RECLAMATION

*Managing Water in the West*

# Salton Sea Shallow Water Habitat Pilot Project

## Environmental Assessment and Finding of No Significant Impact

**Department of Interior**
**Bureau of Reclamation**

**September 2005**

# Salton Sea Shallow Water Habitat Pilot Project

## Environmental Assessment and Finding of No Significant Impact

**04PE303285**

*by*

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Prepared for:

U.S. Department of the Interior
Bureau of Reclamation
Lower Colorado Regional Office
Regional Initiatives and Project Development
Salton Sea Restoration Project
Boulder City, Nevada

September 2005

# FINDING OF NO SIGNIFICANT IMPACT
## Salton Sea Shallow Water Habitat Project

**US Department of the Interior**
**Bureau of Reclamation**
**Lower Colorado Regional Office**

In accordance with the National Environmental Policy Act of 1969, as amended, and based on the following, the Bureau of Reclamation (Reclamation) has determined that implementing the Salton Sea Shallow Water Habitat Project (Project) would not result in a significant impact on the quality of the human environment or the natural or cultural resources of the area. A copy of the final environmental assessment (EA) is attached to this finding of no significant impact.

The intent of the Project is twofold. First is to evaluate site preparation methods, costs, and durability of maintaining shallow saline water impoundments using Salton Sea sediments. Second is to analyze bird and aquatic invertebrate species, water and sediment chemistries, and the various interactions among these factors for shallow impoundments fed with saline water similar to that from a desalination plant discharge stream. This effort would provide Reclamation and other planners with critical information on how these biological and chemical factors could be used in a restoration plan to maximize uses and minimize risks to wildlife in shallow saline habitats. The Project is sited on Imperial Irrigation District, State of California, and Cal Energy Corporation land, and within an Imperial County right of way. Construction would begin on these lands only after Reclamation has received authorization from the respective land owners.

The preparers of the EA specifically evaluated the impacts of implementing the Project on land use/ownership, geology and soils, water resources, biological resources, cultural resources, Indian Trust Assets, hazards and toxic materials and waste, visual resources, air quality, noise, socioeconomics and environmental justice, and traffic. Construction activities are anticipated to be completed within 60 to 90 days and would have only potentially minor and, in some cases, temporary impacts on air quality, noise, and water quality. There would be no impacts on land use/ownership, geology and soils, biological resources, cultural resources, Indian Trust Assets, visual resources, and socioeconomics and environmental justice.

In the final EA are listed Imperial County Air Pollution Control District best management practices that will be incorporated in construction plans to reduce or eliminate impacts or potential impacts on air quality. The project has also been redesigned since initial inception to avoid impacts to pupfish, based on concerns expressed by the U.S. Fish and Wildlife Service, the California Department of Fish and Game, and the Imperial Irrigation District. Project field work activities will not start prior to obtaining all necessary state and federal permits. Once all permits are obtained Reclamation will begin work on land for which Reclamation has obtained land use agreements.

John Johnson, Manager
Regional Initiatives and Project Development
Lower Colorado Regional Office

Sep 27, 2005
Date

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# LIST OF ACRONYMS

| Acronym or Abbreviation | Full Phrase |
|---|---|
| ACOE | US Army Corps of Engineers |
| APCD | Air Pollution Control District |
| CDFG | California Department of Fish and Game |
| CEQA | California Environmental Quality Act |
| CNAHC | California Native American Heritage Commission |
| CNDDB | California Natural Diversity Data Base |
| CNPS | California Native Plant Society |
| CRBRWQCB | Colorado River Basin Regional Water Quality Control Board |
| ESA | Endangered Species Act |
| FONSI | Finding of No Significant Impact |
| ICGP | Imperial County General Plan |
| IID | Imperial Irrigation District |
| NAGPRA | Native America Graves Protection and Repatriation Act |
| NEPA | National Environment Policy Act |
| NHPA | National Historic Preservation Act |
| NMFS | National Marine Fisheries Service |
| NRHP | National Register of Historic Places |
| PVC | Polyvinyl chloride |
| ROI | Region of Influence |
| ROW | Right of way |
| SHPO | State Historic Preservation Office |
| SSA | Salton Sea Authority |
| SSSO | Salton Sea Science Office |
| TDS | Total Dissolved Solids |
| USFWS | US Fish and Wildlife Service |
| USGS | US Geologic Survey |
| VTE | Vertical Tube Evaporation |
| WCB | Wildlife Conservation Board |

# SECTION 1
# PROJECT DESCRIPTION

## 1.1 INTRODUCTION

This environmental assessment (EA) and finding of no significant impact (FONSI) has been prepared in accordance with the National Environmental Policy Act (NEPA), and U.S. Department of the Interior, Bureau of Reclamation (Reclamation) guidelines. A Notice of Exemption was prepared under the California Environmental Quality Act (CEQA) by Imperial County, the project's Lead Agency for CEQA. The Notice of Exemption was posted on May 23, 2005, and is available in Appendix A.

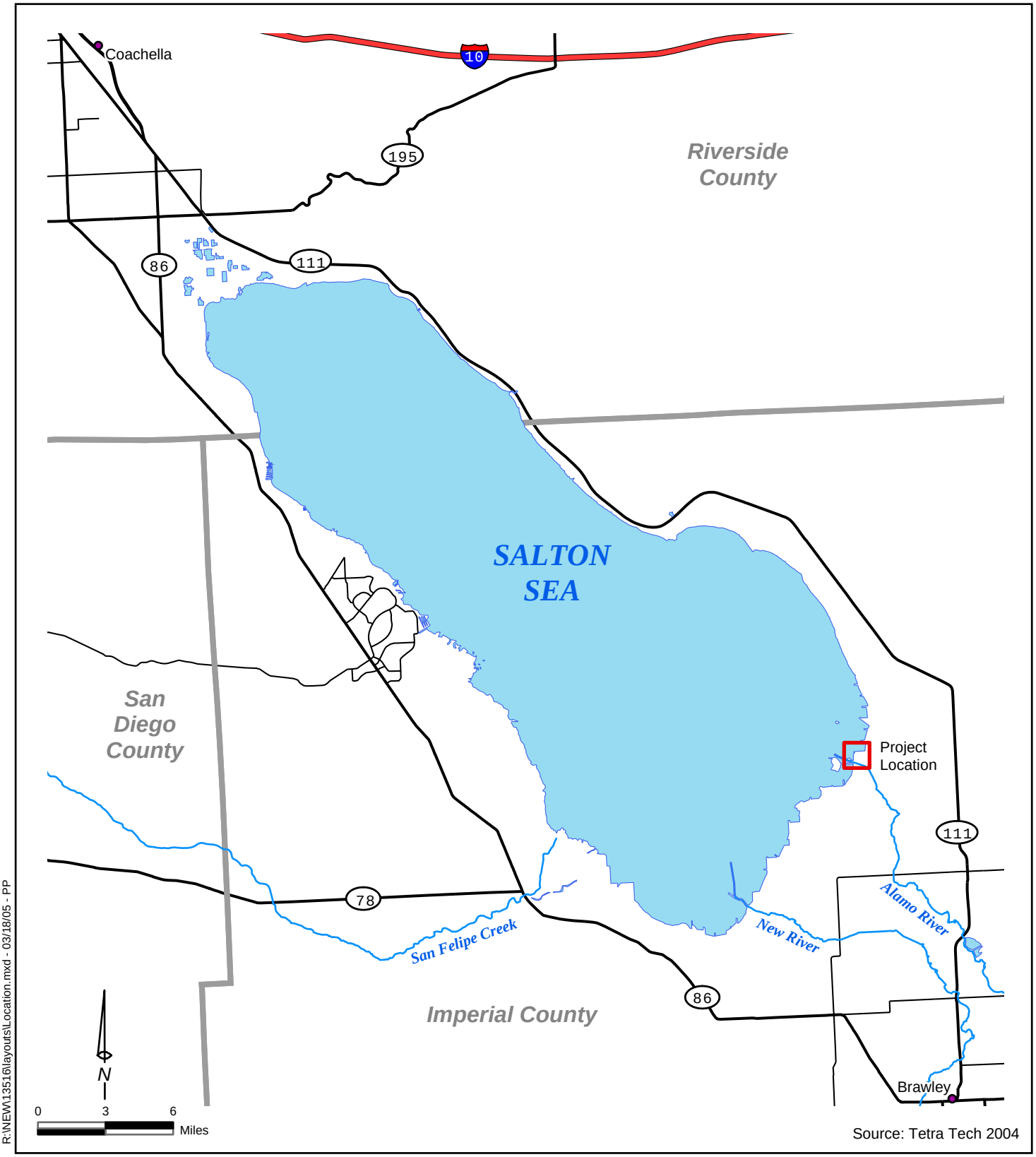
This EA summarizes the environmental effects of implementing a pilot project (Project) for testing saline shallow habitat within abandoned ponds north of the Alamo River, between Davis Road and the Salton Sea, in Imperial County, California (Figure 1-1).

The EA describes the proposed Project, alternatives, and the environmental consequences of constructing, operating, and monitoring a shallow water habitat system for between two and five years. It also sets forth the consultation process used in preparing this EA.

## 1.2 PURPOSE AND NEED OF THE PROPOSED ACTION

To further restoration of the Sea, Reclamation is undertaking a series of pilot projects in and around the Salton Sea, one of which is the Project. The purpose of the Project is to evaluate the quality of saline shallow water shorebird habitat that would be created using water similar in quality to a discharge stream from a desalination facility. Abandoned ponds north of the Alamo River provide an ideal site for the Project.

The objective of the Project is twofold: 1) to evaluate site preparation methods, costs, and durability of maintaining shallow saline water impoundments using Salton Sea sediments and 2) to analyze bird and aquatic invertebrate species, water and sediment

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# Project Location Map
# Shallow Habitat Project

Southeastern California

Tetra Tech, Inc

**Figure 1-1**

chemistries, and the various interactions among these factors for shallow impoundments fed with saline water similar to that from a desalination plant discharge stream. This effort will provide Reclamation and other planners with critical information on how these biological and chemical factors could be used in a restoration plan to maximize uses and minimize risks to wildlife in shallow saline habitats.

## 1.3 PURPOSE AND NEED FOR AN ENVIRONMENTAL ASSESSMENT

Because the Project is using Reclamation funding, it is subject to review and documentation under NEPA (40 CFR Parts 1500 et seq.) and Reclamation's NEPA Handbook (USBR 1990). This EA provides information needed by the federal official who must determine whether to prepare a FONSI or an environmental impact statement (EIS).

## 1.4 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

### 1.4.1 Location

The Project is on the southeastern shore of the Salton Sea, southwest of Niland in Imperial County, California. The Project features would be west of Davis Road on approximately 120 acres of property owned by the Imperial Irrigation District (IID), the State of California, and Cal Energy between the cross streets of Schrimpf Road and Hazard Road. An overview of the project is provided in Figure 1-2, and engineering diagrams of specific project features is provided in Appendix B.

### 1.4.2 Alternatives Considered but Eliminated

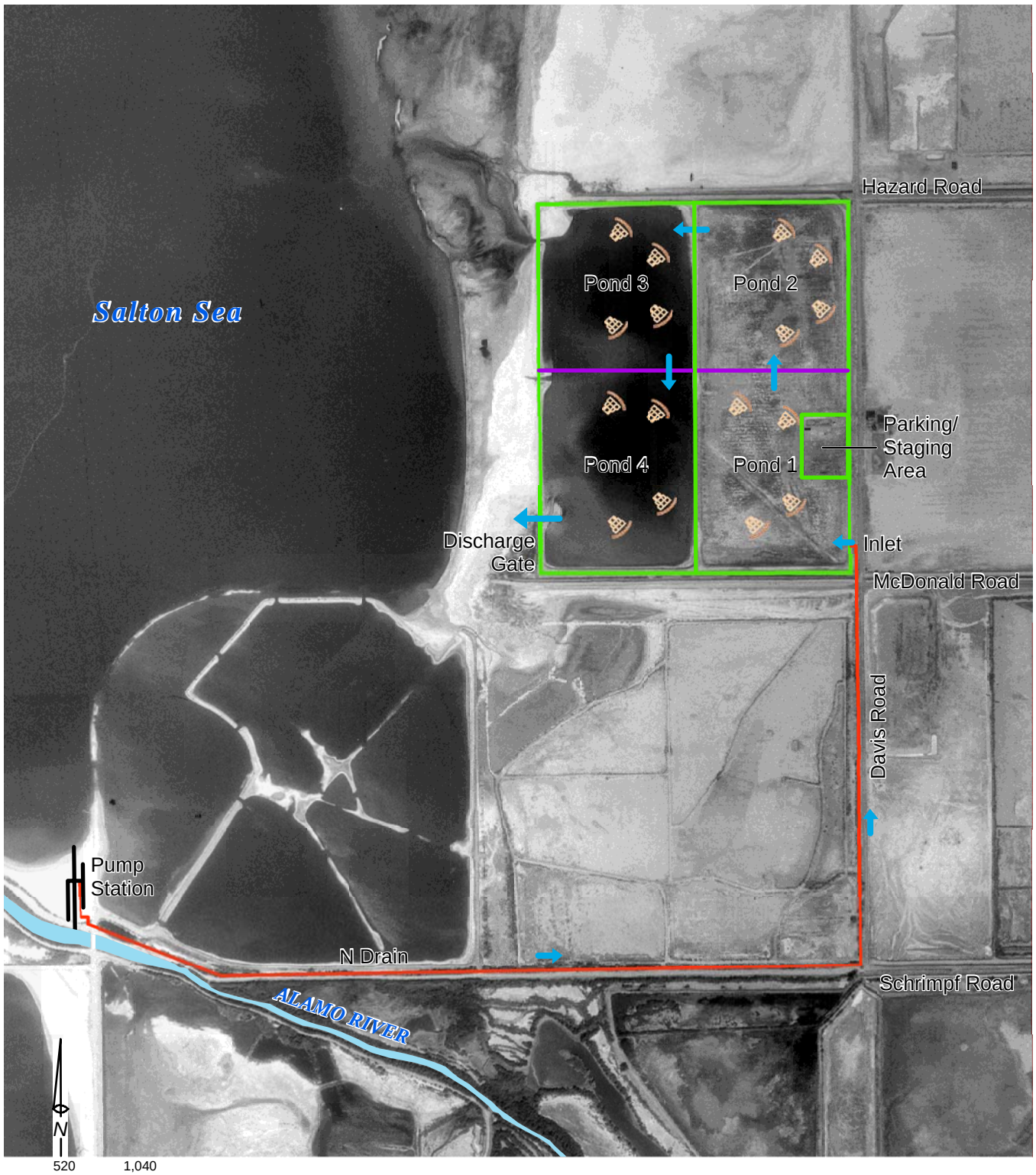
Alternative project designs were considered but eliminated to avoid impacts to desert pupfish and IID drains. Initial project designs included drawing water from IID drains instead of the Alamo River, and drawing water from the Salton Sea without use of a gravel filter. The U.S. Fish and Wildlife Service (USFWS) expressed concerns regarding impacts to desert pupfish in the drains and the Sea, and the IID indicated IID drains and drain flows cannot be impacted by this project.

### 1.4.3 Alternatives Considered in Detail

There were two alternatives considered in detail: Alternative A (no action) and Alternative B (the Proposed Action).

#### *Alternative A—No Action*

NEPA guidelines require that an EA evaluate the No Action Alternative in addition to the Proposed Action. The No Action Alternative provides a basis for comparing the environmental consequences of the Proposed Action. In this EA, the No Action Alternative assumes that the Project would not occur and the existing abandoned ponds would remain in their current condition. No adverse effects are expected to be associated with the No Action Alternative.

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Source: Tetra Tech 2005

**Legend**

- Island
- Pipeline
- Project Boundary/Existing Berms
- Berms to be Constructed
- Direction of Flow

# *Project Detail Map*
# *Shallow Habitat Project*

Southeastern California

Tetra Tech, Inc

**Figure 1-2**

### *Alternative B—Proposed Action*

The Proposed Action is the development of a shallow water habitat system that would be operated and monitored for at least two full breeding seasons. The Project would involve dredging, grading, and placing fill on land above the current elevation of the Sea but deemed within Waters of the US by the Army Corps of Engineers, withdrawing water from the Alamo River and the Salton Sea, and installing a pipeline along existing roads and dikes. These activities may have the potential to cause impacts and therefore would be subject to environmental analysis.

Reclamation is currently applying for use of IID land, State land, and Cal Energy land, as well as for the use land within the IID easement on Cal Energy land along the N Drain and land within the Imperial County Public Works prescriptive right-of-way (ROW) on Cal Energy land along Davis Road. Construction will begin on these lands only after Reclamation has received authorization from the respective land, easement, and ROW owners.

The Project would begin in summer 2005 and, once operational and the ponds equilibrated, is projected to last for a minimum of two years (two full breeding seasons). The Project would involve installing a pumping station to remove water from the Salton Sea and the Alamo River, a pipeline to convey the water to the ponds, and the ponds themselves.

This Project is being funded by Reclamation, implemented by Tetra Tech and Agrarian Research, and evaluated by the Salton Sea Science Office (SSSO). The Project would involve modifying two abandoned ponds to form four less than two feet deep ponds on exposed sediments of the Salton Sea. In order to most accurately duplicate a water stream from a desalination plant, this Project would blend water pumped from the Salton Sea, at 44 parts per thousand (ppt), with water pumped from the Alamo River, at 2.5 ppt, to obtain salinity levels ranging from 15 to 20 ppt in the ponds. The salinity would concentrate through evaporation by flowing sequentially through the series of four ponds. Water from the fourth and most saline pond would be discharged back into the Salton Sea at a salinity of approximately 20 ppt. A possible expansion area lies to the immediate north of the Project area, should more funds become available. Any work in this expansion area would require IID approval and would be subject to separate environmental review.

***Development.*** Project components would be on property owned by IID, by the State of California and by Cal Energy, and would also be located within an Imperial County Public Works prescriptive ROW and an IID easement. Construction would begin on these lands only after Reclamation has received authorization from the respective land, easement, and ROW owners. The Project infrastructure components on IID property would be the pump station, the first half mile of the pipeline from the pump station, and Ponds 2, 3, and 4. The Project infrastructure components on State of California land include the parking/staging area, Pond 1, the berm between Ponds 1 and 4, and 10 acres of Pond 4 directly east of the berm. The Project infrastructure components on Cal

Energy property (but within an IID easement or an Imperial County Public Works Prescriptive right of way) would be the portion of the pipeline along the eastern half mile of the N Drain west of Davis Road and the half mile portion of pipeline along Davis Road north of N Drain, respectively.

Along Davis Road, Cal Energy owns the first half mile north of the N Drain. The State owns the land at the point where the pipeline discharges into Pond 1. Davis Road is an Imperial County road. The pipeline would be buried within the county's prescriptive ROW for Davis Road. The county would guide the construction contractor (Agrarian) as to the exact location of the prescriptive ROW.

Project plans would incorporate all Imperial County Air Pollution Control District (APCD) dust suppression guidelines.

Pump Station. The pump station would consist of a sump, an attached Salton Sea Inlet Ditch (ditch) conveying water from the Sea through a gravel filter, a low head trash pump, and a suction hose bringing water from the Alamo River to the pump. These features are detailed in Appendix B.

Installing the sump, ditch, gravel filter, pump and Alamo River intake would involve light dozers (JD 450, Caterpillar D6) and excavators, possibly on mats. The size of the excavator and the specific techniques used would depend on field soil conditions at the time of construction, but no equipment larger than a JD 690 would be used. Approximately three acres of soil would be disturbed. The sump is 10 feet deep, a total of 596 feet long (from intake to the place where the sump pump discharges into a pipe) and 150 feet wide, including the roads on both sides of the sump. The actual ditch for the sump is 50 feet wide, and it is 266 feet from the intake to the fish screen and another 177 feet from the fish screen to the end of the ditch where the pump station is located. The Alamo River water intake would be a flexible suction hose, 6 inches in diameter that would laid on the surface of the Alamo River bank and then run through an 8-inch polyvinyl chloride (PVC) pipe and buried at least 10 inches beneath ground surface where the hose crosses Schrimpf Road and connects to the pump. Installation of all these features would take approximately two weeks and would involve three workers.

The gravel filter is included in the project design to avoid negative impacts to pupfish that may be present along the shoreline of the Sea. The filter is a gravity feed system and designed to avoid uptake or entrapment of pupfish. Construction of the sump and gravel filter would be done in such a way that will avoid impacts to pupfish; all features of the sump, including the gravel filter, would be fully constructed prior to establishing the final connection to the Sea. This would avoid excavation below the water surface, in potential pupfish habitat. At decommissioning, the sump area would be filled from the shore side working outward into the Sea such that any water and pupfish within the inlet would be displaced back into the Sea and would not be entrapped or harmed.

The ditch running from the sump to the Salton Sea would be approximately 596 feet long and would vary in depth from 15 feet at the pump station to about three feet right along the shore of the Sea. The total amount of fill required for sump construction is 189,225 cubic feet of material, all of which will be borrowed from the sump area itself. The sump and pump would be enclosed within a chain-link fence.

Pipeline. Installation of the pipeline would involve both surface and buried line. Details of the pipeline are provided in Appendix B. The ten-inch surface spline line pipe would be within IID's easement along the north side of N Drain from Black's Bridge to Davis Road. This section of the pipeline would be anchored with soil to keep it from moving, but it would not be buried. Keeping the pipeline above the surface would allow IID drain maintenance personnel to see the pipe and avoid causing it any damage. The easement is 40 feet wide on each side from the center of the drain to the edge of the easement. At Davis Road, the pipeline would be buried and run north along the west side of the road within the Imperial County Public Works prescriptive ROW. The entire pipeline along Davis Road would be buried approximately 30 inches deep or in areas where a 30 inch cannot be obtained, capped with concrete, as required by Imperial County Public Works.

The surface line would be 4,150 feet long, with earthen anchors every 300 feet. This is a disturbance of about 300 square feet. The buried line would be installed using a backhoe or a small excavator, and a disturbance of approximately 0.26 acres of soil (2,830 feet of pipeline with a four-foot-wide impact corridor). Pipeline installation would take approximately one week and would involve three workers.

Pond Development. All existing dikes would be used for the proposed ponds. The IID requires that additional berms be constructed outside the dikes containing drains and laterals so that this Project would have independent boundaries; however, the existing berms have already provided this boundary since they were constructed parallel to IID's dikes. There would be one discharge into the Sea, for which appropriate permits would be obtained. Up to sixteen bird nesting islands (four per pond) would be created more or less perpendicular to the prevailing winds inside the ponds, and there may be at least one observation tower installed to observe bird use.

Developing the ponds would disturb approximately 117 acres. The entire pond bottoms would be graded to create level surfaces within the ponds. This process would use light dozers, such as a Caterpillar D7, and light excavators, possibly on mats. The activity would take approximately four weeks and would involve four workers.

The islands would be created from soil derived from borrow pits that would be excavated out of the existing pond surfaces (when dry). Each borrow pit would be 170 feet long and 10 feet wide and would be situated alongside each island location. The combined area of these borrow pits would be approximately 0.62 acres. Islands would be created using a light excavator on mats to excavate soil and a small backhoe for leveling the islands. Island building would take approximately one week and would

involve two workers. Each completed island would be approximately 0.125 acre, resulting in a total area of 2.0 acres (16 islands x 0.125 acres/island) and a displacement of 6,664 cubic yards of fill within the ponds.

Additional berms would be created from soil from borrow areas that would be excavated out of the existing pond surfaces (when dry). The proposed berms would be 4,197 feet long and 34 feet wide (toe to toe). A total of 4.47 acres would be disturbed, including the borrow areas, the site occupied by the excavator, and the actual berms. This area of disturbance is included in the overall 117 acres of disturbance for the entire pond area. The berms themselves would take up 3.27 acres of the ponds and would represent 30,777 cubic yards of fill, all of which would be borrowed from the pond area itself. Berm development would involve a light excavator, probably on mats, would take approximately two weeks, and would involve two workers.

Pond Inlet. The inlet into the first pond from the pipeline would include an energy dissipater to avoid eroding the pond bottom. A jointed section of pipe would convey the water off the elevated dike and down to the level of the pond bottom. This would involve using a backhoe to cut through the existing non-IID berm in which the delivery pipe is buried to bring the pipe to the level of the pond bottom. Water would pass into the pond through a 10-inch by 10-foot-long slotted pipe to dissipate the energy of the water.

Discharge Gate. The discharge gate consists of a 10-inch pipe installed under the berm at the downslope edge of the final pond. The pipe would include a standpipe at the pond side for adjusting height to control the pond level. There would also be a permanently installed standpipe at the other end of the pipe, discharging water through a 24-inch outlet to the playa outside the ponds. The larger opening, combined with the upward flow through the standpipe, would prevent soil erosion at the discharge end and would prevent pupfish or other fish in the Salton Sea from entering the ponds. Installing this outlet would involve trenching through the berm and laying the outlet pipes and their standpipes. Outlet installation would not disturb any dry ground or seabed not already disturbed by berm development. Installation would use a light excavator or a backhoe, would take approximately one day, and would involve two workers.

***Operation.*** Operation of the system would involve pumping waters from the Salton Sea and the Alamo River in volumes sufficient to keep the ponds full and in ratio sufficient to maintain the salinity targets.

Pond Dimensions. The ponds would be approximately two feet deep and would have the following areas and volumes:

- Pond 1—29.5 acres, 59 acre-feet;
- Pond 2—25.0 acres, 50 acre-feet;
- Pond 3—26.4 acres, 52.8 acre-feet; and

- Pond 4—32.5 acres, 65 acre-feet.

Target Salinities. Pumping rates would be adjusted to maintain Pond 4 at or below 20,000 parts per million (ppm) of total dissolved solids (TDS). The expected TDS levels are as follows:

- Pond 1—15,010 ppm;
- Pond 2—16,035 ppm;
- Pond 3—17,314 ppm; and
- Pond 4—19,261 ppm.

Pump Station. Water from the sea would flow passively through the gravel filter into the sump where it would be pumped to the ponds. Alamo River water would be pumped from the river via a 6-inch flexible suction hose that would be laid inside an 8-inch PVC pipe that would be buried at least 10 inches beneath ground surface where the hose is to cross Schrimpf Road. The hose would have a screened head and a foot valve that would be dropped into the river over a rock-reinforced bank. The rock would be six inches tall and 24 inches in diameter. The trash pump would be manually controlled such that at any given time, it is pumping either Salton Sea water from the sump or Alamo River water directly from the river. The pump would convey the water through a 10-inch surface spline line pipe.

Water Flow Rates and Losses. To meet the initial target salinity of 15,010 ppm at the outflow of the first pond, the ratio of water delivery is calculated to be about three parts Alamo River to one part Salton Sea. To fill the ponds initially, Alamo River water will be pumped to the ponds at a rate of approximately 677 gallons per minute (gpm) for the first day. This will be followed by Salton Sea water pumped at a third of the volume of the Alamo River water. Delivery will alternate in this fashion until the ponds are filled. A salt balance calculating spreadsheet will be used in the future to determine water requirements based on regular sampling of the salinity of the ponds. Based on calculated evaporation rates and estimated percolation rates, annual water use is estimated at 1,745 acre-feet of Alamo River water and 670 acre-feet of Salton Sea water.

The system would lose water from both percolation and evaporation at annual rates of 227 acre feet and 635 acre-feet, respectively. The Project would result in an annual decrease in the Salton Sea of approximately 862 acre-feet.

***Maintenance.*** Agrarian would retain a part-time employee to maintain the pumps, the pipeline, the valves, and all activities associated with the movement of water. Such maintenance would involve tools and shovels but not heavy equipment. There would be meters to record total volumes of water delivered and flumes to determine total volume of water discharged. Agrarian personnel would maintain these data and would also handle berm maintenance and evaluation. Agrarian would monitor pond salinity weekly, with water delivery from the Salton Sea or from the Alamo River adjusted to meet

salinity targets. A backhoe or trackhoe would be maintained on-site to handle any berm maintenance that would be required. Agrarian personnel would evaluate berm conditions and island erosion annually.

***Monitoring.*** Wildlife, bird eggs, invertebrates, water quality, and sediment characteristics would be monitored.

Wildlife. Every two weeks, the US Geologic Survey (USGS) Salton Sea Science Office (SSSO) staff would conduct bird surveys prior to and during site preparation to document species and numbers for baseline determinations. After site preparation, surveys would continue every two weeks to document any changes in bird use by numbers, nesting, species composition, or patterns of use. Surveys would continue every two weeks for the duration of Project development and implementation. Survivability of newly hatched shore bird chicks will be monitored using telemetry via fitting a certain number of chicks with a radio tag. The chicks will be monitored for the lifetime of the radio tag, typically 30 days. Data on movements or recaptures (each radio signal can be statistically considered the same as a resighting or a recapture) will then be modeled to assess post-hatch survival.

Bird Eggs. Samples of eggs would be taken from nesting birds on the shallow saline habitat for chemical analysis of potential contaminants. Within each impoundment, nests would be identified and marked for all targeted breeding species. A random selection process would be used to collect up to five eggs in each impoundment from five different nests of up to three different species of birds.

Invertebrates. The USGS SSSO staff would also conduct quarterly sampling for aquatic invertebrates. This sampling would involve sweeping the water column, installing light traps (the use of lights to attract and trap invertebrates), and obtaining sediment grab samples after the ponds are first filled.

Water and Sediment. Before the Project began, the USGS SSSO staff would collect water and sediment samples to establish baseline water and sediment constituent baseline conditions. Water and sediment would be sampled during Project operation. Samples would be collected from inflows, each impoundment, eventual outflows, and the USFWS's Sonny Bono Refuge, located west of the intake structure.

***Decommissioning.*** Upon Project completion, the pump station, the sump, the inlet, the discharge gate, the pond connecting structures, and all pipelines would be removed and the affected areas would be restored. The constructed berms and islands would remain in place, as requested by IID. The sump and pipeline trench would be filled in, as would the ditch leading into the Salton Sea.

## 1.5 OTHER AGENCY APPROVALS

Approvals would need to be received from several federal, state, and local agencies.

***US Army Corps of Engineers (ACOE).*** An Army Corps of Engineer Section 404 of the Clean Water Act permit will be required before discharging dredged or fill material into Waters of the United States.

***US Fish and Wildlife Service (USFWS).*** The USFWS has been consulted for information on the Endangered Species Act and Coordination Act. The USFWS is preparing a Coordination Act Report for this effort and has, via personal communication, issued a statement of concurrence regarding no impacts to pupfish (Roberts 2005).

***State Historic Preservation Office (SHPO).*** The SHPO would need to concur with findings on the Project's impact on historic properties within the Project area before the Project began. A Section 106 Review in compliance with the National Historic Preservation Act would be conducted. The Section 106 review also would involve consulting with the California Native American Heritage Commission (CNAHC), appropriate Native American tribal organizations and individuals, and other interested parties.

***California Department of Fish and Game (CDFG).*** The CDFG would have to issue a Section 1602 Lakebed Alteration Agreement because all proposed work would take place below the -220 feet above sea level elevation. The Army Corps of Engineers has deemed all land in the area of the Sea at or below the -220' elevation Waters of the United States.

***Colorado River Basin Regional Water Quality Control Board (CRBRWQCB).*** A Section 401 Water Quality Certification or conditional waiver would need to be acquired from the RWQCB for extracting water from the Alamo River and from the Salton Sea, as well as for the resultant discharge into the Salton Sea. A General Permit for Discharges of Stormwater Associated with Construction Activity (WQ Order 99-08) also would need to be obtained from the State Water Resources Control Board for the construction and ground-disturbing activities associated with this Project.

***Imperial County Air Pollution Control District (APCD).*** The APCD requires that construction best management practices for particulate dust emissions be incorporated into project plans. An air permit is not required.

***Imperial County.*** An encroachment permit would need to be acquired from Imperial County for the placement of the 10-inch pipeline within the County's prescriptive ROW along Davis Road.

***Imperial Irrigation District.*** An encroachment permit would need to be acquired from the IID for placement of the 10–inch pipeline over IID infrastructure within their easement along the north bank of the N Drain. A land use agreement will also need to be obtained from Cal Energy prior to use of the IID easement along Cal Energy property.

## 1.6 CUMULATIVE PROJECTS

***Salton Sea Restoration Project.*** The Salton Sea Restoration Project has been identified as a project within the Salton Sea over the proposed three-year project period. In September and October 2003, extensive geotechnical work began in an effort to determine the best location for dikes in the Salton Sea. Though the Salton Sea Authority (SSA) endorsed moving forward on a derivation of a plan originally developed by US Filter, all proposed plans that meet the established restoration components are being scrutinized (Salton Sea Authority 2005). Those restoration components include the following:

- Water quality improvements;
- Shallow water wetlands (bird habitat);
- Healthy deep-water fishery;
- Air quality/dust mitigation;
- New water generation; and
- Economic development.

Under the SSA's plans, the entire present Project area would be dry and would no longer lie at the edge of the Sea's shore. None of the locations proposed for the above-listed components would be near or conflict with the Project.

***Vertical Tube Evaporation Pilot Project.*** The Vertical Tube Evaporation (VTE) pilot project is a 5,000 gallon per day desalination pilot project being undertaken by Reclamation at Cal Energy's Unit One geothermal plant located at the south end of the Sea. The VTE system will be powered by geothermal excess steam and will desalinate 5,000 gallons per day of Salton Sea water through a multi-step condensing system within a vacuum. The purpose is to test the success of powering a VTE system using geothermal excess steam which is very corrosive and could harm the equipment. Removal of selenium will be tested as well as the removal of sulfates from the brine stream. This removal would enable the stream to be injected into the geothermal aquifer, thus helping to replenish it and reduce salt waste from the desalination process.

This project will be up and running by autumn 2005 and will operate for six months. The desalinated water will be mixed with the brine and returned to the Sea for a minimal loss of water to the Sea.

***Alamo and New River Wetlands Sites.*** The Wildlife Conservation Board (WCB) is expected to fund a project involving the construction of wetlands and sedimentation ponds along the Alamo and New Rivers.

In the short term, the Bureau of Reclamation plans to construct two initial wetland sites along the Alamo River: one near Brawley, and one near Holtville. The Brawley site would be 50 acres in size, and the Holtville site would be 30 acres in size.

The New River already has two wetland sites along its banks: a 6-acre site and a 22-acre site. A further 30-acre site is planned for construction. All of these sites increase surface area for waters to evaporate and percolate, resulting in decreases to waters available to the Salton Sea.

***Mexicali Wastewater Treatment Plant.*** Untreated or partially treated wastewater from Mexicali, Mexico, is currently discharged into the New River, which flows north into the United States and ultimately empties into the Salton Sea. The United States and Mexico, through the International Boundary Water Commission, are planning short- and long-term improvements to the Mexicali wastewater system. These improvements include, among others, rehabilitating and expanding the Mexicali I wastewater treatment plant and constructing a Mexicali II wastewater treatment plant. The purpose of these improvements is to improve sanitation in Mexicali and to improve the quality of water discharged to the New River. After improvements, Mexicali may opt to redirect some or all of the treated wastewater for uses south of the border instead of discharging to the New River, potentially affecting the quantity of inflows to the Salton Sea.

***Water Conservation Agreement.*** A water conservation agreement was signed in 1998 between IID and the Los Angeles Metropolitan Water District (MWD) to transfer 100,000 acre feet of water from the Imperial Valley to MWD. This loss of water to the Valley is being realized at the Sea today. Ongoing water conservation practices continue to be implemented in the Valley.

***Quantification Settlement Agreement (QSA).*** The QSA is a multiparty agreement which quantified the Imperial Irrigation District and Coachella Valley Water District rights to Colorado River water and allows for transfers up to 300,000 acre feet of conserved water from IID to other California users. The QSA was signed in 2003 and is expected to be fully implemented by 2016. As part of the QSA, a 15-year period is in place that ensures that any water transfers out of the Imperial Valley do not result in reduced inflows to the Salton Sea.

No other cumulative projects within the proposed installation areas were identified through consultation with Imperial County and the SSA.

## 1.7 SCOPE OF THE DOCUMENT

This EA identifies, evaluates, and documents the environmental effects of the Project. Section 1, Project Description, introduces and describes the Project alternatives. Section 2, Affected Environment, describes existing resource conditions. Section 3, Environmental Consequences, identifies the environmental effects of the Project. Section 4, References, provides information on the sources cited in the report. Section 5, List of Preparers, identifies the people who prepared the report and their disciplines.

This document analyzes direct impacts (those caused by an action and occurring at the same time and place) and indirect impacts (those caused by an action but occurring later

or farther away but at a reasonably foreseeable time or place). Actions that could lessen identified impacts are identified, where appropriate.

## 1.8 PLANS, POLICIES, AND FINDINGS

This section summarizes the major applicable plans and policies of federal, state, regional, and local government agencies. The only applicable plans are from the CRBRWQCB (Region 7), the SSA, and Imperial County. Consultation with regulatory agencies will ensure that the Project is consistent with the applicable plans and policies of those agencies.

***Colorado River Basin RWQCB*** is responsible for protecting water quality in the Colorado River hydrologic region. The Salton Sea transboundary watershed, which contains the Salton Sea, is the region's priority watershed. The CRBRWQCB seeks to reduce of the potential for the Salton Sea to become enriched with dissolved nutrients that stimulate the growth of aquatic plant life, depleting dissolved oxygen (eutrophication) so that beneficial uses, such as providing habitat for fish and migrating birds, can continue into the future (CRBRWQCB 2004).

Findings. The proposed Project would be consistent with the goals of the CRBRWQCB because it would contribute scientific understanding of how to best implement habitat for migrating birds at the Salton Sea.

***Salton Sea Authority.*** The SSA is a joint powers authority whose goal is to restore the Salton Sea. The SSA identifies the following restoration objectives:

- Stabilize salinity;
- Preserve the shoreline and control elevation;
- Promote economic development;
- Provide an agricultural water depository; and
- Provide a healthy fish and wildlife habitat.

The SSA also identifies the following restoration components:

- Improve water quality;
- Establish shallow water wetlands (bird habitat) and a healthy deepwater fishery;
- Preserve air quality and mitigate dust; and
- Generate new water.

Findings. The Project would be consistent with the restoration goals and components of the Salton Sea Authority. Through the Project, the SSA is pursuing the goal of creating

healthy fish and wildlife habitat. The Project would provide valuable information to the SSA-identified restoration component of shallow water wetlands (bird habitat).

***Imperial County.*** The Water Element of the Imperial County General Plan (ICGP) contains the following goals:

- The county would provide safe and healthful sources and supplies of domestic water to ensure the implementation of the County General Plan and the long-term continued availability of this essential resource.
- Long-term viability of the Salton Sea, Colorado River, and other surface waters in the county would be protected for sustaining wildlife and a broad range of ecological communities.
- The county would provide safe and healthful sources and supplies of irrigation water to ensure the continuation of agricultural land uses, as established by the County General Plan and the long-term continued availability of this essential resource.
- The County would adopt and implement ordinances, policies, and guidelines to ensure the safety of county ground and surface waters from toxic or hazardous materials and wastes.
- Water resources would be managed effectively and efficiently through inter-agency and inter-jurisdictional coordination and cooperation.

Findings. The Project would be consistent with the goals and policies of the ICGP. The Project would foster understanding of how to manage surface waters for the purpose of sustaining wildlife.

# SECTION 2
# AFFECTED ENVIRONMENT

## 2.1 INTRODUCTION

This section presents an overview of the existing environment in the project area (Figure 1-2). It is a summary of the preliminary investigations of each resource's existing conditions and includes existing laws, regulations, and guidance that pertain to the management of each resource.

Generally, the discussion is limited to the human and natural environmental conditions that could be affected by the Proposed Action. Information about existing conditions was collected and compiled from numerous sources. Data were provided by federal, tribal, state, county, and local agencies, organizations, and other public and private sources. Data included published and unpublished reports, maps, and aerial photographs.

## 2.2 LAND USE

The project area is in an unincorporated area of Imperial County on land owned by the State of California, Imperial Irrigation District, and Cal Energy Corporation. The area consists of abandoned duck ponds, agricultural drains, and access roads. Surrounding land uses include wetlands, geothermal power plants, and open space. Land use in this area is guided by the ICGP. The project site itself is designated as Agriculture and zoned as Open Space/Recreation/Geothermal Overlay.

### 2.2.1 Utilities and Infrastructure

There are no public utilities in the project area. The N-Drain is a westward flowing agricultural drain in the southern part of the project area that drains into the Alamo River.

### 2.2.2 Airport Involvement

There are no airports within five miles of the project area.

### 2.2.3 Pedestrian and Bicyclist Facilities

There are no pedestrian or bicycle facilities in the project area.

### 2.2.4 Public Lands

The State of California owns the land containing the proposed Pond 1, the berm between Ponds 1 and 4, 10 acres of the eastern portion of Pond 4 and the portion of Davis Road within the west boundary of the State's 40 acres. IID owns the remaining pond areas proposed to be used for the project, as well as an easement along the eastern half of the proposed pipeline alignment along the N-Drain. IID also owns Davis Road from a point half a mile north of the N-Drain.

### 2.2.5 Parklands

Parklands, which include parks and recreation areas, are those public properties owned by state, county, or local jurisdictions. Some parklands may be subject to the provisions of Section 6(f) of the Land and Water Conservation Fund Act of 1965 or Section 1010 of the Urban Park and Recreation Recovery Act of 1978. No parklands are within the project area. There are no designated Wilderness Areas or Wilderness Study Areas in the project area; however, the Imperial State Wildlife Area is located directly south of the N-drain at the south end of the project boundary.

## 2.3 GEOLOGY AND SOILS

The Salton Sea is in the northern portion of the Salton Trough, a seismically active rift valley extending northwestward from the Gulf of California into southern California. Topography across the Salton Trough is relatively flat. The Salton Sea is underlain by quaternary sedimentary deposits, including gravel, sand, and clay (USGS 2004).

***Seismicity.*** The Salton Trough is the northern extension of the Gulf of California Rift Zone and is characterized by northwest-southeast-trending transform fault zones and several crustal rift areas between these fault zones. This region has undergone subsidence, uplift, tilting, folding, and crustal spreading over many millions of years and is considered to be one of the most seismically active areas in the world. The area regularly experiences perceptible earthquakes, both large-scale seismic events and low magnitude swarms (US Department of the Interior and the State of California 1974).

The project area lies within the Brawley Fault Zone. Potential geologic hazards associated with the Salton Trough include seismic hazards, such as ground rupture, ground acceleration, seiches, liquefaction, and dynamic settlement.

## 2.4 WATER RESOURCES

***Salton Sea.*** The Salton Sea is a highly eutrophic (enriched in dissolved nutrients, which stimulate plant life, depleting the dissolved oxygen) saline lake that has no outlet. Agricultural irrigation drainage of 1.36 million acre-feet per year is the primary source of inflow to the Salton Sea. This level of inflow allows the sea to maintain its current elevation. The sea's average depth is 29.9 feet, with the deepest point measuring 51 feet. High levels of salinity in the sea continue to pose an environmental problem (IID 2005).

***Alamo River.*** The Alamo River flows in a northerly direction to the Salton Sea, accumulating nutrients and other constituents, such as selenium along the way from US sources. The Alamo River (along with the New and Whitewater Rivers) is one of three main water inputs into the Salton Sea that allow the sea to maintain its current elevation. The Alamo River provides a total average annual inflow to the Salton Sea of 620,000 acre feet. This represents 46 percent of the annual inflow to the Salton Sea.

## 2.5 BIOLOGICAL SETTING

The project area contains terrestrial and aquatic habitats. The proposed project footprint includes a 120-acre portion of land and existing dikes west of Davis Road and north of the Alamo River on the southeastern shore of the Salton Sea (Figure 1-2).

For the purpose of this EA's biological analysis, the region of influence (ROI) is considered to be the project area, which is the project footprint, plus a 165-foot buffer on all sides. The project occurs within the Niland USGS 7.5-minute quadrangle. Information regarding biological resources at this site and in the ROI was obtained by searching the CDFG California Natural Diversity Data Base (CNDDB) (CDFG 2005), by obtaining a list of proposed, threatened, or endangered species potentially occurring in the Region of Influence (ROI) from the USFWS (included in Appendix C), by reviewing existing literature, and by having a Tetra Tech biologist conduct a site reconnaissance and general biological survey on April 6, 2005. Tetra Tech's biological report is found in Appendix C.

The site consists of approximately 120 acres, including approximately 114 acres for the ponds, three acres for the proposed berms, three acres for the proposed pump station, and 0.26 acre for the proposed pipeline. Existing ponds would be divided into a series of four smaller ponds by installing berms.

## 2.6 VEGETATION COMMUNITIES AND HABITATS

The following vegetation types were observed in the ROI during the biological survey conducted at the site on April 6, 2005, and are defined in accordance with Sawyer and Keeler-Wolfe (CNPS 1995).

### *Tamarisk Series*

Salt-cedar *(Tamarix chinensis [Tamarix ramossisima])* is the dominant plant form in the area. Salt cedar lines most of the waterways found adjacent to the Salton Sea in the ROI. Although not found at the edge of the sea itself, salt cedar was observed growing in dense stands around sloughs and irrigation ditches and along the Alamo River. Co-dominant with this species is common reed *(Phragmites australis)*. Other species observed in this habitat included various types of saltbush *(Atriplex* spp.*)*. This is the primary habitat type found along the access roads and pipeline routes.

### *Iodine Bush Series*

Areas with a slightly raised elevation are present immediately to the east of the ROI, across Davis Road. This area was formerly inundated by the Salton Sea but has been

exposed by the receding waters. Soils in these areas appear to be highly alkaline and support a narrow range of plant species. These areas were characterized by iodine bush *(Allenrolfea occidentalis)* and saltgrass *(Distichlis spicatta)*. Very little of this habitat type would be affected by the proposed project.

### *Mudflats*

Areas of open water and mudflats constitute much of the habitat in the Salton Sea area and are found in the ROI. Mudflats differ from open water habitat, in that open water habitat is more or less permanently flooded and may support submerged or emergent vegetation, whereas mudflats are unvegetated areas that are periodically flooded and exposed. Mudflats are good habitat to support wildlife species, such as shorebirds and invertebrates. This habitat type occurs in the ROI only at the location of the proposed pump station.

### *Salt Pond and Berm*

Most of the ROI is unvegetated former salt pond habitat surrounded by berms. High concentrations of salt in the soil are indicated by a salt crust on the top of the soil. These soils are too saline for all but the most halophytic species (plant species adapted to salty soils). A few individual specimens of saltbush were observed in the area, but these covered less than one percent of the surface area of the salt ponds.

### *Water Bodies*

The Army Corps of Engineers has mapped the entire project area as "Waters of the United States" (Waters), as it is below the -220 foot contour that was determined to define the water line of the Salton Sea. Open water of the Salton Sea is included as regulated Waters of the US and therefore any aquatic portion or water body in the ROI would be considered Waters, as opposed to wetlands. Wetlands are areas of land that are either permanently or seasonally wet and support specially adapted vegetation. There is no jurisdictional wetland in the ROI.

The portion of the ROI that would make up the proposed saline shallow water habitat is in the former bed of the Salton Sea, which has been separated from the sea by earthen berms. At the time of the site survey, the area contained standing water accumulated during recent heavy rains, but typically the area is dry.

The Alamo River runs close to the ROI and is separated from the proposed sump installation area by an elevated road. Habitat in and along the nearby portion of the Alamo River is of low value due to poor water quality and a lack of diverse vegetation, and thus does not provide suitable habitat for wildlife species.

## 2.7 WILDLIFE RESOURCES

### *General Wildlife Species*

Bird species seen in the ROI during the recent site visit are listed in Table 2-1. Animal abundance and diversity are closely linked with the habitat types present, though abundance and distribution may also vary by seasons.

**Table 2-1**
**Bird Species Identified During Site Visit**

| Scientific Name | Common Name |
|---|---|
| *Recurvirostra americana* | American avocet |
| *Himantopus mexicanus* | Black-necked stilt |
| *Bucephala albeola* | Bufflehead |
| *Aythya valisineria* | Canvasback |
| *Sterna forsteri* | Forster's tern |
| *Callipepla gambelii* | Gambel's quail |
| *Ardea herodias* | Great blue heron |
| *Casmerodius albus* | Great egret |
| *Larus* spp. | Gulls |
| *Charadrius vociferous* | Killdeer |
| *Anas platyrhynchos* | Mallard |
| *Egretta thula* | Snowy egret |
| *Pelecanus erythrorhynchos* | White pelican |

Most of the non-shorebird bird species seen in the ROI are considered to be resident species habituated to low quality habitat. Poor habitat conditions, limited foraging, high average temperatures, sparse precipitation, and limited vegetation cover all limit the number of species and size of populations in the ROI. Most of the avian wildlife species observed in the ROI were seen on mudflats or very shallow habitat at the edge of the sea. Wildlife seen here included stilts, ducks, and killdeer. Raccoon tracks were seen here as well. Other avian wildlife species not sighted may occur, such as western grebe *(Aechmophorus occidentalis),* eared grebe *(Podiceps nigricollis),* ring-billed gull *(Larus delawarensis),* northern shoveler *(Anas clypeata),* long-billed dowitcher *(Limnodromus scolopaceus),* ruddy duck *(Oxyura jamaicensis),* and cormorants *(Phalacrocorax* spp.*).*

The terrestrial portions of the ROI may support wildlife but offer limited foraging habitat and are not expected to support nesting due to the high level of disturbance of the habitat. Several reptile species could occur in the ROI, including side-blotched lizard *(Uta standburiana),* western whiptail *(Cnemidophorus tigris),* zebra-tailed lizard *(Callisaurus draconoides),* long-tailed brush lizard *(Urosaurus graciosus),* desert horned lizard *(Phrynosoma platyrhinos),* and desert iguana *(Dipsosaurus dorsalis).* All of these species are common and widely distributed throughout the Salton Sea Basin.

A variety of mammal species is found in the surrounding habitat as well and could occasionally transit through portions of the ROI. These include desert pocket mouse *(Perognathus penicillatus),* pocket mouse *(P. longimembris),* desert kangaroo rat *(Dipodomys*

*deserti),* Merriam's kangaroo rat *(D. merriam),* black-tail jackrabbit *(Lepus californicus),* Audubon's cottontail rabbit *(Sylvilagus audubonii),* mule deer *(Odocoileus hemionus),* and coyote *(Canis latrans).* These mammalian species prefer scrub habitat so most likely are not present in, but could infrequently transit through, the ROI.

### *Special Status Wildlife Species and Critical Habitat*

The Endangered Species Act (ESA) (16 USC 1532 et seq.) was enacted to provide a program for the preservation of endangered and threatened species and to protect the ecosystems on which these species depend for their survival. All federal agencies are required to implement protection programs for designated species and to use their authority to further the purposes of the ESA.

The USFWS and the National Marine Fisheries Service (NMFS) branch of the National Oceanic and Atmospheric Administration (NOAA Fisheries Service) are the primary agencies responsible for implementing the ESA. The USFWS is responsible for land and freshwater aquatic species, while NOAA Fisheries Service is responsible for all other aquatic species.

An endangered species is in danger of extinction throughout all or a significant portion of its range. A threatened species is likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Proposed species have been formally submitted to Congress for official listing as threatened or endangered. In addition, the USFWS has identified species that are candidates for listing as a result of identified threats to their continued existence. The candidate designation includes those species for which the USFWS has sufficient information to list them as endangered or threatened but these species have not yet been proposed.

The ESA also calls for conserving what is termed critical habitat—the areas of land, water, and air space that an endangered species needs for survival. Critical habitat also includes such things as food and water, breeding sites, cover or shelter, and sufficient habitat area to provide for normal population growth and behavior. One of the primary threats to many species is the destruction or modification of critical habitat by uncontrolled land and water development.

The CDFG's Habitat Conservation Division maintains lists of state protected species through the CNDDB. The CNDDB's mission is to track the location and condition of California's many species of rare and sensitive plants, animals, and natural communities (e.g., marshes, riparian systems, and desert scrub). The CNDDB includes in its inventory all federal and state-listed plants and animals, species that are candidates for listing, species of special concern, and those species that are considered "sensitive" by government agencies and the conservation community.

CNDDB was searched for records of special status species that could occur on the site or that have been sighted in the project vicinity. The USFWS also was contacted to identify potential special status species likely to be present in the area; the USFWS

response is provided in Appendix C. Sensitive species occurring in the Niland quadrangle (which includes the ROI) are listed in Table 2-2.

**Table 2-2**
**Likelihood of Occurrence of Federal and State-Listed or Species of Concern Within the ROI**

| Common Name *(Scientific Name)* | Federal/State Status*/CNPS | Likelihood of Occurrence in the Project ROI | Notes |
|---|---|---|---|
| **Plants** | | | |
| Abrams's spurge *(Chamaesyce abramsiana)* | -/-/2 | U | Mohave and Sonoran Scrub habitat not found in project ROI. |
| **Fish** | | | |
| Desert pupfish *(Cyprinidon macularis)* | E/E/- | P | Pupfish inhabit desert ponds, springs, marshes, and streams in southern California and have been recorded within the Niland Quadrangle. Suitable desert pupfish habitat occurs within the ROI. |
| Razorback sucker *(Xyrauchen texanus)* | E/E,FP/- | U | The highly saline waters of the ROI are not suitable to support this species. |
| **Reptiles** | | | |
| Colorado river toad *(Bufo alvarius)* | -/SC/- | U | The highly saline waters of the ROI are not suitable to support this species. |
| **Birds** | | | |
| Bald eagle *(Haliaetus leucocephalus)* | T/E,FP/- | P | Foraging habitat present, but no suitable nesting habitat within the ROI. |
| Black skimmer *(Rynchops niger)* | -/SC/- | P | Nests on gravel bars, low islets, and sandy beaches, in unvegetated sites. Nesting colonies. Known to nest along the north and south ends of the Salton Sea. Nesting habitat present. |
| Black-tailed gnatcatcher *(Polioptila melanura)* | -/SC/- | U | Not likely to occur due to the presence of salt-cedar, which does not provide suitable habitat for this species |
| California brown pelican (*Pelecanus occidentalis*) | E/E,FP/- | P | Foraging habitat but no suitable nesting habitat within the ROI. |
| California least tern (*Sterna antillarum browni*) | E/E,FP /- | P | The bare and sparsely vegetated habitats within the ROI could be suitable nesting habitat for this species but are considered marginal due to the salt encrusted soil and exposure to predation. May forage in the ROI if nesting in or around the ROI. |

**Table 2-2**
**Likelihood of Occurrence of Federal and State-Listed or Species of Concern Within the ROI** *(continued)*

| Common Name *(Scientific Name)* | Federal/State Status*/CNPS | Likelihood of Occurrence in the Project ROI | Notes |
|---|---|---|---|
| Crissal thrasher *(Toxostoma crissale)* | -/SC/- | U | Nests in vegetation along streams/washes that may be dense enough in certain areas of the ROI to support this species. |
| Gull-billed tern *(Sterna nilotica)* | -/SC/- | P | Known to occur in open sandy areas within the project quadrangle. |
| Least Bell's vireo (*Vireo bellii pusillus*) | E/E/- | P | Nests in dense brush near water. The ROI contains some brush and is considered marginally suitable nesting habitat for this species. |
| Mountain plover (*Charadrius montanus)* | SC/SC/- | P | Mudflats in the ROI may support this species. |
| Southwestern willow flycatcher *(Empidonax traillii extimus)* | E/E/- | P | The ROI contains brush, salt-cedar and standing water suitable to support this species' nesting requirements. |
| Yellow warbler *(Dendroica petechia brewsteri)* | -/SC/ | U | Limited suitable habitat, such as willow plants, found within the ROI. |
| Yuma clapper rail *(Rallus longirostris yumanensis)* | E/T/- | U | ROI lacks dense marshy areas or stands of cattails or tule. |
| **Mammals** | | | |
| American badger*(Taxidea taxus)* | -/-/- | U | Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils, and open uncultivated ground. Limited suitable habitat within the ROI. |

CNPS = California Native Plant Society
*Status explanations:
**Federal**
E = Listed as endangered according to the federal Endangered Species Act.
T = Listed as threatened according to the federal Endangered Species Act.
SC = Species of concern; species for which existing information indicates listing may be warranted but for which substantial biological information to support a proposed rule is lacking.
-- = No status.
**State**
E = Listed as endangered according to the California Endangered Species Act.
SC = Species of concern; species for which existing information indicates listing may be warranted but for which substantial biological information to support a proposed rule is lacking.
FP = Fully protected by the State of California
-- = No status.
**California Native Plant Society**
2 = List 2 species: rare, threatened, or endangered in California but more common elsewhere.
**Likelihood of Occurrence**
P = Possible
U = Unlikely
Sources: CDFG 2005; USFWS 2005

The ROI does not contain the necessary elements required to support any special status plant species. The potential for sensitive species to occur within the ROI was evaluated using USFWS and CNDDB lists for the USGS 7.5-Minute Niland Quadrangle, which contains the ROI, and the presence of suitable habitat within the ROI (Table 2-2).

There are six federal- and California-listed species and three California species of concern that could use the ROI. These species are discussed in further detail below.

### *Desert Pupfish*

The desert pupfish *(Cyprinidon macularis)* is a federal- and California-listed endangered species. Historically, desert pupfish occurred in the lower Colorado River in Arizona and California, from about Needles downstream to the Gulf of Mexico and into its delta in Sonora and Baja. In California, pupfish inhabited springs, seeps, and slow-moving streams in the Salton Sink basin and backwaters and sloughs along the Colorado River.

The Salton Sea, its slow moving tributary streams, irrigation drains, and shoreline pools supported large pupfish populations until sharp declines began in the mid- to late 1960s. CDFG surveys show desert pupfish populations currently in drains directly discharging to the Salton Sea, in shoreline pools of the Salton Sea, and in several artificial refugia (Nicol et al. 1991; Black 1980). Pupfish are not known to occur in the New or Alamo Rivers because of the high sediment loads, excessive velocities, and the presence of predators.

***Habitat potential:*** Pupfish have not been reported in the Alamo River, although the USFWS maintains pupfish study areas in the general vicinity.

### *Bald eagle*

The bald eagle *(Haliaeetus leucocephalus)* is a federal-listed threatened and California-listed endangered and fully protected species. Most of California's breeding population of bald eagles is composed of yearlong residents, with some additional populations migrating to California to winter (Thelander et al. 1994). Bald eagles require large bodies of water or free-flowing rivers with abundant fish for feeding and also require places to perch (Zeiner et al. 1990). Bald eagles breed February through July and build nests in old growth or dominant live trees (Zeiner et al. 1990).

***Habitat potential:*** Bald eagles may use the ROI for foraging, but limited perching habitat is found within the immediate area. No suitable nesting trees are present.

### *California brown pelican*

The California brown pelican *(Pelecanus occidentalis californicus*) is a federal- and California-listed endangered and California fully protected species. Brown pelicans are found in estuarine, marine subtidal, and marine pelagic waters throughout coastal California (Thelander et al. 1994). Brown pelicans feed on small surface-schooling fish, primarily anchovy (Zeiner et al. 1990). They rest temporarily on the water or isolated rocks but

roost off the water. Roosting requires a dry location near food and a buffer from predators and humans. Nesting normally begins in the spring but varies according to colony and year. Breeding occurs from March to early August, with peak egg laying between March and April. The young fledge at thirteen weeks but continue to stay in the care of their parents until four or five months (Thelander et al. 1994). California brown pelicans migrate from their breeding zones on the Channel Islands and in Mexico to disperse throughout coastal California as early as mid-May. Most individuals return to breed by the following March.

***Habitat potential:*** In recent years this species has been found to breed in the Salton Sea and to inhabit the sea year round. This species nests on the ground or in small bushes and trees on small islands or other protected habitats. The ROI contains suitable foraging habitat, but there are no islands for pelicans to breed.

### California least tern

The federal- and California-listed endangered California least tern *(Sterna antillarum browni)* is a migratory species. It is found in California and Baja California from April to September (Thelander et al. 1994), which is its breeding season. Least terns nest in open sandy or gravelly shores near their feeding grounds. Adults roost on the ground and fish in shallow estuaries, river mouths, lagoons, and other shallow habitats. They are opportunistic feeders and have been known to eat more than 50 types of fish, including anchovies, shiner surfperch, and topsmelt (Thelander et al. 1994).

Courtship takes place away from the nest colony on open beaches and tidal flats. Incubation can take up to 28 days and the young fledge by the time they are 28 days old (Zeiner et al. 1990).

***Habitat potential:*** California least terns are known to breed at the Salton Sea in small numbers. The mudflats found within the habitat are considered to be only marginally suitable breeding habitat for this colonial nester because of their size, accessibility to predators, and the poor surrounding water quality.

### Least Bell's vireo

The least Bell's vireo *(Vireo bellii pusillus)* is a federal- and California-listed endangered species that is endemic to California and northern Baja California. It inhabits riparian vegetation, such as willows, baccharis, cottonwood, and wild blackberry (Zeiner et al. 1990). It is a migratory bird, spending its winters in Mexico and returning to breed and spend March through August in California. Nests are made in small trees or shrubs, located about three feet above the ground (Thelander et al. 1994), and peak egg laying occurs from May to June (Zeiner et al. 1990). Least Bell's vireos feed on insects that they pick off tree and bush foliage.

The least Bell's vireo was once an abundant species in California but has had its population decrease dramatically due to loss of habitat. Riparian habitat, which is critical to the survival of the vireo, has been disturbed by human activities, such as flood-

control projects, livestock grazing, urban development, agriculture, and recreation (Thelander et al. 1994). Encroachment has caused the least Bell's vireo to live in increasingly marginal habitat. This has led to decreases in reproductive success due to the proximity of cowbirds, which place their own eggs in other songbird nests to be reared, often displacing the songbird's own eggs in the process.

***Habitat potential:*** The availability of scrub and aquatic habitat within the ROI may be sufficient to support breeding least Bell's vireos.

*Southwestern willow flycatcher*

The Southwestern willow flycatcher is a federal- and California-listed endangered species. It is generally found in riparian vegetation consisting of willow thickets with an overstory of cottonwoods or tamarisk. This migratory flycatcher subspecies was historically a common summer resident along streams and rivers throughout southern California. The breeding range of the willow flycatcher included primarily expanses of willow riparian habitat. The species has now been eliminated as a breeding bird from most of its former range in California. Only small scattered populations remain in isolated stretches of stream courses along the Kern, Santa Margarita, San Luis Rey, and Santa Ynez Rivers in southern California. The smallest of these populations consists of about five pairs and the largest of about 50 pairs. Nesting takes place in willows and shrubby plants that border streams, ponds, and wet meadows (Thelander et al. 1994) and is concentrated in May and June (Zeiner et al. 1990). Flycatchers feed on flying insects and occasionally on berries and seeds.

Loss and degradation of riparian habitat is the principal reason for the decline of the willow flycatcher population and the decrease in geographic range of the species. Livestock grazing has damaged both the habitat and nests of breeding birds. Nest parasitism by brown-headed cowbirds has probably also contributed to population reductions.

***Habitat potential:*** The lack of willows and vegetative diversity in this area makes the ROI less than preferred habitat for the southwestern willow flycatcher, but the area has marginally suitable habitat this species. The probability of southwestern willow flycatchers using this site is low, but the willow flycatcher has been recorded within the Niland quadrangle (CDFG 2005) and is likely to be the subspecies, *Empidonax traillii extimus,* based on subspecies distribution within California and other portions of the US. Although the flycatcher sometimes nests in habitats dominated by tamarisk (which is found at the project site), other components of its habitat, such as clean water, do not exist there. The ROI is considered marginally suitable breeding habitat.

### *California species of concern*

The black skimmer *(Rynchops niger),* gull-billed tern *(Sterna nilotica),* and mountain plover *(Charadrius montanus)* are California species of concern that could use the project ROI.

The black skimmer is found primarily on coastal waters, including bays, estuaries, lagoons, and mudflats in migration and winter (NatureServe 2005) but is also found in lakes and other inland waters. This species has been recorded in the Niland Quadrangle in which the ROI exists (CDFG 2005). It is known to rest on mudflats and to nest in association with terns on beaches, the vegetation or drift of salt marshes, and on dredged material sites (NatureServe 2005).

The gull-billed tern is known to nest on sandy shores of saline lagoons and marshes. Within the Niland Quadrangle a gull-billed tern colony was recorded in 1998 within a flooded impoundment containing several remnant earthen levees that serve as the nesting substrate (CDFG 2005).

The mountain plover was proposed for listing as a threatened species in 1999 but was withdrawn from listing in September 2003. This species inhabits areas with low-growing vegetation or bare ground, with flat topography and prefers grazed areas and areas with burrowing rodents (CDFG 2005). It breeds from late April through June, with a peak in late May. Ground-dwelling insects such as grasshoppers constitute most of its diet.

### *Critical Habitat*

There is no federally designated critical habitat within the ROI.

## 2.8 CULTURAL RESOURCES

Cultural resources are locations of human activity, occupation, or use. The term includes archaeological sites, buildings, structures, and traditional cultural properties (TCPs), places associated with the cultural practices or beliefs of a past or living community.

NEPA requires consideration of "important historic, cultural, and natural aspects of our natural heritage." Consideration of cultural resources under NEPA includes the necessity to independently comply with the applicable procedures and requirements of other federal and state laws, regulations, and executive orders. Title 14, Chapter 4, Article 5, Section 15064.5 also requires consideration of cultural and historic resources. The principal federal law addressing cultural resources is the National Historic Preservation Act (NHPA) of 1966, as amended (16 USC 470), and its implementing regulations (36 CFR 800). Under NHPA, historic properties are cultural resources that meet specific criteria for eligibility for listing on the National Register of Historic Places (NRHP). Under CEQA, historic resources are those that would qualify for listing on the California Register of Historical Resources or local registers of historical resources. Other laws, regulations, and guidance applicable to cultural resources include the Archaeological and Historic Preservation Act, the Antiquities Act, the Archaeological Resource Protection Act, the American Indian Religious Freedom Act, the Native American Graves Protection and Repatriation Act, Executive Order 11593: Protection and Enhancement of the Cultural Environment, and Executive Order 13175: Consultation and Coordination with Indian Tribal Governments.

The area around the southern part of the Salton Sea, where the project is located, was occupied historically by the Tipai who called themselves Kumeyaay. The Cahuilla historically occupied the area around the northern part of the Salton Sea. Both groups probably interacted and made forays into each other's territory. Proto-Yuman people from the Colorado River likely made similar forays into the basin to take advantage of resurgences of Lake Cahuilla, the ancient intermittent water body that occupied the Salton Sink during prehistoric times.

***The Tipai.*** The Mission Indians of southern California included the Diegueños (Luomala 1978). Diegueño was an eighteenth century Spanish collective name for bands of aboriginal people living near the mission and presidio of San Diego de Alcalá, established in 1769 as the first of a coastal chain of Franciscan missions. The name Diegueño became extended to culturally and linguistically related bands south and east of the mission. In the 1950s anthropologists renamed the Diegueño the Tipai (Luomala 1978). Today the people are known as either the Tipai-Ipai or Kumeyaay, but the language of these people is still designated as Diegueño.

Prior to contact, the Tipai subsisted on wild plants, supplemented with more small than large game, and, in places, fish. Luomala (1978) reports that they existed as autonomous seminomadic bands of over 30 patrilinealy, named clans (some hostile to one another). In general, they lacked organized social and political unity. The archaeological record of these people includes baskets, grinding stones, and dart and arrow points.

The Tipais in the Imperial Valley occupied primarily a Lower Sonoran Life Zone. Subsistence plants included primarily opuntias, yuccas, agave, and other dry landscape plants. Pole-and-brush huts and caves were used for shelter.

After 1000 BC, local Tipai adaptations to severe desert conditions developed in Arizona and spread into adjacent parts of California (Luomala 1978). Later to be incorporated into the historically known Tipai-Ipai culture, the result of Tipai and their western neighbors, the Ipai, combining, were new types of mortars and grinding stones, deeper floors for huts, and cremation. Around AD 600, two great changes modified the collecting and hunting traditions of the Tipai-Ipai. Lower Colorado River people, influenced by the Hohokam people to the east, began to plant maize, beans, and gourds in floodplains and, later, to make pottery (Luomala 1978). Attenuated, these two practices reached southeastern California, although trade had perhaps brought pottery earlier.

By AD 1000, these lower Colorado River tribes were, possibly, Yuman speakers, who, wandering east from the southern Californian coast into the Mojave region, had spread south along the river. A few, dislocated perhaps by Lake Cahuilla's evaporation, turned west over the mountains either to rejoin remaining bands or to form the nucleus of later Tipai-Ipai groups. Evidence depends on scanty archaeological data and comparison of languages, mythology, and legends recorded only after 1540 when Spaniards arrived at the river and its historic period began (Luomala 1978). The Tipai-Ipai groups were

among the California tribes to most stubbornly and violently resist Spanish acculturation through missionization (Luomala 1978).

***Cahuilla.*** The traditional territory of the Cahuilla Indians was approximately 2,400 square miles of desert territory in south-central California, along the northern shoreline of what is today the Salton Sea. It is thought the Cahuilla arrived in the region between 2,000 and 3,000 years ago. The group was composed of Uto-Aztecan-speaking hunters and gatherers, a Cupan subgroup of the Takic language family. The term Cahuilla is thought to have originated from the tribe's own word, meaning master or masters.

The traditional Cahuilla cultural area was topographically and ecologically complex, encompassing tall mountains, deep valleys, rocky canyons, passes, and arid desert land. The Cahuilla exploited various plant and animal species for food, medicine, and manufacturing in the new territory. Food plants provided a significant portion of their overall nutritional base included arrow weed, barrel cactus, bladder cactus, California fan palm, cat's-claw, century plant, Mohave yucca, nolina, ocotillo, palo verde, salt bush, sand verbena, screw bean, sages, and wild plum trees. Foods were often dried and stored for future use in large basket granaries and ollas. Animal food sources included badgers, chipmunks, cottontails, six species of mice, mule deer, raccoon, three species of kangaroo rats, bighorn sheep, and three species of squirrel. Numerous birds, amphibians, insects, and fish were also exploited, particularly at lakeshore villages. Hunting was exclusively the work of adult men. Hunting blinds, bows and arrows, clubs, fire, traps, nets, snares, and spear-throwers were used.

The Cahuilla were divided into independent politico-religious kin groups known as clans. Clans owned large tracts of land, each of which included several ecological zones. Clans were subdivided into several lineages that were also corporate bodies that owned specific areas of land and rights to land for hunting, gathering, and rituals. Villages were usually made up of one or two exogamous lineages, that is, lineages that result from marriage outside a particular group with which one is identified. Cahuilla houses were rectangular thatched structures that often had walls plastered with mud or adobe. Less permanent dwellings in the mountains were smaller.

Although primarily hunters and gatherers, the Cahuilla also grew corn, beans, and squash in the more permanent settlement, prior to European contact. Those Cahuilla who settled around the northern and western shores of Lake Cahuilla developed an economy that exploited the lake's resources. When Lake Cahuilla began to recede the Cahuilla adapted by moving their villages to the Santa Rosa Mountains. The varied elevations of the range provided a diversity of seasonal floral and faunal resources.

Away from Lake Cahuilla, and during times when the lake dried up, the Cahuilla dug walk-in wells where the groundwater was relatively close to the surface. These wells could reach a depth of 25 feet and are seen to represent a significant technological adaptation by hunter-gather peoples to a harsh desert environment. Walk-in wells were the principal sources of water in the Lower Coachella Valley and were confined to the

bed of ancient Lake Cahuilla. A number of explorers describe a complex system of irrigation reservoirs, ditches, and adobe walls prior to European contact.

In general, the Spanish, Mexican, and early American presence did not greatly affect the Cahuilla, who soon developed economic and political strategies to deal with Hispanic immigrants by forming confederations of clans.

### 2.8.1 Prehistory of the Colorado Desert

The archaeological record of the Colorado Desert indicates that cultural systems responded to changing environmental conditions, especially heat and available water resources, with a variety of hunter-gatherer subsistence and settlement strategies. The Paleoindian (prior to circa 9000 BC) adaptation in this region is termed the San Dieguito complex. It was an adaptation that featured small mobile bands differentially exploiting large and small animal resources and seasonally available vegetation (Schaefer 1994). Most archaeological sites are cleared circles, rock rings, or other types of geoglyphs, and chipped rock artifacts. Sites are found near places where water was available seasonally, often on mesas and terraces.

Similar to the Paleoindian Period, sites dating to the Early Archaic (9000-6000 BC) are rare. Rock circles and chipped artifacts dating to this period are sparse on the Colorado Desert landscape.

Middle Archaic (6000-4000 BC) adaptations in California's Colorado Desert were probably similar to those in western Arizona (Schaefer 1994). Arizona sites, features, and artifacts of this period suggest population increases and use of both forager and collector settlement and subsistence strategies.

The Late Archaic, extending from roughly 4,000 to 1,500 years ago, includes the culture complexes of the late Pinto Period (4000-2000 BC) and the Gypsum Period (2000 BC-AD 500). Subsistence strategies during this time included opportunistic hunting and trapping of large and small fauna, as well as milling of seasonally available nuts and seeds by low-population-density hunters and gatherers (Schaefer 1994).

There is more evidence of cultural activity in the Late Prehistoric and Protohistoric periods, especially associated with the extinct freshwater Lake Cahuilla (Schaefer 1994:65). Sites associated with Lake Cahuilla tend to be found along embayments and sandy spits, especially near stands of mesquite trees. Fish traps tend to be found on the west side of the lake in places where alluvial fans extended all the way down to the fluctuating shoreline. The northwest end of the lake was able to support larger and more closely spaced sites than other parts of the lake. This was especially true of the Myoma Dunes, Indian Wells, and La Quinta areas. Sites on the southern and eastern sides of the lake were scattered, seasonal, temporary camps.

The Late Prehistoric adaptation in this region is termed the Patayan cultural pattern. It featured dispersed seasonal settlements by mobile groups exploiting both riparian and

other desert resources. It is thought to have originated about 500 AD, from late Archaic patterns that had been influenced by the agriculture-based Hohokam culture on the upper Gila River in Arizona (Schaefer 1994:65). The many trail systems in the Colorado Desert that date to this period indicate trade, travel to special resource collecting areas, and possibly warfare. Such trails often have associated trail shrines, ceramic pot-drops, rock art, or other evidence of short-term activities.

In the Imperial Valley where the project is located, ancestral Kumeyaay people practiced field cultivation after Lake Cahuilla dried up. Many other Patayan groups did not adopt agriculture until historic times (Schaefer 1994:67). Patayan period sites in the upland areas of this subregion include residential sites, rockshelters, storage caches, and resource procurement areas. Lowland sites along the Alamo and New Rivers were destroyed by the modern floods of 1905-1906 that created the Salton Sea and also by subsequent agricultural activities.

After 1600 AD there was a population influx in the Colorado Desert. A major residential base was even established on the now dry bed of the former Lake Cahuilla. Late sites are often associated with springs and stands of mesquite. Seasonal subsistence patterns featured mesquite and *Atriplex* harvests in late spring and early summer, pinyon and mountain sheep exploitation in upland areas during winter, and agave harvesting in early spring.

### 2.8.2 Historic Period

The historical record of the Colorado Desert begins in 1774 when Don Juan Bautista de Anza led a large expedition through the area on the way to the missions of San Gabriel. This expedition was the first to encounter the Cahuilla people.

American trappers, miners, and settlers passed through the area using the San Gorgonio Pass for access to California destinations. Fur trappers, including such noted explorers as Kit Carson, Jedediah Smith, and William Wolfskill, started making trips into the region of the lower Colorado River and the Salton Sink in 1825.

The Americanization of Native Americans began after the Mormons settled in San Bernardino around 1852. Several American families settled the San Gorgonio Pass region. William Bradshaw blazed the first road through Riverside County in 1862, as an overland stage route beginning at San Bernardino and ending at La Paz, Arizona (now Ehrenberg). The Bradshaw Trail was used extensively between 1862 and 1877 to haul miners and other passengers to the gold fields at La Paz. Until the Southern Pacific Railroad was completed east to Santa Fe, New Mexico, the Bradshaw trail was the main means of communication between southern California and the eastern part of the United States. During the last years of the Civil War it was the only stage route operating into and out of southern California. By the 1880s, however, passenger coaches were discontinued and commerce took the form predominantly of express and mail contracts carried by mule trains and freight wagons. The Bradshaw Trail was used as a freight

route until the twentieth century and even accommodated automobile and truck travel until the highway that eventually became Interstate 10 was built, farther to the north.

Southern Pacific Railroad tracks reached the San Gorgonio Pass by the end of 1875. By March of 1876, the railroad was in Whitewater and was completed to Seven Palms in May. By August, the first train had reached Indian Wells (Indio). Regular service to Dos Palmas, near what would later be the northeastern shore of the Salton Sea, was in operation by March of 1877. On May 23, the tracks finally extended to the California side of the Colorado River.

In 1891, Colorado River flooding was recorded in the Salton Sink, forming a 100,000-acre lake. In the same year, explorers discovered the mouth of the Alamo River, which connected the sea and the Colorado River. As early as 1853, the Imperial Valley was recognized as a potential agricultural area if it could be adequately irrigated. In 1901, the Imperial Canal began transporting water from the Colorado River to the Imperial Valley. By 1904, silt blocked the Imperial Canal and prevented it from supplying water. In 1905, a temporary diversion of the Colorado River by workers of the Southern Pacific Railroad was constructed to replace water from the blocked canal. This new diversion was breached by Colorado River floodwaters, the course of the river was changed, and water started flowing into the Salton Sink. Floodwaters continued to fill the Salton Sea until early 1907. In February 1907, crews from the Southern Pacific Railroad finally closed the river breach. That same year sport fishing was first promoted at the Salton Sea. In 1909, thinking the Salton Sea would dry up by the 1920s, the US government set aside an additional 10,000 acres of land under the waters of the Salton Sea as reserves in trust for the Torres-Martinez Band of Cahuilla Indians.

The Shallow Water Habitat project area is owned by the IID, which was formed in 1911 to acquire properties of the bankrupt California Development Company. The IID was operating distribution canals into the Imperial Valley as of 1922 using what had been thirteen mutual water companies. By the middle of that decade, water was being delivered to about 500,000 acres in Imperial County. Since 1942, water has been brought into the area via the All American Canal from the Colorado River.

In 1924, President Coolidge issued an executive order setting aside lands under the Salton Sea as a permanent drainage reservoir. In 1928, Congress authorized construction of Boulder Dam and the All American Canal. Completion of the Boulder (now Hoover) Dam in 1935 resulted in controlling the Colorado River and eliminating flooding. In 1930, the Salton Sea Wildlife Refuge was established to protect ducks, geese, and shore birds. Construction began on the All American Canal in 1934 and on the Coachella Canal in 1938. During World War II (1941-1945), when German submarines made ocean fishing hazardous, commercial fishermen fished the Salton Sea to supply mullet. The All American Canal began supplying water to Imperial Valley in 1942.

In 1944 and 1945 B-29s from the US Army's 393rd Heavy Bombardment Squadron, commanded by Lt. Col. Paul Tibbets, made regular but highly secret practice flights

from Wendover Air Base in Utah and dropped dummies of a new type of bomb into the Salton Sea. On August 6, 1945, Tibbets and his crew in the Enola Gay dropped the first Atomic Bomb over Hiroshima, Japan.

### 2.8.3 Archaeological Inventories

Tetra Tech archaeologist Fred E. Budinger, Jr. requested an archaeological records search from the Southeastern Information Center, consulted with the California Native American Heritage Commission (NAHC) for the presence of any traditional cultural properties, and conducted a Class III survey of the area of direct effect (ADE) and the area of potential effect (APE). The results of these inventories are recorded in, *A Class III Archaeological Field Inventory of Approximately 120 Acres for the Proposed South Salton Sea Shallow Water Habitat Project Located North of the Alamo River, Imperial County, California* (Tetra Tech 2005; Appendix D). The ADE is defined as the approximately 120 acres of IID, Cal Energy, and State land that would be modified as part of the project west of Davis Road and between Schrimpf Road and Hazard Road. The APE is defined as the ADE and a one-mile buffer radius.

The cultural resources records search indicated that no surveys had been conducted and no prehistoric archaeological sites or historic properties were known to exist within the ADE. However, one prehistoric archaeological site and four historic sites were revealed to be within the one-mile buffer zone that contributes to the APE. The one recorded prehistoric site is CA-IMP-8176, an obsidian outcrop on Red Hill that exhibits evidence of quarrying, including blanks, flakes, and hammerstones. Red Hill is about one mile west-southwest of the project site. The four historic sites found during the records search are of natural historic interest and are as follows: CA-IMP-3251, described in 1856 as a pond of good water measuring.two feet by six and a half feet; CA-IMP-3256, described in 1856 as a field of mud volcanoes some 600 feet across; CA-IMP-3257, described in 1856 as a field of mud volcanoes some 194 feet across; and CA-IMP-3258, described in 1856 as a field of mud volcanoes (dimensions not listed).

No localities known to be of cultural significance to local Native American groups were reported during the NAHC consultation. Reclamation contacted the following 14 organizations in a letter dated April 18, 2005, as part of efforts to identify traditional cultural properties not held in the NAHC database: Campo Band of Mission Indians, Cocopah Tribe, Cuyapaipe Band of Mission Indians, Fort Yuma Quechan Tribe, Inaja-Cosmit Band of Mission Indians, Jamul Indian Village, Kumeyaay Cultural Repatriation Committee, La Posta Band of Mission Indians, Manzanita Band of Mission Indians, Santa Rosa Band of Mission Indians, Santa Isabel Band of Mission Indians, Sycuan Band of Mission Indians, Torres Martinez Desert Cahuilla Indians, and Viejas Band of Kumeyaay Indians.

Only the Cocopah Tribe responded within 30 days and requested a site visit. Patricia Hicks, archaeologist for Reclamation, contacted Lisa Wanstall of the Cocopah Tribe on May 31, 2005. Ms. Wanstall said the Cocopah were concerned that there might be fish weirs in the ADE. Ms. Hicks explained the physical context of the project area and that

it was unlikely there were any weirs in the area given the existing dikes and ponds. Ms. Wanstall was still interested in a site visit and was referred to Cheryl Rodriguez and Mike Walker to arrange a date and time for the visit. Both Ms. Rodriguez and Mr. Walker attempted to contact Ms. Wanstall numerous times only to leave messages for her. As of publication, the Cocopah Tribe had not yet established a date for this visit and consultation.

Andrew Gentile of Tetra Tech made follow-up phone calls between June 7 and 10, 2005, to the tribes who did not respond to the initial consult letters. The Cuyapaipe Band of Mission Indians, the Kumeyaay Cultural Repatriation Committee, the Santa Isabel Band of Mission Indians, and the Viejas Band of Kumeyaay Indians had no comment on the proposed project. The Santa Rosa Band of Mission Indians also had no comment on the proposed project but requested that all future communications be directed to their Cultural Department. The Campo Band of Mission Indians, the Fort Yuma Quechan Tribe, the Jamul Indian Village, the La Posta Band of Mission Indians, and the Sycuan Band of Mission Indians did not respond to messages. The lack of response was assumed to mean the group had no concerns regarding the proposed project. The Inaja-Cosmit Band of Mission Indians, the Manzanita Band of Mission Indians, and the Torres Martinez Desert Cahuilla Indians could not be reached due to incorrect or disconnected phone numbers.

The Class III intensive archaeological field inventory identified one historic-era (i.e., older than 45 or 50 years) site within the proposed expansion area (expansion into this area is not covered by this EA, but is covered by the Class III intensive archaeological field inventory found in Appendix D). The project archaeologist recorded a remnant 1920s carbon dioxide well field. The site was recorded on California Department of Parks and Recreation site record forms (DPR 523) and given the temporary site number Tt-05-08-02-01. The wells are considered cultural resources due to historic nature of 70+ years of age, but they lack the qualities necessary for NRHP eligibility. The site is a triangular area measuring 183 meters along its north-south axis and 122 meters along its east-west axis, the northern tip of which is located approximated 76 meters South-Southwest of the center of the intersection of Davis Road and Pound Road. The total area of the site is 1,115 square meters. It consists of the remnants of five carbon dioxide wells recorded as Features 1 through 5. These carbon dioxide wells were installed between 1934 and 1944 by the Cardex Western Company for the retrieval of carbon dioxide gas for the production of dry ice (frozen carbon dioxide). Carbon dioxide gas, recovered from pockets 61 to 213 meters deep, was converted to dry ice for refrigeration (San Diego State University Center for Inland Waters 2005). Much of the production was supplied to the railroads for icing refrigerator cars. The project was abandoned in 1954 when other refrigeration technology became available. The wells represent a local industry within the Salton Basin, but are not associated with events that have made a significant contribution to the broad patterns of our national history, nor are they associated with the lives of persons significant in our past. They do not embody the distinctive type, period, or method of construction, represent the work of a master, possess high artistic values, or represent a significant and distinguishable entity

whose components may lack individual distinction. Furthermore, they are unlikely to yield information not yet known regarding our prehistory or history.

Other than the carbon dioxide wells, no cultural resources are present within the project area. Due to the effects of the Alamo River's flooding between 1905 and 1907, to modern and historic modifications to the landscape, and to the continuing dynamic nature of the Salton Sea shoreline, the likelihood of archaeological remains to be present within the project area is considered minimal.

## 2.9 HAZARDOUS AND TOXIC MATERIALS AND WASTE

There are no known underground storage tanks or hazardous waste sites within the project area, but it is possible that there are unreported areas of contamination within the project area. There is record of an abandoned geothermal exploration well within the area identified as a staging area in Figure 1-2. The well is reportedly drilled in the 1980s and capped six feet below the surface of the pond.

## 2.10 VISUAL RESOURCES

The project area is bordered on the west by the shoreline of the Salton Sea, with views of reddish-brown mountains beyond the far shore. Views to the south and southwest are of geothermal power plants and associated steam plumes, beyond duck ponds and a smaller section of the Salton Sea. Views to the north are of the shoreline, with flat topography and managed state wildlife areas. Views to the east and southeast are of flat open areas and vegetated areas composed of a former carbon dioxide plant and associated land, agricultural lands beyond that, and managed duck hunting areas to the southeast. Bordering the site on the east is Davis Road.

## 2.11 AIR QUALITY

The Salton Sea Air Basin is designated as nonattainment for the federal ozone and inhalable particulate matter ($PM_{10}$) standards. Imperial County is designated as unclassifiable for the federal carbon monoxide standard. The air basin is designated as unclassifiable or attainment for the other federal criteria pollutant standards. With respect to the state ambient air quality standards, the Salton Sea Air Basin is designated as nonattainment for the state ozone and $PM_{10}$ standards and in attainment or unclassifiable status for all other state criteria pollutant standards.

## 2.12 NOISE

Motorized watercrafts make up the primary source of noise in the project area. Additional noise sources include nearby vehicles and noise generated by nonmotorized recreational activities. No sensitive receptors have been identified in the immediate proximity of the project area.

## 2.13 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

There are no residential, commercial, or industrial structures or activities in the vicinity of the proposed project.

## 2.14 TRAFFIC

Minimal traffic exists along Davis Road. Use is primarily by duck hunters and staff of Cal Energy, as well as local jurisdictions and regulatory agencies performing work related to the Salton Sea and the irrigation drains.

# SECTION 3
# ENVIRONMENTAL CONSEQUENCES

## 3.1 INTRODUCTION

This section is an evaluation of the potential environmental effects of the alternatives, including a No Action Alternative. This analysis includes likely beneficial and adverse effects on the human environment, including short-term and long-term effects, direct and indirect effects, and cumulative effects. The analysis of effects on resources focuses on environmental issues in proportion to their potential effects. Detailed consideration is given to those resources that have a potential for environmental effects. Interpretation of effects in terms of their duration, intensity, and scale are provided where possible.

## 3.2 CUMULATIVE EFFECTS ANALYSIS

Cumulative effects are the direct and indirect effects of a proposed project alternative's incremental effects when they are added to other past, present, and reasonably foreseeable actions, regardless of who carries out the action (40 CFR, Part 1508.7). Guidance for implementing NEPA recommends that federal agencies identify the temporal and geographic boundaries of the potential cumulative effects of a proposed action (CEQ 1997). For the purposes of this EA, the temporal boundary of analysis is from approximately 2000 to 2010, which corresponds with the period proposed for the project's operation. This boundary encompasses a range within which data are reasonably available and forecasts can be reasonably made.

The geographic boundaries of analysis vary depending on the resource and potential effects. For most resources, the actual project area represents the analysis area. Impacts on resources with farther reaching effects such as those to air quality, are analyzed with a more regional perspective encompassing the Imperial Valley. The analysis area is described under each resource. Specific projects that are similar in size or scope or that have the potential to cumulatively affect the resources evaluated for the project are identified in Section 1. Some resources would be affected by several or all of the described activities, while others could be affected very little or not at all.

## 3.3 TERMINOLOGY

Terms referring to effect intensity, context, and duration are used in the effects analysis. Unless otherwise stated, the standard definitions for these terms are as follows:

- *Negligible:* The effect is at the lower level of detection, and there would be no measurable change.
- *Minor:* The effect is slight but detectable, and there would be a small change.
- *Moderate:* The effect is readily apparent, and there would be a measurable change that could result in a small but permanent change.
- *Major:* The effect is severe, and there would be a highly noticeable, permanent, measurable change.
- *Localized Impact:* The effect occurs in a specific site or area. When comparing changes to existing conditions, the effects are detectable only in the localized area.
- *Short-Term Effect:* The effect occurs only during or immediately after implementation of the alternative.
- *Long-Term Effect:* The effect could occur for an extended period after implementation of the alternative. The effect could last several years or more and could be beneficial or adverse.

## 3.4 THRESHOLDS OF SIGNIFICANCE

Significance thresholds are listed in Table 3-1. These thresholds are provided to help the reader and decision makers understand the magnitude and intensity of effects. Some thresholds are determined using quantitative data, while others rely on qualitative data.

**Table 3-1**
**Thresholds of Significance**

| Resource | Thresholds of Significance |
|---|---|
| Land use | Significance threshold would be reached if there were conflicts with established land uses in the area, disruption or division of established land use configurations, or a substantial change in existing land uses or if the change were to prevent use or to substantially alter use of a right-of-way, or if it proved to be inconsistent with adopted land use plans. Threshold would also be reached if there were a substantial decline in the quality or quantity of existing recreational facilities. Effects on recreational activities would be considered significant if they were to result in a substantial decline in the quality or quantity of opportunities to participate in these recreation activities. |
| Soils and geology | Significance threshold would be reached if an alternative were to expose people to an increased level of geologic hazards, such as slope instability, or if it were to result in a change in or loss of a unique geologic resource. Significance threshold would be reached if an alternative were to result in a substantial soil loss because of increased erosion, decreased slope stability, or increased impermeable surfaces, such that there is a measurable decrease in water infiltration into soils. Significance threshold would be reached if an alternative were to convert federal prime farmland soils or soils of statewide importance to incompatible uses, or if it were to contaminate the soil. |
| Water resources | Significance threshold would be reached if an action were to cause substantial flooding or erosion, if it were to substantially impair any significant water body, watershed health, or the functionality of major rivers, wetlands, or floodplains, or if it were to decrease surface or groundwater quality or quantity. |
| Designated floodplains | Significance threshold would be reached if an action were to cause substantial increases in flooding to any adjacent landowner. |
| Wetlands | Significance threshold would be reached if an action were to dredge, fill, or substantially impair the health or the functionality of wetlands without sufficient mitigation to restore the functions and values of the wetlands. |
| Vegetation | Significance threshold would be reached if:<br>• An action introduced or substantially encouraged the spread of noxious weeds or other (invasive species are by definition undesirable) invasive species;<br>• There were a substantial loss of riparian, wetland, or marsh habitats;<br>• There were harm or destruction of a species, natural community, or habitat that is specifically recognized as biologically significant in local, state, or federal policies, statutes, or regulations; or<br>• There was an alteration or destruction of habitat that would prevent the reestablishment of native biological communities that inhabited the area prior to the disturbance. |

**Table 3-1**
**Thresholds of Significance** *(continued)*

| Resource | Thresholds of Significance |
|---|---|
| Wildlife and fisheries | Significance threshold would be reached if there were:<br>• A loss of a number of individuals of any native animal species sufficient to affect the viability of the local population of that species;<br>• A substantial interference with movement of any resident or migratory fish or wildlife species sufficient to adversely affect the viability of the local population of the species;<br>• An adverse effect on a species, natural community, or habitat that is specifically recognized as biologically significant in local, state, or federal policies, statutes, or regulations;<br>• Harm, harassment, or destruction of a species, natural community, or habitat that is recognized for scientific, recreational, ecological, or commercial importance;<br>• An extensive loss of rare biological communities in high quality habitat for longer than one year; or<br>• A violation of the Migratory Bird Treaty Act. |
| Threatened and endangered species | Significance threshold would be reached if there were harm, harassment, or destruction of any federally listed endangered, threatened, or candidate species, its habitat, migratory corridors, or breeding areas. |
| Cultural resources | Significance threshold would be reached if an alternative were to directly or indirectly alter the integrity and characteristics of a resource that would qualify it for inclusion in the NRHP (36 CFR 800.5a). Significance threshold would be reached if it were determined that, in consultation with federally recognized tribes or other tradition-based communities, an alternative would inhibit access to or use of culturally important locations or would interfere with cultural or religious practices. |
| Native American resources | There are no universally applicable regulatory thresholds for assessing significance of Native American resources effects, but other cultural resource-related regulations and guidelines provide a general context for assessing these effects. Significance threshold would be reached if an alternative were to impair the ability of a tribe to continue earning income or otherwise be deprived of uses and values associated with Native American-owned resources. |
| Hazardous and toxic materials and waste | Significance threshold would be reached if an alternative were to directly or indirectly create a hazard by exposing the public to hazardous materials at levels exceeding the range of risk generally considered acceptable to the EPA or other federal or state agencies. Significance threshold would be reached if an alternative were to create a hazard to the public through transport, use, or disposal of hazardous materials or were to increase the likelihood of a hazardous materials release to the environment. Significance threshold would be reached if an alternative were to lead to a major increase in hazardous material used or wastes generated. |
| Visual resources | Significance threshold would be reached if an alternative were to noticeably increase visual contrast and reduce the scenic quality, as seen from any high-sensitivity foreground or middle ground viewpoint; if it were to block or disrupt existing views or substantially reduce public opportunities to view scenic resources; or if visual effects resulting from a project were to conflict with local regulations. |

**Table 3-1**
**Thresholds of Significance** *(continued)*

| Resource | Thresholds of Significance |
|---|---|
| Air quality | Significance threshold would be reached if an alternative were to lead to an exceedance of the National Ambient Air Quality Standards or the State of California Ambient Air Quality Area Standards. |
| Noise | There are no universally applicable regulatory thresholds for assessing significance of noise effects, but environmental noise regulations and guidelines are defined by various federal and state agencies that provide a general context for assessing noise issues. The EPA calls out a maximum annual day/night noise level of 55 dBA to protect public health and welfare for outdoor areas where noise interferes with normal speech or is found to be extremely annoying to those who frequent the area. Significance threshold would be reached if an alternative were to violate EPA noise standards at the boundaries of the project area over an extended period or if it were to create impulse or other short-term event noise levels that would be likely to cause significant annoyance to more than 15 percent of exposed individuals at locations frequented by the general public. |
| Socioeconomics and environmental justice | Significant socioeconomic effects would result if a project alternative would create an increase in population growth or the demand for housing, schools, or community facilities that is beyond the capacity of the region to accommodate. Significant effects also would result from the displacement of a large number of people, especially from affordable housing, a decrease in local employment, or a decrease in the accessibility of community facilities. Significant environmental justice effects would occur if a project alternative would disproportionately negatively affect low-income and minority populations. |
| Traffic | Significance traffic effects would result if a project alternative would create a decrease in the level of service for any transportation routes in the project vicinity. |

## 3.5 LAND USE

### 3.5.1 Alternative A—No Action

#### *Direct and Indirect Effects*

Implementation of Alternative A would not have any effect on existing land use in the project area. The area would likely continue to remain unused for the next several years. Due to the local geothermal resources, geothermal energy exploration and development activities may occur on the land in the future; however, no such activities are planned at this time.

#### *Mitigation*

No measures are recommended.

### 3.5.2 Alternative B—Proposed Action

#### *Direct and Indirect Effects*

The proposed project would not be within an established community, divide any community, conflict with applicable plans, policies, or regulations, or conflict with the provisions of any adopted habitat conservation plan, natural community conservation plan, or other approved local, regional, or state habitat conservation plan. Due to the local geothermal resources, geothermal energy exploration and development activities may occur on the land in the future; however, no such activities are planned at this time.

#### *Mitigation*

No measures are recommended.

### 3.5.3 Cumulative Effects

The cumulative effects analysis area for land use is Imperial County. Implementing either of the alternatives would have no impact on land use in Imperial County.

## 3.6 GEOLOGY AND SOILS

### 3.6.1 Alternative A—No Action

#### *Direct and Indirect Effects*

Implementing Alternative A would have no impacts on geology and soils. The existing earthen berms would continue to gradually erode due to wind and rain.

#### *Mitigation*

No measures are recommended.

### 3.6.2 Alternative B—Proposed Action

#### *Direct and Indirect Effects*

Implementing Alternative B would expose the proposed structures to risks from seiche and seismic ground shaking. Alternative B would also increase the potential for soil erosion at the project site. All of these potential impacts are considered to be less than significant.

A seiche is a wave on the surface of a lake or landlocked bay that is caused by atmospheric or seismic disturbances. Seiches can be caused when an earthquake creates a resonant oscillation in a water body that causes that water body to overflow its boundaries. A seiche could cause vigorous wave motion, potentially damaging the berms, islands, water intakes and outlets, pumps and pipelines. Any potential damage would be limited to the physical components of the project. The project would introduce maintenance and monitoring personnel to the project area and would increase the risk of adverse impacts on these people from a possible seiche. No such events have

been recorded at the Salton Sea in its nearly 100-year history, and such impacts are unlikely to occur. This would be a less than significant impact.

The project and related personnel would be subject to a risk of strong seismic ground shaking, which could damage components of the project and could also induce liquefaction of the berms and/or earthen islands. No liquefaction of berms has been recorded at the Salton Sea in its nearly 100-year history, and such impacts on structures and any people present are unlikely to occur. This would be a less than significant impact.

The project would be located on former Salton Sea seabed (sediment), and these sediments would erode to some extent. Soils would be lost from the site largely via suspension as dust and transport by wind. Any erosion by water would result in the soils being transported into the adjacent Salton Sea. The project plans have incorporated APCD best management practices to reduce the loss of soils as windblown dust. This is considered to be a less than significant impact.

#### *Mitigation*

No measures are recommended.

### 3.6.3 Cumulative Effects

The cumulative effects analysis area for soils is composed of the southeast shore of the Salton Sea. The direct and indirect effects of implementing Alternative A or B would not combine with the cumulative projects identified in Section 1.6 for cumulative effects on erosion along the Salton Sea's east shore. No other earth-disturbing activities along the southeast shore of the Salton Sea have been identified.

## 3.7 WATER RESOURCES

### 3.7.1 Alternative A—No Action

#### *Direct and Indirect Effects*

Implementing Alternative A would not result in any impacts on water resources. The Alamo River would continue to drain to the Salton Sea without any diversions near the project area. Rainwater would continue to pool within the ponds during the winter months, and evaporate during the summer months.

#### *Mitigation*

No measures are proposed.

### 3.7.2 Alternative B—Proposed Action

#### *Direct and Indirect Effects*

Implementing Alternative B would have no impact on groundwater resources, drainage patterns, or runoff volumes and would not negatively affect water quality.

The proposed project would result in losses of approximately 862 acre-feet per year from the Salton Sea through the additional project-introduced evaporation and percolation. This loss represents a 0.064 percent decrease in inflow to the sea every year for the duration of the project. Due to the small percentage of decrease and the temporary nature of the proposed project, this would be a less than significant impact.

All installed berms would be placed within an existing bermed area and would not impede or redirect flood flows. The project does not involve housing, permanent structures, or areas that would attract people for the long term. The area is not subject to sudden flooding.

There would be no risk of mudflows due to the flat topography of the area. There would be no risk of tsunami due to the lack of any nearby oceans or seas. The berms, ditch, pump, gravel filter, water intake, and water outlets could become damaged in case of seiche, but damage would be limited to the project features.

#### *Mitigation*

No measures are proposed.

### 3.7.3 Cumulative Effects

The cumulative impacts analysis area is defined as the Salton Sea. Several other projects have been identified that would reduce water flows to the Salton Sea within the timeframe of the Proposed Action.

Several wetland creation projects are planned along the New and Alamo Rivers. A total of 138 acres of wetlands have either been recently created or are planned for creation within the next few years. While these projects are expected to improve water quality within the rivers, water losses from these wetlands due to evaporation and percolation are estimated to be approximately 6,600 acre-feet per year. These wetlands would reduce total flows to the Salton Sea by approximately 0.5 percent.

Upgrades to the Mexicali Wastewater Treatment Plant and the construction of a new wastewater treatment plant in Mexicali and a natural gas power plant in Mexico that would use the waste stream from the new wastewater plant would also reduce flows to the New River.

The implementation of water conservation practices via the IID has reduced annual flows to the Salton Sea by approximately 100,000 acre-feet since 1998. These water conservation practices will continue in the Valley.

The Proposed Action would result in a temporary annual loss of 862 acre feet of water flowing to the Salton Sea, resulting in an insignificant, temporary contribution to cumulatively significant effects on Salton Sea water volumes.

## 3.8 BIOLOGICAL RESOURCES

### 3.8.1 Alternative A—No Action Alternative

#### *Direct and Indirect Effects*

Implementing the No Action Alternative may result in some minor improvements to habitat in the ROI. Over time, adverse impacts on fish and avian resources in the ROI would develop due to several factors.

There would most likely continue to be a decrease in habitat value over time due to the increase in saline conditions in the Salton Sea. There would be a continued concentration of minerals and contaminants in the ROI. The increase in concentration of salts and contaminants would affect wildlife species that spend time in waters of the Salton Sea. Because of the link between environmental quality and disease spread, there could be increases in bird losses from disease under the No Action Alternative. As avian species are concentrated into decreasing areas of suitable habitats both in and around the Sea, avian diseases that spread readily in dense population conditions could further affect birds in the area. In addition, the aquatic prey base would be lost as the salinity level increases, further stressing those species that depend on foraging in the area.

These combined effects would result in minor to moderate adverse impacts over time, due to an overall continued decline in habitat value for both plant and wildlife species.

Locally, at the project site, shorebirds and other migratory birds would continue to use the seasonally pooled rainwater that collects during the winter within the existing ponds.

#### *Mitigation*

No measures are proposed.

### 3.8.2 Alternative B—Proposed Action

#### *Direct and Indirect Effects*

Implementing Alternative B would result in minor short-term adverse impacts on biological resources that would mainly occur during implementation periods. However, these would be outweighed by the overall benefits that would result from the project action during the life span of the project.

The project would avoid impacts on birds by avoiding project activities during the spring and most of the summer when they are breeding and which is their most sensitive life stage. The project would not affect terrestrial vegetation or negatively affect terrestrial habitat. Construction and earthmoving would not involve the riparian corridor or surrounding brush. The project, once operational, is expected to provide habitat for shorebirds for the duration of the project.

The project would avoid negatively affecting desert pupfish by avoiding pupfish. This would be achieved by limiting project activities to those areas where pupfish are unlikely to occur, and by blocking pupfish access to the project area by using gravel filters and a standpipe at the outflow (which would maintain an upward flowing discharge, preventing fish from entering the pond system). No existing pupfish habitat would be degraded.

The proposed system that would be implemented under Alternative B would be operated and monitored for at least two full breeding seasons and would provide better habitat to biological resources during that time than that which exists now. Additionally, some lingering effects of the improved habitat may persist after these two seasons, resulting in beneficial impacts as long as the enhanced habitat is present. In the long term, the ROI would revert back to its existing condition, resulting in such impacts as those described above under the No Action Alternative.

Habitat in and along the Alamo River is currently of low value (as described in the Affected Environment section) and would only be minimally affected by the proposed project. Any adverse effects would be primarily short-term construction noise generated during excavation. Also in the short term, the exposed portion of the bed of the Salton Sea would be marginally adversely affected by installation of the proposed pumping station and sump.

There would be beneficial impacts on biological resources while the project is underway. The net impact of the proposed project on wildlife species would be positive due to the resulting increase of foraging, resting, and potentially breeding habitat generated by the project. This would in turn provide greater use of aquatic portions of the ROI. Oceanic bird species, such as cormorants *(Phalacrocorax* spp.*),* may benefit by the additional perching options that the aboveground pipeline would provide; for example, they could perch on the pipeline to dry and preen their feathers. Aquatic wildlife could benefit from the increase in distribution of oxygenated water and the reduction in the salinity levels (15 to 20 parts per thousand in the ponds versus 44 ppt in the sea) under Alternative B.

While some minor adverse impacts may occur in the short term, these would be outweighed by the overall beneficial impacts that would result from the project action during the life span of the project and for a period of time after the project is completed.

### *Mitigation*

No measures are proposed.

### *Cumulative Effects*

The ROI for the cumulative effects analysis is the ROI described in Section 2.5, plus the Salton Sea and the Alamo and New Rivers near their junction with the Sea..

The implementation of the Proposed Action would cumulatively contribute to increased salinity and decreased habitat quality at the Salton Sea due to evaporative and percolative water losses. Such salinity increases from water losses are also associated with cumulative projects, particularly the Alamo and New River wetland projects and the Mexicali Wastewater Treatment Plant. The Alamo and New River wetlands projects would result in evaporative and percolative water losses from the rivers that feed the Sea, and the Mexicali Wastewater Treatment Plant would remove a source of low salinity water for the Sea. The temporary nature of the Proposed Action and the volume of water expected to be lost renders the cumulative impacts on biological resources associated with the Proposed Action negligible.

## 3.9 CULTURAL RESOURCES

### 3.9.1 Alternative A—No Action

#### *Direct and Indirect Effects*

The No Action Alternative would result in no change in existing conditions and would have no effect on cultural resources.

#### *Mitigation*

Because the No Action Alternative would have no effect on cultural resources, no mitigations are required.

### 3.9.2 Alternative B—Proposed Action

#### *Direct and Indirect Effects*

Insofar as no NRHP-eligible prehistoric, historic, or traditional cultural resources were identified within the project area, it follows that no federal historic properties or California historic resources have been identified at the Salton Sea Shallow Water Habitat project area. Therefore, the Proposed Action would not have any effects on cultural resources. However, consideration must be given to the possibility of buried cultural resources that could not be identified by the archaeological inventories.

#### *Mitigation*

Prior to construction, workers would be briefed on the importance of immediately reporting findings of any archaeological materials to a designated individual with the authority to suspend construction activities. Should evidence of archaeological resources be found during ground disturbance, construction staff would immediately notify Reclamation's Regional Archaeologist, the California SHPO and the project archaeologist. Ground-disturbing activities would be suspended in the vicinity of the find. The project archaeologist would assess the potential significance of the discovery and would recommend measures to minimize potential effects on the resources. If human remains were encountered, Native American Graves Protection and Repatriation Act (NAGPRA) guidelines should be followed, including immediate contact of the responsible federal official and the Imperial County Coroner within 24 hours. If the

human remains were determined to be Native American, the responsible federal official would notify the most likely descendent within 24 hours of the determination.

#### *Cumulative Effects*

The cumulative effects analysis area for cultural resources is a one-mile radius from the proposed project area, or the APE, as used in the Class III survey. Providing the mitigation for inadvertent discovery of cultural resources is implemented, no direct or indirect effects on cultural resources are anticipated if the proposed project were implemented. Therefore, there would be no cumulative effects either.

## 3.10 HAZARDOUS AND TOXIC MATERIALS AND WASTE

### 3.10.1 Alternative A—No Action

#### *Direct and Indirect Effects*

Implementation of the No Action Alternative would not result in any effects related to hazardous and toxic materials and waste.

#### *Mitigation*

No measures are recommended.

### 3.10.2 Alternative B—Proposed Action

#### *Direct and Indirect Effects*

Because no hazardous sites have been identified in the project area, there would likely be no effects on any existing contaminated sites if Alternative B were implemented. Implementing Alternative B would result in potential soil and groundwater contamination from diesel fuel and lubricants that would be present on the project site in association with construction equipment and vehicles. Project plans would incorporate all spill prevention and leak containment best management practices to reduce this potential risk to a less than significant level.

#### *Mitigation*

No measures are recommended.

### 3.10.3 Cumulative Effects

The cumulative effects analysis area for hazardous materials is the project area. Implementing either of the alternatives would likely not contribute any hazardous materials effects to the projects listed in Section 1.6, because no sites are known to exist within the EA study area.

## 3.11 VISUAL RESOURCES

### 3.11.1 Alternative A—No Action

#### *Direct and Indirect Effects*

The No Action Alternative would have no effect on visual resources.

#### *Mitigation*

No measures are recommended.

### 3.11.2 Alternative B—Proposed Action

#### *Direct and Indirect Effects*

Implementing Alternative B would have a negligible effect on visual resources in the area. None of the project area is within a scenic vista or within view of a scenic highway. The only visible component of the proposed project would be the proposed observation tower. All other project features would be below the height of the existing berms. The project would not substantially alter the existing visual character or quality of the site and its surroundings. The proposed project would not create a new source of light or glare, nor would it affect day or nighttime views in the area.

#### *Mitigation*

No measures are recommended.

### 3.11.3 Cumulative Effects

The cumulative effects analysis area for visual resources is a one-mile radius around the project area. No other projects have been identified that would contribute to effects on visual resources.

## 3.12 AIR QUALITY

### 3.12.1 Alternative A—No Action

#### *Direct and Indirect Effects*

Implementation of the No Action Alternative would result in continued exposure of salt and soil to wind erosion, which results in suspended soils and negative impacts to air quality.

#### *Mitigation*

No measures are recommended.

### 3.12.2 Alternative B—Proposed Action

#### *Direct and Indirect Effects*

Implementing the Proposed Action would result in increases in fine particulate matter ($PM_{10}$) due to construction-related fugitive dust and diesel exhaust emissions. APCD-

recommended measures *(Imperial County APCD Rule 800—Fugitive Dust Requirements for Control of Fine Particulate Matter [$PM_{10}$])* have been incorporated into the project plans to reduce fugitive dust emissions during earth-moving activities. These measures would reduce this impact to a less than significant level.

The project would not conflict with or obstruct implementation of any air quality plan, and would not violate any air quality standard. The project would not contribute substantially to an existing or projected air quality violation, and it would not expose any sensitive receptors to substantial pollutant concentrations. Digging for the sump and pump station may result in temporary, localized odors from exposure of buried sediments. No sensitive receptors have been identified in the project area; therefore, there would be no impacts from objectionable odors.

#### *Mitigation*

No measures are recommended.

### 3.12.3 Cumulative Effects

The cumulative effects analysis area is the area covered by the Imperial County APCD. With the incorporation of dust suppression measures, the project would not have the potential to result in a cumulatively considerable net increase in $PM_{10}$.

## 3.13 NOISE

### 3.13.1 Alternative A—No Action

#### *Direct and Indirect Effects*

Implementing the No Action Alternative would not result in any noise generation or impacts.

#### *Mitigation*

No measures are recommended.

### 3.13.2 Alternative B—Proposed Action

#### *Direct and Indirect Effects*

Implementing the Proposed Action Alternative would result in minimal construction-related noise impacts. Construction operations would generate substantial temporary levels of noise and ground-borne vibrations in the direct vicinity of the project. Operation, maintenance, and ongoing monitoring would generate minimal amounts of noise from vehicles and equipment. No sensitive receptors have been identified in the project area. No established noise standards would be exceeded. Project-generated noise could have a minimal effect on wildlife in the area, but this would be a less than significant impact.

#### *Mitigation*

No measures are recommended.

### 3.13.3 Cumulative Effects

The cumulative effects analysis area is a half-mile area surrounding all project components. No cumulative projects have been identified within the analysis area. The project would not have the potential to result in a cumulatively considerable net increase in local noise levels.

## 3.14 SOCIOECONOMICS AND ENVIRONMENTAL JUSTICE

### 3.14.1 Alternative A—No Action

#### *Direct and Indirect Effects*

Implementing the No Action Alternative would not result in any socioeconomic or environmental justice impacts.

#### *Mitigation*

No measures are recommended.

### 3.14.2 Alternative B—Proposed Action

#### *Direct and Indirect Effects*

Implementing the Proposed Action Alternative would not result in any socioeconomic or environmental justice impacts.

#### *Mitigation*

No measures are recommended.

### 3.14.3 Cumulative Effects

The cumulative effects analysis area is Imperial County. The project would not result in any cumulative socioeconomic or environmental justice impacts.

## 3.15 TRAFFIC

### 3.15.1 Alternative A—No Action

#### *Direct and Indirect Effects*

Implementing the No Action Alternative would not result in any traffic-related impacts.

#### *Mitigation*

No measures are recommended.

### 3.15.2 Alternative B—Proposed Action

#### *Direct and Indirect Effects*

Implementing the Proposed Action Alternative would result in short-term increases in construction traffic levels along Davis, West Schrimpf, McDonald, and Hazard Roads. All project components are accessed most directly from Davis Road, which runs north-south. Traffic from Niland and/or Highway 111 could access Davis Road via any of the east-west aligned roads: West Schrimpf, McDonald, or Hazard Roads.

Construction equipment that would be using these roads includes light bulldozers (JD 450, Caterpillar D6), excavators, and backhoes. An estimated maximum of four workers would be present on the work site at any given time. This low number of workers would not result in substantial impacts on traffic along the affected roads.

The operational phase of the project would involve maintenance and monitoring activities. Some heavy equipment would be retained on-site for berm maintenance and may occasionally be transported to or from the site. Maintenance and monitoring activities would be conducted on an ongoing basis but would involve only a few individuals at any given time. The operational phase of the project would not result in any significant impacts on traffic.

The decommissioning phase of the project would involve similar equipment and vehicle trips as the construction phase. The decommissioning phase would result in temporary, less than significant impacts on traffic along project area roads.

#### *Mitigation*

No measures are recommended.

### 3.15.3 Cumulative Effects

The cumulative effects analysis area is Davis Road and the roads connecting Davis Road to Highway 111. No cumulative projects have been identified that would generate traffic on these roads. The project would not result in any cumulative traffic impacts.

# SECTION 4
# COMMENTS AND COORDINATION

## 4.1 SOLICITATION LETTERS

Letters soliciting comments on the effects of the proposed project were mailed to several Native American tribes on April 27, 2005 (Appendix D). One phone call was received in response to this letter from the Cocopah Tribe of Arizona. The tribe representative requested a site visit and expressed concern over the potential impacts on fishing weirs in the area. Reclamation phoned the Cocopah Tribe to arrange for a site visit, but these phone calls were not returned after approximately six weeks.

## 4.2 PUBLIC INVOLVEMENT

### 4.2.1 Introduction

Public involvement is a vital component of NEPA for vesting the public in the decision making process and allowing for full environmental disclosure. Guidance for implementing public involvement is codified in 40 CFR 1506.6, thereby ensuring that federal agencies make a diligent effort to involve the public in preparing NEPA documents.

Public involvement is generally conducted in two phases:

- Public scoping prior to NEPA analysis to obtain public input on issues and proposed alternatives, and
- Public review and comment on the draft EA, which includes analyzing possible environmental effects and identifying the preferred alternative.

Scoping is a public process designed to determine the scope of issues and alternatives to be addressed in a NEPA document. Scoping helps ensure that real problems are identified early and that they are properly studied; that issues of no concern do not consume time and effort; and that the proposed action and alternatives are balanced, able to be implemented, and thorough. Due to the noncontroversial nature of this

project and the lack of any identified resources that would be affected by the project, scoping activities for the Shallow Water Habitat Project have been limited to the public availability and agency review and comment period for the draft EA.

### 4.2.2 Summary of Activities

The agencies had 30 days to review the draft. The draft EA's availability was announced via a Press Release by the Bureau of Reclamation on the opening day of the comment period and posted on Reclamations website.

## 4.3 DRAFT EA DISTRIBUTION

Reclamation provided the individuals and organizations in Table 4-1 with a copy of the draft EA. Comments on the draft EA are summarized in Appendix E, along with responses from Reclamation.

**Table 4-1**
**Draft EA Distribution**

| Organization | Name | City | State | Zip |
|---|---|---|---|---|
| US Army Corps of Engineers | Deanna Cummings | Los Angeles | CA | 90053 |
| Imperial County Air Pollution Control District | Reyes Romero | El Centro | CA | 92243 |
| Imperial County Planning | Jurg Heuberger | El Centro | CA | 92243 |
| Imperial County Public Works | Robert Gray | El Centro | CA | 92243 |
| Coachella Valley Water District | Steve Robbins | Coachella | CA | 92236 |
| Colorado River Basin Regional Water Quality Control Board | Jose Angel | Palm Desert | CA | 92260 |
| Imperial County | Roberta Burns | El Centro | CA | 92243 |
| Imperial Irrigation District | Mike King | El Centro | CA | 92243 |
| California Department of Fish and Game | Jack Crayon | Bermuda Dunes | CA | 92201 |
| US Fish and Wildlife Service | Kurt Roblek | Carlsbad | CA | 92008 |
| Imperial Health Department | Tom Wolf | El Centro | CA | 92243 |
| Salton Sea Authority | Dan Cain | La Quinta | CA | 92253 |
| Torres Martinez Desert Cahuilla Indian Tribe | Debi Livesay | Thermal | CA | 92274 |

# SECTION 5
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