMDL
Submit monitoring data and reports to the Regional Water Board.	Semiannually, beginning 12 months after USEPA approval of TMDL

3. Regional Water Board Monitoring and Tracking Program

Regional Water Board staff will coordinate the TMDL Monitoring and Tracking Program. It is important to track TMDL implementation, monitor water quality progress, and modify TMDLs and Implementation Plans as necessary to:

- Address uncertainty that may have existed during TMDL development;
- Ensure that implementation is occurring; and
- Ensure TMDL effectiveness, given watershed changes that may have occurred after TMDL development.

i. Water Quality and Trash Monitoring

The Implementation Plan calls for water quality and trash monitoring to determine TMDL progress, and to revise the TMDL as needed. Monitoring program objectives include evaluation of:

- Water quality objectives attainment;
- Implementation of effectiveness;
- In-stream water quality; and
- Water quality temporal and spatial trends.

Regional Water Board staff requests that USIBWC and USEPA conduct water quality and trash monitoring of the New River at or immediately downstream of the International Boundary, and submit monitoring data and reports to the Regional Water Board.

ii. Implementation Tracking Program

The Implementation Plan calls for a tracking program to assess implementation. Objectives include assessment and tracking of measures already in place, and evaluation of TMDL progress. Regional Water Board staff will evaluate data to determine when numeric targets are attained, and will present annual reports to the Regional Water Board describing progress.

iii. Measures of Success, and Failure Scenarios

The primary measure of success for TMDL implementation is attainment of zero trash in the New River at the International Boundary within three years of USEPA approval of the TMDL. Another measure of success may be a substantially lower level of trash than currently exists, such as meeting the interim numeric target (i.e., 75% trash reduction within two years of USEPA approval of the TMDL.)

The primary failure scenario for TMDL implementation is the failure to achieve zero trash in the New River at the International Boundary, or the failure to substantially reduce trash if zero trash is not achieved. If either of these failure scenarios occurs, the Regional Water Board will consider taking further actions to achieve TMDL compliance.

4. TMDL Review Schedule

i. Annual Reports

Regional Water Board staff shall present annual reports to the Regional Water Board describing progress toward milestone attainment. The reports will assess:

- Water quality improvement, in terms of trash reduction at the International Boundary; Monitoring results;
- Control measures implemented to deal with pollution originating in Mexico;
- Whether milestones were met on time or at all. If milestones were not met, the reports will discuss the reasons; and
- Recommendations for further actions.

ii. Triennial Review

The State of California must hold public hearings for reviewing applicable water quality standards (WQS), and modifying/ adopting the standards as appropriate pursuant to section 303 of the Clean Water Act and 40 Code of Federal Regulations part 130. The state also must formulate and periodically review (and update as necessary) regional water quality control plans pursuant to section 13240 of the Water Code. Following adoption by the Regional Water Board, Basin Plan amendments and supporting documents are submitted to the State Water Board for review and approval, the California Office of Administrative Law for its concurrence that the amendments meet California Administrative Procedure Act requirements, and finally the USEPA.

The first TMDL review is scheduled to conclude three years after TMDL adoption to provide adequate time for implementation and data collection. At this time, TMDL compliance should be achieved. If the TMDL is not achieved, the Regional Water Board will consider taking further actions to achieve TMDL compliance. Subsequent reviews (if needed) will be conducted concurrently with the Triennial Review of the Basin Plan. The TMDL Review will include the same components assessed in annual reports, and will conform to the schedule in Table 4-24.

Public hearings will be held at least every three years to review this TMDL. At these hearings, the Regional Water Board will:

- Review monitoring results;
- Review progress toward milestone attainment;
- Consider approval of proposed management practices for the control of pathogens from human-made nonpoint sources of pollution;
- Consider enforcement action; and
- Consider revision of TMDL components.

This proposed review schedule indicates the Regional Water Board's commitment to periodic review and refinement of this TMDL via the Basin Plan amendment process.

Table 4-24: TMDL REVIEW SCHEDULE

Activity	Date
USEPA Approval of TMDL	December 2006
Terminate First TMDL Review, Conduct Regional Water Board Public Hearing, and Begin Second TMDL Review	December 2009

Terminate Second TMDL Review, Conduct Regional Water Board Public Hearing, Begin Third TMDL Review, and Continue triennial review cycle	December 2012

*Dates are contingent upon USEPA approval

Public hearings will be held at least every three years to review this TMDL. At these hearings, the Regional Water Board will:

- review monitoring results;
- review progress toward milestone attainment;
- consider approval of proposed management practices for the control of pathogens from human-made nonpoint sources of pollution;
- consider enforcement action; and
- consider revision of TMDL components.

This proposed review schedule indicates the Regional Water Board's commitment to periodic review and refinement of this TMDL via the Basin Plan amendment process.

G. NEW RIVER AT THE INTERNATIONAL BOUNDARY DISSOLVED OXYGEN TMDL

SUMMARY

This TMDL was adopted by the California Regional Water Quality Control Board, Colorado River Basin Region on May 20, 2010.

This TMDL was approved by:
The State Water Resources Control Board (SWRCB) on **December 6, 2011**
The California Office of Administrative Law (OAL) on **May 21, 2012**
The U.S. Environmental Protection Agency (USEPA) on **November 16, 2012**

1. TMDL Elements

Elements of this Total Maximum Daily Load (TMDL), as described in the "State of California S.B. 469 TMDL Guidance: A Process for Addressing Impaired Waters in California, June 2005," are described in Table 4-25:

Table 4-25: ELEMENTS OF THE TMDL IMPLEMENTATION PLAN FOR DISSOLVED OXYGEN IN THE NEW RIVE AT THE INTERNATIONAL BOUNARY

ELEMENT	DESCRIPTION
Project Definition (To describe the impairment being addressed by the TMDL)	This TMDL addresses impairment (or pollution) of low Dissolved Oxygen (DO) in the first 12 mile (mi) [19.3 kilometer (km)] reach of the New River downstream of the International Boundary (IB) caused mainly by waste discharges from Mexico. The New River originates in Mexicali Valley, Mexico. It flows approximately 20 miles (32.2 km) through the city of Mexicali, Mexico, crosses the IB, continues through the city of Calexico, California, in the U.S., and travels northward about 60 miles (96.56 km) until it empties into the Salton Sea. The Salton Sea is California's largest inland surface water. The Basin Plan prescribes a general surface water quality objective (WQO) for DO in all surface waters designated WARM, such as the New River, of a minimum of 5.0 (five)

	milligrams per liter (mg/L) at any time (Chapter 3, Section II.F). The Basin Plan also prescribes a specific surface WQO for the New River at the International Boundary of 5.0 mg/L, (Chapter 3, Section III.B, Table 3-1). This WQO is based on the quantitative standards set forth in Minute No. 264 of the Mexican-American Water Treaty, titled "Recommendations for Solution of the New River Border Sanitation Problem at Calexico, California – Mexicali, Baja California Norte." The Treaty was signed and made effective by the U.S. and Mexico on December 4, 1980. Accordingly, this TMDL proposes these DO WQOs as the numerical target to be met.
Watershed Description (To provide a geographic and environmental setting for the TMDL)	The New River watershed is approximately 500,000 acres in size, with 200,000 acres in the United States that consists primarily of agricultural land of Imperial Valley; and 300,000 acres in Mexico that include agricultural and urban land in Mexicali Valley. The climate of the New River watershed is hot, with dry summers, occasional thunderstorms, and gusty high winds. Average annual rainfall is less than 3 inches (76.2 mm), and temperatures are in excess of 100 ºF (38 ºC) for more than 100 days per year. Major soils associations in the New River watershed are within the "wet" series of poorly drained soils. Sources of flows to the New River are urban and agricultural runoff, and treated municipal and industrial wastes from the Mexicali Valley, Mexico, and the Imperial Valley, California, U.S. Downstream reaches of the New River provide important habitat for many kinds of wildlife. Birds are the most diverse wildlife group using the New River. Generally, waterfowl and shorebirds are seen where the New River meets the Salton Sea. Riparian areas along some parts of the New River, especially in downstream reaches, provide important habitat for songbirds. The New River contains state and federally endangered and threatened species. Fifteen special status wildlife and plant species (including one that is endangered and/or threatened) occur or potentially occur in the New River International Boundary vicinity.
Data Analysis (To inventory relevant data and provide a summary of the water quality and flow conditions in the impaired water and identify any important trends or relationships)	Development of this TMDL started in early 2003. Regional Water Board staff collected monthly water quality samples at four locations in the New River, from March 2003 to November 2009, to evaluate DO impairments. The four sampling locations are: • New River at IB; • Evan Hewes Highway (EH), about 20 river miles downstream from IB; • Drop Structure 2 (D2), about 50 river miles downstream from IB; and • Outlet to the Salton Sea (Outlet), about 60 river miles downstream from IB. This TMDL also used water quality data from the Regional Water Board Border Program, U.S. Section of the International Boundary and Water Commission (USIBWC), U.S. Geological Survey (USGS), Imperial Irrigation District (IID), and wastewater treatment plants (WWTPs) in the New River watershed inside the U.S. For the past 28 years, the Regional Water Board has observed flows from Mexico to be decreasing. In 1980, average flows for the New River at the IB and at the outlet to the Salton Sea were about 6.10 and 17.71 cubic meters per second (cms), respectively. In 2008, average flows for the New River at the IB and at the outlet to the Salton Sea were about 3.36 and 15.61 cms, respectively.

<table>
<tr><td></td><td>DO averages for the New River at the IB ranged from 0.8 to 2.8 mg/l from 1997 to 2002. Data and source analysis for this TMDL determined that the Mexicali Valley in Mexico is the most significant source of materials causing New River DO impairments. The Las Arenitas Wastewater Treatment Plant (WWTP), which started operations in March 2007, was designed to prevent Mexicali's remaining untreated sewage from discharging into the New River. As a result, DO levels in the impaired section of the New River improved significantly, but DO concentrations continue to violate the DO WQO of 5.0 mg/l at any time. Annual DO concentration averages for the New River at IB from both the Regional Water Board and USIBWC are shown below.
<table>
<tr><th></th><th colspan="5">Annual DO Concentrations in mg/l for the New River at the IB</th></tr>
<tr><th></th><th>2005</th><th>2006</th><th>2007</th><th>2008</th><th>2009</th></tr>
<tr><td>Regional Water Board</td><td>0.88</td><td>2.85</td><td>3.21</td><td>4.43</td><td>5.61</td></tr>
<tr><td>USIBWC</td><td>0.82</td><td>1.18</td><td>3.70</td><td>4.27</td><td>5.94</td></tr>
</table></td></tr>
<tr><td>Source Analysis
(To provide a complete inventory and description of all sources of the pollutant of concern, including point, nonpoint, and background sources in the watershed.)</td><td>This source analysis identifies and characterizes sources of oxygen demanding materials that result in low DO concentrations in the New River. BOD and NH_3 from the Mexicali Valley, Mexico, are found to be the main cause of low DO in the first 12-mile segment of the New River downstream of the International Boundary as shown by analysis of available data to date and New River QUAL2K Water Quality computer model simulations. A continuous monitoring program at various locations along the impaired section of the New River is needed to properly characterize any contribution of materials causing DO impairment from natural and nonpoint sources, and to evaluate the long term effect of the Las Arenitas WWTP in the New River Watershed.</td></tr>
<tr><td>Critical Conditions and Seasonal Variations
(To identify the critical conditions and seasonal variation in the TMDL.)</td><td>Prior to the completion of the Las Arenitas WWTP in March 2007, there were no significant critical conditions or seasonal variations for DO in the impaired section of the New River. Data showed year-round violations of DO WQOs immediately downstream of the International Boundary, regardless of season or climate. Analyses of data since March 2007 suggest improved concentrations of DO in the impaired section of the New River, although the DO concentrations still violate the Basin Plan's DO WQO of a minimum of 5 mg/l at any time, especially during the hot summer months. Because the materials that cause low DO may stay in the New River up to a few months, controlling these materials throughout the year is important. In addition, New River flows at the IB should be managed on a whole-year basis based on: (a) the oxygen data (which do not appear to exhibit strong seasonal variability); and (b) the fact that the warmer months have lower flows. In conclusion, currently there are no significant critical conditions or seasonal variations for DO in the impaired section of the New River.</td></tr>
<tr><td>Numeric Target
(To identify the appropriate numeric water quality target(s) that represents attainment of applicable WQO and that were used in the calculation of the TMDL.)</td><td>The numeric target for DO established by this TMDL for the first 12 mile (19.3 km) segment of the New River downstream from the International Boundary is a minimum of 5.0 mg/l at any time.</td></tr>
<tr><td>Linkage Analysis
(To describe the method used to establish the relationship between</td><td>A Steady-State New River DO QUAL2K Model, which was developed by Tetra Tech, Inc., for the USEPA, was used to establish the linkage between loading of materials causing DO impairment in the New River and the predicted DO responses. First priority in Model calibration was the determination of temperature, DO, carbonaceous BOD, and NH_3. The second priority was the consideration of other nutrients, conductivity, suspended solids, alkalinity and pH. Phytoplankton, detritus, and pathogens were not</td></tr>
</table>

pollutant loading and in-stream water quality response and how the relationship was used to identify the loading capacity of the impaired water.)	calibrated due to limited data. The Model concentrated on the critical condition months of June, July, and August where lower flow, higher temperature and lower DO concentrations are characteristic of the New River's flow at the IB. BOD and NH_3, expressed as mass per unit of time, were chosen because (1) the modeling showed BOD and NH_3 are the most influential parameters affecting DO levels in the New River and (2) variations in other parameters were shown to have only a minor influence. Data and modeling analysis showed that Mexico's sources are the major cause of low DO in the New River. Allocations recommended by the Model for Mexico are expected to meet the applicable DO WQO in first 12-mile (19.3 km) segment downstream of the New River at IB. As more water quality data are collected and evaluated, allocations will be revised, if necessary.
TMDL Calculation and Allocations (To clearly identify all TMDL allocations for point sources (waste load allocations) and nonpopint sources (load allocations) in the watershed.)	This TMDL proposes to eliminate low DO impairment in the first 12 mile (19.3 km) reach of the New River downstream of the IB. To accomplish this WQO, the TMDL specifies allowable loads of BOD and NH_3 to the sources of DO impairments. The allowable loads are based on steady-state New River DO QUAL2K Model projections, scientific literature, monitoring data, and best professional judgment. The load allocations for all discharges from Mexico to the New River at the International Boundary are 5.0 mg/l or 1529 kg/day of BOD and 0.5 mg/l or 153 kg/day of NH_3. The mass/day load allocations are based on the 2007 average flows of 125 cubic feet per second (cfs) or 3.54 cms measured at the IB. All publicly owned treatment works that discharge pollutants from point sources in the impaired New River watershed in the U.S. have been issued NPDES permits, which prescribe, among other requirements, effluent limitations for BOD concentrations. Therefore, wasteload allocations for these facilities are the BOD limitations prescribed in their existing permits, as shown below: **Wasteload Allocations (Current NPDES Permitted BOD Effluent Limitations in mg/l)**

Discharger	Average Monthly	Average Weekly	Permit Numbers
City of Calexico WWTP	30	45	CA7000009
Seeley County Water District	45	65	CA0105023
Centinela State Prison	45	65	CA7000001
U.S. Naval Air Facility, El Centro	30	45	CA0104906
McCabe Union School District	30	45	CA0104281
Date Gardens Mobile Home Park	30	45	CA0104841

Although there are no effluent limitations for DO and NH_3 in these NPDES permits, DO and NH_3 are addressed in the receiving surface water limitation sections of the permits.

This TMDL has an implicit Margin of Safety (MOS) that is incorporated into the conservative assumptions used to develop the TMDL, and thus, is not quantified. The MOS is implicit in this TMDL process through the use of conservative model inputs (temperature, DO concentrations, and flow). Conservative temperature values are employed through the use of the highest average maximum temperature that would normally occur under critical stream flow conditions. The DO concentrations and stream

	flow employed for the summer reflects the lowest DO and flows that would normally occur during the critical conditions period.
<u>Implementation Plan</u> (To describe the strategy for implementing the TMDL, and restoring water quality standards, including implementation activities, milestones/goals, timeline, funding, and responsible parties.)	The TMDL Implementation Plan proposes to eliminate New River low DO impairment in two phases. Phase 1 of the TMDL Implementation Plan (first three years after USEPA approval) requests that the federal government (USIBWC and USEPA) take the following three actions: 1. Develop and submit to the Regional Water Board a New River DO TMDL Implementation Report that describes measures taken or proposed to ensure Mexico does not cause or contribute to violations of this TMDL. This report is due one (1) year after USEPA approval of the TMDL. 2. Continue to conduct water quality and DO monitoring in the New River at IB, and to submit monitoring data and reports to the Regional Water Board. This task is on-going. 3. Develop and submit to the Regional Water Board a New River DO TMDL Final Implementation Report that describes progress in completing the implementation measures identified in Actions 1 and 2, above. This report is due three (3) years after USEPA approval of the TMDL. Phase 1 of TMDL Implementation also requests that third party cooperating agencies and organizations (i.e., U.S. members of the New River/ Mexicali Sanitation Program Binational Technical Advisory Committee (BTAC), North American Development Bank (NADBank), Border Environment Cooperation Commission (BECC), California Border Environment Cooperation Commission (CalBECC), City of Calexico New River Committee (CCNRC), and Citizens Congressional Task Force on the New River (CCTFNR)) take the following two actions: 1. Develop, sign, and submit to the Regional Water Board a memorandum of understanding (MOU) to ensure coordination of New River IB projects. The MOU is due six (6) months after USEPA approval of the TMDL. 2. Develop and submit to the Regional Water Board New River DO TMDL implementation progress reports. These reports are due semiannually, with the first report due 12 months after USEPA approval of the TMDL. Phase 2 of TMDL Implementation (second three years after USEPA approval) will be implemented if Phase 1 does not result in attaining the DO WQO of a minimum of 5.0 mg/l at any time in the first 12 mile (19.3 km) section of the New River downstream from the International Border. Regional Water Board staff will track TMDL implementation and monitor water quality progress in both phases, enforce provisions, and propose modifications of the TMDL to the Regional Water Board, if necessary, in accordance with a time schedule.

2. Measures of Success and Failure Scenarios

i. Measures of Success

The primary measure of success for TMDL implementation is timely attainment of numeric targets for DO in the New River. Another measure of success is the level of TMDL compliance. A third measure of success is the cooperation from Mexico to maintain the Las Arenitas WWTP, and to identify and prevent other waste dischargers from violating the TMDL. Such cooperation is essential to the success of the TMDL Implementation Plan.

ii. Failure Scenarios

The only failure scenario for TMDL implementation is the failure to achieve the numeric DO WQO of 5.0 mg/l at any time in the 12 mile (19.3 km) section of the New River downstream from the IB. If DO WQOs are not reached by the end of the first phase (the first three years after USEPA approval), several actions may be considered for the second phase (the following three years). A river wastewater treatment plant in the U.S. could be one of these actions, if feasible and appropriate.

3. TMDL Review Schedule

i. Annual Reports

Annual reports will be provided by Regional Water Board staff to the Regional Water Board describing progress toward milestone attainment. Reports will assess:

- monitoring results;
- water quality improvement;
- implementation actions and effectiveness; and
- recommendations for further actions, including more stringent enforcement.

ii. Triennial Review

The Regional Water Boards must hold public hearings for reviewing applicable Water Quality Standards (WQSs), and modifying/adopting the standards as appropriate pursuant to CWA section 303 and 40 Code of Federal Regulations part 130. Also, the Regional Water Board must formulate and periodically review (and update as necessary) Regional Water Board Basin Plans pursuant to Water Code section 13240. Following adoption by the Regional Water Board, Basin Plan amendments and supporting documents are reviewed and approved by the State Water Board, the State Office of Administrative Law and, if the Basin Plan amendment concerns waters subject to the CWA, USEPA. Since the Basin Plan amendment concerns waters subject to the CWA (i.e., the New River), USEPA approval is required.

The first review for this TMDL will occur during a Regional Water Board public hearing scheduled three years after USEPA approval of the TMDL. The Regional Water Board may consider more stringent regulatory mechanisms for a second implementation phase (the second three years of implementation) if the TMDL is not achieved at this time. The TMDL review will evaluate attainment of numeric targets, and include the same components assessed in annual reports. The schedule for TMDL review is provided in Table 4-26.

Table 4-26: TMDL REVIEW SCHEDULE*

Activity	Date*
Begin First TMDL Review	Two Years after USEPA Approval
Terminate First TMDL Review, Conduct Regional Water Board Public Hearing, and Begin Second TMDL Review	Three Years after USEPA Approval
Terminate Second TMDL Review, Conduct Regional Water Board Public Hearing, and Begin Third TMDL Review	Six Years after USEPA Approval
Etc.	
* Dates are contingent upon availability of Regional Water Board resources. Subsequent reviews will occur concurrently with Triennial Reviews.	

Public hearings will be held at least once every three years to review this TMDL. At these hearings, the Regional Water Board will:

- review monitoring results;
- review progress toward milestone attainment;
- consider approval of proposed management practices;
- consider enforcement action, if necessary; and
- consider revision of TMDL components.

This proposed review schedule indicates the Regional Water Board's commitment to periodic review and refinement of this TMDL via the Basin Plan amendment process.

H. COACHELLA VALLEY STORMWATER CHANNEL BACTERIAL INDICATORS TMDL

1. TMDL Elements

Table 4-27: COACHELLA VALLEY STORMWATER CHANNEL BACTERIAL INDICATORS TMDL ELEMENTS

<table>
<tr><th>ELEMENT</th><th>DESCRIPTION</th></tr>
<tr><td>Project Definition</td><td>
Coachella Valley Stormwater Channel (CVSC) is on the California 303(d) List for impairment by pathogens of unknown sources. This listing applies to the 17-mile length of the CVSC from Indio to the Salton Sea. This violation of water quality standards (WQSs) is a threat to public health, and impairs the following CVSC beneficial uses (BUs): Water Contact Recreation (REC I) and Water Non-Contact Recreation (REC II). WQSs consist of designated beneficial uses, specified numeric or narrative water quality objectives (WQOs) that protect these BUs, and antidegradation requirements to ensure that existing uses and the level of water quality necessary to protect the existing uses are maintained and protected. The following Table summarizes REC I bacteria indicator WQOs for all surface waters in the Colorado River Basin Region, excepting the Colorado River:

Bacterial Indicator Water Quality Objectives

<table>
<tr><th>Indicator Parameter</th><th>30-Day Geometric[a] Mean</th><th>Maximum Instantaneous</th></tr>
<tr><td>E. coli</td><td>126 MPN[b]/100 Milliliter (ml)</td><td>400 MPN/100 ml</td></tr>
<tr><td>Fecal coliform</td><td>200 MPN/100 ml</td><td>c</td></tr>
<tr><td>Enterococci</td><td>33 MPN/100 ml</td><td>100 MPN/100 ml</td></tr>
</table>

a- Based on a minimum of no less than 5 samples equally spaced over a 30-day period.
b- Most probable number.
c- No more than 10 % of total samples during any 30-day period exceed 400 MPN per 100 ml

Federal Clean Water Act (CWA) section 303(d)(1)(A) requires all states to identify surface waters impaired by pollution (i.e., that do not meet WQSs), and to establish Total Maximum Daily Loads (TMDLs) for pollutants causing the impairments. As a result, a TMDL to address bacterial indicator organisms is proposed for CVSC, which has been completed pursuant to the State of California TMDL Guidance issued in June 2005, and USEPA guidance published in April 2001.
</td></tr>
<tr><td>Watershed Description</td><td>
CVSC is located in Coachella Valley in Riverside County, California. The Coachella Valley is bounded to the north by the San Bernardino and Little San Bernardino Mountains, and to the south by the San Jacinto and Santa Rosa Mountains, and the Salton Sea. The Coachella Valley has been heavily agricultural since the early 1900's. Agricultural lands are irrigated by groundwater and water from the Colorado River delivered to the Valley through the Coachella Canal via the All-American Canal. CVSC is an unlined, engineered extension of the Whitewater River, and serves as a conveyance channel for irrigation return water, treated wastewater from three National Pollutant Discharge Elimination System (NPDES) permitted municipal wastewater treatment plants, wastewater discharge from one NPDES permitted aquaculture facility (Kent SeaTech Corporation Fish Farm (KSCFF), owned/operated by Kent SeaTech Corporation), and urban and stormwater runoff. The Coachella Valley Water District (CVWD) operates and maintains the CVSC. The three permitted wastewater treatment plants are:
</td></tr>
</table>

	• Valley Sanitary District Wastewater Treatment Plant (VSDWTP), Indio, owned/operated by Valley Sanitary District; • Mid-Valley Water Reclamation Plant (MVWRP), Thermal, owned/operated by CVWD; and • Coachella Sanitary District Wastewater Treatment Plant (CSDWTP), Coachella, owned/operated by the City of Coachella and the Coachella Sanitary District. Average annual flows in CVSC are decreasing due to changes in agricultural practices and suburban development. The CVSC and its tributary drains provide flood control and protection in addition to habitat for many types of wildlife including migratory songbirds, waterfowl, coyotes, raccoons, and rodents. Although recreation in the stormwater channel is prohibited by CVWD, people are known to recreate in and around the stormwater channel.
Data Analysis	During the development of this TMDL, water quality samples were collected monthly at eight locations in the CVSC, from February to September 2003, to evaluate bacteria concentrations and loading. Eleven of the 59 samples collected exceeded the 400 MPN/100 ml E. coli WQO in the Colorado River Basin Water Quality Control Plan (Basin Plan) and one of the proposed numeric targets for this TMDL. Based on the 2004 State of California's 303(d) Listing Policy, this exceedance rate would be sufficient to confirm the impairment identified in the 303(d) List.
Source Analysis	To identify potential sources of bacteria, Regional Water Board staff reviewed bacteria data provided by the three NPDES wastewater treatment facilities (WWTFs) and the City of Coachella, which is the only Municipal Separate Storm Sewer System (MS4) permittee discharging into the impaired section of the CVSC. Data reviewed indicate that all three WWTFs met their applicable bacteria WQOs. Data also indicate that urban and stormwater flows contain fecal coliform levels in violation of its applicable WQOs for REC I and REC II. These water quality violations range up to 900,000 MPN/100 ml at Avenue 52 Storm Drain in Coachella, September 1999. Due to the limited data available, actual contribution from urban and stormwater runoff and contributions from other point and nonpoint sources require further characterization. To assist with characterizing the bacterial contribution from agricultural sources (Agricultural Dischargers), the Coachella Valley Agricultural Stakeholder Water Quality Task Force (CVAS) was formed for the purpose of collecting water samples and monitoring the amount of E. coli discharged from agricultural sources. Samples were collected from subsurface drain collectors that service agricultural land and ultimately discharge into the CVSC. Monitoring was conducted from July 2008 through June 2009. Four hundred fifty water samples were collected from five (5) representative subsurface drain collectors at receiving water locations upstream from the collectors, and at receiving water locations downstream from the collectors. The samples were analyzed for E. coli concentrations. The analysis of results from this monitoring program indicated that E. coli levels in the subsurface drain collectors were typically two orders of magnitude lower than the E. coli levels in the CVSC. Out of one hundred fifty samples collected from the drain collectors, four exceeded the 400 MPN/100 ml Instantaneous Maximum E. coli WQO. None of the ninety 30-day geometric means calculated for E. coli exceeded the Basin Plan WQO of 126 MPN/100 ml. No significant correlation could be made between the E. coli levels measured in the drain collector discharges and the E. coli levels measured in the CVSC. The overall results of this monitoring program indicate that bacteria entering the CVSC in flows from subsurface drain collectors serving agricultural lands have only a de minimis effect on the bacterial indicator impairment in the CVSC. To further identify possible sources of bacteria to CVSC, a Ribotype or DNA microbial source tracking (MST) method was used. MST methods match fingerprints from bacterial strains isolated from a water system to those isolated from hosts such as humans, cows,

	geese, chicken, or municipal wastewater. The DNA monitoring and analysis study was conducted from October 2003 through March 2004. Two hundred water samples were collected from three sites along CVSC. E. coli strains were isolated from water samples, ribotypes fingerprinted, and then compared to a source library. The DNA monitoring and analysis study determined the percentage distribution of fecal sources in the CVSC. The following potential bacterial sources were identified in CVSC from the two hundred samples collected during the study: avian (40%), human (25%), rodents plus other wild mammals (25%), and livestock (<3%). Approximately 6% of the E. coli species originated from unknown sources. This distribution provides an idea of the possible sources of bacteria in CVSC, although it does not reflect the relative loading from those sources. Although scientific studies support the use of ribotype-based MST methods, there are concerns regarding their accuracy due to spatial and temporal vectors, stability of the markers, and sampling design.
Critical Conditions and Seasonal Variation	The climate in the Coachella Valley is arid with hot summers and warm winters and very low average annual rainfall (<3 inches/year). The water in the CVSC mainly originates from irrigation return flows, rising groundwater, fish farm effluent, treated municipal wastewater, urban runoff, and stormwater runoff. Analysis of available water quality data suggest slightly higher concentrations of bacteria in warm months, but the bacteria concentrations do not appear to be correlated with flow.
Numeric Targets	TMDL numeric targets derived from the Basin Plan's WQOs have been established for E. coli as a log mean (Geomean) of 126 MPN/100 ml (based on a minimum of not less than five samples during a 30-day period), and 400 MPN/100 ml for a single sample. The rationale supporting Regional Water Board staff's decision to choose only one bacterial indicator for the CVSC, E. coli, is as follows: The Colorado River Basin Region's Basin Plan has bacterial indicator WQOs for E. coli, fecal coliform, and enterococci. In most cases, these indicators do not cause human illness directly; rather, they have shown a correlation as indicators of the presence of other harmful pathogens in water bodies. The general inclusion of all three bacterial indicators in the Basin Plan has presented region-wide application problems and confusion for the regulated community. The CVSC is considered a fresh water recreational surface water. The decision to express the numeric targets, loading capacity, and allocations in the CVSC TMDL in terms of E.coli only was based on recommendations from USEPA guidance to eliminate fecal coliform as an indicator of pathogens causing human illness, and to rely instead on either E. coli and/or Enterococci. The USEPA water quality criteria document, titled "Ambient Water Quality Criteria for Bacteria, 1986" recommends replacing fecal coliform with either E. coli or enterococci as bacterial indicators for the protection of fresh water recreational users. The USEPA provided draft implementation guidance in May 2002, titled "Implementation Guidance for Ambient Water Quality Criteria for Bacteria," that reaffirmed the 1986 guidance. Further, E. coli, which is a species of fecal coliform, is being used in the TMDL as a surrogate for fecal coliform. Consequently, a load reduction in E. coli into the CVSC that will attain the E. coli WQOs will also result in a load reduction in fecal coliform and attain the fecal coliform WQOs. The TMDL targets must not be exceeded more frequently than the allowable exceedance rate described in the State of California's 303(d) Listing Policy, as a result of controllable sources with the exception of the three NPDES WWTFs, which have met their applicable bacteria WQOs and thus, shall be required to continue to meet their WQOs. All other responsible parties, however, shall be required to attain their respective WLA and LA numeric targets within ten (10) years after USEPA approves the TMDL.
	For this TMDL, the connection between pollutant loading and protection of BUs is established by the fact that TMDL numeric targets and allocations are equal to WQOs for the most stringent BU of CVSC in the Basin Plan. Therefore, this TMDL's numeric targets

Linkage Analysis	protect all BUs of CVSC. There is a one-to-one relationship between loading allocations and numeric targets in this TMDL. For example, a 30-day geometric mean wasteload/load allocation of 126 MPN/100 ml for E. coli at the point of discharge makes it more likely that 126 MPN/100 ml or less will be present in the CVSC, especially if contributions from natural background sources are not exceeding these allocations. The potential for increased or decreased concentration downstream due to growth and decay dynamics may be offset by dilution from subsurface drainage from irrigated agricultural lands and effluent from permitted wastewater treatment plants and thus provides an implicit margin of safety.
TMDL Calculations and Allocations	A TMDL is a numeric calculation of the loading capacity of a water body to assimilate a certain pollutant and still attain all WQSs. The TMDL is the sum of the individual wasteload allocations (WLAs) for point sources, load allocations (LAs) for nonpoint sources and natural background sources, and a margin of safety (MOS) to address uncertainties. Discharges from all current and future point sources and controllable nonpoint sources of pollution to the impaired section of CVSC shall not exceed the following WLAs and LAs for E. coli. Both WLAs and LAs for E. coli are: 1) the log mean (Geomean) of samples collected shall not exceed 126 MPN/100 ml (based on a minimum of not less than five samples during a 30-day period), and[4] 2) 400 MPN/100 ml for a single sample. The allocations are applicable throughout the entire stretch of the impaired section of the CVSC year-round. The numeric target concentrations are based on extensive epidemiological studies conducted by the USEPA and others. To address the uncertainty concerning bacterial die-off and re-growth dynamics in CVSC, and to better address critical conditions and seasonal variations, this TMDL provides a MOS by including a monitoring and review plan that uses data collected during implementation to evaluate TMDL effectiveness and the need for revision.

Allocation Type	**Discharger**	**E. Coli Allocations**
Point Source (WLAs)	VSDWTP CSDWTP MVWRP	A log mean (Geomean) of ≤126 MPN/100 ml (based on a minimum of not less than five samples during a 30-day period), and 400 MPN/100 ml for a single sample
Point Source (WLAs)	KSCFF Cal-Trans City of Coachella (MS4 co-permittee)	A log mean (Geomean) of ≤126 MPN /100 ml (based on a minimum of not less than five samples during a 30-day period), and 400 MPN/100 ml for a single sample

[4] For Nonpoint sources, when it is impractical to collect five samples for the log mean (Geomean), the single sample maximum allocation of 400 MPN/100 ml may be used to determine compliance with the load allocation.

	Nonpoint Source (LAs)	Agricultural Runoff Federal Lands Tribal Lands	A log mean (Geomean) of ≤126 MPN/100 ml (based on a minimum of not less than five samples during a 30-day period), and 400 MPN/100 ml for a single sample
	Nonpoint Source (LAs)	Septic Systems	Zero (0) MPN/100 ml
	Load allocations (LAs) and wasteload allocations (WLAs) for bacteria indicator dischargers into CVSC are described below:		
Monitoring Plan	Dischargers listed in Table 4-27will be required to develop and submit as a whole, or in groups, a comprehensive water quality monitoring program for the 303(d) listed segment of CVSC to the Regional Water Board Executive Officer for review and approval 90 days after USEPA approves the TMDL. The monitoring plan will include a sufficient number of monitoring stations and monitoring events to adequately address all potential sources of bacteria.		

2. Implementation Actions for Attainment of TMDL

The implementation plan is divided into two phases. Phase I actions will take three years to complete and will focus on monitoring and addressing bacterial indicators associated with wastewater discharges from NPDES facilities, and urban and stormwater runoff. Regional Water Board staff will coordinate closely with USEPA to address waste discharges from tribal lands. If E. coli WQOs are not achieved by the end of Phase I, Regional Water Board staff will implement additional actions to control E. coli sources in Phase II. Enforcement actions against violators of the TMDL will occur in both phases if necessary. This approach provides for immediate assessment of known sources of bacterial indicators while allowing time for additional monitoring to assess TMDL implementation, effectiveness, and need for modification.

Agricultural Dischargers and the CVWD are specifically exempted from having to complete Phase I monitoring actions regarding agricultural discharges. The Regional Water Board acknowledges the monitoring completed by CVAS in 2008-2009, and finds that its monitoring accurately characterizes the contribution of irrigated agriculture to the bacterial indicator impairment in the CVSC. The Regional Water Board considers CVAS's effort as an early implementation of this TMDL. Accordingly, this effort does not exempt Agricultural Dischargers and the CVWD from completing Phase II actions, should Phase II become necessary and available data indicate discharges into the CVSC from irrigated agriculture exceed E. coli WQOs.

i. Phase I Implementation Actions

Phase I actions will occur within three years after USEPA approves the TMDL, and begin as directed in Table 4-28 below. Phase I requires:

- Monitor CVSC for bacteria loading from city of Coachella, KSCFF, Cal-Trans, federal lands, and tribal lands;
- Identify significant federal and tribal dischargers to CVSC and notify them of their role in TMDL implementation;
- Receive a written report from each tribal entity, or from USEPA, describing measures to ensure waste discharges from tribal property do not violate or contribute to a violation of this TMDL;
- Prepare an amendment to the Basin Plan that rectifies current limitations of having three bacterial indicator organisms, clarifies which indicators apply to specified surface waters of the Region, and as necessary, determines the need for site-specific objectives; and
- Monitor, track, and survey CVSC to determine if Phase I activities achieve bacteria WQOs.

ii. Phase I Implementation Responsible Parties and Schedule

The time schedule and parties responsible for implementing Phase I actions are provided in Table 4-28 below.

Table 4-28: PHASE I ACTIONS AND TIME SCHEDULES

Due	Action
Immediately following Regional Water Board approval of TMDL	Regional Water Board staff shall begin preparing an amendment to the Basin Plan that rectifies current limitations of having three bacteria indicator organisms, clarifies which indicators apply to which surface waters of the Region, and as necessary, develops site-specific objectives. This Basin Plan amendment shall be drafted and presented to the Regional Water Board for consideration of adoption at the earliest practicable date, but no later than eighteen (18) months following USEPA approval of the CVSC Bacterial Indicators TMDL.
90 days after USEPA approves the TMDL	Pursuant to requests from Regional Water Board staff, the responsible parties, which includes Kent Seatech Corporation Fish Farm (NPDES permittee), Cal-Trans (MS4 permittee); and the city of Coachella (MS4 permittee), shall submit to Regional Water Board staff with the cooperation and assistance of the Coachella Valley Water District, which operates and maintains the impaired section of CVSC, data that characterize their contribution of bacteria to the CVSC or shall develop bacterial indicator water quality monitoring programs. As part of the water quality monitoring programs, Quality Assurance Project Plans (QAPPs) shall be developed and submitted to the Regional Water Board Executive Officer for review and approval. Monitoring data will be provided to Regional Water Board staff on a quarterly basis and will be used to assess contributions of bacteria to CVSC from anthropogenic sources (stormwater and urban runoff, and other sources). Responsible parties that join groups to complete Phase I actions shall be allowed an additional 90 days to submit their QAPP.
90 days after USEPA approves the TMDL	Regional Water Board staff shall begin to identify significant federal and tribal dischargers to CVSC and notify them of their role in TMDL implementation.
90 days after USEPA approves the TMDL	Regional Water Board staff shall develop a plan to conduct TMDL surveillance and track TMDL activities. The objectives of the plan are to assess monitoring data, measure attainment of the water quality objectives, and determine compliance with the TMDL.
90 days after USEPA approves the TMDL	Pursuant to a request from the Regional Water Board, each tribal entity, in coordination with USEPA, shall submit a technical report describing measures to ensure that waste discharges to CVSC from tribal land do not violate or contribute to a violation of this TMDL.
3 years after USEPA approves the TMDL	Regional Water Board staff shall submit a written report to the Regional Water Board describing monitoring results, attainment of the water quality objectives, and the need to revise the TMDL, if necessary.

Phase I actions are intended to aid in developing an effective assessment of critical conditions and sources, which will be used to develop and implement appropriate control measures in Phase II. Responsible parties, who are fulfilling their responsibilities, have no obligation to undertake the actions assigned to others, who may fail to perform.

iii. Phase II Implementation Actions

Actions taken in Phase I (within three years after USEPA approves the TMDL) will determine whether WQOs have been achieved, sources of bacterial pollution have been identified, and whether additional actions are required in Phase II (within seven years after end of Phase 1) to meet WQOs. If monitoring and assessment in Phase I indicate that waste discharges to CVSC from anthropogenic activities violate this TMDL, and that violations persist despite recommended operation and maintenance procedures and control measures in responsible parties' existing permits, the Regional Water Board shall require the implementation of additional actions to control anthropogenic sources of bacteria in Phase II. The Regional Water Board will require responsible parties to select and implement new/additional management practices (MPs) for Phase II, following characterization of sources and a determination of whether these sources can be controlled. This determination shall take into consideration background conditions and cost factors. The Regional Water Board may revise Municipal Separate Storm Sewer System (MS4) permit water quality based effluent limitations, which may be expressed in terms of narrative management practice (MP) requirements. The Regional Water Board may also consider revising WQOs for CVSC to address natural background sources of bacteria. This revision would be accomplished through the establishment of a Site Specific Objective (SSO) after completing a Use Attainability Analysis (UAA). If an SSO is required, it would be developed by the end of Phase 2 based on available resources.

Violations of WQOs will be addressed by implementing MPs identified in the discharger's existing Regional Water Board permit, or by implementing measures provided in the State Water Board's Nonpoint Source Program Plan and/or Nonpoint Source Program Strategy and Implementation Plan (PROSIP). Appropriate and required regulatory procedures will be followed prior to implementing any additional control practice(s).

iv. TMDL Review Schedule

Annual reports will be provided to the Regional Water Board by Regional Water Board staff describing progress in attaining the water quality objectives. The reports will assess:

- Water quality improvement in terms of E. coli concentration;
- Water quality objectives achieved, delayed, or not achieved, and why; and
- Compliance with Regional Water Board orders and requests.

v. Triennial Review

Federal law requires states to hold public hearings to review WQSs, and modify/adopt standards as appropriate. (CWA section 303(c); 40 C.F.R. § 131.20.) State law requires that each Regional Water Board shall formulate and adopt water quality control plans (Basin Plan) for all areas within the region. Such plans shall be periodically reviewed and may be revised. (Water Code, § 13240.) All Basin Plan amendments and supporting documents adopted by the Regional Water Board must be submitted to the State Water Board, and then OAL, for review and approval. Lastly, the USEPA has final approval authority for Basin Plan amendments concerning surface waters.

The first review of this TMDL is scheduled for completion three years after USEPA approves the TMDL to provide adequate time for implementation and data collection. Subsequent reviews will be conducted concurrently with the Triennial Review of the Basin Plan. The TMDL review schedule is shown below in Table 4-29.

Table 4-29: TMDL REVIEW SCHEDULE

Activity	Date*
Begin TMDL Review	Two years after USEPA approves the TMDL
Terminate First TMDL Review, and conduct Regional Water Board Public Hearing	Three years after USEPA approves the TMDL
Begin Second TMDL Review	Five years after USEPA approves the TMDL
Terminate Second Review and Conduct Regional Water Board Public Hearing	Six years after USEPA approves the TMDL
Etc.	
* Dates are contingent upon availability of Regional Water Board resources. Subsequent reviews will occur concurrently	

Monitoring results and progress toward attainment of the water quality objectives will be provided during Triennial Review public hearings. If TMDL progress is insufficient, staff will recommend to the Regional Water Board additional MPs to control pollutant sources, enforcement action, TMDL revision, or other means to achieve WQOs.

This proposed review schedule reflects the Regional Water Board's commitment to periodic review and refinement of this TMDL, via the basin plan amendment process.

VI. ACTIONS OF OTHER AUTHORITIES

Within the Colorado River Basin Region, there are several water quality issues requiring actions that fall either wholly or in large part outside the direct authority of the State and Regional Water Boards. One particular issue involves recharge of the Coachella Valley ground water basin with imported water.

The Coachella Valley Water District (CVWD) and the Desert Water Agency (DWA) exchange their entitlements to State Water Project water for equal volumes of the Metropolitan Water District of Southern California's (MWD) water entitlement from the Colorado River. This water is delivered via the MWD's Colorado River Aqueduct for recharge purposes in the upper portion of the Coachella Valley. The recharge lessens the Valley's overdraft problem, although the total dissolved solids (TDS) concentration of Colorado River water is significantly higher than that of the native ground water in the greater portion of Coachella Valley.

In addition to importing water to augment available local supplies as required to lessen overdraft of ground water supplies within the Coachella Valley and to meet existing and future growth therein, the Regional Water Board encourages the CVWD and DWA to implement water conservation and reclamation practices within their respective jurisdictional areas of the Coachella Valley.

The water resources of the Coachella Valley are limited, and the demands on those resources have increased considerably. Every effort must be made to optimize the use of available water resources. The quantity of treated wastewaters produced by community sewerage systems is appreciable, and the TDS concentrations of the treated wastewaters is less than that of the Colorado River water which is purchased and spread for recharge in the upper valley areas. In recognition of this, the Regional Water Board supports the reuse of community wastewaters, wherever economically and socially feasible.

CHAPTER 5 - PLANS, POLICIES AND ISSUES

In addition to the Basin Plan, many other plans and policies are applicable to Regional Water Board actions or clarify the Regional Water Boards intent. This Chapter contains a list of applicable State Water Board and Regional Water Board plans and policies for water quality control. This chapter also contains discussions of important water quality issues that the Regional Water Board will be addressing in the future.

I. STATE WATER BOARD PLANS AND POLICIES

The applicable State Water Board Plans and Policy statements include:

A. RESOLUTION No. 68-16

"Statement of Policy with Respect to Maintaining High Quality of Waters in California" (adopted October 28, 1968).

http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1968/rs68_016.pdf

B. WATER QUALITY CONTROL

"Water Quality Control Policy for Addressing Impaired Waters: Regulatory Structure and Options" (adopted June 15, 2005, Resolution No. 2005-0050).

http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/iw_policy.pdf

C. THERMAL PLAN

"Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California" (adopted on September 18, 1975; Resolution No. 75-89).

http://www.waterboards.ca.gov/water_issues/programs/ocean/docs/wqplans/thermpln.pdf

D. POWER PLANT COOLING

"Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Powerplant Cooling" (adopted June 19, 1975; Resolution No. 75-58).

http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1975/rs75_058.pdf

E. WATER RECLAMATION

"Policy with Respect to Water Reclamation in California" (adopted January 6, 1977; Resolution No. 77-1).

http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/1977/rs77_001.pdf

F. SHREDDER WASTE

"Policy on the Disposal of Shredder Waste" (adopted March 19, 1987; Resolution No. 87-22).

G. NONPOINT SOURCE PROGRAM STRATEGY AND IMPLEMENTATION PLAN

Volume 1, Nonpoint Source Program Strategy and Implementation Plan, 1998-2013 (PROSIP) (adopted January 2000).

http://www.waterboards.ca.gov/water_issues/programs/nps/docs/planvol1.doc”

H. SOURCES OF DRINKING WATER POLICY

"Sources of Drinking Water" (adopted May 19, 1988; Resolution No. 88-63).

http://www.waterboards.ca.gov/board_decisions/adopted_orders/resolutions/2006/rs2006_000 8_rev_rs88_63.pdf

I. RECYCLED WATER POLICY

“Recycled Water Policy” (adopted February 3, 2009, Resolution No. 2009-0011).

http://www.waterboards.ca.gov/water_issues/programs/water_recycling_policy/docs/recycled waterpolicy_approved.pdf

II. REGIONAL WATER BOARD POLICIES

Adopted Regional Water Board Policies include the following:

A. SEWERAGE SYSTEMS

"Guidelines Regarding Grouped or Community Sewerage Systems" (adopted January 28, 1981; Resolution No. 81-35).

http://www.waterboards.ca.gov/coloradoriver/publications_forms/publications/docs/commsew. pdf

B. SEWAGE DISPOSAL FROM LAND DEVELOPMENTS

"Guidelines for Sewage Disposal from Land Developments" (adopted March 14, 1979; Resolution No. 79-42).

http://www.waterboards.ca.gov/coloradoriver/publications_forms/publications/docs/sewtoland. pdf

C. MOU WITH THE BUREAU OF LAND MANAGEMENT

"Memorandum of Understanding between California Desert District U.S. Bureau of Land Management and California Regional Water Quality Control Board Colorado River Basin Region" (adopted January 25, 1985; Resolution No. 85-24).

D. WATER QUALITY LIMITED SEGMENT

"Designating Water Quality Limited Segments in the Colorado River Basin Region" (adopted January 27, 1988; Resolution No. 88-37).

E. MOA's

"A Memorandum of Agreement between the California Regional Water Quality Control Board Colorado River Basin Region and the Department of Health Services for the Regulation of Low-Level Radioactive Waste" (adopted June 28, 1989; Resolution No. 89-060).

"A Memorandum of Agreement between the California Regional Water Quality Control Board Colorado River Basin Region's Executive Officer and Ibanez Farms and Chino Corona Farms" (adopted November 29, 1989; Resolution No. 89-078).

F. WATER QUALITY ASSESMENT

"Water Quality Assessment for the Colorado River Basin Region of California" (adopted November 20, 1991; Resolution No. 91-057).

G. AGRICULTURAL DRAINAGE

"Agricultural Drainage Management Report for the Colorado River Basin Region" (adopted March 11, 1992; Resolution No. 92-023).

III. REGIONAL WATER BOARD ISSUES

The following issues will be considered by the Regional Water Board:

A. SEPTIC SYSTEM IMPACTS TO GROUND WATER BASINS

There are a number of unsewered communities in this Region which have the potential to have a negative impact on the groundwater. The Regional Water Board has identified some communities with high densities of septic systems. As staffing and finances permit, the Regional Water Board will conduct investigations to determine the relative priority for sewering the following communities:

- Communities in the Indio Hydrologic Subarea
- Yucca Valley
- Twentynine Palms
- Palo Verde
- Morongo Valley
- Lucerne Valley
- Borrego Springs
- Landers
- Joshua Tree

B. BENEFICIAL USE DESIGNATIONS OF AQUIFERS

The ground water Beneficial Use Designations for this Region are currently based on hydrologic units. In the next three years, Regional Water Board staff intends to review the appropriate groundwater data and propose changes to the Beneficial Use Designations so that they will correspond to individual groundwater aquifers within the various hydrologic units. The proposed changes in designations will also be based on the review of the "Sources of Drinking Water Policy" in Chapter 2. These changes would result in an updated version of Table 2-5 (Chapter 2) and a more detailed map of the groundwater aquifers in this Region.

C. GEOTHERMAL FLUIDS

Due to the extensive development of the geothermal industry in Imperial Valley, the Regional Water Board is assessing the potential of surface water and ground water contamination from geothermal brines. A Regional Water Board policy on geothermal development along with updated water quality objectives may be promulgated as necessary based on the findings obtained.

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 Water Board and the Regional Water 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 Water Board and Regional Water 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 Water Board. Section 13163 of the Act states that in conducting this mission, the State Water 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 Water Boards in implementing this section.

Pursuant to these mandates, the State Water 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 Wildlife; 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 Water 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.

II. REGIONAL WATER BOARD MONITORING

The Regional Water 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 Water 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 Water Board staff as grab samples and were analyzed by either the Regional Water Board's in-house laboratory or the California 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 Water 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
Annual Stations	
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

Quarterly Stations

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 Water 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 Water 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 Water 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 Water 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:
1. Tahquitz Creek
2. Twin Pines Creek
3. Boundary Creek
4. Walker Creek
5. Tule Creek
6. Mission Creek
7. Carrizo Creek
8. Big Morongo Creek
9. Banner Creek
10. Little Morongo Creek
11. San Felipe Creek
12. Arrastre Creek
13. Borrego Palm Canyon Creek
14. Coyote Creek
15. 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 Water Board staff on a case-by-case basis, but shall in no case be less frequent then 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 Water 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 Water 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 Water 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 Water 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 California 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 Water 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 California Department of Fish and Wildlife under a contract managed by the State Water Board with the assistance and oversight of the Regional Water 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; and
- 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

Station Name	Sample Years
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 Sebastion 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 sections 13225, 13267, and 13268 of the 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.i.
- Require submission of reports of waste discharge pursuant to Water Code section 13260.
- Adoption of waste discharge requirements, pursuant to section 13263 of the 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 Water Code against any responsible party who violates Regional Water 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 Water Code against those who violate Regional Water Board waste discharge requirements and/or prohibitions.
- Issuance of Administrative Civil Liability Complaints, pursuant to sections 13261, 13264, or 13268 of the Water Code, against any responsible party who fails to comply with Regional Water Board orders, prohibitions, and requests.
- Adoption of referrals of recalcitrant violators of Regional Water Board orders and prohibitions to the District Attorney or Attorney General for criminal prosecution or civil enforcement.

1. PATHOGEN/BACTERIAL INDICATORS

i. New River

(a) Additional Compliance Assurance and Enforcement

Implement and enforce section 13267 of the 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.

(b) 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 Water Board pursuant to a Regional Water Board Quality Assurance Project Plan for the New River (QAPP-NR). The QAPP-NR shall be developed by Regional Water 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 Water Board implementation tracking plan (ITP). Regional Water Board staff will develop the ITP within 180 days following USEPA approval of the TMDL. The objectives of Regional Water 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 State Water Board NPS Program Plan (PROSIP).

2. SEDIMENTATION/SILTATION

i. Imperial Valley

(a) Additional Compliance Assurance and Enforcement

As provided in the State Water 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 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 agricultural land 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 Water 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 Water 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.

(b) 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.)

(c) Water Quality Monitoring and Assessment

Monitoring activities are contingent upon adequate programmatic funding. Regional Water Board staff will conduct monitoring activities for the Alamo River, New River, and Imperial Valley Drains Sedimentation/Siltation TMDLs pursuant to a Regional Water 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 Water 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 Water 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 Water 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 Water 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 Water Board staff will develop and implement the ITP within 180 days following USEPA approval of the Alamo River and New River TMDLs. Regional Water Board staff will develop and implement the ITP by one month following USEPA approval of the Imperial Valley Drains TMDL. The Regional Water 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 Water 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 State Water Board NPS Program Plan (PROSIP).

(d) TMDL Implementation Tracking

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

(e) TMDL Assessment and Reporting

On a yearly basis, Regional Water 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.

(f) Regular Review

The Regional Water 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 Water 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 Code of Federal Regulations section 30.503 (July 01, 1987).

The State Water Board has appointed a QA Program Manager to direct, coordinate and administer the state QAPP. Independently, each Regional Water Board has appointed a QA Officer to administer its Regional responsibilities. The

State Water Board and the Regional Water Boards jointly administer the program but the State Water Board has lead responsibility for managing the overall program and for reporting to the USEPA. The duties of the Regional Water Board QA Officer include overseeing and implementing QA procedures conducted in the Regional Water 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 Water 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.