PROJECT REPORT

TO: ENVIRONMENTAL EVALUATION COMMITTEE
FROM: PLANNING & DEVELOPMENT SERVICES

AGENDA DATE: July 10, 2025
AGENDA TIME: 1:30PM / No.1

Information Item Only
Imperial Irrigation District

PROJECT TYPE: CUP#25-0006 SUPERVISOR DIST # 4

LOCATION: 5TH Street and Avenue E. APN: 002-640-002-000

Bombay Beach, CA. PARCEL SIZE: 320 AC

GENERAL PLAN (existing) Government GENERAL PLAN (proposed) N/A

ZONE (existing) S-2-G (Open Space Preservation with Geothermal Overlay) ZONE (proposed) N/A

GENERAL PLAN FINDINGS ☒ CONSISTENT ☐ INCONSISTENT ☐ MAY BE/FINDINGS

PLANNING COMMISSION DECISION: HEARING DATE: _____

☐ APPROVED ☐ DENIED ☐ OTHER

PLANNING DIRECTORS DECISION: HEARING DATE: _____

☐ APPROVED ☐ DENIED ☐ OTHER

ENVIROMENTAL EVALUATION COMMITTEE DECISION: HEARING DATE: 07-10-2025

INITIAL STUDY: #25-0014

☐ NEGATIVE DECLARATION ☐ MITIGATED NEG. DECLARATION ☒ ADDENDUM EIR

DEPARTMENTAL REPORTS / APPROVALS:

PUBLIC WORKS	☐ NONE	☒ ATTACHED
AG	☐ NONE	☒ ATTACHED
APCD	☐ NONE	☒ ATTACHED
E.H.S.	☒ NONE	☐ ATTACHED
FIRE / OES	☐ NONE	☒ ATTACHED
SHERIFF	☐ NONE	☐ ATTACHED

OTHER Quechan Indian Tribe

REQUESTED ACTION:

See attached.

EEC ORIGINAL PKG

Final Addendum To
Environmental Impact Report

Bombay Beach Plot Study

Prepared for:

Imperial Irrigation District
333 East Barioni Boulevard
Imperial, California 92251

Prepared by:

3838 Camino del Rio North, Suite 370
San Diego, California 92108

December 2022

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LIST OF ACRONYMS AND ABBREVIATIONS

Term	Description
AB	Assembly Bill
AFY	acre-feet per year
ALOC	*Allenrolfea occidentalis* (iodine bush)
amsl	above mean sea level
AOI	Area of Interest
APE	Area of Potential Effects
ATCA	*Atriplex canescens* (fourwing saltbush)
ATLE	*Atriplex lentiformis* (big saltbush)
ATV	all-terrain vehicle
bgs	below ground surface
BLM	U.S. Bureau of Land Management
BMPs	Best Management Practices
CAA	Clean Air Act
CalEEMod	California Emissions Estimator Model
CalEPA	California Environmental Protection Agency
CAL FIRE	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH_4	methane
CHP	California Highway Patrol
CHRIS	California Historical Resources Information System
CNDDB	California Natural Diversity Database
CNEL	Community Noise Equivalent Levels
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide

LIST OF ACRONYMS AND ABBREVIATIONS

Term	Description
CO_2e	carbon dioxide equivalent
CRHR	California Register of Historic Places
CUP	Conditional Use Permit
CUSD	Calipatria Unified School District
CVWD	Coachella Valley Water District
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibels
DCMs	dust control measures
DHS	California Department of Health Services
DOC	California Department of Conservation
DPM	diesel particulate matter
DTSC	Department of Toxic Substances Control
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
°F	Fahrenheit
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GDE	groundwater dependent ecosystem
GHG	greenhouse gas
gpm	gallons per minute
GRIA	Groundwater Resources Impact Assessment
HCP	Habitat Conservation Plan
Hz	hertz
ICAPCD	Imperial County Air Pollution Control District
ICPDS	Imperial County Planning and Development Services Department
IID	Imperial Irrigation District
IPCC	Intergovernmental Panel on Climate Change
ITAs	Indian Trust Assets
L_{dn}	day/night noise level
L_{eq}	equivalent noise levels
LF	linear feet
MBTA	Migratory Bird Treaty Act
MDAQMD	Mojave Desert Air Quality Management District
MHMP	Multi-Jurisdictional Hazard Mitigation Plan
MLD	Most Likely Descendent

LIST OF ACRONYMS AND ABBREVIATIONS

Term	Description
mph	miles per hour
MMRP	Mitigation Monitoring and Reporting Program
MWD	Metropolitan Water District
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCAG	Natural Communities Commonly Associated with Groundwater
NCCP	Natural Communities Conservation Plan
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NPDES	National Pollutant Discharge Elimination System
N_2O	nitrous oxide
NO_2	nitrogen dioxide
NO_x	nitrogen oxides
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
O_3	ozone
OPR	Office of Planning and Research
PEIR	Programmatic Environmental Impact Report
PDCP	Proactive Dust Control Plan
$PM_{2.5}$	Particulate Matter Less than 2.5 Microns in Diameter
PM_{10}	Particulate Matter Less than 10 Microns in Diameter
PPV	peak particle velocity
PRC	Public Resources Code
PVC	polyvinyl chloride
QSA	Quantification Settlement Agreement
Reclamation	Bureau of Reclamation
RMS	root mean square
ROG	Reactive Organic Gas
RWQCB	Regional Water Quality Control Board
USACE	U.S. Army Corps of Engineers
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SCIC	South Coastal Information Center
SDCWA	San Diego County Water Authority
SIP	State Implementation Plan
SLF	Sacred Lands File
SO_2	sulfur dioxide
SR	State Route
SSAB	Salton Sea Air Basin
SSAQMP	Salton Sea Air Quality Mitigation Program

LIST OF ACRONYMS AND ABBREVIATIONS

Term	Description
SSMP	Salton Sea Management Plan
SUNI	*Suaeda nigra* (bush seepweed)
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
TCRs	Tribal Cultural Resources
TDS	total dissolved solids
TNC	The Nature Conservancy
Transfer Project	IID's Water Conservation and Transfer Project
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UV	ultraviolet
VdB	vibration velocity
VOC	volatile organic compound
VRI	Visual Resource Inventory
WDR	Waste Discharge Requirements

1.0 BACKGROUND

1.1 Summary

Project Title:	Bombay Beach Plot Study
Lead Agency Name and Address:	Imperial Irrigation District (IID) Water Department 333 East Barioni Boulevard Imperial, California 92251
Contact Person and Phone Number:	Jessica Humes Senior Environmental Project Manager IID Water Department (760) 339-9703 jllhumes@iid.com
Project Location:	The Project Area consists of approximately 168.39 acres of property located in the northeastern quarter of Section 33 of Township 9 South, Range 12 East, San Bernardino Base and Meridian as depicted on the 1998 Frink, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map (Figure 1). The northwestern corner of the Project Area is one block east of the intersection of 1st Street and Avenue G in the community of Bombay Beach. The Proposed Project entails the evaluation of the efficacy of several surface treatments to provide dust control and habitat enhancements to the south of the community of Bombay Beach.

1.2 Introduction

The purpose of this California Environmental Quality Act (CEQA) Environmental Impact Report (EIR) Addendum (Addendum) is to discuss the details and environmental impacts associated with implementation of air quality mitigation measures required for IID's Water Conservation and Transfer Project (Transfer Project) and Habitat Conservation Plan (HCP) analyzed in a Final Environmental Impact Report and Environmental Impact Statement (Final EIR/EIS or EIR/EIS), certified in June 2002 (Bureau of Reclamation [Reclamation] and IID 2002a, 2002b), and as amended (IID 2003; IID 2008). This Addendum documents the potential environmental impacts associated with implementation of a portion of the Salton Sea Air Quality Mitigation Program (SSAQMP), required mitigation by the EIR/EIS. Specifically, this Addendum discusses and analyzes the impacts associated with implementation of the Bombay Beach Plot Study (Proposed Project), which is identified as part of IID's 2019/2020 Proactive Dust Control Plan (PDCP) under the SSAQMP.

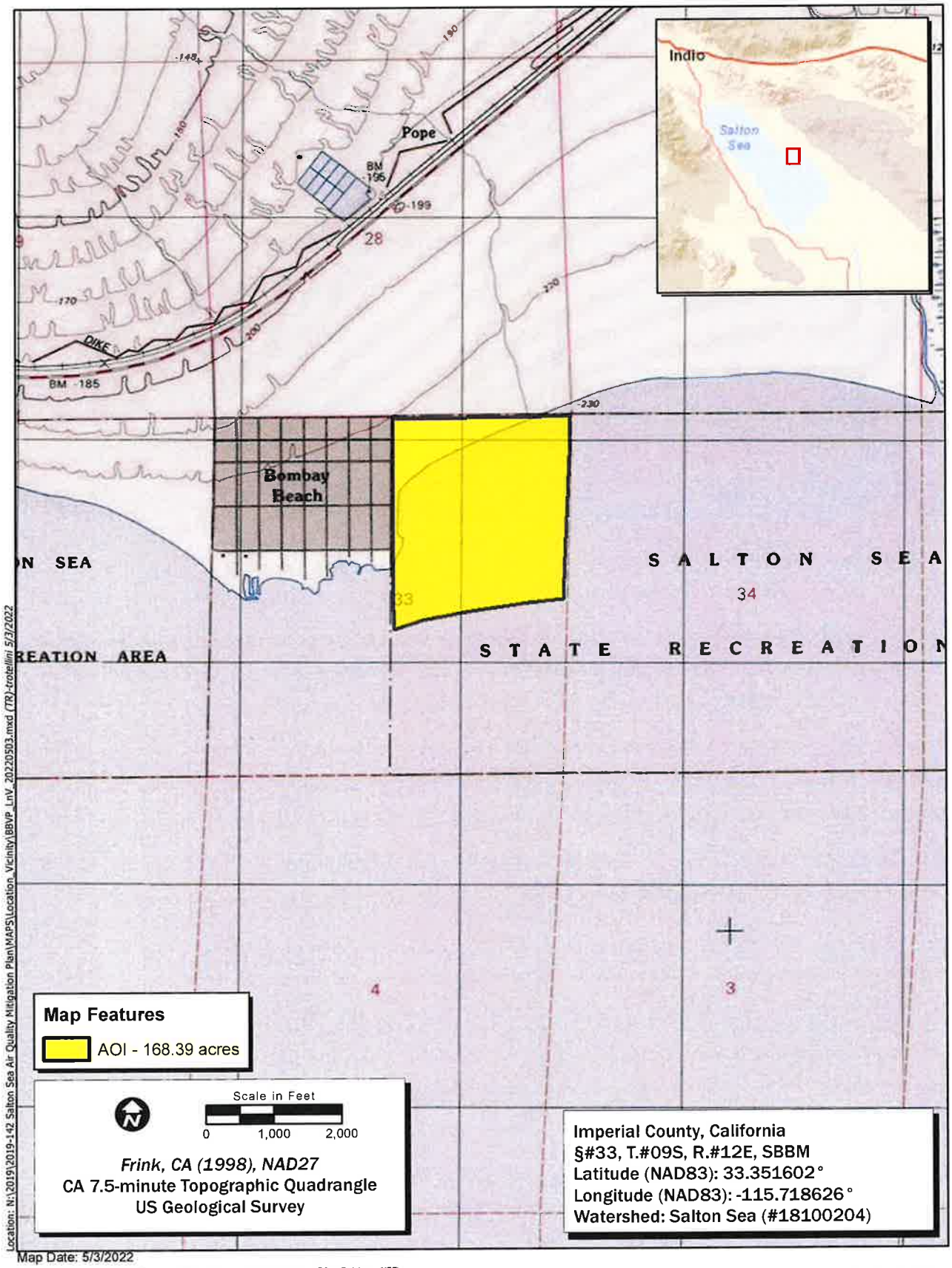

Figure 1. Project Location and Vicinity

2022-061 Bombay Beach Vegetation Plots

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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The SSAQMP was developed by IID to provide a comprehensive, science-based, adaptive approach to address air quality mitigation requirements associated with the Transfer Project. The Proposed Project Area comprises approximately 168.39 acres which has been identified as a priority area to evaluate groundwater supply and quality and development, vegetation establishment options, maintenance of existing vegetation, stormwater retention and spreading features (bunds), and waterless dust control measures (DCMs). Critical to the success of this Project is development of sufficient groundwater suitable to establish and sustain vegetation cover within the Project Area. Waterless DCMs will include placement of hay bales and perimeter sand-fencing.

1.3 Final Environmental Impact Report/Environmental Impact State for the Imperial Irrigation District Water Conservation and Transfer Project and Habitat Conservation Plan

The Final EIR/EIS or EIR/EIS for the IID's Transfer Project and HCP was certified by IID (as CEQA Lead Agency) in June 2002 (Reclamation and IID 2002a). The EIR/EIS was amended by the Amended and Restated Addendum to the EIR/EIS for the IID Water Conservation and Transfer Project (09/03 Addendum) in September 2003 to document the potential environmental impacts of certain changes made to the Transfer Project, as well as by a Supplemental EIR certified in 2008 to implement a managed marsh complex associated with the Transfer Project (IID 2003, 2008).

The EIR/EIS, as amended, evaluates a water conservation and transfer project that would conserve and transfer up to 300,000 acre-feet per year (AFY) of IID's Colorado River entitlement. The water, which could be conserved by a variety of methods, would be transferred by IID to the San Diego County Water Authority (SDCWA), the Coachella Valley Water District (CVWD) and/or the Metropolitan Water District (MWD). The terms of the water conservation and transfer transactions are set forth in the Agreement for Transfer of Conserved Water (IID/SDCWA Transfer Agreement) executed by IID and SDCWA in 1998, as amended, and the Quantification Settlement Agreement (QSA) executed by IID, CVWD, and MWD. These transfers, which are to remain in effect for up to 75 years, facilitate efforts to reduce California's diversions of Colorado River water in normal years to its annual 4.4 million AFY apportionment.

The Transfer Project also includes implementation of an HCP to address impacts to covered species and habitats within the IID water service area associated with the water transfer; implementation of certain operations and maintenance activities by IID associated with water conservation and water transfer; and implementation of mitigation measures required in the EIR/EIS. The HCP was not adopted by resource agencies but is analyzed as part of the Transfer Project in the EIR/EIS.

The Final EIR/EIS identified potential air quality impacts from windblown dust from exposed Salton Sea playa as a result of the conservation of up to approximately 300,000 acre-feet reducing the volume of agricultural inflows to the Sea. The requirements for monitoring and mitigating dust emissions from the exposed Salton Sea playa are identified in the Final EIR/EIS and as Mitigation Measure AQ-7. The Salton Sea air quality monitoring and mitigation requirements established by Final EIR/EIS Mitigation Measure AQ-7, in pertinent part, are as follows:

1. **Restrict Access:** Public access, especially off-highway vehicle access, would be limited, to the extent legally and practicably feasible, to minimize disturbance of natural crusts and soils surfaces in future exposed shoreline areas.

2. **Research and Monitoring:** A research and monitoring program would be implemented incrementally as the Sea recedes. The research phase would focus on development of information to help define the potential for problems to occur in the future as the Sea elevation is reduced slowly over time. Research would:

    a. Study historical information on dust emissions from exposed shoreline areas.

    b. Determine how much land would be exposed over time and who owns it.

    c. Conduct sampling to determine the composition of "representative" shoreline sediments and the concentrations of ions and minerals in salt mixtures at the Sea.

    d. Analyze [data] to predict responses of Salton Sea salt crusts and sediments to environmental conditions, such as rainfall, humidity, temperature, and wind.

    e. Implement a meteorological, course particulate matter (PM_{10}) and toxic air contaminant (TAC) monitoring program to begin under existing conditions and continue as the [Sea recedes]. The goal of the monitoring program would be to observe PM_{10} problems or incremental increases in TAC concentrations associated with [receding Sea levels] and to provide a basis for mitigation efforts.

    f. If incremental increases in TACs (such as arsenic or selenium, for example) are observed at the receptors and linked to emissions from exposed shoreline caused by [receding Sea levels], conduct a health risk assessment to determine whether the increases exceed acceptable thresholds established by the governing air districts and represent a significant impact.

    g. If potential PM_{10} or health effects problem areas are identified through research and monitoring and the conditions leading to PM_{10} emissions are defined, study potential dust control measures specific to the identified problems and the conditions at the Salton Sea.

3. **Create or Purchase Offsetting Emission Reduction Credits:** This step would require negotiations with the local air pollution control districts to develop a long-term program for creating or purchasing offsetting PM_{10} emission reduction credits. Credits would be used to offset emissions caused by the Proposed Project, as determined by monitoring.

4. **Direct Emission Reductions at the Sea:** If sufficient offsetting emission reduction credits are not available or feasible, Step 4 of this mitigation plan would be implemented. It would include either, or a combination of:

    a. Implementing feasible dust mitigation measures; and/or

b. If feasible, supplying water to the Sea to re-wet emissive areas exposed by the [receding Sea], based on research and monitoring program.

The EIR/EIS concludes that windblown dust from exposed shoreline caused by the Transfer Project may result in potentially significant and unavoidable air quality impacts that could not be mitigated. This conclusion was based upon (1) uncertainty regarding the actual air quality impacts of Salton Sea shoreline exposure, because of the lack of sufficient records or research regarding emissive potential, and (2) uncertainty regarding the availability or feasibility of mitigation measures. The SSAQMP, therefore, was developed as result of Mitigation Measure AQ-7 to reduce air quality impacts and health effects associated with particulate matter less than 10 microns in diameter (PM_{10}) as described below.

1.4 The Salton Sea Air Quality Mitigation Program

The SSAQMP was developed by IID in July 2016 to provide a comprehensive, science-based, adaptive approach to address air quality mitigation requirements associated with the transfer of up to approximately 300,000 AFY of conserved water in compliance with Mitigation Measure AQ-7 of the EIR/EIS. The conserved water transfer reduces the volume of agricultural return flow to the Salton Sea, thereby contributing to an increase in the rate of playa exposure and increasing the potential for dust emissions that could affect communities near and around the Sea. The SSAQMP expands upon these general mitigation measures with detailed methods to assess playa dust emissions and identify options to mitigate them.

The SSAQMP has three main components: (1) an annual Emissions Monitoring Program to estimate emissions and to identify high-priority areas of exposed playa for proactive dust control, (2) an annual PDCP with recommendations and design for site-specific DCMs, and (3) implementation and monitoring of DCMs (e.g., surface roughening and vegetation establishment) to mitigate potential PM_{10} dust source areas proactively as playa becomes exposed. The annual Emissions Monitoring Program is designed to work hand-in-hand with the development of the annual PDCP and subsequent implementation and monitoring of DCMs (IID 2016).

Based on the results of the 2020/2021 Emission Estimates, the 2021/2022 PDCP reports progress on the implementation of the dust mitigation recommended in the 2019/2020 PDCP. The 2021/2022 PDCP also provides performance monitoring results of existing dust control areas and an update on program-level planning activities (IID 2022a). IID prepared the 2019/2020 PDCP as part of the SSAQMP to identify priority playa areas for dust control using the prioritization results from the 2018/2019 Emissions Estimates performed under the SSAQMP, and considering other stakeholder-planned projects at the Salton Sea. The PDCP recommends dust mitigation projects on approximately 7,000 acres, including a series of plot studies and irrigation water supply development implemented in a series of steps over three years. These plot studies are designed to test the effectiveness of various DCMs including their operation, maintenance, and cost. Results of the plot studies will inform larger scale implementation of dust control in each planning area identified in the SSAQMP. Implementation of the following DCMs are considered in the SSAQMP and PDCP:

- Surface roughening;

- Vegetation enhancement;
- Vegetated swales;
- Moat and row;
- Surface stabilizers;
- Physical barriers;
- Gravel cover;
- Shallow flooding; and
- Brine stabilization.

Most of these activities involve ground disturbance. Vegetation enhancement may involve use of groundwater and/or irrigation water and installation of infrastructure to facilitate irrigation (IID 2020).

In the 2019/2020 PDCP, Planning Areas were identified within the 7,000-acres for implementation of DCMs and no new areas were recommended in the 2021/2022 PDCP. The areas are identified as follows:

- Alamo North;
- Alamo South;
- Bombay Beach;
- Clubhouse;
- Mundo;
- New East;
- New West;
- Poe Road;
- San Felipe;
- Tule Fan;
- Travertine; and
- Whitewater West

This CEQA Addendum addresses implementation of a proposed dust control plot study in the Bombay Beach Planning Area identified in the 2019/2020 PDCP under the SSAQMP.

1.5 Bombay Beach Plot Study Project Description

The Proposed Project Area comprises approximately 168.39 acres that has been identified as a priority playa area to evaluate groundwater supply and quality, vegetation establishment in hedgerows,

enhancement of existing vegetation through rainwater harvesting (bund) techniques, and waterless DCMs. The Project Area is located adjacent to the town of Bombay Beach on the eastern playa of the Salton Sea in Imperial County (County) near the northern extent of Salton City and is accessible from Huron Avenue and Crystal Lake Avenue (a 1). As shown on Figure 2, the Proposed Project would include:

- Development (drilling, testing, and operations) of up to three shallow supply wells (approximately 100 feet deep) on approximately 86 acres;
- Installation of approximately 5,000 feet, with a footprint of 4 acres, of perimeter sand-fencing;
- Placement of physical exclusion barriers including hay bales, sand-fencing, and concrete barriers around site perimeter;
- Installation of access routes totaling 5,250 linear feet (LF);
- Installation and operations of solar-powered electric submersible groundwater pumps;
- Placement and use of approximately three 5,000-gallon water storage tanks;
- Installation of irrigation system from wells to storage tanks and from storage tanks to vegetation on the exposed playa;
- Enhancement of up to 53 acres of existing vegetation through rainwater harvesting (bund) techniques and establishment of 86.5 acres of vegetated hedgerows, including site preparation, seeding and transplanting, and installation of managed irrigation systems. Vegetation would be seeded or transplanted iodine bush;
- Ongoing operations, maintenance, and monitoring of the Project components.

The purpose of the Project is the development of sufficient groundwater (both quantity and quality) to establish and sustain vegetation cover on the site and implementation of DCMs as described in the 2019/2020 PDCP. The primary DCMs would include vegetation establishment using irrigation from groundwater wells onsite and vegetation enhancement using bunds for surface water capture. Existing vegetation includes native species such as iodine bush (*Allenrolfea occidentalis* or ALOC), fourwing saltbush (*Atriplex canescens* or ATCA), big saltbush (*Atriplex lentiformis* or ATLE), and bush seepweed (*Suaeda nigra* or SUNI).

Vegetation establishment activities include earthworks, seeding, and the installation and operation of an irrigation system. The vegetated hedgerows will be planted with ALOC Playa Mix. Site preparation includes site staking, grubbing, construction of hedgerow seedbeds, and hedgerow seeding.

Bunds will be used to mimic the surface water retention achieved by natural beach ridges and promote vegetation expansion into areas where natural beach ridges do not occur. Bund construction will consist of staking, grubbing, excavation, compaction, and site restoration. Diversion swales will be installed to divert surface flow to the bund arrays.

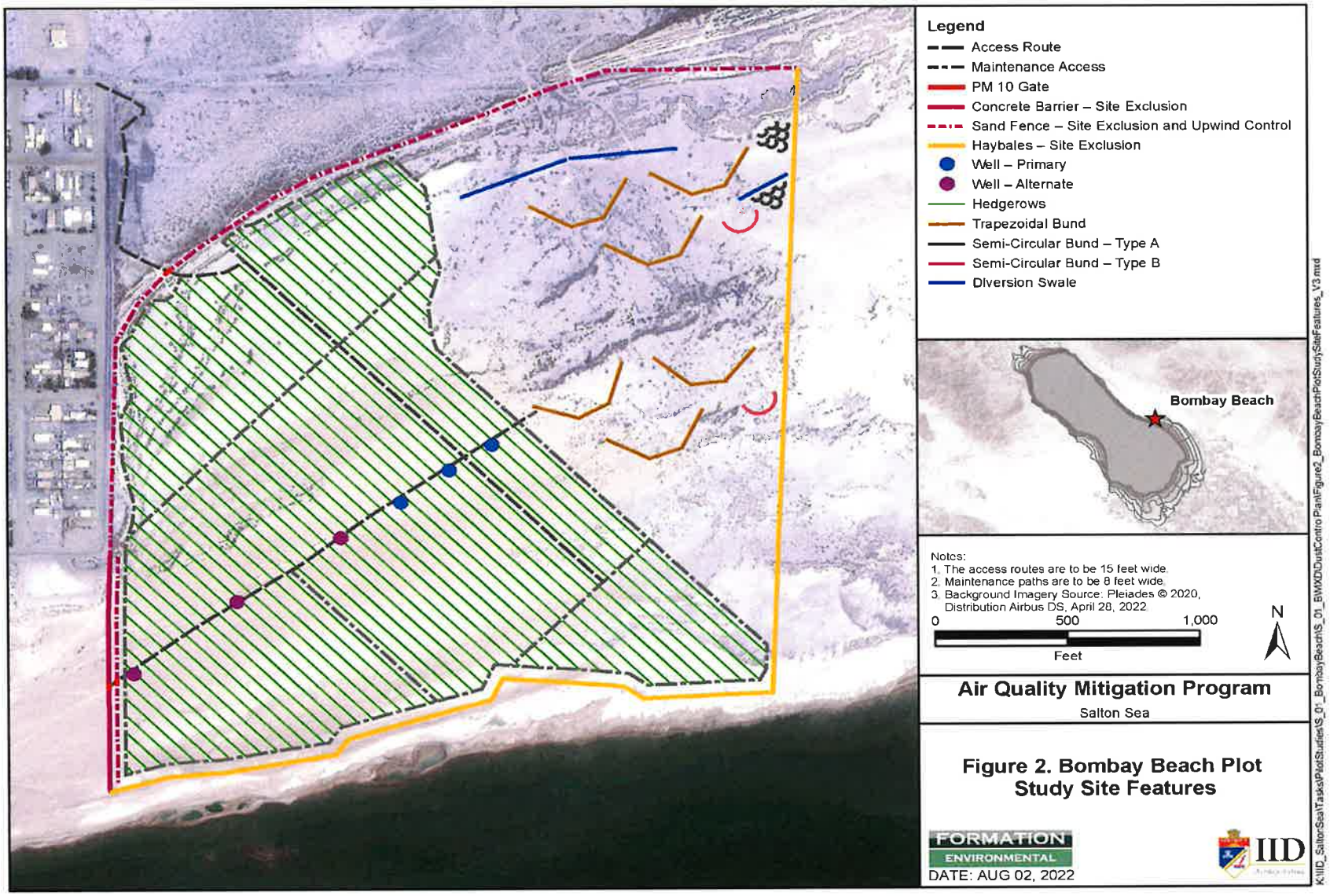

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Figure 2. Site Plan
2019-142 Salton Sea Air Quality Mitigation Plan

Waterless DCMs include hay bales and sand fencing. Hay bales will be placed on the eastern and southern perimeter of the Project Area for site exclusion. Sand fencing will be installed on the western and northern perimeter of the Project Area for site exclusion and upwind control. A concrete barrier will also be placed along a portion of the western perimeter to prevent vehicle disturbance to the Plot Study site.

1.6 CEQA Requirements

According to Section 15164(a) of the *CEQA Guidelines*, "[t]he lead agency or responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred."

Section 15162 of the *CEQA Guidelines* provides that, for a project covered by a certified EIR, preparation of a Subsequent or Supplemental EIR rather than an addendum is required only if one or more of the following conditions occur:

1. Substantial changes are proposed in the project which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

2. Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of the previously identified significant effects; or

3. New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete, shows any of the following:

    a. The project will have one or more significant effects not discussed in the previous EIR.

    b. Significant effects previously examined will be substantially more severe than shown in the previous EIR.

    c. Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measures or alternatives.

    d. Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measures or alternatives.

Implementation of the Proposed Project would not trigger any of the circumstances listed above to warrant preparation of a Subsequent or Supplemental EIR as discussed in more detail below. Specifically, the Proposed Project would not result in any new project specific impacts nor would result in any new

impacts that would have a considerable contribution to cumulative impacts. The Proposed Project would not result in a substantial increase in the severity of previously identified impacts nor would result in a requirement for new mitigation measures.

1.7 Contents of the Addendum

This Section of the Addendum includes: the purpose of this Addendum; the previous environmental documentation and documents incorporated by reference; and a description of Project development and events following certification of the Final EIR/EIS.

Section 2.0 of the Addendum includes a description of the details associated with the Proposed Project including best management practices that have been incorporated into the Project to avoid and/or minimize environmental impacts.

Section 3.0 consists of an environmental checklist form focusing specifically on impacts caused by the Proposed Project. This form is based on the model prepared by the California Office of Planning and Research (OPR) and has been modified to reflect the significance criteria used in the Final EIR/EIS. Section 3.0 includes an explanation of each of the answers in the environmental checklist.

Section 4.0 contains a List of Preparers and references are included in Section 5.0.

1.8 Previous Environmental Documentation

The following environmental documentation was previously prepared for the Project:

1. A Notice of Preparation was circulated on September 29, 1999, for a 30-day public review period.
2. An Initial Study was prepared and circulated concurrently with the Notice of Preparation.
3. A Notice of Completion was filed with the OPR (State Clearinghouse) on January 17, 2002, indicating that the Draft EIR/EIS was available for review.
4. The Draft EIR/EIS (Reclamation and IID 2002a) was released on January 18, 2002, and made available for a 90-day public review period, which ended on April 26, 2002.
5. The Final EIR/EIS (Reclamation and IID 2002b) was certified by IID in June 2002. The Draft EIR/EIS is incorporated as part of the Final EIR/EIS.
6. An Addendum to the Final EIR/EIS dated December 2002 was adopted by IID on December 31, 2002, but the revised Project assessed in the Addendum was not implemented.
7. The *Amended and Restated Addendum to the EIR/EIS for the IID Water Conservation and Transfer Project* (09/03 Addendum) was approved by IID in September 2003 to document the potential environmental impacts of certain changes made to the Transfer Project, including changes to the 2002 Draft HCP (IID 2003). The 9/03 Addendum amends and replaces the December 2002 Addendum.

8. The IID Board of Directors approved a Mitigation Monitoring and Reporting Program (MMRP) for the Transfer Project on October 3, 2003 (2003 MMRP) that addressed the Transfer Project as described in the Transfer Project Final EIR/EIS and the 9/03 Addendum.

9. IID prepared the *Final Supplement to the IID Water Conservation and Transfer Project EIR/EIS for the Managed Marsh Complex* (Managed Marsh Complex Supplement) in June 2008 to provide additional environmental assessment that was required under CEQA to implement the managed marsh complex as described in the 2002 Draft HCP and in the Habitat Conservation Plan/Natural Communities Conservation Plan (HCP/NCCP). The Managed Marsh Complex Supplement MMRP (2008 MMRP) is a revised version of the 2003 MMRP and includes all of the mitigation, monitoring, and reporting requirements from the 2003 MMRP and any additional requirements outlined in the Managed Marsh Complex Supplement.

10. The *Salton Sea Air Quality Mitigation Program (SSAQMP)* was prepared for the IID in July 2016 (IID 2016) to provide a comprehensive, science-based, adaptive approach to address air quality mitigation requirements associated with the transfer of up to approximately 300,000 AFY of conserved water under the QSA under Impact AQ-7 as identified in the Final EIR/EIS, and the associated mitigation measure AQ-7 found in the 2008 MMRP. The conserved water transfer reduces the volume of agricultural return flow to the Salton Sea, thereby exposing the playa and increasing the potential for dust emissions that could affect communities near and around the Sea. As stated in mitigation measure AQ-7, the required air quality mitigation measures to address these potential dust emissions are generally defined as:

    1) restricting access to the exposed playa;

    2) researching and monitoring the exposed playa;

    3) creating or purchasing offsetting emission reduction credits; and

    4) implementing direct emission reduction measures on the exposed playa.

    The SSAQMP expands upon these general mitigation measures with detailed methods to assess playa dust emissions and identify options to mitigate them.

11. The IID Board of Directors approved *Final Addendum to Environmental Impact Report Clubhouse Plot Study* for the Transfer Project in August 2021 addressing the environmental impacts of implementation of air quality mitigation measures required for the Transfer Project.

1.9 Documents Incorporated by Reference

Consistent with Section 15150 of the State CEQA Guidelines, the following documents were used in the preparation of this Addendum and are incorporated herein by reference:

- CVWD, IID, MWD, and SDCWA. *Addendum to the Program EIR for the Implementation of the Colorado River Quantification Settlement Agreement, September 2003* (IID 2003);
- The Draft EIR/EIS (Reclamation and IID 2002a);
- The Final EIR/EIS (Reclamation and IID. 2002b);
- Final Supplement to the IID Transfer Project EIR/EIS for the Managed Marsh Complex (Managed Marsh Complex Supplement) (IID 2008);
- *Salton Sea Air Quality Mitigation Program (SSAQMP).* Prepared for the IID in coordination with the County of Imperial, (IID 2016);
- Order WR 2017-0134 (Stipulated Order) certified by the State Water Resources Control Board (SWRCB) on November 17, 2017, Order Accepting Stipulation and Revising State Water Board Revised Order WRO 2002-0013 approving IID's and SDCWA's *"Amended Joint Petition for Approval of a Long-Term Transfer of Conserved Water from IID to SDCWA and to Change the Point of Diversion, Place of Use and Purpose of Use Under IID's Permit 7642"* (originally issued by the SWRCB on December 20, 2002); and
- 2019/2020 Proactive Dust Control Plan. Prepared for Imperial Irrigation District by Formation Environmental LLC as part of the SSAQMP (IID 2020).
- 2021/2022 Proactive Dust Control Plan. Prepared for Imperial Irrigation District by Formation Environmental LLC as part of the SSAQMP (IID 2022a).

2.0 PROJECT DESCRIPTION

2.1 Project Background

As described in the PDCP for the SSAQMP, the Bombay Beach Plot Study (Project or Proposed Project) is proposed for implementation to the east of Bombay Beach to evaluate groundwater supply and quality, vegetation establishment in hedgerows, enhancement of existing vegetation through rainwater harvesting (bund) techniques, and waterless DCMs. An approximately 168.39-acre Project Area has been identified as the buffered area in which the Project would be implemented and is shown on Figure 1. A site plan for proposed physical improvements is shown on Figure 2.

Critical to the success of this Project is development of sufficient groundwater (both quantity and quality) to establish and sustain vegetation cover. In addition, the Project Area would include waterless DCMs, including the placement of hay bales and sand fencing. Formation Environmental, LLC (Formation) prepared a Dust Control Plan for the Proposed Project to provide site specific details on dust control design (Appendix A; Formation 2022a).

Information from this Proposed Project would be used to inform water supply development and planning for expanded future vegetation-based dust control on the east side of the Salton Sea. Test wells would be developed, tested, and operated; new vegetation would be established in hedgerows, irrigated, and monitored; and existing vegetation would be monitored and irrigated as needed to maintain plant vigor and prevent loss of existing vegetation cover. Vegetation would include the planting of ALOC, commonly known as iodine bush, to augment existing ALOC in the area. ALOC is native, drought-resistant, and suitable for establishment on the playa.

2.2 Project Components

The following elements are proposed in association with the Project:

- Development (drilling, testing, and operations) of up to three shallow supply wells (approximately 100 feet deep) on approximately 86 acres;
- Installation of approximately 5,000 feet, with a footprint of 4 acres, of perimeter sand-fencing;
- Placement of physical exclusion barriers including hay bales, sand-fencing, and concrete barriers around site perimeter;
- Installation of access routes totaling 5,250 linear feet (LF);
- Installation and operations of solar-powered electric submersible groundwater pumps;
- Placement and use of approximately three 5,000-gallon water storage tanks;
- Installation of irrigation system from wells to storage tanks and from storage tanks to vegetation on the exposed playa;

- Enhancement of up to 53 acres of existing vegetation through rainwater harvesting (bund) techniques and establishment of 86.5 acres of vegetated hedgerows, including site preparation, seeding and transplanting, and installation of managed irrigation systems. Vegetation would be seeded or transplanted iodine bush;
- Ongoing operations, maintenance, and monitoring of the Project components.

2.3 Project Characteristics

2.3.1 Groundwater

2.3.1.1 Well Construction and Development

Up to three shallow groundwater supply wells would be constructed as described below.

Shallow Groundwater Wells

The three shallow wells, screened from approximately 50 to 100 feet below ground surface (bgs), are proposed for water supply development. The final location of the wells will be determined in the field. Well installation and evaluation will be conducted through the following steps: (1) drilling of a pilot boring to a depth of approximately 100 feet bgs to characterize subsurface conditions, sample water quality, and collect data necessary for design of the well; (2) determination of whether a suitable well can be developed at each location in the depth interval explored; (3) abandonment of the borehole if a well is not warranted, or design, install, and develop a 6-inch well; (4) pump testing of the well; (5) installation of a production pump; and, (6) connection of the pump to a solar-powered pump and water storage tank. After well construction, pump testing will be conducted to inform the proposed well design and pump selection.

Wells will be constructed using 6-inch diameter polyvinyl chloride (PVC) screen and rise casing, completed with approximately 50 feet of casing and 50 feet of PVC screen. The surface completion will be in a steel "stove pipe" rise centered on a concrete pad that measures approximately 3 feet by 3 feet. Wells will be fitted with submersible electric pumps powered by a series of four to six solar panels installed near each of the wellheads.

Drilling, well development, and power supply construction will take approximately four to six weeks. This work will require a drill rig and heavy and light duty trucks. Construction will take place in work areas measuring approximately 50 by 100 feet and would be enclosed by a temporary chain link construction fence. A 36-inch silt fence would be attached at the base of the temporary construction fence and embedded into the ground at least 4 inches deep and function as a wildlife exclusion barrier. No additional site preparation will be conducted.

The native drill soil cuttings from installation of all wells would be spread onsite. Any hazardous materials, such as the hydraulic oil and diesel fuel onboard the drill rig, would be handled pursuant to a project-specific management and spill prevention plan. Fuel service would be provided for drilling and other temporary equipment using a mobile fuel service or small portable fuel containers; bulk fuel storage would not be required.

Following installation, the wells will be developed by surging, air-lift pumping, and conventional pumping until the removed water becomes relatively clear and free of sediment. Well development water, albeit miniscule, is used for dust control and irrigation purposes on the playa and applied using an impact-type water cannon (Formation 2022a).

Aquifer Test and Commissioning

After well development, a step-drawdown and 24-hour constant discharge pumping test would be performed at one of the wells using a submersible pump. All pumped water will be discharged onsite using a Rain-Bird-type sprinkler. Following the initial pump testing, solar powered electric submersible pumps will be installed in each test well and a long-term pumping test will be conducted for a period of one month. A protective, locking, six-foot-high chain-link privacy fence enclosure topped with barbed wire and measuring about 40 feet by 40 feet will be installed around two of the three well locations and a central fence compound measuring 60 feet by 80 feet will be constructed around one of the well locations.

This work will require light and heavy-duty trucks. The initial pump testing will take approximately two days, while the construction of the fence will take up to five days (Formation 2022a).

Site Restoration

Following completion of the pumping tests and removal of all equipment and staged materials, all remaining waste materials will be removed from each work area. Rutting in the access road will be repaired and wheel ruts in pull-out areas will be leveled. The temporary security fences will be demobilized and replaced with the permanent security fences described above This work will require two heavy-duty trucks, a bulldozer, and take approximately three days (Formation 2022a).

2.3.2 Surface Water

There are no perennial surface water features. Several ephemeral washes originating from the Chocolate Mountains to the north enter the northeastern corner of the Project Area through a single breach of the 2003 historic shoreline of the Salton Sea. None of the ephemeral washes appear to reach the Salton Sea with any regular frequency and the recurrence interval of flood flows is infrequent based on the number and size of plants growing in the washes (Formation 2022a).

Using the Santa Barbara Unit Hydrograph, the 10-year California Department of Transportation (CalTrans) peak discharge flow rate was calibrated to estimate the total volume of each storm event (Stubchaer 1975). The total volume produced by a 10-year storm event is approximately 40 acre-feet. This information was used to inform the design of bunds to capture surface water and support the expansion and enhancement of existing vegetation.

2.3.3 Dust Control Measures

2.3.3.1 Vegetation Establishment

After groundwater supply wells have been established, water conveyance lines would then be run on the ground surface to support managed irrigation for vegetation establishment. Vegetation requires irrigation for establishment until root development is deep enough to access near-surface groundwater for long-term survival (IID 2020).

Site Preparation

Site preparation includes site staking, grubbing, construction of hedgerow seedbeds, and hedgerow seeding.

Hedgerows are planted on seedbeds and soil amendments including compost and fertilizer are applied along the seedbeds. Vegetated hedgerows will be planted with the ALOC Playa Mix with a spacing of 50 feet, oriented N45°W, over an area of approximately 86.5 acres. In this mix, ATLE is used as a nurse plant to protect the ALOC as it matures, however, this species' tolerance is much less than ALOC and it eventually dies back. Seeding is performed with a single-row seeder in two passes, one for each species. A total of 70,000 LF of seedbed will be prepared.

The hedgerows will be oriented relative to the predominant high wind direction to provide protection from the most common SWW high wind direction, as well as protection against wind erosion from the less frequent northernly wind direction. It is anticipated that plants will reach individual plant dimensions of 3 feet tall and 4 feet in diameter in two or three growing seasons (Formation 2022a).

Irrigation System

The groundwater wells will be configured to pump into a centralized water storage tank farm which will be located coincident with one of the groundwater wells. The remaining wells will supply the tank farm by a buried pipeline. Approximately 650 LF to 3,250 LF of buried mainline is anticipated but the length of pipeline will vary based on actual well locations. The polyethylene water storage tanks will consist of three 5,000-gallon tanks per well. The solar power from the groundwater wells will be used to pump and convey the water to the tank farm. The larger (approximately 60 feet by 80 feet) fenced compound installed during well commissioning will be used to contain the wellhead, pump solar arrays, and pump controllers, tank farm, connecting pipes, valves, booster pumps, filter station, and other equipment.

Hedgerows will be irrigated with a drip system which includes a booster pump, filter station, flow meter, mainline, block control valves, submains, and driplines. Approximately 4,500 LF of mainline, 14,000 LF of submain, and 70,000 LF of driplines will be installed. Lateral dripline runs range from 20 LF to 825 LF.

A buried mainline will convey water supply to the submains. The driplines will be installed both on the surface and subsurface. Typically, subsurface drip is installed with a shank. For areas with subsurface irrigation, a second, surface line is installed for reclamation and germination purposes. The surface line will be removed following reclamation and germination.

A solar powered booster pump will supply pressure to the irrigation system. Ten to twelve solar panels will be installed adjacent to the booster pump and wired to a pump controller, breaker, and lightning arrestor.

Installation activities of the buried mainline will require light-duty pickups, a mini-excavator, a backhoe, a bulldozer, and a motor-grader or other similar equipment as appropriate. The remaining irrigation system installation activities will require a light-duty tractor, three all-terrain vehicles (ATVs), and two light-duty pickups with trailers. This work will take approximately 30 days (Formation 2022a).

2.3.3.2 Vegetation Enhancement with Bunds

Bund construction will consist of staking, grubbing, excavation, compaction, and site restoration. All bund types utilize the same general construction methods. Bunds will be located to limit the disturbance to existing vegetation.

Type A semi-circular bunds will have a 20-foot radius, a top width and maximum height above existing grade of one foot, and side slopes of 1:1 (horizontal:vertical). Type B semi-circular bunds will have a 65-foot radius, a top width of one foot, maximum height above existing grade of two feet, and side slopes of 3:1. Trapezoidal bunds are to have one side installed on contour (center bund) that is 130 LF, a top width and maximum height above existing grade of two feet, and side slopes of 4:1. The remaining two sides of the trapezoidal bund (side bunds) are to be installed at an angle of 45 degrees upslope, referenced to the center bund, with a length of 184 LF. The tips of semi-circular type B and trapezoidal bunds will be armored with rip-rap.

Diversion swales will be installed to divert surface flow to the bund arrays. The swales will be excavated with a depth of nine inches, a bottom width of two feet, and side slopes of 3:1. Swales will have a downslope berm with an equivalent geometry. The termination of the swale will be armored with rip-rap and transitioned to a shallower and wider channel to ensure the water is dispersed as sheet or shallow concentrated flow.

Bund installation will take approximately 30 days and require a 130 horsepower (hp) excavator, 75 hp vibratory soil compactor, 125 hp bulldozer, 75 hp bulldozer, 75 hp skid steer, water truck, two ATVs, and two light-duty pickups with trailers. Following construction, all disturbed surfaces will be treated with stormwater erosion control features consisting of but not limited to coconut mats and straw rolls (Formation 2022a).

2.3.4 Waterless Dust Control Measures

In addition to establishing vegetation on the playa, the Project includes installation of waterless DCMs, including placement of hay bales and sand fencing.

Approximately 5,000 LF of sand fencing will be installed on the western and northern perimeter of the Project Area, with a dual purpose to (1) limit the intrusion of moving sand from upwind source areas outside of the Project Area, and (2) serve as a barrier to limit access to the site to non-project related vehicles. Sand fencing traps mobile soil particles behind individual barriers by increasing the threshold friction velocity required to move soil particles.

The sand fencing will be ultraviolet (UV) resistant, have a height of four feet, and will be fastened to T-posts. T-posts will be driven into the ground at a spacing of 6 feet between posts. Fencing material will be fastened to the T-posts with UV resistant zip ties with a wooden dowel between the fence and T-post. Additionally, a single 12.5-gauge wire will be installed on the bottom of the fence to keep the fence taut at the ground surface. Installation of the sand fence is expected to take approximately 10 days and will require two ATVs and two light-duty pickups with trailers (Formation 2022a).

Hay bales will be placed on the eastern and southern perimeter of the Project Area for site exclusion. A concrete barrier will also be placed along a portion of the western perimeter to prevent vehicle disturbance to the Project Area.

2.3.5 Access Roads

Approximately 5,250 LF of access roads would be installed for access to the wells and irrigation infrastructure from the nearest improved roadway. Access roads will minimize impacts to existing vegetation. Access routes will be approximately 15 feet wide and will be traded and track rolled for compaction. If unstable soils are encountered, then they will be stabilized using appropriate fill material. Unstable areas also may be compacted using vibratory rollers and moisture conditioned using water trucks, as appropriate.

PM_{10} gates will be used at strategic locations to allow vehicle access for operations and maintenance. A speed limit five miles per hour (mph) would be maintained by all vehicles to limit dust emissions. Access routes will be periodically moisture controlled using a water truck, as needed. Access roads may require periodic maintenance to flatten ruts, restore stability, or repair washouts.

Installation activities will require light-duty tractors, ATVs, light-duty pickups, bulldozers, motor-graders, water trucks, or other similar equipment as appropriate. Construction of access routes is anticipated to take approximately five days. Maintenance will be conducted using similar equipment as construction (Formation 2022a).

2.3.6 Operations, Monitoring, and Maintenance

Operations and maintenance are primarily focused on irrigation; however, gap-filling with seed or transplants may be required. In addition, the Project Area would be accessed periodically for monitoring Project performance. A light-duty truck would be required for access.

2.3.6.1 Operations

Operations include seedbed reclamation and irrigation. Following reclamation, the managed irrigation system would be used to establish and maintain vegetation. The establishment period would last for 16 weeks, with every lateral (surface and subsurface) irrigated every three days. After establishment, irrigation would revert to maintenance irrigation once per week for 20 weeks (Formation 2022a). Irrigation operations are implemented through cellular-based automation and staffed as necessary. Irrigation scheduling is dependent upon soil and vegetation monitoring, but is anticipated to include the following:

- Reclamation – An irrigation event every three days for one month

- Establishment – An irrigation event every three days for 16 weeks
- Maturation – An irrigation event every seven days for 16 weeks

2.3.6.2 Monitoring

Project monitoring includes groundwater production and sampling, irrigation system performance, vegetation monitoring and sampling, and soil sampling. Sand motion monitoring will also be conducted to evaluate the dust control performance of the plot studies.

The irrigation system and vegetation stand would be monitored and maintained during each irrigation event. Groundwater quality monitoring will include quarterly assessments, including field measurements of conductivity and pH. Soil quality, particularly soil salinity, will be monitored through periodic sampling to compare with baseline conditions.

Development of performance monitoring techniques and appropriate maintenance criteria have been a focus of IID and the Imperial County Air Pollution Control District (ICAPCD) collaborative efforts. Performance monitoring will help determine the feasibility and applicability of implemented DCMs for additional areas around the Salton Sea. Performance monitoring is anticipated to include a combination of visual surveillance network, sand flux monitoring, upwind/downwind PM_{10} monitoring, and saltation flux mapping (Formation 2022a).

2.3.6.3 Maintenance

Maintenance activities will include repairs to water supply and storage facilities as well as any needed repairs to drip laterals. Vegetation maintenance includes gap-filling and replanting of any dead or poorly performing plants. It is anticipated that all maintenance activities will be completed during an irrigation event. Maintenance of sand fence may include repair and replacement. Minor maintenance of the bunds to repair erosion associated with large storm flows may occur one to two times per year (Formation 2022a).

2.4 Project Timing

Drilling and testing of the wells is planned to occur in June 2023. Production of the wells and installation of plantings is planned to occur in the winter of 2023/2024, starting in November 2023.

2.5 Best Management Practices

The following best management practices (BMPs) will be implemented to ensure compliance with other mitigation measures required in the EIR/EIS and other laws and regulations.

2.5.1 Air Quality

Implement BMPs during construction and site restoration and operation following construction. BMPs could include, but are not limited to, the following:

- Equip diesel powered construction equipment with particulate matter emission control systems, where feasible.
- Use paved roads to access the construction sites when possible.
- Minimize the amount of disturbed area and apply water or soil stabilization chemicals periodically to areas undergoing ground-disturbing activities. Limit vehicular access to disturbed areas, and minimize vehicle speeds.
- Reduce ground disturbing activities as wind speeds increase.
- Suspend grading and excavation activities during windy periods (i.e., surface winds in excess of 20 mph).
- Limit vehicle speeds to no greater than 10 mph on unpaved roads.
- Cover trucks that haul soils or fine aggregate materials.
- Enclose, cover, or water excavated soil twice daily.
- Cover stockpiles of excavated soil at all times when the stockpile is not in use. Secure the covers.
- Replant vegetation in disturbed areas where water is available, following the completion of grading and/or construction activities.
- Designate personnel to monitor dust control measures to ensure effectiveness in minimizing fugitive dust emissions.

2.5.2 Nesting Birds

Complete all Project activities outside of the bird nesting season to avoid impacts to nesting birds. The nesting season for birds that could potentially establish ground nests at the Salton Sea is March 1 through October 31. If Project activities cannot be completed outside of the bird nesting season, a qualified biologist shall survey all areas to be disturbed within 7 days in advance of the start of ground-disturbing activities. Active bird nests identified during the survey effort shall be avoided until such time that the qualified biologist has determined that the nest(s) is/are vacant or is/are otherwise not active. Depending on the location of the active nest(s) the qualified biologist may establish a no-work buffer around an active nest(s). Work may resume within the active nest buffer only with the approval of the qualified biologist.

2.5.3 Cultural Resources Post-Review Discovery Procedures

If subsurface deposits believed to be cultural or human in origin are discovered during construction, all work must halt within a 100-foot radius of the discovery. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, shall be retained to evaluate the significance of the find, and shall have the authority to modify the no work radius as appropriate, using professional judgment. The following notifications shall apply, depending on the nature of the find:

- If the professional archaeologist determines that the find does not represent a cultural resource, work may resume immediately and no agency notifications are required.
- If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, the archaeologist shall immediately notify the IID and Reclamation. The agencies shall consult on a finding of eligibility and implement appropriate treatment measures if the find is determined to be a Historical Resource under CEQA, as defined in Section 15064.5(a) of the CEQA Guidelines, or a Historic Property, as under Section 106 of the National Historic Preservation Act (NHPA), if applicable. Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the site either: 1) is not a Historical Resource under CEQA or a Historic Property under Section 106; or 2) that the treatment measures have been completed to their satisfaction.
- If the find includes human remains, or remains that are potentially human, they shall ensure reasonable protection measures are taken to protect the discovery from disturbance (Assembly Bill [AB] 2641). The archaeologist shall notify the Imperial County Coroner (per Section 7050.5 of the Health and Safety Code). The provisions of Section 7050.5 of the California Health and Safety Code, Section 5097.98 of the California Public Resources Code (PRC), and AB 2641 will be implemented. If the Coroner determines the remains are Native American and not the result of a crime scene, the Coroner will notify the Native American Heritage Commission (NAHC), which then will designate a Native American Most Likely Descendant (MLD) for the Project (Section 5097.98 of the PRC). The designated MLD will have 48 hours from the time access to the property is granted to make recommendations concerning treatment of the remains. If the landowner does not agree with the recommendations of the MLD, the NAHC may mediate (Section 5097.94 of the PRC). If no agreement is reached, the landowner must rebury the remains where they will not be further disturbed (Section 5097.98 of the PRC). This will also include either recording the site with the NAHC or the appropriate Information Center; using an open space or conservation zoning designation or easement; or recording a reinternment document with the county in which the property is located (AB 2641). Work may not resume within the no-work radius until the lead agencies, through consultation as appropriate, determine that the treatment measures have been completed to their satisfaction.

2.5.4 Paleontological Resources

In the event of an unanticipated discovery of paleontological resources during construction, all ground disturbance within 200 feet of the discovery will be halted or redirected to other areas until the discovery has been recovered by a qualified paleontologist. All paleontological resources recovered will be appropriately described, processed, and curated in a scientific institution such as a museum or university.

2.5.5 Noise

Implement BMPs during construction. BMPs could include, but are not limited to, the following:

- All construction equipment, fixed or mobile, will be equipped with properly operating and maintained mufflers, consistent with manufacturer standards.

- All stationary construction equipment will be placed so that emitted noise is directed away from the noise sensitive receptors nearest the Project Area.
- As applicable, shut off all equipment when not in use.
- Equipment staging shall be located in areas that create the greatest distance between construction-related noise/vibration sources and sensitive receptors surrounding the Project Area.
- No amplified music and/or voice will be allowed on the construction site.
- In accordance with the County Guidelines, construction equipment shall be limited to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturdays. No commercial construction operations are permitted on Sundays or holidays.

2.6 Regulatory Requirements, Permits, and Approvals

The following approvals and regulatory permits would be required for implementation of the Plot Study:

- National Pollutant Discharge Elimination System (NPDES) General Permit for Stormwater Discharges from Construction Activities (for grading over one acre associated with access improvements, and construction of furrows for vegetation);
- Coverage under the *Statewide General Waste Discharge Requirements (WDRs) for Discharges to Land with Low Threat to Water Quality (General WDRs)* (SWRCB Water Quality Order No. 2003-0003-DWQ) (for well development discharge);
- Well Construction Permit from Imperial County Planning and Development Services Department (ICPDS) to drill the new supply wells (the wells would be considered test wells, with no continued water use as defined by Title 8, Division 21, Water Well Regulations, of the Imperial County Code until the viability of the wells has been determined through testing); and
- Conditional Use Permit (CUP) from the Imperial County Planning Commission for the new supply wells to be put into production as a groundwater extraction facility (pursuant to the Imperial County Groundwater Management Ordinance [Title 9, Division 22 of the County Code]).
- Grading Permit from Imperial County for earthworks associated with implementation of the bunds, if determined necessary.
- A Nationwide Permit (NWP) 27 for Aquatic Habitat Restoration under Section 404 of the federal Clean Water Act (CWA) must be obtained from the U.S. Army Corps of Engineers (USACE).
- A Water Quality Certification or waiver pursuant to Section 401 of the CWA, as issued by the Regional Water Quality Control Board (RWQCB), must be obtained for Section 404 permit actions.
- A Waste Discharge Requirement for dredge and fill in Waters of the State under the Porter-Cologne Water Quality Control Act as issued by RWQCB.
- A Streambed Alteration Agreement pursuant to Section 1600 of the Fish and Game Code as issued by CDFW.

3.0 ENVIRONMENTAL CHECKLIST AND DISCUSSION

This Addendum addresses whether implementation of the Proposed Project would result in new significant environmental effects or a substantial increase in the severity of previously identified significant effects under the Transfer Project. Thus, the checklist and the explanations contained in this Section, pertain only to the effects of the changes to the Transfer Project. This section offers an explanation for all answers checked in the Initial Study and Checklist Form regarding the changes to the Transfer Project evaluated in the certified Final EIR/EIS (Reclamation and IID 2002a, 2002b). No environmental impacts in the Initial Study and Environmental Checklist Form were evaluated to be potentially significant. Thus, the proposed changes would not result in new significant environmental effects or a substantial increase in the severity of previously identified significant effects as described in the Draft and Final EIR/EIS (CEQA Guidelines, Section 15162).

3.1 Aesthetics

3.1.1 Existing Environmental Setting

A complete discussion of the aesthetic impacts of the Transfer Project as originally proposed is included in Section 3.11 of the 2002 Draft EIR/EIS (and incorporated into the Final EIR/EIS).

Visual resources in the area of the Salton Sea geographic subregion include various landforms, vegetation, structures, and the Sea itself (Imperial County 2016; Reclamation and IID 2002a). The Salton Sea covers approximately 330 square miles and is immediately surrounded by a sparsely vegetated desert landscape, which gives way to rocky, sandy hills (Reclamation and IID 2002a).

Imperial County's visual resources have been identified based on the U.S. Bureau of Land Management (BLM) Visual Resource Inventory (VRI) process and are shown in the County's Conservation and Open Space Element. Areas with a moderate to high value for maintenance of visual quality could represent opportunities for conservation and open space areas. The County also identifies areas with low value for maintenance of visual quality based upon the VRI process in the Conservation and Open Space Element. The Project Area is within an area of low value for maintenance of visual quality. There are no scenic highways in the vicinity of the Plot Study (Imperial County 2016). The County has not identified this area as having scenic resources (Imperial County 2016).

3.1.2 Adopted 2002 EIR/EIS

Please refer to Section 3.11 of the adopted 2002 Draft EIR/EIS for analyses of the potential effects of the Transfer Project related to Aesthetics. The adopted EIR/EIS found that the Transfer Project would not result in a significant impact on a scenic vista.

There are no scenic highways in the vicinity of the Proposed Project (Imperial County 2016). State Route (SR) 111, along the northeast shore of the Salton Sea is an eligible highway for official scenic highway designation from Bombay Beach in Imperial County to the City of Mecca in Riverside County. This area's gradual slopes allow for wide-open views of the Salton Sea and provides the best viewing opportunities to the Sea from public lands (Reclamation and IID 2002a).

Construction of an on-farm irrigation system and/or water delivery system conservation measures under the Transfer Project would occur solely within the IID water service area and the aesthetic character of desert areas, sand dunes, and mountains located outside the IID water service area would not be impacted. Equipment required for construction of conservation measures is commonly used for ongoing projects in the irrigated portions of the IID water service area and is therefore consistent with the visual character. If conservation were to be achieved through fallowing, up to 50,000 additional acres throughout the IID water service area would go into a fallowed state. About 18,000 acres are fallowed each year and although the additional fallowed acres are more than the current amount, it would be distributed throughout the subregion and would not become an obvious visual feature of the landscape. Many farms go fallow for part of the year so the landscape is constantly changing from cropped to fallow acres (Reclamation and IID 2002a).

The adopted 2002 EIR/EIS found that the Transfer Project would not require the installation of any lighting and therefore would not result in a new source of light or glare. No impacts were identified (Reclamation and IID 2002a).

The adopted 2002 EIR/EIS references impacts on aesthetics occurring from a decrease in the elevation of the Salton Sea. Under Impact A-1, implementation of 300 KAFY of water conservation under the Transfer Project would result in lowering the elevation of the Salton Sea, thus reducing the overall water surface area and exposing areas of shoreline that are currently inundated. The Transfer Project would primarily affect views of the Salton Sea landscape as seen from public shoreline locations such as Salton Sea Beach, Red Hill Marina County Park, Bombay Beach, and Sneaker Beach. Views from these areas would encompass noticeably greater amounts of foreground mudflat or shoreline while decreased amounts of open water vista would be available. Changes in elevation and thus vistas, though gradual, would be accelerated with the Transfer Project and these visual impacts are considered to be significant but would be less than significant with the implementation of Mitigation Measure A-1.

Impact A-2 discusses impacts on aesthetics from odors. The reduction of water flow into the Salton Sea could increase odors near the Salton Sea. This would occur if the Transfer Project were to decrease adversely affect water quality in the Salton Sea to the point that it (1) contributed to the death of flora or fauna, or (2) increased the existing summertime algae bloom, which produces large amounts of sulfuric odors. Under the Baseline, the salinity of the Salton Sea will increase in future years to the point that it will kill most aquatic invertebrates and fish. As a result, odor emissions from animal die-offs would occur in future years, with or without the implementation of the Transfer Project. Nutrient levels within the Salton Sea will also continue to increase under the Baseline, which will perpetuate or enhance algae blooms and their associated odor emissions. While the Transfer Project could somewhat accelerate the future rate of animal die-offs or algae blooms, because there will be ongoing objectionable odor episodes at the Salton Sea under the Baseline, this effect from the Project would be less than significant.

3.1.3 Analysis of Project Changes

The Bombay Beach Plot Study proposes water tanks, hay bales, concrete barriers, and sand fencing for the Project that may be visible to Bombay Beach residents and visitors on public roadways immediately adjacent to the Project Area. However, the size and height of the tanks, hay bales, and sand fencing would

not be expected block views of the Salton Sea, mountains, or horizon from public locations. Therefore, the Project would not significantly alter scenic vistas in the area and impacts would be less than significant. Please see Chapter 2.0 for more information regarding the Proposed Project.

The water tanks would occupy a small area, and therefore, would not substantially degrade the existing visual character. Hay bales and sand fencing placed over a large area have the potential to be incompatible with the visual character of the surrounding area. However, the color of the hay bales would match the color of the natural landscape, and a color compatible with the natural landscape would be selected for the sand fencing. The Proposed Project would not substantially degrade the existing visual character or quality of public views of the site and its surroundings.

The Project Area and vicinity are not designated as a scenic view or vista in the Imperial County General Plan or any other applicable planning documents. Additionally, the County has designated the Project Area as an area of low value for maintenance of visual quality (Imperial County 2016).

Drill rigs would utilize lighting during nighttime operations. However, this would only occur over a short period of time. Otherwise, night work would not be expected. In addition, the Project would not introduce any materials that would be considered a source of glare. Therefore, impacts would be less than significant.

In consideration of all of the above, implementation of the Proposed Project would not require any major changes to the adopted 2002 EIR/EIS and will not result in any new significant environmental impacts.

3.1.3.1 Cumulative Impacts

The cumulative study area for aesthetic impacts is limited to the immediately adjacent area within view of the Project Area. The Proposed Plot Study would not have a significant cumulative impact on the visual environment, as the size and height of the tanks, hay bales, and sand fencing would not be expected block views of the Salton Sea, mountains, or horizon from public locations. The Proposed Plot Study would not generate significant adverse effects on adjacent land uses with respect to Aesthetics. There are no known visual incompatibilities between the Proposed Project and planned future projects located in the surrounding area, and the contribution of the Project to potential cumulative visual/aesthetic impacts in the study area is considered less than significant.

3.1.4 Findings Related to Aesthetics

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to aesthetics, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to aesthetics that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to aesthetics requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to aesthetics identified in and considered by the adopted 2002 EIR/EIS.

3.1.5 Mitigation Measures

Please refer to Section 3.11 of the adopted 2002 EIR/EIS for complete analyses of Project impacts and mitigation measures (Reclamation and IID 2002a).

Mitigation Measure A-1: With implementation of the Salton Sea Conservation Strategy the elevation of the Salton Sea in year 2077 would be -240 msl. This increase in elevation compared to the Proposed Project [Transfer Project] without the Salton Sea Habitat Conservation Strategy will significantly lessen aesthetic impacts. However, these following measures should be implemented on an ongoing basis as the Sea recedes until it reaches its lowest and stable elevation, at which point they should be permanent.

- Relocate recreation facilities and extend access to the new shoreline to provide quality public viewing opportunities of the Salton Sea and its shoreline. These facilities may be temporary until the Sea reaches its minimum and stable elevation
- Develop interpretive facilities and material to be made available to the public at recreation areas and along public roadways. Interpretive displays may include historical photographs of the Salton Sea landscape and information about water conservation measures including their effects on Salton Sea water levels

Based on the proposed modifications, the 2002 Transfer Project EIR/EIS was reviewed to determine whether or not changes to the Project would affect the mitigation measures contained therein. Given the analysis and information provided above, no changes to the analysis found in the 2002 EIR/EIS are required. Therefore, no mitigation measures are required for impacts associated with aesthetics.

3.2 Agriculture and Forestry Resources

A complete discussion of the agricultural impacts of the Transfer Project as originally proposed is included in Section 3.5 of the Draft EIR/EIS and in Section 4, Errata of the Final EIR/EIS. As discussed below, the changes to the Transfer Project would result in no new significant impacts or substantial increase in the severity of the impacts to agricultural resources identified in the EIR/EIS. The overall impacts to agricultural resources would be similar to those described in the EIR/EIS.

The environmental setting for the Project Area is discussed below along with impacts from implementation of the Plot Study.

3.2.1 Existing Environmental Setting

Imperial County is an important California agricultural region ranking in the top five, in terms of value of production among California counties for 24 agricultural commodities. Imperial County ranks first among California counties in value of production for alfalfa hay, onions, wheat, sugar beets, carrots, sweet corn, watermelon, and sudan grass hay. The IID water service area is characterized by a mild climate that allows year-round agricultural production of a wide variety of commodities. Agricultural production is made possible only through the delivery of irrigation water from the Colorado River, and the availability of the Salton Sea as a repository for agricultural drainage (Reclamation and IID 2002a).

Soils within the Project Area have not been mapped by the U.S. Department of Agriculture (USDA) Natural Resource Conservation Service (NRCS) because this area was inundated by the Salton Sea until very recently (NRCS 2022). Jennings et al. (2010) describes the geology of the Project Area as alluvium, lake, playa, and terrace deposits, both unconsolidated and consolidated, with most deposits being nonmarine (Q). There is no mapped Prime Farmland, Unique Farmland, or Farmland of Statewide Importance in the Project Area under the State's Farmland Mapping and Monitoring Program (Department of Conservation [DOC] 2022). The Project Area is zoned for Open Space/Preservation (S-2-G) with a Community Area land use designation by Imperial County, and the site is not under a Williamson Act contract (Imperial County 2007, 2015a, 2022). Therefore, there are no agriculture resources on the site. No forestry resources are present either.

3.2.2 Adopted 2002 EIR/EIS

Please refer to Section 3.5 of the adopted 2002 Draft EIR/EIS for analyses of the potential effects of the Transfer Project as related to Agriculture and Forestry Resources.

Gravity irrigation methods, such as furrow and border irrigation, account for the vast majority of irrigation application methods within the IID water service area. A few farmers have switched to level basin irrigation and others have installed tailwater return systems. Sprinkler irrigation is sometimes used in conjunction with gravity irrigation methods, in which seedbeds are irrigated by sprinklers until germination. At that point, a transition to furrow or border irrigation occurs (Reclamation and IID 2002a).

Depending on the location of specific improvements, the construction of on-farm or water delivery system improvements could convert lands within the IID water service area that historically have been in crop production to reservoirs, canals, or other uses in support of on-farm irrigation system improvements or water delivery system improvements. Such changes in land use would not result in a classification change from agricultural to something other than agricultural. The changes would, therefore, not result in an impact to agricultural resources (Reclamation and IID 2002a).

IID has identified the possibility that a fallowing program to conserve water for transfer could be implemented that would include permanent fallowing of crop lands, and that fallowing for mitigation and/or to conserve water to meet Inadvertent Overrun and Payback Policy obligations would be limited to rotational fallowing. In this analysis, rotational fallowing indicates that a particular parcel of land would be removed from crop production for no more than three consecutive years. To identify the maximum

potential impact to agricultural resources, the analysis assumes the worst-case scenario that all lands fallowed to conserve water for transfer would be permanently fallowed (Reclamation and IID 2002a).

Under Impact AR-1, up to 50,000 acres of prime farmland or farmland of statewide importance would be reclassified. With implementation of the Transfer Project, up to a total of 300 KAFY could be conserved for transfer through one or more conservation measures, including fallowing. If fallowing were used as a conservation measure, it could be either rotational fallowing or non-rotational or a combination of the two. The worst-case impact of the Transfer Project would be the permanent fallowing of up to 50,000 acres of land. This represents approximately 11 percent of the total net acreage in agricultural production within the IID water service area. Assuming the water conservation program was implemented using non-rotational fallowing exclusively, this would represent a significant, unavoidable impact to the agricultural resources of the IID water service area. Impacts related to agriculture and forestry resources would be minimized with Mitigation Measure AR-1 (Reclamation and IID 2002a).

Impact HCP-AR-2 discusses impacts to the Project Area due to conversion of agricultural lands from implementation of the HCP. The worst-case impacts to agricultural resources from the implementation of these components of the Proposed HCP would result in approximately 700 acres of agricultural lands converted to marsh habitat, native forest habitat, or new drainage channels to the Salton Sea. This represents less than 0.5 percent of the average annual net acreage in agricultural production within the IID water service area. However, if these lands are located on Prime Farmland or Farmland of Statewide Importance, implementation of the HCP (IID Water Service Area Portion) would result in a significant, unavoidable impact to agricultural resources. Impacts related to agriculture and forestry resources would be minimized with Mitigation Measure HCP-AR-2 (Reclamation and IID 2002a).

3.2.3 Analysis of Project Changes

The Project Area is located on a parcel that is not mapped for Prime Farmland, Unique Farmland, or Farmland of Statewide Importance under the State's Farmland Mapping and Monitoring Program (DOC 2022). The Project Area is zoned for Open Space/Preservation (S-2-G) with a Community Area land use designation by Imperial County, and the Project Area is not under a Williamson Act contract (Imperial County 2007, 2015a, 2022). The Project Area is not zoned for agriculture. Therefore, there are no agriculture resources in the Project Area. No forestry resources are present either.

The Proposed Project would require the issuance of a CUP for the supply wells that would be used to irrigate the vegetated hedgerows on approximately 86 acres. Existing vegetation will be enhanced through rainwater harvesting techniques such as the use of bunds. The enhancement of existing vegetation will occur on approximately 53 acres.

3.2.3.1 Cumulative Impacts

The cumulative study area for agricultural and forestry impacts is limited to the County. The Proposed Project would not have a significant cumulative impact on agricultural or forestry resources, as the resources would not be impacted by the Proposed Project. The Proposed Project would not affect lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance and would not affect lands under conservation through Williamson Act contracts. There are no lands within the Project

Area designated as forestry or timberland resources. Project implementation would not result in the conversion of lands designated for agricultural use to a non-agricultural use. The contribution of the Proposed Project to potential cumulative agricultural/forestry impacts in the study area is considered less than significant. Therefore, in consideration of all of the above, the changes to the Project do not require any major changes to the adopted 2002 EIR/EIS and would not result in any new significant cumulative impacts.

3.2.4 Findings Related to Agriculture and Forestry Resources

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to agriculture or forestry resources, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to agriculture and forestry resources that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to agriculture or forestry resources requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to agriculture or forestry resources identified in and considered by the adopted 2002 EIR/EIS.

3.2.5 Mitigation Measures

Please refer to Section 3.5 of the adopted 2002 EIR/EIS for complete analyses of Project impacts and mitigation measures (Reclamation and IID 2002a).

Mitigation Measure AR-1: The only way to avoid or minimize this impact is to prohibit the use of non-rotational fallowing under the Transfer Project. Otherwise, no mitigation measures have been proposed to avoid or minimize this impact.

Mitigation Measure HCP-AR-2: The only way to avoid or minimize this impact is to prohibit the conversion of agricultural lands under the HCP (IID Water Service Area Portion). Otherwise, no mitigation measures have been proposed to avoid or minimize this impact.

Based on the proposed modifications to , the 2002 Transfer Project EIR/EIS was reviewed to determine whether or not changes to the Project would affect the mitigation measures contained therein. Given the

analysis and information provided above, no changes to the analysis found in the 2002 EIR/EIS are required. Therefore, no mitigation measures are required for impacts associated with agriculture and forestry resources.

3.3 Air Quality

A complete discussion of the air quality impacts of the Transfer Project as originally proposed is included in Section 3.7 of the Draft EIR/EIS and in the Final EIR/EIS in Section 4, Errata.

The environmental setting for the Project Area is discussed below. Emissions of criteria pollutants are discussed and evaluated for implementation of the Plot Study in a report contained in Appendix B and summarized below.

3.3.1 Existing Environmental Setting

Air quality in a region is determined by its topography, meteorology, and existing air pollutant sources. These factors are discussed below, along with the current regulatory structure that applies to the Salton Sea Air Basin (SSAB), which encompasses the Project Area, pursuant to the regulatory authority of the Imperial County Air Pollution Control District (ICAPCD).

3.3.1.1 Salton Sea Air Basin

The California Air Resources Board (CARB) divides the State into air basins that share similar meteorological and topographical features. Imperial County, which extends over 4,482 square miles in the southeastern corner of California, lies in the SSAB, which includes the Imperial Valley and the central part of Riverside County, including the Coachella Valley. The province is characterized by the large-scale sinking and warming of air within the semi-permanent subtropical high-pressure center over the Pacific Ocean. The elevation in Imperial County ranges from about 230 feet below sea level in the Salton Sea to more than 2,800 feet on the mountain summits to the east (ICAPCD 2010).

3.3.1.2 Temperature and Precipitation

The flat terrain near the Salton Sea, intense heat from the sun during the day, and strong radiational cooling at night create deep convective thermals during the daytime and equally strong surface-based temperature inversions at night. The temperature inversions and light nighttime winds trap any local air pollution emissions near the ground. The area is subject to frequent hazy conditions at sunrise, followed by rapid daytime dissipation as winds pick up and the temperature warms. The lack of clouds and atmospheric moisture creates strong diurnal and seasonal temperature variations ranging from an average summer maximum of 108 degrees Fahrenheit (°F) down to a winter morning minimum of 38°F. The most pleasant weather occurs from about mid-October to early May when daily highs are in the 70s and 80s with very infrequent cloudiness or rainfall. Imperial County experiences rainfall on an average of only four times per year (>0.10 inch in 24 hours). The local area usually has three days of rain in winter and one thunderstorm day in August. The annual rainfall in this region is less than three inches per year (ICAPCD 2010).

3.3.1.3 Wind

Wind patterns in the area generally align with the long axis of the Salton Sea. The prevailing wind direction during all seasons is from the northwest. During the spring and summer, winds from the east and southeast become a secondary component, while during the fall and winter, the secondary component is from the west and southwest. Wind speeds are generally moderate throughout the geographic subregion (Reclamation and IID 2002a).

3.3.1.4 Inversion

The entire county is affected by inversion layers, where warm air overlays cooler air. Inversion layers trap pollutants close to the ground. In the winter, these pollutant-trapping, ground-based inversions are formed during windless, clear-sky conditions, as cold air collects in low-lying areas such as valleys and canyons. Imperial County experiences surface inversions almost every day of the year. Due to strong surface heating, these inversions are usually broken allowing pollutants to be more easily dispersed (ICAPCD 2010).

3.3.1.5 Criteria Air Pollutants

Criteria air pollutants are defined as those pollutants for which the federal and state governments have established air quality standards for outdoor or ambient concentrations to protect public health with a determined margin of safety. Ozone (O_3), PM_{10}, and $PM_{2.5}$ are generally considered to be regional pollutants because they or their precursors affect air quality on a regional scale. Pollutants such as carbon monoxide (CO), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2) are considered to be local pollutants because they tend to accumulate in the air locally. PM is also considered a local pollutant. Reactive Organic Gases (ROGs) and nitrogen oxides (NO_x) are precursors to O_3.

3.3.1.6 Ambient Air Quality

The U.S. Environmental Protection Agency (USEPA) and CARB designate air basins or portions of air basins and counties as being in *attainment* or *nonattainment* for each of the criteria pollutants. Areas that do not meet the standards are classified as nonattainment areas. The National Ambient Air Quality Standards (NAAQS) (other than O_3, PM_{10}, and $PM_{2.5}$ and those based on annual averages or arithmetic mean) are not to be exceeded more than once per year. The NAAQS for O_3, PM_{10}, and $PM_{2.5}$ are based on statistical calculations over one- to three-year periods, depending on the pollutant. The California Ambient Air Quality Standards are not to be exceeded during a three-year period. The attainment status for the portion of the SSAB encompassing the Project Area is included in Table 3.3-1.

Table 3.3-1. Attainment Status of Criteria Pollutants in the Imperial County Portion of the SSAB.

Pollutant	State Designation	Federal Designation
O_3	Nonattainment	Nonattainment
PM_{10}	Nonattainment	Attainment

Table 3.3-1. Attainment Status of Criteria Pollutants in the Imperial County Portion of the SSAB.

Pollutant	State Designation	Federal Designation
$PM_{2.5}$	Attainment	Unclassified/Attainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment

Source: CARB 2019

The determination of whether an area meets the state and federal standards is based on air quality monitoring data. Some areas are unclassified, which means there is insufficient monitoring data for determining attainment or nonattainment. Unclassified areas are typically treated as being in attainment. Because the attainment/nonattainment designation is pollutant-specific, an area may be classified as nonattainment for one pollutant and attainment for another. Similarly, because the state and federal standards differ, an area could be classified as attainment for the federal standards of a pollutant and as nonattainment for the state standards of the same pollutant. The region is designated as a nonattainment area for the federal O_3 standard and is also a nonattainment area for the state standards for O_3 and PM_{10} (CARB 2019).

3.3.1.7 Sensitive Receptors

Sensitive receptors are defined as facilities or land uses that include members of the population who are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, athletes, and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive receptors to the Project Area are residences located directly adjacent to the western Project Area boundary in Bombay Beach.

3.3.2 Adopted 2002 EIR/EIS

Air quality impacts associated with the Transfer Project and alternatives would result from the construction and operation of new systems and facilities, and from the potential wind erosion of soil from fallowed fields and/or shoreline sediments exposed by lowered water levels in the Salton Sea. The pollutants of greatest concern are ozone and the ozone precursors, NO_x, and volatile organic compounds (VOC), primarily from equipment exhaust, PM_{10}, and fine particulate matter ($PM_{2.5}$) from soil disturbance and wind erosion (fugitive dust). The main impacts would occur in the IID water service area because of the construction activities and land fallowing, and in the Salton Sea subregion from exposure of the shoreline (Reclamation and IID 2002a).

Construction activities result in pollutant emissions from mobile construction equipment and soil disturbance activities. Emission sources include engine exhaust from construction equipment, dust

generated from the movement of construction equipment, and dust generated from soil disturbance activities. Soil disturbance activities, such as soil grading, excavation, and equipment and vehicle travel on unpaved roads, represent sources of windblown dust (Reclamation and IID 2002a).

No direct air quality impacts would be associated with the operation of the Transfer Project in the Salton Sea subregion. Operation of the on-farm conservation measures would not occur in this subregion. Two indirect impacts, Impacts AQ-7 and AQ-8, were associated with the Transfer Project in the Salton Sea. Impact AQ-7 addressed indirect air quality impacts due to the potential for windblown dust from exposed shoreline and Mitigation Measure AQ-7 was provided to mitigate this impact. Impact AQ-8 addressed potential for decreased water flow and quality to increase odorous impacts in proximity to the Salton Sea, however this impact was expected to be less than significant (Reclamation and IID 2002a).

Mitigation Measure AQ-7 would include additional conservation via fallowing or other measures to allow drain water to continue to flow to the Salton Sea at a rate equal to the Baseline, thereby avoiding impacts to the Salton Sea and shoreline associated with reduced flow. Impacts would be less than significant with implementation of this mitigation measure (Reclamation and IID 2002a).

3.3.3 Analysis of Project Changes

3.3.3.1 ICAPCD Significance Thresholds

The significance criteria established by the applicable air quality management or air pollution control district may be relied upon to determine if the Project would conflict with or obstruct implementation of an applicable air quality plan. The ICAPCD has identified significance thresholds for use in evaluating project impacts under CEQA. Accordingly, the ICAPCD-recommended thresholds of significance are used to determine whether implementation of the Proposed Project would result in a significant air quality impact. Significance thresholds for evaluation construction and operational air quality impacts are listed in Table 3.3-2.

Table 3.3-2. ICAPCD Significance Thresholds – Pounds per Day

Criteria Pollutant and Precursors	Construction Activities	Operations	
	Average Daily Emissions (lbs/day)	Average Daily Emissions (lbs/day)	
		Tier I Threshold	Tier II Threshold
ROG	75	<137	>137
NO_x	100	<137	>137
PM_{10}	150	<150	>150
$PM_{2.5}$	N/A	<550	>550
CO	550	<550	>550
SO_2	N/A	<150	>150

Source: ICAPCD 2017
lbs/day = pounds per day

Projects that are predicted to exceed Tier I thresholds require implementation of applicable ICAPCD standard mitigation measures to be considered less than significant. Projects exceeding Tier II thresholds are required to implement applicable ICAPCD standard mitigation measures, as well as applicable discretionary mitigation measures. Projects that exceed the Tier II thresholds after implementation of standard and discretionary mitigation measures would be considered to have a potentially significant impact to human health and welfare (ECORP 2022a).

3.3.3.2 U.S. Environmental Protection Agency Conformity Determination Analysis

General Conformity ensures that the actions taken by federal agencies do not interfere with a state's plans to attain and maintain national standards for air quality.

Established under the Clean Air Act (CAA) (section 176(c)(4)), the General Conformity rule plays an important role in helping states improve air quality in those areas that do not meet the NAAQS. Under the General Conformity rule, federal agencies must work with state and local governments in a nonattainment or maintenance area to ensure that federal actions conform to the air quality plans established in the applicable state or tribal implementation plan.

The General Conformity Rule allows for exemptions for emissions that are not reasonably foreseeable, will not result in an increase in emissions, are below de minimis limits, are the result of emergency actions, are included in stationary source air permits, are for routine maintenance and repair of existing structures, or are included in a transportation conformity determination undertaken by the Federal Highway Administration (FHWA) or Federal Transit Administration (FTA) (40 Code of Federal Regulations [CFR] 93.153(c)).

A conformity determination would be required if the annual emissions of non-attainment pollutants generated by the Proposed Project were to exceed the General Conformity de minimis thresholds. The de minimis limits represent a level of emissions that the USEPA has determined will have only de minimis impacts to the air quality of an area and are thus exempted from the General Conformity Rule. If the overall predicted increase in emissions of a criteria pollutant due to a federal action in a nonattainment area exceeds the de minimis limits as shown in Table 3.3-3, the lead federal agency (Reclamation) is required to make a conformity determination. As previously described, the Project Area is located in the Imperial County portion of the SSAB. Table 3.3-3 lists the attainment status for each criteria air pollutant and the de minimis threshold based on the NAAQS designation and classification.

Table 3.3-3. Federal General Conformity *De Minimis* Emissions Levels in Imperial County

Pollutant	Attainment Status	Classification	USEPA General Conformity Threshold (tons/year)
VOC (O_3 precursor)	Nonattainment	Marginal	100

Table 3.3-3. Federal General Conformity *De Minimis* Emissions Levels in Imperial County

Pollutant	Attainment Status	Classification	USEPA General Conformity Threshold (tons/year)
NO_x (O_3 precursor)	Nonattainment	Marginal	100
PM_{10}	Attainment	Maintenance	100
$PM_{2.5}$	Unclassified/Attainment	Maintenance	100
CO	Unclassified/Attainment	Maintenance	100
NO_2	Unclassified/Attainment	N/A	100
SO_2	Unclassified/Attainment	N/A	100

Source: USEPA 2022

3.3.3.3 Methodology

Air quality impacts were assessed in accordance with methodologies recommended by the ICAPCD and the USEPA. Where criteria air pollutant quantification was required, emissions were modeled using the California Emissions Estimator Model (CalEEMod), version 2016.3.2. CalEEMod is a statewide land use emissions computer model designed to quantify potential criteria pollutant emissions associated with both construction and operations from a variety of land use projects. Project implementation-generated air pollutant emissions were calculated using CalEEMod model defaults for Imperial County as well as timing and equipment identified by the IID. Post implementation air pollutant emissions were based on the Project Area plans and the estimated traffic trip generation rates provided by the IID (ECORP 2022a).

3.3.3.4 Project Construction/Implementation-Generated Criteria Air Quality Emissions

ICAPCD Significance Thresholds

Emissions generated during Project implementation would be temporary and short-term but have the potential to represent a significant air quality impact. Three basic sources of short-term emissions will be generated through implementation of the Proposed Project: operation of the construction vehicles (i.e., excavators, trenchers, dump trucks), the creation of fugitive dust during clearing and grading, and the use of asphalt or other oil-based substances during paving activities associated with the concrete pads installed for the groundwater wells. Activities such as excavation and grading operations, worker vehicle traffic, and wind blowing over exposed soils would generate exhaust emissions and fugitive PM emissions that affect local air quality at various times during Project implementation. Effects would be variable depending on the weather, soil conditions, the amount of activity taking place, and the nature of dust control efforts. The dry climate of the area during the summer months creates a high potential for dust generation. Project implementation activities would be subject to ICAPCD Regulation VIII, which requires taking reasonable precautions to prevent the emissions of fugitive dust, such as stabilizing unpaved roads and bulk material that is being transported (ECORP 2022a).

Predicted emissions generated during Project implementation were calculated using the CARB-approved CalEEMod computer program, which is designed to model emissions for land use development projects, based on typical construction requirements. See Appendix B for more information regarding the construction assumptions, including construction equipment and duration, used in this analysis (ECORP 2022a).

Predicted maximum daily emissions associated with Project implementation are summarized in Table 3.3-4. Project-generated emissions would be short-term and of temporary duration, lasting only as long as construction activities occur, but would be considered a significant air quality impact if the volume of pollutants generated exceeds the ICAPCD's thresholds of significance.

Table 3.3-4. Project Construction-Generated Emissions

Construction Phase	Maximum Pollutant (pounds per day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Vegetation Management (Year 1)	16.74	63.28	124.17	0.51	32.80	9.70
Well and Irrigation Installation (Year 1)	5.09	36.05	32.97	0.13	9.22	4.94
Total	**21.83**	**99.33**	**157.14**	**0.64**	**42.02**	**14.64**
ICAPCD Significance Threshold	75	100	550	N/A	150	N/A
Exceed ICAPCD Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Appendix B for Model Data Outputs.
Note: Pounds per day taken from the season with the highest output.

As shown in Table 3.3-4, emissions generated during Project construction would not exceed the ICAPCD significance threshold. Therefore, criteria pollutant emissions generated during Project construction would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is nonattainment under an applicable federal or state ambient air quality standard, and no health effects from Project criteria pollutants would occur (ECORP 2022a).

3.3.3.5 Operational Criteria Air Quality Emissions

Operational emissions impacts are long-term air emissions impacts that are associated with any changes in the permanent use of the Project Area by onsite stationary sources and offsite mobile sources that substantially increase emissions. Once construction is complete, no regular additional daily vehicle trips or personnel would be added to operate or maintain the Project Area. No major diesel-powered equipment would be required as part of ongoing Project operations. Thus, the Proposed Project would not include the provision of new permanent stationary or mobile sources of criteria air pollutant emissions. The operations of the Project focus on maintenance and monitoring of the irrigation system (ECORP 2022a). Implementation of the Project would result in negligible long-term operational emissions of criteria air pollutants.

3.3.3.6 *Conflict with an Applicable Air Quality Management Plan*

As previously described, the Project region is classified as nonattainment for federal O_3, PM_{10}, and $PM_{2.5}$ standards (CARB 2019). The USEPA, under the provisions of the CAA, requires each state with regions that have not attained the federal air quality standards to prepare a State Implementation Plan (SIP), detailing how these standards are to be met in each local area. The SIP is a legal agreement between each state and the federal government to commit resources to improving air quality. It serves as the template for conducting regional and project-level air quality analysis. CARB is the lead agency for developing the SIP in California. Local air districts, such as the ICAPCD, prepare air quality attainment plans or air quality management plans and submit them to CARB for review, approval, and incorporation into the applicable SIP. The air districts develop the strategies stated in the SIPs for achieving air quality standards on a regional basis (ECORP 2022a).

The region's SIP is constituted of the ICAPCD air quality plans: 2018 PM_{10} SIP, the 2018 Annual $PM_{2.5}$ SIP, the 2017 8-Hour Ozone SIP. Project compliance with all of the ICAPCD rules and regulations results in conformance with the ICAPCD air quality plans. These air quality attainment plans are a compilation of new and previously submitted plans, programs (such as monitoring, modeling, permitting, etc.), district rules, state regulations, and federal controls describing how the state will attain ambient air quality standards. These SIP plans and associated control measures are based on information derived from projected growth in Imperial County in order to project future emissions and then determine strategies and regulatory controls for the reduction of emissions. Growth projections are based on the general plans developed by Imperial County and the incorporated cities in the county (ECORP 2022a).

As previously described, the Project proposes to implement several surface treatments to provide dust control and habitat enhancements adjacent to the community of Bombay Beach on vacant land. The Project would not result in population growth and would not cause an increase in currently established population projections. The Project does not include residential development or large local or regional employment centers, and thus would not result in significant population or employment growth. Further, the Project would reduce the amount of airborne PM and mitigate dust emissions resulting in improved air quality in the region. Once construction is complete, no regular additional daily vehicle trips or personnel would be added to operate or maintain the Project Area. No major diesel-powered equipment would be required as part of ongoing Project operations. Thus, the Proposed Project would not include the provision of new permanent stationary or mobile sources of criteria air pollutant emissions. Project operations would include maintenance and monitoring of the irrigation system. This poses a negligible impact and would not conflict with any local or regional plan and would result in a beneficial impact to the region's air quality (ECORP 2022a).

Exposure of Sensitive Receptors to Toxic Air Contaminants

As previously described, sensitive receptors are defined as facilities or land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers. CARB has identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over age 65, children under age 14, athletes, and persons with cardiovascular

and chronic respiratory diseases such as asthma, emphysema, and bronchitis. The nearest sensitive receptors to the Project Area are several single-family residences located on the road, Aisle of Palms, which is directly adjacent to the Project Area (ECORP 2022a).

Construction/Implementation-Generated Air Contaminants

Construction of the Project would result in temporary, short-term Proposed Project-generated emissions of diesel particulate matter (DPM), ROG, NOx, CO, and PM_{10} from the exhaust of off-road, heavy-duty diesel equipment for Project construction; soil hauling truck traffic; paving; and other miscellaneous activities. The portion of the SSAB which encompasses the Project Area is designated as a nonattainment area for federal O_3 and $PM_{2.5}$ standards and is also a nonattainment area for the state standards for O_3 and PM_{10} (CARB 2019). Thus, existing O_3 and PM_{10} levels in the SSAB are at unhealthy levels during certain periods. However, as shown in Table 3.3-4, the Project would not exceed the ICAPCD significance thresholds for construction emissions.

The health effects associated with O_3 are generally associated with reduced lung function. Because Project construction would not result in O_3 precursor emissions (ROG or NO_x) in excess of the ICAPCD thresholds, the Project would not substantially contribute to regional O_3 concentrations and the associated health impacts.

CO tends to be a localized impact associated with congested intersections. In terms of adverse health effects, CO competes with oxygen, often replacing it in the blood, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions. The Project would not result in CO emissions in excess of the ICAPCD thresholds (ECORP 2022a). Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

Particulate matter (PM_{10} and $PM_{2.5}$) contains microscopic solids or liquid droplets that are so small that they can get deep into the lungs and cause serious health problems. Particulate matter exposure has been linked to a variety of problems, including premature death in people with heart or lung disease, nonfatal heart attacks, irregular heartbeat, aggravated asthma, decreased lung function, and increased respiratory symptoms such as irritation of the airways, coughing, or difficulty breathing. For construction-type activity, DPM is the primary TAC of concern. PM_{10} exhaust is considered a surrogate for DPM as all diesel exhaust is considered to be DPM. Most PM_{10} exhaust derives from combustion, such as use of gasoline and diesel fuels by motor vehicles. As with O_3 and NOx, the Project would not generate emissions of PM_{10} or $PM_{2.5}$ that would exceed the ICAPCD's thresholds. Accordingly, the Project's PM_{10} and $PM_{2.5}$ emissions are not expected to cause any increase in related regional health effects for these pollutants (ECORP 2022a).

In summary, Project construction would not result in a potentially significant contribution to regional concentrations of nonattainment pollutants and would not result in a significant contribution to the adverse health impacts associated with those pollutants. Recommendations for best management practices during construction are incorporated into the project description (see Section 2.5) to avoid impacts on air quality.

Operational Air Contaminants

Operation of the Proposed Project would not result in the development of any substantial sources of air toxics. There would be no stationary sources associated Project operations; nor would the Project attract additional mobile sources that spend long periods queuing and idling at the site. Onsite Project emissions would not result in significant concentrations of pollutants at nearby sensitive receptors as the predominant operational emissions associated with the Proposed Project would be routine maintenance work, water deliveries, and site security. Therefore, the Project would not be a substantial source of TACs. The Project would not result in a high carcinogenic or non-carcinogenic risk during operation (ECORP 2022a).

Carbon Monoxide Hot Spots

It has long been recognized that CO exceedances are caused by vehicular emissions, primarily when idling at intersections. Concentrations of CO are a direct function of the number of vehicles, length of delay, and traffic flow conditions. Under certain meteorological conditions, CO concentrations close to congested intersections that experience high levels of traffic and elevated background concentrations may reach unhealthy levels, affecting nearby sensitive receptors. Given the high traffic volume potential, areas of high CO concentrations, or "hot spots", are typically associated with intersections that are projected to operate at unacceptable levels of service during the peak commute hours. It has long been recognized that CO hot spots are caused by vehicular emissions, primarily when idling at congested intersections. However, transport of this criteria pollutant is extremely limited, and CO disperses rapidly with distance from the source under normal meteorological conditions. Furthermore, vehicle emissions standards have become increasingly more stringent in the last 20 years. Currently, the allowable CO emissions standard in California is a maximum of 3.4 grams per mile for passenger cars (there are requirements for certain vehicles that are more stringent). With the turnover of older vehicles, introduction of cleaner fuels, and implementation of increasingly sophisticated and efficient emissions control technologies, CO concentration in the SSAB is designated as in attainment. Detailed modeling of Project-specific CO "hot spots" is not necessary and thus this potential impact is addressed qualitatively (ECORP 2022a).

A CO "hot spot" would occur if an exceedance of the state one-hour standard of 20 parts per million (ppm) or the eight-hour standard of 9 ppm were to occur. The analysis prepared for CO attainment in the South Coast Air Quality Management District's (SCAQMD's) *1992 Federal Attainment Plan for Carbon Monoxide* in Los Angeles County and a Modeling and Attainment Demonstration prepared by the SCAQMD as part of the 2003 Air Quality Management Plan can be used to demonstrate the potential for CO exceedances of these standards. The SCAQMD is the air pollution control officer for much of southern California. The SCAQMD conducted a CO hot spot analysis as part of the 1992 CO Federal Attainment Plan at four busy intersections in Los Angeles County during the peak morning and afternoon time periods. The intersections evaluated included Long Beach Boulevard and Imperial Highway (Lynwood), Wilshire Boulevard and Veteran Avenue (Westwood), Sunset Boulevard and Highland Avenue (Hollywood), and La Cienega Boulevard and Century Boulevard (Inglewood). The busiest intersection evaluated was at Wilshire Boulevard and Veteran Avenue, which has a traffic volume of approximately 100,000 vehicles per day. Despite this level of traffic, the CO analysis concluded that there was no violation of CO standards (SCAQMD 1992). In order to establish a more accurate record of baseline CO concentrations affecting the

Los Angeles, a CO "hot spot" analysis was conducted in 2003 at the same four busy intersections in Los Angeles at the peak morning and afternoon time periods. This "hot spot" analysis did not predict any violation of CO standards. The highest one-hour concentration was measured at 4.6 ppm at Wilshire Boulevard and Veteran Avenue and the highest eight-hour concentration was measured at 8.4 ppm at Long Beach Boulevard and Imperial Highway. Thus, there was no violation of CO standards.

Similar considerations are also employed by other air districts when evaluating potential CO concentration impacts. More specifically, the Bay Area Air Quality Management District, the air pollution control officer for the San Francisco Bay Area, concludes that under existing and future vehicle emission rates, a given project would have to increase traffic volumes at a single intersection by more than 44,000 vehicles per hour or 24,000 vehicles per hour where vertical or horizontal air does not mix in order to generate a significant CO impact.

The Proposed Project would not generate traffic volumes at any intersection of more than 100,000 vehicles per day (or 44,000 vehicles per day) and there is no likelihood of the Project traffic exceeding CO values (ECORP 2022a). Furthermore, as shown in Table 3.3-4, Project construction would result in the emission of CO below the ICAPCD significance threshold, which is a health-based threshold intended to reduce the health deleterious effects of air pollution.

3.3.3.7 Odor

Typically, odors are regarded as an annoyance rather than a health hazard. However, manifestations of a person's reaction to foul odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache).

With respect to odors, the human nose is the sole sensing device. The ability to detect odors varies considerably among the population and overall is quite subjective. It is also important to note that an unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. This is because of the phenomenon known as odor fatigue, in which a person can become desensitized to almost any odor and recognition only occurs with an alteration in the intensity.

Quality and intensity are two properties present in any odor. The quality of an odor indicates the nature of the smell experience. Intensity refers to the strength of the odor. Odor intensity depends on the odorant concentration in the air. When an odorous sample is progressively diluted, the odorant concentration decreases. As this occurs, the odor intensity weakens and eventually becomes so low that the detection or recognition of the odor is quite difficult. At some point during dilution, the concentration of the odorant reaches a detection threshold. An odorant concentration below the detection threshold means that the concentration in the air is not detectable by the average human.

Odor advisories in the northern area of Salton Sea have been required by the SCAQMD due to hydrogen sulfide concentrations in the air. Hydrogen sulfide in the air is released from sulfides in the water. Because the Project would be implemented in dry, upland areas, there is no potential for the Project to exacerbate hydrogen sulfide concentrations in the air.

During implementation, the Proposed Project presents the potential for generation of objectionable odors in the form of diesel exhaust in the immediate vicinity of the Project Area. However, these emissions are short term in nature and would rapidly dissipate and be diluted by the atmosphere downwind of the emission sources. Additionally, odors would be localized and generally confined to the Project Area (ECORP 2022a). Therefore, odors generated during Project implementation would not adversely affect a substantial number of people to odor emissions.

Land uses commonly considered to be potential sources of obnoxious odorous emissions include agriculture (farming and livestock), wastewater treatment plants, food processing plants, chemical plants, composting facilities, refineries, landfills, dairies, and fiberglass molding. The Proposed Project does not include any land uses during Project operations identified as being associated with odors (ECORP 2022a).

3.3.3.8 Cumulative Impacts

By its very nature, air pollution is largely a cumulative impact. No single project is sufficient in size, by itself, to result in nonattainment of ambient air quality standards. Instead, a project's individual emissions contribute to existing cumulatively significant adverse air quality impacts. If a project's individual emissions exceed its identified significance thresholds, the project would be cumulatively considerable. Projects that do not exceed significance thresholds would not be considered cumulative considerable. As noted above, recommendations for best management practices during construction are incorporated into the project description (see Section 2.5) to avoid impacts on air quality.

3.3.4 Findings Related to Air Quality

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to air quality, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to air quality that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to air quality requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to air quality identified in and considered by the adopted 2002 EIR/EIS.

3.3.5 Mitigation Measures

Please refer to Section 3.5 of the adopted 2002 EIR/EIS for complete analyses of Project impacts and mitigation measures (Reclamation and IID 2002a).

Mitigation Measure AQ-7: To mitigate this impact, selection of HCP (Salton Sea Portion) Approach 2 would be the only effective measure. This approach would include additional conservation, via fallowing or other measures in the IID water service area, to allow drain water to continue to flow to the Sea at a rate equal to the Baseline, thereby avoiding impacts to the Sea and shoreline associated with the reduced flow. Additional details of Approach 2 can be found in Chapter 2, Description of the Proposed Project [Transfer Project] and Alternatives. With implementation of this approach, this impact would be avoided; without it, this impact would remain potentially significant and unavoidable.

Based on the proposed modifications, the 2002 Transfer Project EIR/EIS was reviewed to determine whether or not changes to the Project would affect the mitigation measures contained therein. Given the analysis and information provided above, no changes to the analysis found in the 2002 EIR/EIS are required. Therefore, no mitigation measures are required for impacts associated with air quality.

3.4 Biological Resources

Section 3.2 of the Draft EIR/EIS, and Section 4, Errata of the Final EIR/EIS, address the impacts of the Transfer Project on biological resources.

The environmental setting for the Salton Sea region and Project Area is discussed below. Impacts on biological resources from implementation of the Proposed Project are discussed in the Biological Resources Report contained in Appendix C and summarized below (ECORP 2022b).

3.4.1 Existing Environmental Setting

According to Imperial County's Conservation and Open Space Element, an extensive range of vegetation communities have been identified in the County, including native and nonnative communities on which sensitive and common plant and wildlife species are dependent. Native communities include wetland and riparian habitats within fresh and saltwater systems and high and low elevation woodland and scrub habitats, some with saline and alkali soil conditions. Nonnative communities include agriculture, annual grasslands, and tamarisk or salt cedar stands (Imperial County 2016).

The Project Area is primarily located within the exposed former bed of the Salton Sea (also referred to as the Salton Sea playa or playa), which has been exposed over the last 16 years as a result of seawater evaporation and decreased agricultural inflows. Slopes on the playa within the Project Area are very flat, ranging from 1 to 3 inches of vertical drop every 100 feet, generally grading from northwest to south-southeast. Exposed elevations within the Project Area range from approximately -221 feet below sea level (bsl) at the northwest Project Area corner, to approximately -230 feet bsl North American Vertical Datum 1988 (NAVD88) at the Salton Sea margin.

The site is characterized by expansive bare playa areas interspersed with patches of very-low density to moderate-density halophytic (salt loving) vegetation. No perennial surface water resources occur at the

Project Area. Rather, one prominent ephemeral wash originating from the Chocolate Mountains (to the north) enters the northeastern corner of the site. This ephemeral wash does not appear to reach the Salton Sea with any regular frequency. The recurrence interval of flood flows entering the Project Area through this wash is uncertain but appears to be very infrequent based on the number and size of plants growing in the washes. Plant condition (apparent health and vigor) appears to vary within the Project Area, likely reflecting the scarcity and sources of irrigation water over time.

3.4.1.1 Soils

Soils in Imperial County are formed by stratified alluvial deposits. A large portion of the County includes fine-textured lakebed sediments. Approximately 28 known soil types occur in Imperial County: Aco, Antho, Carrizo, Carsitas, Chuckwalla, Cibola, Coachella, Fluvaquents, Gadsden, Gilman, Glenbar, Holtville, Imperial, Indio, Kofa, Lagunita, Laposa, Laveen, Mecca, Meloland, Niland, Orita, Ripley, Rositas, Salorthids, Superstition, Torriorthents, and Vint. Parent material includes Glenbar, Holtville, and Imperial soils. Indio, Vint, Meloland, and Rositas soils are derived from windblown and channel silts. Rositas and Carsitas soils were formed in beach deposits. Sand and gravelly fan materials are the parent materials of Carsitas and Rositas soils (Imperial County 2016).

According to the U.S. Department of Agriculture's NRCS Web Soil Survey website (NRCS 2022), there is no digital data available for the Project Area.

3.4.1.2 Vegetation

Four general terrestrial wildlife habitats occur in the Salton Sea: drain habitat, tamarisk scrub habitat, desert habitat, and agricultural field habitat.

Drain habitat is located adjacent to the Salton Sea and occurs in association with the drainage and conveyance systems and unmanaged vegetation. Vegetation in the drains typically consists of species such as saltgrass (*Distichlis spicata*), saltbush (*Atriplex* sp.), Bermuda grass (*Cynodon dactylon*), common reed (*Phragmites australis*), and salt cedar (*Tamarix* sp.). Vegetation along the margins of the Salton Sea includes tamarisk, iodine bush, , cattails (*Typha* spp.), and common tule (*Schoenoplectus acutus*) in adjacent wetlands.

Tamarisk scrub habitat is a non-native plant community that supplant native vegetation following major disturbances. Characteristic species include salt cedar, big saltbush (*Atriplex lentiformis*), and saltgrass, and common reed. Tamarisk scrub occurs in the margins of the Salton Sea, wherever water is available. The shoreline of the Salton Sea also consists of iodine bush.

Desert habitats supported in the area include creosote bush scrub and dunes. Creosote bush scrub typically occurs on well-drained secondary soils of slopes, fans, and valleys. Characteristic species include creosote bush (*Larrea tridentata*), burro weed (*Ambrosia dumosa*), brittle brush (*Encelia farinosa*), and ocotillo (*Fouquieria splendens*). Succulents are common, and ephemeral annual herbs generally bloom during late February and March. Mesquite thickets, an important wildlife habitat component, are in creosote bush scrub habitat. Desert dune communities are barren expanses of actively moving wind-deposited sand with little or no stabilizing vegetation. Plant species include bee plant (*Cleome sparsifolia*),

Desert dicoria (*Dicoria canescens*), evening primrose (*Oenothera avita*), and Plicate coldenia (*Tiquilia plicata*).

Agricultural field habitat is the predominant land cover type in the Imperial Valley. The crops grown vary but can include alfalfa, Sudan grass, Bermuda grass, and wheat (Reclamation and IID 2002a).

The Project Area is characterized by four coarse habitat types: upland iodine bush scrub, upland iodine bush/quail bush scrub, upland bare salt pan, and wetland iodine/bush seepweed scrub (ECORP 2022b).

Special-Status Plants

Special-status plant species with potential to occur in the desert habitat include Coachella Valley milk-vetch (*Astragalus lentiginosus var. coachellae*), Perison's milk-vetch (*Astragalus magdalenae* var. *peirsonii*), triple-ribbed milk-vetch (*Astragalus tricarinatus*), Parish's daisy (*Erigeron parishii*), and Orcutt's aster (*Xylorhiza orcuttii*). A full list of special-status plant species with potential to occur are listed in the Draft EIR/EIS for the IID Water Conservation and Transfer Project (Reclamation and IID 2002a).

3.4.1.3 Eleven special-status plant species were identified historically in the vicinity of the Project Area based on the literature review. Upon further analysis and after the special-status plant survey conducted in May 2022, all 11 species were determined to not occur within the Project Area.Wildlife

Wildlife associated with drain habitat includes wading birds such as green-backed heron (*Butorides striatus*), great blue heron (*Ardea herodias*), and great egret (*Ardea alba*) and riparian and wetland bird species including red-winged blackbird (*Agelaius phoeniceus*), common yellowthroat (*Geothlypis trichas*), Yuma Ridgway's rail (*Rallus longirostris yumanensis*), and black phoebe (*Sayornis nigricans*).

Tamarisk is a non-native species that has invaded riparian areas and is considered poor quality habitat for native wildlife species, although some wildlife species have adapted to using tamarisk where it has displaced native vegetation. Bird species diversity and abundance are lower in tamarisk than in stands of native riparian vegetation. Bird species potentially using tamarisk scrub and other riparian habitat include yellow warbler (*Dendroica petechia*), southwestern willow flycatcher (*Empidonax traillii extimus*), mourning dove (*Zenaida macroura*), black-crowned night heron (*Nycticorax nycticorax*), cinnamon teal (*Anas cyanoptera*), and phainopepla (*Phainopepla nitens*). Two groups, large raptors and cavity-nesting species, are not known to occur in tamarisk. Mammals associated with the habitat include deer mouse (*Peromyscus maniculatus*), cotton rat (*Sigmodon hispidus*), muskrat (*Ondatra zibethicus*), raccoon (*Procyon lotor*), common gray fox (*Urocyon cinereoargenteus*), ringtail cat (*Bassariscus astutus*), and coyote (*Canis latrans*).

Desert habitat areas support birds, mammals, and reptiles that are adapted to arid desert conditions. Bird species include white-crowned sparrow (*Zonotrichia leucophrys*), greater roadrunner (*Geococcyx californianus*), great-horned owl (*Bubo virginianus*), and loggerhead shrike (*Lanius ludovicianus*). Mammals use this habitat, generally in low densities, including the Merriam's kangaroo rat (*Dipodomys merriami*), little pocket mouse (*Perognathus longimembris*), desert kangaroo rat (*Dipodomys deserti*), ground squirrels (*Spermophilus* sp.), striped skunk (*Mephitus mephitis*), and black-tailed hare (*Lepus californicus*). Reptile

species include the zebra-tailed lizard (*Callisaurus draconoides*), side-blotched lizard (*Uta stansburiana*), and California whiptail (*Cnemidophorus tigris mundus*).

Wildlife associated with agricultural fields adjacent to the Salton Sea include geese (Anatidae), ibis (Threskiornithidae), gulls (Laridae), blackbirds (Icteridae), long-billed curlew (*Numenius americanus*), mountain plover (*Charadrius montanus*), red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus hudsonius*), brown-headed cowbird (*Molothrus ater*), wintering ferruginous hawk (*Buteo regalis*), and horned larks (*Eremophila alpestris*). Common mammals in agricultural and ruderal habitats include western harvest mouse (*Reithrodontomys megalotis*) and southern pocket gopher (*Thomomys umbrinus*) (Reclamation and IID 2002a).

Special-Status Wildlife

Special-status wildlife species with potential to occur in the Imperial Valley and Salton Sea area include desert pupfish (*Cyprinodon macularius*), desert tortoise (*Gopherus agassizi*), Flat-tailed horned lizard (*Phrynosoma mcallii*), Cooper's hawk (*Accipiter cooperi*), southwestern willow flycatcher, western snowy plover (*Charadrius alexandrinus nivosus*), black tern (*Chlidonias niger*), brown pelican (*Pelecanus occidentalis*), California least tern (*Sterna antillarum browni*), Leconte's thrasher (*Toxostoma lecontei*), burrowing owl (*Athene cunicularia*), and black skimmer (*Rynchops niger*). A full list of special-status wildlife species with potential to occur are listed in the Draft EIR/EIS for the IID Water Conservation and Transfer Project (Reclamation and IID 2002a).

Based on species occurrence information from the literature review and observations in the field, a list of special-status plant and animal species that have the potential to occur within the AOI was generated. Only special-status species were included in this analysis (ECORP 2022b).

After further analysis, the rare plant survey, and the reconnaissance site visit, it is determined that two amphibian species, one reptile species, one bird species, and one mammal species have a low potential to occur and four bird species have a high potential to occur within the AOI. The rest of the species identified in the literature review were excluded due to absence of suitable habitat.

The western snowy plover has a high potential to occur onsite. Ground nests are established on barren to sparsely vegetated sand beaches, dry salt flats, dredge spoils deposited on beach or dune habitat, levees and flats at salt-evaporation ponds, and sand/cobble river bars. The species was observed on the playa near shoreline pools at Bombay Beach Wetlands (east of and adjacent to AOI) in July 2021 and suitable nesting habitat occurs within open areas of sandy playa onsite (ECORP 2022b).

The black skimmer has a high potential to occur onsite. They prefer to nest on open sandy areas or sparsely vegetated gravel or shell bars or broad mats of seawrack on salt marsh. The open playa may provide suitable nesting habitat onsite (ECORP 2022b).

The gull-billed tern (*Gelochelidon nilotica*) has a high potential to occur onsite. The Salton Sea population nests on eroded earthen levees and gravel and barnacle islets or on constructed islets in shallow, brackish impoundments. Suitable nesting habitat occurs onsite in the open areas of the playa (ECORP 2022b).

The California brown pelican has a high potential to occur onsite. The brown pelicans nesting in California nest mainly on the ground. Suitable foraging habitat occurs onsite (ECORP 2022b).

3.4.2 Adopted 2002 EIR/EIS

Please refer to Section 3.2 of the adopted 2002 Draft EIR/EIS for analyses of the potential effects of the Transfer Project as related to Biological Resources.

The Draft EIR/EIS identifies potential impacts on biological resources due to the Transfer Project's use of on-farm irrigation system improvements, water delivery system improvements, and/or fallowing to conserve water. Under Impact BR-41, reduced drain flows could affect adjacent wetlands dominated by cattail and bulrush vegetation. Cattails and bulrushes cannot tolerate saline water and the Transfer Project would increase freshwater flows to the drains in the CVWD service area and potentially increase freshwater flows to the adjacent wetlands. Other areas identified as adjacent wetlands were misclassified and do not meet the definition of an adjacent wetland. Therefore, there is no impact.

Under Impact BR-42, reduced sea elevation could affect the acreage of adjacent wetlands dominated by tamarisk and shoreline strand. In areas where drain water or shallow groundwater is the predominant water source, no change in tamarisk-dominated adjacent wetlands is expected. Although it is not possible to predict the magnitude of change in the tamarisk adjacent to the Salton Sea, a reduction in the amount would not cause a significant impact because (1) tamarisk is an invasive, non-native species of poor habitat quality for wildlife and (2) no special-status species depend on tamarisk. Implementation of the Salton Sea Conservation Strategy under the HCP component of the Transfer Project would further ensure that no significant impacts occur. Therefore, impacts would be less than significant.

Under Impact BR-43, increased salinity would change invertebrate resources in the Salton Sea. The Transfer Project would accelerate the rate at which the Salton Sea transitions first to an invertebrate-dominated ecosystem, then to a system dominated by halotolerant organisms. In accord with the significance criteria, because no invertebrates are candidate, sensitive, or special-status species, the acceleration in the changes in the invertebrate community of the Salton Sea is not a significant impact.

Under Impact BR-44, changes in the invertebrate community could affect shorebirds and other waterbirds. he changes in the abundance and composition of the invertebrate community could alter the suitability of foraging conditions for birds using the Salton Sea. Mono Lake provides the best model of what the bird species diversity and abundance likely would resemble as salinity of the Salton Sea increases. Mono Lake is a saline, inland sea like the Salton Sea. The species of shorebirds that use Mono Lake also occur at the Salton Sea as migratory birds or winter residents. Given that the shorebird and waterbird (grebes and ruddy ducks) species that use the Sea also use Mono Lake, in which the brine flies and brine shrimp are the primary prey species, it is reasonable to expect that these species would similarly exploit brine flies and brine shrimp as they become the dominant invertebrate at the Salton Sea. Therefore, changes in the invertebrate community would have less-than-significant impacts on shorebirds and other waterbirds using this resource.

Under Impact BR-45, increased salinity would reduce fish resources in the Salton Sea. The salinity of the Salton Sea has increased because of high evaporative water loss and continued input of salts from

irrigation drainage water. The Transfer Project could affect the rate of salinization and the overall outcome of increasing salinity would be the loss of fish. Under both the Baseline and the Transfer Project, the salinity of the Salton Sea would rise and exceed levels at which fish species inhabiting the Salton Sea could reproduce. The acceleration is considered a less-than-significant impact to fish resources for two reasons. First, the differences between when species-specific salinity thresholds would be exceeded are small (5 to 11 years). Second, based on the significance criteria, only effects to candidate, sensitive or special-status species or certain effects to native fish (e.g., nursery habitat, migratory routes) constitute significant biological impacts. Because all fish species are introduced, non-native species, the impacts are less than significant.

Under Impact BR-46, reduced fish abundance would affect piscivorous birds. The abundance of tilapia, which is the most abundant fish in the Salton Sea and the primary forage species for piscivorous birds, would decline substantially once the salinity of the Salton Sea reaches about 60 g/L. Water conservation under the Transfer Project would reduce inflows to the Salton Sea, which would increase its rate of salinization. Tilapia could persist in the Salton Sea if low salinity areas persist around the deltas and potentially near drain outlets, however, the total population supported in the Salton Sea would be reduced relative to existing conditions. The primary piscivorous birds of concern with respect to reduced fish abundance are white pelicans, brown pelicans, black skimmers, and double-crested cormorants (*Nannopterum auritum*). The adverse effect to piscivorous birds is considered a significant, but avoidable, impact of the water conservation and transfer component of the Transfer Project. Implementation of the HCP component of the Transfer Project would reduce this impact to less than significant.

Under Impact BR-47, changes to selenium in the Salton Sea would not affect fish and birds. The Transfer Project would decrease annual loading of selenium to the Salton Sea relative to the Baseline. However, selenium exhibits unusual behavior in the Salton Sea, concentrating in the sediment rather than the water column. Most selenium in the Sea is in sediments, and the sediments are the dominant source for exposure to aquatic organisms. The Transfer Project would decrease the amount of selenium entering the Salton Sea relative to the Baseline and in that way reduce the annual accumulation of selenium in sediments. However, because of the large amount of selenium stored in Sea sediments, the slight reduction in selenium loading relative to the Baseline would not substantially change the exposure of fish and birds to selenium in the sea, in general. Therefore, the Transfer Project would have no effect on exposure of fish and birds to selenium in the Salton Sea.

Under Impact BR-48, reduced sea elevation could affect colonial nest/roost sites for ground-nesting birds including black skimmers, terns and gulls, American white pelicans (*Pelecanus erythrorhynchos*), California brown pelicans (*Pelecanus occidentalis californicus*), and double-crested cormorants. The surface elevation of the Salton Sea is projected to decline but the Transfer Project would accelerate the decline by a few years. With 300 KAFY of conservation, the water surface elevation would fall by 3 feet and 4 feet, 3 and 7 years earlier than under the Baseline, respectively. The small temporal difference in when the islands would connect to the mainland would not result in a substantial adverse effect to colonial, ground-nesting birds at the Salton Sea and is considered less than significant.

Under Impact BR-49, reduced sea elevation could affect the availability of mudflat and shallow water habitat. Migratory birds, specifically shorebirds and waterfowl, could be affected by the changes in surface

water elevation predicted under the Transfer Project due to changes physical habitat availability. The Transfer Project would result in less inflow to the Sea and result in a more rapid decline in water surface elevation than under the Baseline. Under both the Transfer Project and Baseline, shallow water/mudflat habitat could be lost or reduced as the Sea recedes, but under both alternatives, new areas of shallow water/mudflat habitat also would be created as the Sea recedes. Because the magnitude and likelihood of changes in the amount and characteristics of shallow water/mudflat habitat, either positively or negatively, would not differ substantially between the Transfer Project and the Baseline, the Transfer Project would not significantly affect the availability of shallow water/mudflat habitat.

Under Impact BR-50, water quality changes could increase the incidence of avian disease outbreaks. The Salton Sea is warm, shallow, and strongly eutrophic. These conditions, in combination with dense aggregations of water birds that use the Sea, create prime conditions for avian disease outbreaks. The links between lake enrichment, productivity, and bird disease are weak and ill-defined. Nevertheless, conditions contributing to avian disease outbreaks would persist under both the Baseline and Transfer Project. The Transfer Project would likely reduce phosphorus and sediment-associated loading, but nitrate loading would increase along with dissolved constituents in general. It is unknown what such a change in the mix of nutrient loads would have on lake productivity. Regardless, the lake is already highly eutrophic, and trophic states are not quantitatively linked to avian disease. As a result, a change in the mix of nutrient loading is not expected to increase the incidence of avian disease.

Under Impact BR-51, increased salinity could isolate drains supporting desert pupfish. Desert pupfish inhabit pools formed by barnacle bars in near-shore and shoreline areas of the Salton Sea. Desert pupfish have a high salinity tolerance, with 90 g/L used as the threshold for when pupfish could not longer move among drains via the Salton Sea. Under the Transfer Project, with conservation of 300 KAFY the salinity of the Sea would exceed 90 g/L by 2022. At this salinity, the Sea could become intolerable to pupfish and prevent them from moving among drains; they would be isolated to individual drains. Small, isolated populations are at risk of extinction because of environmental and genetic stochasticity. Implementation of the HCP component of the Transfer Project would reduce this impact to less than significant.

The Salton Sea Conservation Strategy of the Transfer Project's HCP has several components to address potential impacts to biological resources. The approaches include hatchery and habitat replacement and use of conserved water as mitigation.

3.4.3 Analysis of Project Changes

3.4.3.1 Literature Review

The following resources were reviewed to determine the special-status species that have been documented within or near the Project Area. Results of the species searches are included as Attachment B.

- California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) data for the "Frink, California" 7.5-minute quadrangle as well as the eight surrounding USGS quadrangles (CDFW 2022a);

- U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Consultation System Resource Report List for the Project Area (USFWS 2022a);
- California Native Plant Society (CNPS) Rare Plant Inventory was queried for the "Frink, California" 7.5-minute quadrangle and the nine surrounding quadrangles (CNPS 2022).

Additional background information was reviewed regarding the documented or potential occurrence of special-status species within or near the Project Area from the following sources:

- Special Animals List (CDFW 2022b);
- Bird Species of Conservation Concern (USFWS 2021);
- USFWS Online Critical Habitat Mapper (USFWS 2022b); and
- NRCS Web Soil Survey (NRCS 2022).

Based on the literature review, 11 special-status plant species, 2 special-status fish species, 1 special-status invertebrate species, 3 special-status amphibian species, 2 special-status reptile species, 14 special-status bird species, and 7 special-status mammal species were identified as having the potential to occur within the Project Area (ECORP 2022b).

3.4.3.2 Reconnaissance Survey

A site reconnaissance survey was conducted on April 5 and May 10, 2022, to identify portions of the Project Area with the potential to support special-status species and sensitive habitats. During the field survey, biological communities occurring onsite were characterized and the following biological resource information was collected:

- Potential aquatic resources
- Vegetation communities
- Plant and animal species directly observed
- Animal evidence (e.g., scat, tracks)
- Existing active bird nest locations
- Burrows and any other special habitat features
- Representative Project Area photographs (Attachment C)

Impacts to Special-Status Birds

The Project Area provides suitable nesting and foraging habitat for special-status birds and birds protected by the Migratory Bird Treaty Act (MBTA) and Fish and Game Code. Nesting and/or foraging birds have potential to be adversely impacted by Project activities (all components) if present within and adjacent to the Project Area during implementation of the Project. The Project would avoid or minimize potential impacts to special-status birds and birds protected to comply with the regulatory measures of

the MBTA and Fish and Game Code. Recommendations for best management practices during construction are incorporated into the project description (see Section 2.5) to avoid impacts on special-status birds.

3.4.3.3 Aquatic Resources Delineation Survey

An aquatic resources delineation of the Project Area was conducted on April 5 and May 10, 2022. A total of 63.433 acres of aquatic resources were mapped within the Project Area. Aquatic resources within the Project Area include Palustrine wetland (57.619 acres), Riverine (0.091 acre) and Lacustrine (5.723 acres) feature types.

The Project Area supports aquatic resources that are potential Waters of the U.S. and Waters of the State, subject to verification by the USACE and RWQCB, respectively. The following regulatory authorizations pertain to the Project component that will occur within the wetland habitat onsite: habitat enhancement activities, including construction of bunds and diversion swales (ECORP 2022b). Compliance with regulatory measures would ensure no-net-loss of wetland function and values as a result of the Proposed Project.

3.4.3.4 Rare Plant Survey

A rare plant survey was conducted on May 10, 2022, for the 168.39-acre Project Area. The survey was scheduled to coincide with the target species' blooming periods and during a period when target species were most likely identifiable.

The following rare plant were considered target plant species for their potential to occur in the survey area: chaparral sand-verbena (*Abronia villosa* var. *aurita*), Salton milk-vetch (*Astragalus crotalariae*), Harwood's milk-vetch (*Astragalus insularis* var. *harwoodii*), gravel milk-vetch (*Astragalus sabulonum*), triple-ribbed milk-vetch, ribbed cryptantha (*Johnstonella costata*), narrow-leaf sandpaper plant (*Petalonyx linearis*), Orocopia sage (*Salvia greatae*), and Chocolate Mountains tiquilia (*Tiquilia canescens* var. *pulchella*). Rare plant species were not observed within the Project Area during the rare plant survey (ECORP 2022b).

3.4.3.5 Regulatory Compliance Measures

As listed in Section 2.5 and 2.6 of this report, the Proposed Project would comply with the Migratory Bird Treaty Act through the following avoidance and minimization measures and permits:

Avoidance and Minimization Measures

- Complete all Project activities outside of the bird nesting season to avoid impacts to nesting birds. The nesting season for birds that could potentially establish ground nests at the Salton Sea is March 1 through October 31.
- If Project activities cannot be completed outside of the bird nesting season, a qualified biologist shall survey all areas to be disturbed within 7 days in advance of the start of ground-disturbing activities. Active bird nests identified during the survey effort shall be avoided until such time that

the qualified biologist has determined that the nest(s) is/are vacant or is/are otherwise not active. Depending on the location of the active nest(s) the qualified biologist may establish a no-work buffer around an active nest(s). Work may resume within the active nest buffer only with the approval of the qualified biologist.

Permits

- Coverage under Section 404 of the federal CWA must be obtained from USACE. The impacts from such actions are expected to be temporary/temporal loss only and solely associated with the habitat enhancement activities within wetland habitat. Therefore, no net loss of aquatic resources is likely to occur as a result of the Project (a net increase of wetland habitat in the long term is anticipated), and no compensatory mitigation is required.
- A Water Quality Certification or waiver pursuant to Section 401 of the CWA, as issued by RWQCB, must be obtained for Section 404 permit actions.
- A Waste Discharge Requirement for dredge and fill in Waters of the State under the Porter-Cologne Water Quality Control Act as issued by RWQCB must be obtained for impacts to waters of the State.

3.4.3.6 Cumulative Impacts

Potentially significant impacts related to biological resources would occur during construction and would be reduced to a less than significant level with implementation of avoidance and minimization measures which are regulatory in nature. Accordingly, the Plot Study would not otherwise combine with impacts of related development to add considerably to any cumulative impacts in the region. With adherence to regulatory requirements, the Plot Study would not have impacts that are individually limited, but cumulatively considerable. Therefore, the Proposed Project would have a less than cumulatively considerable impact.

3.4.4 Findings Related to Biological Resources

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that Project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to biological resources, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to biological resources that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no

substantial new information indicating that there would be a new significant impact to biological resources requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to biological resources identified in and considered by the adopted 2002 EIR/EIS.

3.4.5 Mitigation Measures

The 2002 EIR/EIS did not recommend mitigation measures as no significant impacts were identified (Reclamation and IID 2002a).

Based on the proposed modifications, the 2002 Transfer Project EIR/EIS was reviewed to determine whether or not changes to the Project would affect the mitigation measures contained therein. Given the analysis and information provided above, no changes to the analysis found in the 2002 EIR/EIS are required. Therefore, no mitigation measures are required for impacts associated with biological resources.

3.5 Cultural Resources

A complete discussion of the cultural resources impacts of the Transfer Project as originally proposed is included in Section 3.8 of the Draft EIR/EIS and Section 4, Errata of the Final EIR/EIS.

The environmental setting for the Project Area is discussed below. In addition, impacts on cultural resources from implementation of the Plot Study are discussed in a separate report incorporated by reference herein (ECORP 2022c) and summarized below.

3.5.1 Existing Environmental Setting

The previous studies conducted in the County identified resources including villages, rock shelters, habitation sites, lithic scatters, trails, rock art localities, and milling stations. Isolated artifacts not associated with the larger sites have also been identified in Imperial County (Imperial County 2016).

The Project Area consists of approximately 168.39 acres of property located in the northeastern quarter of Section 33 of Township 9 South, Range 12 East, San Bernardino Base and Meridian as depicted on the 1998 Frink, California USGS 7.5-minute topographic quadrangle map (Figure 1). The northwestern corner of the Project Area is one block east of the intersection of 1st Street and Avenue G in the community of Bombay Beach.

The Area of Potential Effects (APE) consists of the horizontal and vertical limits of a project and includes the area within which significant impacts or adverse effects to Historical Resources or Historic Properties could occur as a result of the project. The APE is defined for projects subject to regulations implementing Section 106 (federal law and regulations). For projects subject to the CEQA review, the term Project Area is used rather than APE. The terms Project Area and APE are interchangeable for the purpose of this document.

The horizontal APE consists of all areas where activities associated with a project are proposed and, in the case of this Project, equals the Project Area subject to environmental review under the National Environmental Policy Act (NEPA) and CEQA. This includes areas proposed for construction, vegetation removal, grading, trenching, stockpiling, staging, and other elements in the official Project description. The horizontal APE represents the survey coverage area. It measures approximately 0.6 mile in length by 0.5 mile in width.

The vertical APE is described as the maximum depth below the surface to which excavations for project foundations and facilities will extend. Therefore, the vertical APE for this Project includes all subsurface areas where archaeological deposits could be affected. The subsurface vertical APE varies across the Project, depending on depth of any grading or excavation. Without definitive construction plans, ground disturbance of up to 15 feet below the surface will be expected in order to accommodate Project-related activities, and therefore, a review of geologic and soils maps was necessary to determine the potential for buried archaeological sites that cannot be seen on the surface.

The vertical APE also is described as the maximum height of structures that could impact the physical integrity and integrity of setting of cultural resources, including districts and traditional cultural properties. For this Project, the above-surface vertical APE is presumed to be up to 20 feet above the surface.

3.5.1.1 Geology and Soils

Jennings (1967) describes the geology of the Project Area as recent dune sand (Qs). Jennings et al. (2010) describes the geology of the Project Area as alluvium, lake, playa, and terrace deposits, both unconsolidated and consolidated, with most deposits being nonmarine (Q). Additionally, the San Andreas Fault is located immediately north of the Project Area.

According to the U.S. Department of Agriculture's NRCS Web Soil Survey website (NRCS 2022), there is no digital data available for the Project Area.

There exists the potential for buried precontact archaeological sites in the Project Area due to the presence of alluvium within the Project Area and the likelihood of precontact archaeological sites located along perennial waterways (Reclamation and IID 2002a).

3.5.1.2 Ethnographic Context

Ethnohistorically documented tribes living in the Salton Sea region include the Kumeyayy/Kamia (part of the Salton Sea geographic subregion) and the Cahuilla (Salton Sea geographic subregion and southern Coachella Valley) (Reclamation and IID 2002a).

Kumeyayy/Kamia

South of the Salton Sea was home to the Kamia (a subdivision of the Kumeyaay), a sedentary agricultural people related culturally to the River Yumans (Reclamation and IID 2002a). The Kumeyaay (also known as Ipai and Tipai) are the Yuman-speaking native people of central and southwestern Imperial County, central and southern San Diego County, and the northern Baja Peninsula in Mexico. Spanish missionaries and settlers used the collective term Diegueño for these people, which referred to people living near the

presidio and mission of San Diego de Alcalá. Today, these people refer to themselves as Kumeyaay or as Ipai and Tipai, which are northern and southern subgroups of Kumeyaay language speakers, respectively (Luomala 1978). The ancestral lands of the Kumeyaay extend north from Todos Santos Bay near Ensenada, Mexico to Agua Hedionda Lagoon in north San Diego County, and east to the Imperial Valley (ECORP 2022c).

While the Kumeyaay have been depicted as hunter/gatherers in ethnographic documents, some groups practiced agriculture in the Imperial Valley. Most groups had a mountain home base that provided acorns, greens, fruits, and abundant game. Each group operated out of its home base for most of the year. Seasonal campsites were scattered throughout their territory and used as needed, but their central villages were larger and permanently situated (Reclamation and IID 2002a).

Archaeological sites along the ancient shorelines of the Salton Trough are often recognized by a number of distinctive features, such as house rings with associated artifacts, sandstone slab hearths, cremations, artifacts sometimes covered with travertine, abundant obsidian and quartzite lithic debris, shell (abalone, *Olivella*, cardium, limpet, and mussel), fishbone, bird bones, and mammal bones (Reclamation and IID 2002a).

Cahuilla

The northern part of the Salton Sea was home to the Desert Cahuilla who practiced some agriculture. The southern border has been recorded as the San Felipe Creek and also as the Riverside/Imperial County line (Reclamation and IID 2002a).

The Cahuilla spoke a Takic language. The Takic group of languages is part of the Uto-Aztecan language family. The Cahuilla occupied a territory ranging from the San Bernardino Mountains in the north to the Chocolate Mountains and Borrego Springs in the south, and from the Colorado Desert in the east to Palomar Mountain in the west (ECORP 2022c).

Desert Cahuilla society was set up with a dozen or more land-holding clans, each with territory that ranged from desert or valley floor to mountain areas. Each clan included several lineages, each with an independent community area it owned within a larger clan area. Each lineage had ownership rights to various hunting and gathering areas. Hilly, rocky areas, cave sites, or walled cave sites were used for temporary camping, food storage, hunting blinds, and as fasting places for shamans (Reclamation and IID 2002a).

Cahuilla buildings consisted of dome-shaped or rectangular houses, constructed of poles covered with brush and above-ground granaries. Other material culture included baskets, pottery, and grinding implements; stone tools, arrow shaft straighteners and bows; clothing (e.g., loincloths, blankets, rope, sandals, skirts, and diapers); and various ceremonial objects made from mineral, plant, and animal substances (ECORP 2022c).

3.5.2 Adopted 2002 EIR/EIS

Please refer to Section 3.8 of the adopted 2002 Draft EIR/EIS for analyses of the potential effects of the Transfer Project as related to cultural resources.

Known or recorded archaeological resources within the Salton Sea geographic subregion include 83 prehistoric sites, 13 historical sites, and one other element of the historic built environment, a historic railroad grade. The Native American Heritage Commission (NAHC) reported that no sacred lands are present in the Salton Sea geographic subregion (Reclamation and IID 2002a).

The Draft EIR/EIS identifies potential impacts to cultural resources as a result of the Transfer Project. Impact CR-5 addresses reduced inflows to the Salton Sea. Reduced inflow would lower the Sea's level and expose submerged land which could potentially contain archaeological sites that could potentially be vandalized if not protected. Newly exposed land could also potentially be cultivated or developed, thus harming any archaeological sites, if they were not protected. Through the years, the rich sediment load of inflowing wastewaters has deposited silt on the lake bottom, probably covering the inundated archaeological sites with one or more inches of deposited sediment. Any archaeological sites that might be present would be only gradually exposed over a 20-year time period (as reduced inflows gradually result in lowered Sea levels). Such sites would be obscured by the deposited sediment, and would likely be recolonization of freshly exposed surfaces to invading plant life. Impacts would be reduced to less than significant with implementation of Mitigation Measure CR-5. However, if HCP Approach 2 (use of conserved water as mitigation) is implemented, impacts to cultural resources at the Salton Sea would be avoided and mitigation measures would not be necessary) (Reclamation and IID 2002a).

3.5.3 Analysis of Project Changes

ECORP prepared a Cultural Resources Inventory and Evaluations Report for the Proposed Project in July 2022. The cultural resources inventory included a records search, literature review, and field survey. A record search of the California Historical Resources Information System (CHRIS) at the South Coastal Information Center (SCIC) of San Diego State University revealed 12 cultural resource investigations were conducted in or within a 1-mile radius of the Project Area, with 4 of these overlapping the Project Area. Six previously recorded precontact and historic-era cultural resources recorded within 1 mile of the Project Area; however, no cultural resources have been previously identified within the Project Area. A search of the Sacred Lands File (SLF) was completed by the NAHC and resulted in a positive finding, meaning that Native American Sacred Lands have been recorded in the Project Area.

ECORP conducted an intensive pedestrian survey on June 9 and 10, 2022. As a result of the survey, five newly identified historic-period isolated cultural resources and no precontact cultural resources were recorded within the Project Area. BBVP-01-I, a historic-period umbrella tripod base; BBVP-002-I, a historic-period pottery sherd with partial Paden City Pottery maker's mark; BBVP-003-I, a historic-period complete amber glass bottle; BBVP-004-I, a historic-period complete amber beer glass bottle; and BBVP-005-I, a historic-period complete colorless alcohol bottle. The five newly identified historic-period isolated finds are not individually eligible for the California Register of Historical Resources (CRHR) or the National Register of Historic Places (NRHP). The isolated finds do not contribute to any known or suspected historic districts; and are neither considered to be Historic Properties for the purpose of Section 106 NHPA, nor Historical Resources under CEQA.

Due to the presence of alluvium within the Project Area and given the likelihood of precontact archaeological sites located along water sources, there exists the potential for buried precontact

archaeological sites in the Project Area. Recommendations for best management practices during construction are incorporated into the project description (see Section 2.5) to avoid impacts on cultural resources. Impacts would be less than significant.

3.5.3.1 Cumulative Impacts

Potentially significant impacts related to cultural resources would occur during construction and would be mitigated to a less than significant level. No significant operational impacts were identified. Accordingly, the Plot Study would not otherwise combine with impacts of related development to add considerably to any cumulative impacts in the region. With mitigation, the Plot Study would not have impacts that are individually limited, but cumulatively considerable. Therefore, the Proposed Project would have a less than cumulatively considerable impact.

3.5.4 Findings Related to Cultural Resources

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to cultural resources, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to cultural resources that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to cultural resources requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to cultural resources identified in and considered by the adopted 2002 EIR/EIS.

3.5.5 Mitigation Measures

Please refer to Section 3.8 of the adopted 2002 EIR/EIS for complete analyses of Project impacts and mitigation measures (Reclamation and IID 2002a).

Mitigation Measure CR-5: Gradual exposure of submerged lands would potentially expose archaeological sites, if they are present. The same mitigation measures listed under Mitigation Measure CR-1 would apply to this impact to provide assurances in the event that if cultural resources are encountered during Project construction or operation, they will be handled appropriately. In addition, a

series of archaeological surveys at regular intervals (once every 3 years) will be conducted to check freshly exposed lands for the presence/absence of archaeological sites.

Mitigation Measure CR-1: Construction of conservation measures can occur anywhere within the IID water service area; therefore, pre-Project surveys have not been conducted. The following mitigation measures have been designed to provide assurances in the event that if cultural resources are encountered during Project construction or operation, they will be handled appropriately.

- Archaeological and historical surface surveys to identify any cultural resources that may be affected. Areas that may contain buried archaeological resources also will be identified.

Archaeological Resources

- Modify Project design, when feasible, to avoid impacts to cultural resources, unless a qualified archaeologist conducts a field inspection and determines that the resource has no potential for significance because it is re-deposited, an isolated occurrence, modern, or otherwise lacks data potential.
- Develop and implement a pre-Project Phase II Testing and Evaluation Plan for all unavoidable potentially significant archaeological sites that will be directly impacted to evaluate the significance of the resource in terms of applicable criteria.
- Develop and implement a pre-Project Phase III Data Recovery Plan for all significant archaeological sites that will be directly impacted if the sites cannot be avoided through redesign.
- If impacts to significant resources cannot be reduced to less than significant levels through data recovery or other by other mitigation measures, then the Project will be redesigned to avoid the impact.
- Develop a Cultural Resources Construction Monitoring Plan prior to construction if ground disturbance will occur within any areas of archaeological sensitivity, such as recorded sites and areas that may contain buried archaeological sites.
- In the event of an unanticipated cultural resource discovery during construction, all ground disturbances within 200 feet of the discovery will be halted or re-directed to other areas until the discovery has been documented by a qualified archaeologist and its potential significance evaluated in terms of applicable criteria. Resources considered significant will be avoided or subject to a data recovery program as described above.
- Coordinate with SHPO and local Native American groups, if required, in compliance with applicable state laws.

Architectural Resources

- If avoidance of a potentially significant architectural resource is not feasible, then the resource will be documented on DPR forms and resource significance will be evaluated according to applicable criteria. If significant, then the architectural resource either will be relocated or integrated into construction design. Structural reuse will be consistent with the Secretary's Standards for the

Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings (see CEQA Guidelines 1998 Section 15064.5 [b][3] and Section 9.

- If a significant resource is not avoidable or incorporated into construction design, then recordation will be conducted through large-format black-and-white archival photographs, building descriptions, and archival research to establish their regional context. The recordation report will be submitted to a local or regional historic society.

Paleontological Resources

- A literature review and paleontological field survey (as needed) will be conducted as part of site-specific CEQA review to identify potential impacts to rock units that may contain significant fossil remains.
- Modify construction design, when feasible, to avoid impacts to all significant paleontologic resources.
- Construction monitoring by a qualified paleontologist may be recommended for locations within paleontologically sensitive sediments. If so, a Paleontological Monitoring Plan shall be prepared prior to ground disturbance in sensitive areas.
- In the event of an unanticipated discovery during construction, all ground disturbance within 200 feet of the discovery will be halted or re-directed to other areas until the discovery has been recovered by a qualified paleontologist.
- All paleontologic resources recovered will be appropriately described, processed, and curated in a scientific institution such as a museum or university.

3.6 Energy

A complete discussion of the energy impacts of the Transfer Project as originally proposed is included in Section 3.7 and 5.6 of the Draft EIR/EIS and Section 4, Errata of the Final EIR/EIS. As discussed below, the changes to the Project would result in no new impacts or a substantial increase in the severity of the impacts to energy as identified in the EIR/EIS. The overall impacts to energy would be similar to those described in the EIR/EIS.

The environmental setting for the Project Area is discussed below.

3.6.1 Existing Environmental Setting

Energy relates directly to environmental quality. Energy use can adversely affect air quality and other natural resources. The vast majority of California's air pollution is caused by burning fossil fuels. Consumption of fossil fuels is linked to changes in global climate and depletion of stratospheric ozone. Transportation energy use is related to the fuel efficiency of cars, trucks, and public transportation; choice of different travel modes (auto, carpool, and public transit); vehicle speeds; and miles traveled by these modes. Construction and routine operation and maintenance of transportation infrastructure also consume energy. In addition, residential, commercial, and industrial land uses consume energy, typically

through the usage of natural gas and electricity. This analysis focuses on the one source of energy that is relevant to the Proposed Project: the equipment fuel necessary for Project construction.

California relies on a regional power system comprised of a diverse mix of natural gas, renewable, hydroelectric, and nuclear generation resources. Natural gas provides California with a majority of its electricity, closely followed by renewables, large hydroelectric and nuclear (California Energy Commission 2021). IID provides electric power to more than 150,000 customers in Imperial County and parts of Riverside and San Diego counties. IID Energy controls more than 1,100 megawatts of energy derived from a diverse resource portfolio that includes its own generation, and long- and short-term power purchases. IID produces 30 percent of its power supply locally, using efficient, low-cost hydroelectric facilities and steam generation facilities, as well as several natural gas turbines (Imperial County 2021).

3.6.2 Adopted 2002 EIR/EIS

Certain aspects of the Transfer Project would result in the irretrievable commitment of resources, such as the construction associated with the water conservation program because construction activities would consume fossil fuels, which are finite sources of energy that cannot be regenerated (Reclamation and IID 2002a).

Electrical services for the construction effort would be provided by portable generators or by self-powered construction equipment; therefore, demand on existing electricity sources would be minimal (Reclamation and IID 2002a).

3.6.3 Analysis of Project Changes

The Plot Study would involve fuel (gasoline) consumption associated with operation of onsite mobile construction equipment and worker trips to the job site. Solar pumps would be used for the new wells. The Plot Study would not utilize electricity or natural gas. Fuel (gasoline) consumption would be minimal compared to the total combined fuel usage in Imperial County. Project implementation would have a nominal effect on local and regional energy supplies. Therefore, impacts would be less than significant.

3.6.3.1 Cumulative Impacts

No cumulative impacts relating to Energy are expected to occur as a result of the Proposed Project.

3.6.4 Findings Related to Energy

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to energy, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to energy that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to energy requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to energy identified in and considered by the adopted 2002 EIR/EIS.

3.6.5 Mitigation Measures

The 2002 EIR/EIS did not recommend mitigation measures as no significant impacts were identified. Based on the proposed modifications, the 2002 EIR/EIS was reviewed to determine whether or not changes to the Project would affect the mitigation measures contained therein. Given the analysis and information provided above, no changes to the analysis found in the 2002 EIR/EIS are required. Therefore, no mitigation measures are required for impacts associated with energy.

3.7 Geology and Soils

A complete discussion of the geology and soils impacts of the Transfer Project as originally proposed is included in Section 3.3 of the Draft EIR/EIS. As discussed below, the changes to the Transfer Project would result in no new impacts or substantial changes to the severity of the impacts to geology and soils identified in the EIR/EIS. The overall impacts to geology and soils would be similar to those described in the EIR/EIS.

The environmental setting for the Project Area is discussed below along with impacts from implementation of the Plot Study.

3.7.1 Existing Environmental Setting

3.7.1.1 Geomorphic Setting

Imperial County is underlain by three natural geomorphic provinces: the Peninsular Ranges, the Colorado Desert, and the Mojave Desert. Each of these provinces is a naturally defined geologic region that displays a distinct landscape or landform with defining features based on geology, faults, topographic relief, and climate (Imperial County 2016).

The Salton Sea is in the northern portion of the Salton Trough, a large, sediment-filled topographical depression and seismically active valley. Topographically, the Salton Trough is a broad, flat alluviated valley with an area of about 6,000 square miles. The entire valley lies below 500 feet above sea level, except for its rise into San Gorgonio Pass. More than 3,000 of its 6,000 square miles are below sea level (from the City of Indio to below the International Boundary). The Salton Trough is filled with approximately 21,000 feet of Cenozoic sediments derived predominantly from the Colorado River, which

emptied into the Gulf of California during the Cenozoic period. The sediments formed a delta that spread and eventually separated the Salton Basin Region from the Gulf of California (Reclamation and IID 2002a).

3.7.1.2 Soils

Soils in Imperial County are formed by stratified alluvial deposits. A large portion of the County includes fine-textured lakebed sediments. Approximately 28 known soil types occur in Imperial County: Aco, Antho, Carrizo, Carsitas, Chuckwalla, Cibola, Coachella, Fluvaquents, Gadsden, Gilman, Glenbar, Holtville, Imperial, Indio, Kofa, Lagunita, Laposa, Laveen, Mecca, Meloland, Niland, Orita, Ripley, Rositas, Salorthids, Superstition, Torriorthents, and Vint. Parent material includes Glenbar, Holtville, and Imperial soils. Indio, Vint, Meloland, and Rositas soils are derived from windblown and channel silts. Rositas and Carsitas soils were formed in beach deposits. Sand and gravelly fan materials are the parent materials of Carsitas and Rositas soils (Imperial County 2016).

The clay material deposited in riverine environments during the formation of the Colorado River delta terrace is the source of the Holtville and Imperial soils. Niland soils occur in clayey lakebed. Several large gullies have formed from runoff water leading into the Salton Sea. The Antho, Laveen, Niland, and Superstition soils were formed from fan sediment. Fine-textured basin deposits provide the source material for Glenbar, Holtville, and Imperial soils (Imperial County 2016).

Soils within the Project Area have not been mapped by the U.S. Department of Agriculture NRCS because this area was inundated by the Salton Sea until very recently (NRCS 2022).

3.7.1.3 Regional Seismicity

Imperial County contains several major active faults, including the Brawley Fault Zone, the Coyote Creek Fault and the Elmore Ranch Fault (in the San Jacinto Fault Zone), the Elsinore Fault, the Imperial Fault, the Laguna Salada Fault (in the Elsinore Fault Zone), the San Andreas Fault, the Superstition Hills Fault, and the Wienert Fault (in the San Jacinto Fault Zone) (Imperial County 2016).

The San Jacinto-Coyote Creek and Elsinore-Laguna Salada fault zones form the western boundary of the Salton Trough. Branches of the San Andreas fault zone form the eastern boundary. The Salton Trough is characterized by northwest/southeast-trending transform fault zones with several crustal rift areas between them. The Salton Trough is the northern extension of the Gulf of California rift zone (Reclamation and IID 2002a).

The Project Area lies within the San Andreas Fault zone with the San Andreas Fault running southeast through the neighboring Bombay Beach community and into the western boundary of the Project Area (California Geological Survey [CGS] 2022).

3.7.1.4 Paleontological Resources

A paleontological records search was conducted of the University of California Museum of Paleontology (UCMP) online database (UCMP 2022) for the Project Area. There are no records in the plot study location.

3.7.2 Adopted 2002 EIR/EIS

The Adopted 2002 Draft EIR/EIS analyzed impacts to geology and soils based on the proximity of active faults, frequency and types of seismic events, existing ground acceleration data and models, and the type of existing soils. The Transfer Project's susceptibility and/or contribution to geotechnical hazards were described in terms of their potential impact on the public or geological resources. Implementation of the Transfer Project in the Salton Sea area would result in Impact GS-8, potential for increased soil erosion along exposed playa of Salton Sea. During operation of the Transfer Project, there might be an increased potential for impact from soil erosion in the Salton Sea area. Implementation of the Transfer Project would result in a decrease in the elevation of the Salton Sea, exposing up to 50,000 acres (over the life of the project) of previously inundated area (compared to the Baseline condition). The newly exposed shoreline could be subject to wind and water erosion. However, the high salt content of the Salton Sea and the soils underlying the Sea cause a crust to form on the soils as they dry, which minimizes both wind and soil erosion. Impact GS-8 is considered less than significant and no mitigation is required.

Impacts to paleontological resources is addressed in Section 3.5 (Cultural Resources) of this report and would be mitigated with Mitigation Measure CR-1 per the 2002 EIR/EIS.

3.7.3 Analysis of Project Changes

No habitable structures would be constructed in the Project Area and the Project would be completed completely within IID property. Therefore, there would be no substantial adverse effects, including the risk of loss, injury, or death involving due to rupture of a known earthquake fault, strong seismic ground shaking, seismic-related ground failure, including liquefaction, and landslides.

Ground disturbing activities such as access improvements and construction of furrows for vegetation would not be performed during rain events. Therefore, the Project would not be expected to increase soil erosion. An NPDES Permit for Stormwater Discharges from Construction Activities will be obtained for the Plot Study. Implementation of a Storm Water Pollution Prevention Plan (SWPPP) will be required through this process which would ensure that storm water runoff from the Project Area would not result in soil erosion. In addition, the goal of the Plot Study would be to reduce wind erosion of the Project Area. Therefore, impacts such as soil erosion or the loss of topsoil would be less than significant. Recommendations for best management practices during construction are incorporated into the project description (see Section 2.5) to avoid impacts on paleontological resources.

3.7.3.1 Cumulative Impacts

No cumulative impacts relating to geology and soils are expected to occur as a result of the Proposed Project.

3.7.4 Findings Related to Geology and Soils

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002

EIR/EIS. The Proposed Project will not result in new significant environmental impacts to geology and soils, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to geology and soils that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to geology and soils requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to geology and soils identified in and considered by the adopted 2002 EIR/EIS.

3.7.5 Mitigation Measures

See Mitigation Measure CR-1 in Section 3.5 Cultural Resources for measures applicable to paleontological resources.

3.8 Greenhouse Gas Emissions

The environmental setting for the Project Area is discussed below. Greenhouse gas emissions are discussed and evaluated for implementation of the Plot Study in a report contained in Appendix B and summarized below.

3.8.1 Existing Environmental Setting

Certain gases in the earth's atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining the earth's surface temperature. Solar radiation enters the earth's atmosphere from space. A portion of the radiation is absorbed by the earth's surface and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from the earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Because the earth has a much lower temperature than the sun, it emits lower-frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead trapped, resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on earth. Without the greenhouse effect, the earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Fluorinated gases also make up a small fraction of the GHGs that contribute to

climate change. Fluorinated gases include chlorofluorocarbons, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and nitrogen trifluoride; however, it is noted that these gases are not associated with typical land use development. Human-caused emissions of these GHGs in excess of natural ambient concentrations are believed to be responsible for intensifying the greenhouse effect and leading to a trend of unnatural warming of the earth's climate, known as global climate change or global warming. It is "extremely likely" that more than half of the observed increase in global average surface temperature from 1951 to 2010 was caused by the anthropogenic increase in GHG concentrations and other anthropogenic factors together (Intergovernmental Panel on Climate Change [IPCC] 2014).

Table 3.8-1 describes the primary GHGs attributed to global climate change, including their physical properties, primary sources, and contributions to the greenhouse effect.

Each GHG differs in its ability to absorb heat in the atmosphere based on the lifetime, or persistence, of the gas molecule in the atmosphere. CH_4 traps over 25 times more heat per molecule than CO_2, and N_2O absorbs 298 times more heat per molecule than CO_2 (IPCC 2014). Often, estimates of GHG emissions are presented in carbon dioxide equivalents (CO_2e), which weight each gas by its global warming potential. Expressing GHG emissions in CO_2e takes the contribution of all GHG emissions to the greenhouse effect and converts them to a single unit equivalent to the effect that would occur if only CO_2 were being emitted.

Climate change is a global problem. GHGs are global pollutants, unlike criteria air pollutants and TACs, which are pollutants of regional and local concern. Whereas pollutants with localized air quality effects have relatively short atmospheric lifetimes (about one day), GHGs have long atmospheric lifetimes (one to several thousand years). GHGs persist in the atmosphere for long enough time periods to be dispersed around the globe. Although the exact lifetime of any particular GHG molecule is dependent on multiple variables and cannot be pinpointed, it is understood that more CO_2 is emitted into the atmosphere than is sequestered by ocean uptake, vegetation, or other forms. Of the total annual human-caused CO_2 emissions, approximately 55 percent is sequestered through ocean and land uptakes every year, averaged over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere (IPCC 2013).

Table 3.8-1. Greenhouse Gases

Greenhouse Gas	Description
CO_2	$CO_2$is a colorless, odorless gas. CO_2 is emitted in a number of ways, both naturally and through human activities. The largest source of CO_2 emissions globally is the combustion of fossil fuels such as coal, oil, and gas in power plants, automobiles, industrial facilities, and other sources. A number of specialized industrial production processes and product uses such as mineral production, metal production, and the use of petroleum-based products can also lead to CO_2 emissions. The atmospheric lifetime of CO_2 is variable because it is so readily exchanged in the atmosphere.
CH_4	CH_4 is a colorless, odorless gas and is the major component of natural gas, about 87 percent by volume. It is also formed and released to the atmosphere by biological processes occurring in anaerobic environments. Methane is emitted from a variety of both human-related and natural

Table 3.8-1. Greenhouse Gases

Greenhouse Gas	Description
	sources. Human-related sources include fossil fuel production, animal husbandry (intestinal fermentation in livestock and manure management), rice cultivation, biomass burning, and waste management. These activities release significant quantities of CH_4 to the atmosphere. Natural sources of CH_4 include wetlands, gas hydrates, permafrost, termites, oceans, freshwater bodies, non-wetland soils, and other sources such as wildfires. The atmospheric lifetime of CH_4 is about12 years.
N_2O	N_2O is a clear, colorless gas with a slightly sweet odor. Nitrous oxide is produced by both natural and human-related sources. Primary human-related sources of N_2O are agricultural soil management, animal manure management, sewage treatment, mobile and stationary combustion of fossil fuels, adipic acid production, and nitric acid production. N_2O is also produced naturally from a wide variety of biological sources in soil and water, particularly microbial action in wet tropical forests. The atmospheric lifetime of N_2O is approximately 120 years.

Sources: USEPA 2016a, 2016b, 2016c

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; it is sufficient to say the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

3.8.1.1 Sources of Greenhouse Gas Emissions

In 2020, CARB released the 2020 edition of the California GHG inventory covering calendar year 2018 emissions. In 2018, California emitted 425.3 million gross metric tons of CO_2e including from imported electricity. Combustion of fossil fuel in the transportation sector was the single largest source of California's GHG emissions in 2018, accounting for approximately 30 percent of total GHG emissions in the state. This sector was followed by the industrial sector (21 percent) and the electric power sector including both in-state and out-of-state sources (15 percent) (CARB 2020). Emissions of CO_2 are byproducts of fossil fuel combustion. CH_4, a highly potent GHG, primarily results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N_2O is also largely attributable to agricultural practices and soil management. Carbon dioxide sinks, or reservoirs, include vegetation and the ocean, which absorb CO_2 through sequestration and dissolution (CO_2 dissolving into the water), respectively, two of the most common processes for removing CO_2 from the atmosphere.

3.8.2 Regulatory Framework

3.8.2.1 Executive Order S-3-05

Executive Order (EO) S-3-05, signed by Governor Arnold Schwarzenegger in 2005, proclaims that California is vulnerable to the impacts of climate change. It declares that increased temperatures could reduce the Sierra Nevada snowpack, further exacerbate California's air quality problems, and potentially

cause a rise in sea levels. To combat those concerns, the EO established total GHG emission targets for the state. Specifically, emissions are to be reduced to the 2000 level by 2010, the 1990 level by 2020, and to 80 percent below the 1990 level by 2050.

3.8.2.2 Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed AB 32 (Health and Safety Code Section 38500 et seq., or AB 32), also known as the Global Warming Solutions Act. AB 32 requires CARB to design and implement feasible and cost-effective emission limits, regulations, and other measures, such that statewide GHG emissions are reduced to 1990 levels by 2020 (representing a 25 percent reduction in emissions). Pursuant to AB 32, CARB adopted a Scoping Plan in December 2008, which outlines measures to meet the 2020 GHG reduction goals. California is on track to meet or exceed the target of reducing GHG emissions to 1990 levels by the end of 2020.

The Scoping Plan is required by AB 32 to be updated at least every five years. The latest update, the 2017 Scoping Plan Update, addresses the 2030 target established by Senate Bill (SB) 32 as discussed below and establishes a proposed framework of action for California to meet a 40 percent reduction in GHG emissions by 2030 compared to 1990 levels. The key programs that the Scoping Plan Update builds on include increasing the use of renewable energy in the state, the Cap-and-Trade Regulation, the Low Carbon Fuel Standard, and reduction of methane emissions from agricultural and other wastes.

3.8.2.3 Senate Bill 32 and Assembly Bill 197 of 2016

In August 2016, Governor Brown signed SB 32 and AB 197, which serve to extend California's GHG reduction programs beyond 2020. SB 32 amended the Health and Safety Code to include Section 38566, which contains language to authorize CARB to achieve a statewide GHG emission reduction of at least 40 percent below 1990 levels by no later than December 31, 2030. SB 32 codified the targets established by EO B-30-15 for 2030, which set the next interim step in the state's continuing efforts to pursue the long-term target expressed in EOs S-3-05 and B-30-15 of 80 percent below 1990 emissions levels by 2050.

3.8.2.4 Senate Bill 100 of 2018

In 2018, SB 100 was signed by Governor Brown, codifying a goal of 60-percent renewable procurement by 2030 and 100 percent by 2045 Renewables Portfolio Standard.

3.8.3 Adopted 2002 EIR/EIS

The 2002 EIR/EIS does not evaluate impacts to GHGs as the need to analyze GHG emissions was not a required part of the CEQA process at the time. Senate Bill 97, enacted in 2007, amended the CEQA statute to clearly establish that GHG emissions and the effects of GHG emissions are appropriate subjects for CEQA analysis. It directed OPR to develop draft CEQA Guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions" by July 1, 2009, and directed the Resources Agency to certify and adopt the CEQA Guidelines by January 1, 2010. The final draft of the Transfer Project was published prior to the provision requiring GHG emissions analysis.

3.8.4 Analysis of Project Changes

3.8.4.1 Thresholds of Significance

The impact analysis provided below is based on the following CEQA Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to GHG emissions if it would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment.
2. Conflict with any applicable plan, policy, or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases.

The Appendix G thresholds for GHGs do not prescribe specific methodologies for performing an assessment, do not establish specific thresholds of significance, and do not mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency's discretion to determine the appropriate methodologies and thresholds of significance consistent with the manner in which other impact areas are handled in CEQA. With respect to GHG emissions, the CEQA Guidelines Section 15064.4(a) states that lead agencies "shall make a good-faith effort, based to the extent possible on scientific and factual data, to describe, calculate or estimate" GHG emissions resulting from a project. The CEQA Guidelines note that an agency has the discretion to either quantify a project's GHG emissions or rely on a "qualitative analysis or other performance-based standards." (14 California Code of Regulations [CCR] 15064.4(b)). A lead agency may use a "model or methodology" to estimate GHG emissions and has the discretion to select the model or methodology it considers "most appropriate to enable decision makers to intelligently take into account the project's incremental contribution to climate change." (14 CCR 15064.4(c)). Section 15064.4(b) provides that the lead agency should consider the following when determining the significance of impacts from GHG emissions on the environment:

1. The extent a project may increase or reduce GHG emissions as compared to the existing environmental setting.
2. Whether the project emissions exceed a threshold of significance that the lead agency determines applies to the project.
3. The extent to which the project complies with regulations or requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions (14 CCR 15064.4(b)).

In addition, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence" (14 CCR 15064.7(c)). The CEQA Guidelines also clarify that the effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines Section 15130(f)). As a note, the CEQA Guidelines were amended in response to SB 97. In particular, the CEQA Guidelines were

amended to specify that compliance with a GHG emissions reduction plan renders a cumulative impact insignificant.

Per CEQA Guidelines Section 15064(h)(3), a project's incremental contribution to a cumulative impact can be found not cumulatively considerable if the project would comply with an approved plan or mitigation program that provides specific requirements that would avoid or substantially lessen the cumulative problem within the geographic area of the project. To qualify, such plans or programs must be specified in law or adopted by the public agency with jurisdiction over the affected resources through a public review process to implement, interpret, or make specific the law enforced or administered by the public agency. Examples of such programs include a "water quality control plan, air quality attainment or maintenance plan, integrated waste management plan, habitat conservation plan, natural community conservation plans [and] plans or regulations for the reduction of greenhouse gas emissions." Put another way, CEQA Guidelines Section 15064(h)(3) allows a lead agency to make a finding of less than significant for GHG emissions if a project complies with adopted programs, plans, policies, or other regulatory strategies to reduce GHG emissions.

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines Section 15064.4(b)(2) by considering whether the Project complies with applicable plans, policies, regulations and requirements adopted to implement a statewide, regional, or local plan for the reduction or mitigation of GHG emissions. The ICAPCD has not adopted a GHG significance threshold yet recommends the 100,000-metric ton of CO_2e threshold established by the Mojave Desert Air Quality Management District (MDAQMD). As previously described, Section 15064.7(c) of the CEQA Guidelines specifies that "[w]hen adopting or using thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence"(14 CCR 15064.7(c)). This ICAPCD-recommended threshold is appropriate as the MDAQMD GHG thresholds were formulated based on similar geography and climate patterns as found in Imperial County. Therefore, the 100,000-metric ton of CO2e threshold is appropriate for this analysis.

In *Center for Biological Diversity v. Department of Fish and Wildlife* (2015) 62 Cal. 4th 2014, 213, 221, 227, following its review of various potential GHG thresholds proposed in an academic study [Crockett, *Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World* (July 2011), 4 Golden Gate U. Envtl. L. J. 203], the California Supreme Court identified the use of numeric bright-line thresholds as a potential pathway for compliance with CEQA GHG requirements. The study found numeric bright line thresholds designed to determine when small projects were so small as to not cause a cumulatively considerable impact on global climate change was consistent with CEQA. Specifically, PRC section 21003(f) provides it is a policy of the state that "[a]ll persons and public agencies involved in the environmental review process be responsible for carrying out the process in the most efficient, expeditious manner in order to conserve the available financial, governmental, physical and social resources with the objective that those resources may be better applied toward the mitigation of actual significant effects on the environment." The Supreme Court-reviewed study noted, "[s]ubjecting the smallest projects to the full panoply of CEQA requirements, even though the public benefit would be minimal, would not be consistent with implementing the statute in the most efficient,

expeditious manner. Nor would it be consistent with applying lead agencies' scarce resources toward mitigating actual significant climate change impacts." (Crockett, *Addressing the Significance of Greenhouse Gas Emissions: California's Search for Regulatory Certainty in an Uncertain World* (July 2011), 4 Golden Gate U. Envtl. L. J. 203, 221, 227.)

3.8.4.2 Methodology

Where GHG emission quantification was required, emissions were modeled using CalEEMod, version 2020.4.0. CalEEMod is a statewide land use emissions computer model designed to quantify potential GHG emissions associated with both construction and operations from a variety of land use projects. Project GHG emissions were calculated using a combination of model defaults for Imperial County. The duration of Project construction and the specific construction equipment that would be employed are derived from the Project's Dust Control Plan for the Proposed Project (Formation 2022a). The operational phase of this Project would be limited to maintenance and monitoring, which would pose a negligible impact associated with GHG emissions and therefore is addressed qualitatively.

3.8.4.3 Impact Analysis

Generation of GHG Emissions

Project Construction

Construction-related activities that would generate GHG emissions include worker commute trips, haul trucks carrying supplies and materials to and from the Project Area, and off-road construction equipment (e.g., dozers, loaders, excavators). Table 3.8-2 illustrates the specific construction generated GHG emissions that would result from construction of the Project. Once construction is complete, the generation of these GHG emissions would cease.

Table 3.8-2. Construction-Related Greenhouse Gas Emissions

Emissions by Phase	CO_2e (Metric Tons/ Year)
Vegetation Management (Year 1)	1,041
Well and Irrigation Installation (Year 1)	216
Total	**1,257**
Significance Threshold	100,000
Exceed Significance Threshold?	**No**

Source: CalEEMod version 2020.4.0. Refer to Appendix B for Model Data Outputs.

As shown in Table 3.8-2, Project would result in the total generation of approximately 1,257 metric tons of CO_2e in the construction phase. Once complete, the generation of these GHG emissions would cease. Therefore, Project GHG emissions would not exceed the significance threshold.

Operations

Operations of the Project, which include the maintenance and monitoring of the irrigation system, would result in negligible amounts of long-term GHG emissions. Operational emissions impacts are long-term impacts that are associated with any changes in the permanent use of the Project Area by sources that substantially increase emissions. Once construction is complete, no regular additional daily vehicle trips or personnel would be added to operate or maintain the Project Area. No major diesel-powered equipment would be required as part of ongoing Project operations. The operations of the Project focus on maintenance and monitoring of the irrigation system. Thus, the Proposed Project would not include the provision of major sources of GHG emissions and implementation of the Project would result in negligible long-term operational GHG emissions.

The Project would not conflict with any adopted plans, policies, or regulations adopted for the purpose of reducing GHG emissions. The Proposed Project is subject to compliance with SB 32. As discussed previously, the Proposed Project-generated GHG emissions would not surpass either the ICAPCD-recommended GHG significance threshold, which was prepared with the purpose of complying with statewide GHG-reduction efforts.

3.8.4.4 Cumulative Impacts

The quantity of GHGs that it takes to ultimately result in climate change is not precisely known; it is sufficient to say the quantity is enormous, and no single project alone would measurably contribute to a noticeable incremental change in the global average temperature or to global, local, or microclimates. From the standpoint of CEQA, GHG impacts to global climate change are inherently cumulative.

3.8.5 Findings Related to Greenhouse Gas Emissions

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to GHG emissions, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to GHG emissions that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to GHG emissions requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to GHG emissions identified in and considered by the adopted 2002 EIR/EIS.

3.8.6 Mitigation Measures

The 2002 EIR/EIS did not recommend mitigation measures as the analysis of GHG was not included. Given the analysis and information provided above, the Proposed Project would not result in significant impacts related to GHG emissions. Therefore, no mitigation measures are required for impacts associated with GHG emissions.

3.9 Hazards and Hazardous Materials

The environmental setting for the Project Area is discussed below along with impacts from implementation of the Plot Study.

3.9.1 Existing Environmental Setting

A material is considered hazardous if it appears on a list of hazardous materials prepared by a federal, state, or local agency, or if it has characteristics defined as hazardous by such an agency. A hazardous material is defined by the California Health and Safety Code, Section 25501 as follows:

> "Hazardous material" means any material that, because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or the environment. "Hazardous materials" include, but are not limited to, hazardous substances, hazardous waste, and any material that a handler or the administering agency has a reasonable basis for believing that it would be injurious to the health and safety of persons or harmful to the environment if released into the workplace or the environment.

A hazardous material is defined in 22 CCR Section 662601.10 as follows:

> A substance or combination of substances which, because of its quantity, concentration, or physical, chemical, or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported, or disposed of or otherwise managed.

Transporters of hazardous waste in California are subject to several federal and state regulations. They must register with the California Department of Health Services (DHS) and ensure that vehicle and waste container operators have been trained in the proper handling of hazardous waste. Vehicles used for the transportation of hazardous waste must pass an annual inspection by the California Highway Patrol (CHP). Transporters must allow the CHP or DHS to inspect its vehicles and must make certain required inspection records available to both agencies. The transport of hazardous materials that are not wastes is regulated by the U.S. Department of Transportation through national safety standards.

Under Government Code Section 65962.5, both the Department of Toxic Substances Control (DTSC) and the SWRCB are required to maintain lists of sites known to have hazardous substances present in the environment. Both agencies maintain up-to-date lists on their websites.

3.9.2 Adopted 2002 EIR/EIS

No hazardous and hazardous materials section is included in the 2002 EIR/EIS because the Lead Agencies concluded that there are no potential impacts associated with hazards and hazardous materials that could result from implementation of the Transfer Project.

3.9.3 Analysis of Project Changes

3.9.3.1 Groundwater Resources Impact Assessment

The Groundwater Resources Impact Assessment (GRIA) report prepared for the Plot Study, shows Project Area relative to reported nearby contamination sites (Appendix D; Formation 2022b). Two sites have reported gasoline releases and five sites have the primary contaminant of concern listed as "explosives". These sites are located more than 0.5 mile from the proposed well sites. Thus, if any residual contamination exists at these sites, it is not expected to be affected by gradient changes that would interfere with required discharge requirements or cleanups. Furthermore, the Ski Inn gasoline leaking underground storage tanks release site, which is the nearest release location from the Plot Project (approximately 0.5 mile), was closed in 1992. The Hot Spa Waste Management facility is located approximately 5 miles to the north of the Plot Project Area, and simulated drawdown effects were not predicted in this area, thus, there are no predicted gradient changes in this area. The landfill has not been operated since 2018 and site reclamation was completed in 2020. Based on this information, pumping the proposed wells is not likely to interfere with ongoing cleanup or other water quality regulatory efforts, or to result in migration of contamination.

3.9.3.2 Hazard to the Public or Environment

Drilling of the new wells and use of mobile construction equipment for access improvements and creation of furrows for vegetation would require the routine use of oils, lubricants, and fuels. However, the use and management of these materials will be conducted following typical best management practices. In addition, no hazardous materials would be utilized as a diluent for drilling of the new wells. Therefore, the Project would have a less than significant impact on hazards associated with hazardous material use

The Project Area is not located within an airport land use plan or within two miles of an airport. The nearest airport, Desert Air Sky Ranch-63Ca, is located approximately 12.4 miles northwest of the Project Area.

Cortese List

Government Code Section 65962.5 requires the DTSC, the State Department of Health Services, the SWRCB, and the California Integrated Waste Management Board to compile and annually update lists of hazardous waste sites and land designated as hazardous waste property throughout the State.

The California Environmental Protection Agency (CalEPA) Cortese List Data Resources records were reviewed to help determine whether hazardous materials have been handled, stored, or generated in the Project Area or the adjacent properties and businesses (CalEPA 2022). The list, although mostly covering the requirements of Section 65962.5, has always been incomplete because it does not indicate if a specific site was at one time included in the abandoned site program.

The list is a compilation of five separate websites that includes:

1. DTSC's EnviroStor – identifies waste or hazardous substances sites.
2. SWRCB's GeoTracker – identifies underground storage tanks for which an unauthorized release report was filed, cleanup sites, and all solid waste disposal facilities from which there is a mitigation of hazardous waste for which a regional board has notified DTSC.
3. A pdf of solid waste disposal sites identified by the SWRCB with waste constituents above hazardous waste levels outside the waste management unit.
4. A list of cease-and-desist orders and clean up and abatement orders.
5. A list of hazardous waste facilities subject to corrective action.

DTSC's EnviroStor indicated that that Project Area was not identified as a hazardous waste or substances site. The nearest site, Salton Sea Bomb Target (FBT17) (#58), is located within the Salton Sea approximately 2.45 miles southwest of the Project Area.

- Salton Sea Bomb Target (FBT17) (#58)
  - Site Type: Military Evaluation
  - Past Use(s): Firing Range – Artillery, Firing Range – Small Arms
  - Potential Contaminants of Concern: Explosives (UXO, MEC)
  - Potential Media Affected: Soil, Surface Water Affected
  - Status: Inactive – Action Required as of 8/15/2018

Additionally, searches of SWRCB GeoTracker revealed a leaking underground storage tank (LUST) Cleanup Site within 0.5 mile of the Project Area.

- Ski Inn
  - Location: 9596 Avenue A, Bombay Beach, CA 92257
  - Site Type: LUST Cleanup Site
  - Potential Contaminants of Concern: Gasoline
  - Potential Media Affected: Soil
  - Status: Completed – Case Closed as of 9/14/1992

A list of solid waste disposal sites with waste constitutes above hazardous waste levels outside the waste management unit was also checked. No records in or near the Project Area were listed (CalEPA 2022).

The list of active cease-and-desist orders (CDO) and clean up and abatement orders (CAO) from the Water Board was checked. No records in the Project Area were listed (CalEPA 2022).

The list of hazardous facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code does not include the Project Area location (CalEPA 2022).

As the Proposed Project is not listed on one of the five websites provided to fulfill the Cortese List, the Proposed Project would not create a significant hazard to the public or the environment. There are no hazardous waste facilities and sites with known contamination, or sites where there may be reasons to investigate further located in the Project Area. There would be no impact.

3.9.3.3 Emergency Response/Evacuation Plan

The site is located away from populated areas and not in an area identified in an emergency evacuation plan. Plot study activities would not impair the implementation of, or physically interfere with, any adopted emergency response plan or emergency evacuation plan.

3.9.3.4 Cumulative Impacts

No cumulative impacts relating to hazards and hazardous materials are expected to occur as a result of the Proposed Project.

3.9.4 Findings Related to Hazards and Hazardous Materials

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to hazards and hazardous materials, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to hazards and hazardous materials that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to hazards and hazardous materials requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to hazards and hazardous materials identified in and considered by the adopted 2002 EIR/EIS.

3.9.5 Mitigation Measures

The 2002 EIR/EIS did not recommend mitigation measures as no significant impacts were identified. Based on the proposed modifications, the 2002 EIR/EIS was reviewed to determine whether or not changes to the project would affect the mitigation measures contained therein. Given the analysis and information provided above, no changes to the analysis found in the 2002 EIR/EIS are required. Therefore, no mitigation measures are required for impacts associated with hazards and hazardous materials.

3.10 Hydrology and Water Quality

A complete discussion of the hydrology and water quality impacts of the Transfer Project as originally proposed is included in Section 3.1 of the Draft EIR/EIS and Section 4, Errata of the Final EIR/EIS. As discussed below, the changes to the Transfer Project would result in no new impacts or substantial increase in the severity of the impacts to hydrology and water quality identified in the EIR/EIS. The overall impacts to hydrology and water quality would be similar to those described in the EIR/EIS.

The environmental setting for the Project Area is discussed below. Impacts on groundwater from implementation of the Plot Study are discussed in the GRIA prepared by Formation summarized below (Formation 2022b). Other impacts on hydrology and water quality are also discussed below.

3.10.1 Existing Environmental Setting

3.10.1.1 Salton Sea

The Salton Sea is a terminal lake with no surface water discharges. The main natural tributaries to the Salton Sea are the Whitewater River, which flows into the north end of the Sea, and the Alamo and New Rivers, which flow into the Sea from the south. A large component of inflow originates as agricultural and municipal drainage. Other components of inflow include precipitation and groundwater discharge. Inflows are generally higher in the spring and lower in the fall and winter (Reclamation and IID 2002a).

Agriculture drainage flowing into the Sea comes into contact with various agricultural chemicals and fertilizers, as well as the native mineral and organic substances contained in soils. Municipal wastewater, depending on the degree of treatment it receives, contains varying amounts of dissolved and suspended organic material, nutrients, metals, hydrocarbons, and other compounds that originate from domestic, industrial, and urban runoff sources. The water also carries with it sediment derived from soil erosion (Reclamation and IID 2002a).

The concentration of chemicals in the Salton Sea depends on both external loads and internal processes, such as sediment resuspension and chemical cycling. Dissolved or suspended constituents in inflows to the Sea constitute an external pollutant loading. The constituents most likely to be associated with impacts to beneficial uses of the Salton Sea include salinity, selenium, boron, nitrogen, and phosphorus (Reclamation and IID 2002a).

Salt loads and loads of other constituents entering the Salton Sea tend to accumulate in the Sea by virtue of lack of an outlet. Salinity of the Sea will continue to increase as long as dissolved salt loadings continue to be concentrated by evaporation. The proportions of major salt constituents in the inflows to the Sea

vary by source. Sodium and chloride are the principal constituents of inflow from the New River, while sodium and sulfate are the principal constituents of Whitewater and Alamo River inflows (Reclamation and IID 2002a).

3.10.1.2 Site Hydrology and Groundwater

The Project Area is located in the East Salton Sea Groundwater Basin, which is bounded by rocks of the Chocolate Mountains on the north and east, by the San Andreas Fault on the south and west, and by the Sand Hills Fault on the south. The Easton Salton Sea Groundwater Basin is drained by Mammoth Wash and Iris Wash in the eastern portion and by Ken Wash and Pacific Wash in the western portion. Ken and Pacific Washes drain into the Bombay Beach wetland, east of the Plot Project Area, which drains directly into the Salton Sea. A relatively impermeable clay layer associated with deposits from ancient Lake Cahuillla is present in the shallow subsurface beneath these washes, keeping discharge from seeping into the subsurface and maintaining the flow in these washes. These washes converge at the Bombay Beach wetland, located approximately 1 mile east of the proposed test wells and is maintained by their flow (Formation 2022b).

Groundwater resources in the East Salton Sea Groundwater Basin are very sparsely developed. No evidence of current groundwater use has been observed or reported in the area within about 5 miles of the Plot Project Area (Formation 2022b).

3.10.1.3 Groundwater Quality

The groundwater quality in the basin is reported as not being suitable for domestic, municipal, or agricultural purposes (Formation 2022b).

3.10.2 Adopted 2002 EIR/EIS

Please refer to Section 3.1 of the adopted 2002 Draft EIR/EIS for analyses of the potential effects of the Transfer Project as related to Hydrology and Water Quality.

Impact WQ-11 addresses a potential change in COC concentrations of Salton Sea water column. The ecosystem of the Salton Sea effectively removes selenium from the water column to concentrations of 1 µg/L or less and it is unlikely that the Transfer Project would result in an increase in selenium concentrations in the Sea to levels equal to or greater than the 5.0-µg/L level stipulated in the significance criteria (Reclamation and IID 2002a).

Impact WQ-12 addresses a potential change in pesticide/herbicide deposition in Salton Sea sediments. Qualitative assumptions indicate that concentrations of herbicides and pesticides in sediment in the Salton Sea are expected to decrease under the Transfer Project. A reduction in herbicide and pesticide concentrations in sediment is expected because the mass input of TSS to the Sea is expected to decrease relative to the Baseline, along with the total inflow of water. As a result, impacts to sediment quality from the Transfer Project would be less than significant (Reclamation and IID 2002a).

Under the Transfer Project, up to 300 KAFY would be transferred by IID to SDCWA. The conveyance and distribution of water from MWD's facilities to the SDCWA service area would not change as a result of

implementing the Transfer Project. No new facilities, operations, or maintenance practices would be required in the SDCWA service area or by member utilities to receive or deliver the water transferred from IID (Reclamation and IID 2002a).

3.10.3 Analysis of Project Changes

The Proposed Project will include groundwater supply development, establishment of new vegetation, maintenance of existing vegetation, stormwater retention and spreading features (bunds), and waterless DCMs. Specifically, the study will gather data to inform water supply development and planning for expanded future vegetation-based dust control on the east side of the Salton Sea. Test wells will be developed, tested, and if feasible, operated as supply wells; new vegetation will be established in hedgerows, irrigated, and monitored; and existing vegetation will be monitored and irrigated as needed to maintain plant vigor and prevent loss of existing vegetation cover.

3.10.3.1 Groundwater Dependent Ecosystems

Potential groundwater dependent ecosystems (GDEs) near the Project Area were identified using the Natural Communities Commonly Associated with Groundwater (NCCAG) dataset developed for the California Department of Water Resources (DWR) by The Nature Conservancy (TNC) in cooperation with CDFW and downloaded from the GDE Pulse website (TNC 2022). These potential GDEs are shown in the GRIA (Formation 2022b). The mapped GDEs include the Bombay Beach wetland, aquatic and emergent wetland vegetation along Pacific and Ken Washes, and several areas of mapped alkali shrub wetland located north of the Salton Sea 2002 shoreline berm and near the Hot Mineral Spa and Frink areas. Additionally, recent vegetation mapping conducted by Formation in December 2021, identified local occurrences of ALOC and SUNI, which are classified as obligate phreatophyte species, at elevations below -201 feet above mean sea level (amsl) in the vicinity of the Project Area. Other potentially groundwater-dependent vegetation, including ATCA and ATLE, were also found below this elevation. Finally, tamarisk, a highly invasive phreatophyte species that utilizes large quantities of groundwater, are evident along Ken and Pacific Wash and in the upslope portions of the Bombay Beach wetland (Formation 2022b).

Field observations indicate that in some of the areas, these species may be dependent on the regional shallow groundwater table. The depth to the regional groundwater table increases with distance from the Salton Sea, which may explain the observed general limitation of these species below certain elevations. Near the Bombay Beach wetland and the perennial washes, perched water appears to occur perennially, whereas, further to the east and west, perching of shallow groundwater appears to occur only after significant precipitation events. Phreatophyte vegetation dependent on perched groundwater would not be expected to be affected by decreases of shallow groundwater levels. In the Durmid Hill area located north and northwest of the community of Bombay Beach, the depth to groundwater is inferred to be greater than 20 feet bgs and there are no continuous clay layers that perch water. Thus, no GDEs are expected to occur in this area (Formation 2022b).

Groundwater Extraction

Groundwater extraction will occur from three wells using solar-powered pumps, and irrigation water will only be applied during daylight hours; however, the pumping rates summarized in Table 3.10-1, below are

presented as daily and long-term annual average rates. During vegetation establishment, it is assumed for this analysis that the average daily extraction over a 24-hour period from each of the shallow groundwater wells will be 3.75 gallons per minute (gpm) per well (Table 3.10-1), which is equivalent to pumping at 10 gpm for nine hours (maximum instantaneous pumping rate during daylight hours). It is assumed that the long-term average annual rate will be 18 AFY per well (Formation 2022b).

Table 3.10-1. Average Annual Water Demand and Groundwater Supply

Water Balance Component	Average Annual Water Demand and Supply		
	gallons/day	AFY	gpm
Irrigation Water Demand - ALOC (60 acres, assume up to 20% cover)			
Year 1 (1.8 feet/year for planted area, including soil reclamation (salt flushing) and establishment of seedlings)	11,120	12.5	7.7
Years 2 through 4 (1.8 feet/year to establish juvenile plants in planted areas)	11,120	12.5	7.7
Long Term (10 inches/year for planted area)	5,148	5.8	3.6
Groundwater Supply to Meet Irrigation Water Demand			
Shallow Zone Groundwater Pumping Capacity (assumes pumping for 24 hrs/day)	16,200 (5,400 per well)	18 (6 per well)	11.25 (3.75 per well)

Source: Formation 2022b
Note: Surplus groundwater would be used to irrigate existing vegetation in the Project Area and surrounding IID-owned land within the area potentially affected by project drawdown, and potentially to supply future vegetation-based dust control measures.

To evaluate impacts of the water demand associated with implementation of the Plot Study on groundwater, the potential drawdown of the groundwater was simulated over a 20-year period using a modeling approach with AnAqSim modeling code (Fitts Geosolutions 2020), a three-dimensional (multi-layer) analytical element modeling code capable of simulating groundwater flow to wells under confined, unconfined, or semiconfined aquifer conditions. The methods and results of the groundwater modeling performed for the Plot Study are presented in the GRIA report contained in (Formation 2022b).

Based upon a soil boring performed for the Plot Study and well logs from wells in the region, the following groundwater layers were evaluated in the model (Formation 2022b):

- Layer 1 represents a relatively thin (15 feet) unconfined upper groundwater zone occurring from approximately 5 to 20 feet bgs, comprised of sandy sediments. This layer has poor water quality and is in potential communication with GDEs.
- Layer 2 extends from approximately 20 to 40 feet bgs; although, this unit is represented as a continuous 10-foot-thick clay unit, because of the interbedded nature of the silts and sands in this zone. This layer represents the confining unit separating the upper and lower groundwater zones.

- Layer 3 represents the production aquifer extending from approximately 30 to 100 feet bgs. This 60-foot-thick layer is confined to semi-confined and is comprised of interbedded fine sand, silty sand, clayey sand, and clay. The water quality improves considerably in Layer 3, as compared to Layer 1.

The following additional assumptions are incorporated into the model:

- The pumped layer is homogeneous. This is a common simplifying assumption.
- The layers are uniform in thickness. This is a common simplifying assumption.
- The groundwater surface is flat in all layers. This is a common simplifying assumption used in "superposition" or "impact modeling," and is an appropriate assumption when the drawdown effects of project pumping are isolated by subtracting them from a baseline condition and exact groundwater elevations or flow rates do not need to be known.
- Predicted drawdown is measured from the initial heads, which are set at zero feet in all layers at time zero, this is appropriate when using a superposition or impact modeling approach.
- The model receives no recharge, and all flow from the pumping wells comes from storage. This simplifying assumption tends to produce a conservative result that over-predicts drawdown.
- The well pumping rates in the producing zone are constant and simulated as long-term averages. This is a reasonable assumption for a non-seasonal water supply project, especially when examining drawdown effects at distance from the pumping wells.
- The narrow-perched hydrostratigraphic unit overlies Layer 1 and is hydraulically separated from Layer 1 by a lacustrine clay aquitard. Therefore, the perched unit is not simulated in the model.
- To address uncertainty in the hydraulic properties of the faults in the model domain, the conductance term for the faults was varied from 1x10-6 to 1x10-2. A sensitivity analysis was conducted to simulate the effects of varying fault conductance and the low and high conductance terms were derived from this analysis. The conductance of the San Andreas fault, the nearest fault to the pumping wells, will be investigated during the pump testing planned for the test wells.
- The aquitard represented by Layer 2, is assumed to have a uniform thickness of 10 feet and accounts for interbedded sands described in the boring log. The available data suggest the combined thickness of clay units in this zone is likely closer to 15 feet near the proposed supply test well locations. According to Waters (1983), fine-grained lacustrine units reportedly thin to the east of the Project Area in the direction of the shoreline for paleo Lake Cahuilla, which is why a thinner aquitard thickness was modeled.
- Pumping was simulated for a period up to 20 years, after which drawdown is assumed to reach relatively stable conditions.

Scenario 1 simulated the lower bound fault conductance and the effects of pumping for 20 years from wells on either side of the San Andreas Fault (1a), wells on the eastside of the fault (1b), and wells on the westside of the fault (1c). Scenario 2 simulated the upper bound fault conductance and the effects of

pumping for 20 years from wells on either side of the San Andreas fault (2a), wells on the eastside of the fault (2b), and wells on the westside of the fault (2c) (Formation 2022b).

Model results indicate that operation of the proposed test wells is predicted to result in limited drawdown in close proximity to the pumping wells. In Scenario 1 after 20 years of pumping, maximum drawdown of the groundwater table by 1.9 feet within Layer 1 is predicted at the IID property boundary and 3.3 feet within Layer 3 is predicted within the Bombay Beach Community. In Scenario 2, maximum predicted drawdowns for Layers 1 and 3 are less than those predicted for Scenario 1. In Scenario 2 after 20 years of pumping, maximum drawdown of the groundwater table by 1.3 feet within Layer 1 is predicted at the IID property boundary and 2.5 feet within Layer 3 is predicted within the Bombay Beach Community (Formation 2022b).

The maximum predicted drawdown in Layer 1 after 20 years of pumping the wells is predicted to be up to approximately 2 feet or less in the areas where potential GDEs or vegetation that is groundwater dependent may be present. Drawdown is predicted to occur slowly, and the potential groundwater-dependent vegetation species that could be affected would be expected to be able to adapt to such a small amount of drawdown over such a long period of time. Predicted drawdown in Layer 1 after 20 years of pumping the wells is not predicted to exceed approximately 0.75 feet in the Bombay Beach wetland area. Based on the available information, impacts to GDEs from operating the supply test wells will be less than significant (Formation 2022b).

The predicted area of drawdown in Layer 1 extends to the western portion of the Bombay Beach wetland and the southern shoreline of the Salton Sea. However, the magnitude of the predicted drawdown is limited in these areas and would not be distinguishable from seasonal fluctuations in the water table. Furthermore, the Bombay Beach wetland is believed to be hydraulically disconnected from the water table groundwater zone. Thus, no impact to interconnected surface water will occur (Formation 2022b).

The long-term groundwater extraction associated with the proposed test wells will be relatively limited. The maximum average annual water demand that is proposed to be met by the wells is at most 18 AFY which is equivalent to a long-term pumping rate just over 11.25 gpm (Table 3.10-1). This would be the only known anthropogenic groundwater demand in the Lacustrine Unit and is not anticipated to interfere with existing beneficial environmental groundwater uses by GDEs (Formation 2022b).

3.10.3.2 Water Quality

The total dissolved solids (TDS) concentrations for the Proposed Project are estimated to range from approximately 7,000 to 14,000 mg/L. This groundwater salinity exceeds agricultural water quality standards, and State Water Resources Control Board Resolution 88-63 states that water containing TDS concentrations over 3,000 mg/L would not be considered suitable as a municipal or domestic water supply; however, it would be suitable for irrigation of the salt tolerant vegetation planned for use as a dust control measure in the Plot Project Area. Based on this information, pumping of groundwater from the wells is unlikely to result in groundwater quality degradation that would impact existing or potential beneficial uses. Based on the likely limited water quality effect of pumping of the wells on groundwater

salinity distribution and beneficial uses, operation of the proposed wells will not interfere with implementation of a Water Quality Control Plan (Formation 2022b).

3.10.3.3 Subsidence

Subsidence can occur especially in confined aquifer conditions, where the drawdown associated with groundwater extraction is greater than in unconfined aquifers. No subsidence has been reported in the vicinity of the Project Area. The proposed test wells will extract a relatively limited amount of water from the lower lacustrine groundwater system. Drawdown is predicted to attenuate rapidly with distance from the test wells (Formation 2022b).

A maximum drawdown of 3.3 feet is predicted during Scenario 1. The other scenarios simulated, predicted maximum drawdowns between 1.5 and 2.5 feet after 20 years of pumping. Less than 5 feet of drawdown is unlikely to result in measurable land subsidence or damage to infrastructure (Formation 2022b).

3.10.3.4 Cumulative Impacts

Groundwater resources in the West Salton Sea Groundwater Basin are very sparsely developed. No active groundwater production wells are located in the area, and the town of Bombay Beach is served by the CVWD. The maximum predicted drawdown at the water table after 20 years of pumping represents a small fraction of the anticipated groundwater level decline in the area as a result of existing trends (approximately 0.5 feet per year) and is not expected to be distinguishable from seasonal and interannual groundwater level fluctuations (Formation 2022b). Based on these considerations, the groundwater resources impacts associated with the Project will be less than cumulatively considerable.

3.10.4 Findings Related to Hydrology and Water Quality

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to hydrology and water quality, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to hydrology and water quality that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to hydrology and water quality requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to hydrology and water quality identified in and considered by the adopted 2002 EIR/EIS.

3.10.5 Mitigation Measures

The 2002 EIR/EIS did not recommend mitigation measures as no significant impacts were identified. Based on the proposed modifications, the 2002 EIR/EIS was reviewed to determine whether or not changes to the project would affect the mitigation measures contained therein. Given the analysis and information provided above, no changes to the analysis found in the 2002 EIR/EIS are required. Therefore, no mitigation measures are required for impacts associated with hydrology and water quality.

3.11 Land Use and Planning

A complete discussion of the land use and planning impacts of the Transfer Project as originally proposed is included in Section 3.4 of the Draft EIR/EIS. As discussed below, the changes to the Transfer Project would result in no new impacts or substantial increase in the severity of the impacts to land use and planning identified in the EIR/EIS. The overall impacts to land use and planning would be similar to those described in the EIR/EIS.

The environmental setting for the Project Area is discussed below along with impacts from implementation of the Proposed Project.

3.11.1 Existing Environmental Setting

The Imperial County General Plan sets forth land use and planning guidance for the portion of the Salton Sea located in Imperial County. The area surrounding the southern two-thirds of the Salton Sea contains the land use classifications of Agricultural, Urban Area, Community Area, and Rural Residential (Reclamation and IID 2002a).

Urban land uses surrounding the Salton Sea consist primarily of unincorporated communities adjacent to the Sea or in the Coachella and Imperial Valleys. Hot Mineral Spa/Bombay Beach is an unincorporated community that extends along the east shore of the Sea from the northern Imperial County line to Bombay Beach. Most urban land uses in this area are single-family homes and RV parks. Commercial uses mostly provide services for tourists and area residents. Industrial uses mostly consist of geothermal power production (Reclamation and IID 2002a).

The Proposed Project is located on the east side of the Salton Sea west of Highway 111 and is immediately east of the community of Bombay Beach, California. The Project Area is zoned for Open Space/Preservation (S-2-G) with a Community Area land use designation by Imperial County (Imperial County 2007, 2015a, 2022). The Project Area is located on IID-owned land on Assessor's Parcel Number 002-640-002, and is surrounded by private land on the north, the community of Bombay Beach to the west, land owned by the Bureau of Reclamation and leased to State Parks on the east, and the Salton Sea to the south.

The State of California's Natural Resources Agency has an equivalent Salton Sea Management Plan (SSMP) and 10-year Plan to implement DCMs in areas adjacent to the Salton Sea as well as to protect and enhance habitat for fish and wildlife.

3.11.2 Adopted 2002 EIR/EIS

Existing land use around the Sea is designated as open space, agricultural, or rural residential. Some of the lands surrounding the Sea are specifically designated for recreational purposes (such as fishing and birdwatching). Over the term of the Transfer Project, these activities may decline (as compared to the Baseline) as water quality in the Sea changes and the shoreline recedes. These fluctuations in elevation would expose areas of the Seabed in the north and south shores. No conflicts with adopted land use plans would occur as a result of the decline in the Sea's elevation because the Transfer Project does not include the rezoning of the exposed seabed. Also, the exposed seabed would remain a recreational amenity (Reclamation and IID 2002a).

3.11.3 Analysis of Project Changes

The Project Area is zoned for Open Space/Preservation (S-2-G) with a Community Area land use designation by Imperial County (Imperial County 2007, 2015a, 2022). The Project Area is surrounded by private land on the north, the community of Bombay Beach to the west, land owned by the Bureau of Reclamation and leased to State Parks on the east, and the Salton Sea to the south.

The Project Area is located adjacent to the community of Bombay Beach on undeveloped land. Implementation of the Proposed Project would not occur in a populated area and therefore would not physically divide an established community. The Proposed Project would not conflict with any applicable land use plan, policy, or regulation. Additionally, the Plot Study is expected to result in a net benefit to air quality by reducing the emissivity of the Salton Sea playa in the area and is in alignment with the State of California's SSMP. Impacts to land use and planning would be less than significant.

3.11.3.1 Cumulative Impacts

No cumulative impacts relating to land use and planning are expected to occur as a result of the Proposed Project.

3.11.4 Findings Related to Land Use and Planning

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to land use and planning, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to land use and planning that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to land use and planning requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to land use and planning identified in and considered by the adopted 2002 EIR/EIS.

3.11.5 Mitigation Measures

The 2002 EIR/EIS did not recommend mitigation measures as no significant impacts were identified. Given the analysis and information provided above, no changes to the analysis found in the 2002 EIR/EIS are required. Therefore, no mitigation measures are required for impacts associated with land use and planning.

3.12 Mineral Resources

A complete discussion of the mineral resources impacts of the Transfer Project as originally proposed is included in Section 3.3 of the Draft EIR/EIS. As discussed below, the changes to the Transfer Project would result in no new impacts or substantial increase in the severity of the impacts to mineral resources identified in the EIR/EIS. The overall impacts to mineral resources would be similar to those described in the EIR/EIS.

The environmental setting for the Proposed Project is discussed below along with impacts from implementation of the Plot Study.

3.12.1 Existing Environmental Setting

A number of mineral resources in Imperial County are currently being extracted. These mineral resources include gold, gypsum, sand, gravel, lime, clay, stone, kyanite, limestone, sericite, mica, tuff, salt, potash, and manganese. Several issues influence the extraction of mineral deposits in Imperial County, including the location of geologic deposition, the potential for impacts to the environment, and land use conflicts. As a result, the extraction of mineral resources is limited to a relatively small number of sites throughout the County (Imperial County 2016). The Project Area is not located near any mineral resources or mining sites.

The California Division of Mines and Geology recognizes the Salton Trough as an area underlain at shallow depths by thermal water of sufficient temperature for direct heat application. Separate geothermal anomalies are distributed throughout the Trough that have hotter fluids suitable for generation (Imperial County 2015b). Geothermal resource areas and sources of sand and gravel are generally located along the southern border of the Salton Sea; other resources are found in the

surrounding hills (Reclamation and IID 2002a). Nine known geothermal resource areas (KGRAs) have been identified in Imperial County: the Dunes KGRA, East Brawley KGRA, East Mesa KGRA, Glamis KGRA, Heber KGRA, North Brawley KGRA, Salton Sea KGRA, South Brawley KGRA, and Westmorland KGRA. The nine KGRAs are located throughout the County and vary in temperature, pressure, and chemical composition of brine solutions found in each area (Imperial County 2015b).

The County has identified Renewable Energy/Geothermal and Geothermal Overlay Districts, where important mineral resources occur within Imperial County. The Project Area is not within a KGRA or any mapped overlay districts (Imperial County 2015b).

3.12.2 Adopted 2002 EIR/EIS

Impact GS-8 addresses the potential for increased soil erosion along exposed playa of Salton Sea during operation of the Transfer Project. Implementation of the Transfer Project would result in a decrease in the elevation of the Sea, exposing up to 50,000 acres of previously inundated area which could be subject to wind and water erosion. However, the high salt content of the Salton Sea and the soils underlying the Sea cause a crust to form on the soils as they dry, which minimizes both wind and soil erosion. Therefore, impacts are less than significant (Reclamation and IID 2002a).

3.12.3 Analysis of Project Changes

The Proposed Project is not located within a KGRA or near any mineral resources or mining sites. Additionally, the Proposed Project does not include the extraction of any mineral resources. The Plot Study would evaluate the efficacy of several surface treatments to provide dust control habitat enhancements to the south of the community of Bombay Beach. These treatments would minimize erosion. Impacts are less than significant.

3.12.3.1 Cumulative Impacts

No cumulative impacts relating to mineral resources are expected to occur as a result of the Proposed Project.

3.12.4 Findings Related to Mineral Resources

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to mineral resources, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to mineral resources that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was

not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to mineral resources requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to mineral resources identified in and considered by the adopted 2002 EIR/EIS.

3.12.5 Mitigation Measures

The 2002 EIR/EIS did not recommend mitigation measures as no significant impacts were identified. Given the analysis and information provided above, no changes to the analysis found in the 2002 EIR/EIS are required. Therefore, no mitigation measures are required for impacts associated with mineral resources.

3.13 Noise

A complete discussion of the noise impacts of the Transfer Project as originally proposed is included in Section 3.10 of the Draft EIR/EIS. As discussed below, the changes to the Project would result in no new impacts or substantial increase in the severity of the impacts to noise identified in the EIR/EIS. The overall impacts to noise would be similar to those described in the EIR/EIS.

The environmental setting for the Project Area is discussed below. Noise impacts from implementation of the Plot Study are discussed in a report contained in Appendix E and summarized below (ECORP 2022d).

3.13.1 Existing Environmental Setting

3.13.1.1 Fundamentals of Noise and Environmental Sound

The decibel (dB) scale is logarithmic, not linear, and therefore sound levels cannot be added or subtracted through ordinary arithmetic. Two sound levels 10 dB apart differ in acoustic energy by a factor of 10. When the standard logarithmic decibel is A-weighted (dBA), an increase of 10 dBA is generally perceived as a doubling in loudness. When two identical sources are each producing sound of the same loudness, the resulting sound level at a given distance would be three dB higher than one source under the same conditions (FTA 2018).

3.13.1.2 Sound Propagation and Attenuation

Noise can be generated by a number of sources, including mobile sources such as automobiles, trucks and airplanes, and stationary sources such as construction sites, machinery, and industrial operations. Sound spreads (propagates) uniformly outward in a spherical pattern, and the sound level decreases (attenuates) at a rate of approximately 6 dB (dBA) for each doubling of distance from a stationary or point source (FHWA 2017). Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately 3 dBA

for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (FHWA 2017). No excess attenuation is assumed for hard surfaces like a parking lot or a body of water. Soft surfaces, such as soft dirt or grass, can absorb sound, so an excess ground-attenuation value of 1.5 dBA per doubling of distance is normally assumed. For line sources, an overall attenuation rate of three dB per doubling of distance is assumed (FHWA 2011).

3.13.1.3 Noise Descriptors

The decibel scale alone does not adequately characterize how humans perceive noise. The dominant frequencies of a sound have a substantial effect on the human response to that sound. Several rating scales have been developed to analyze the adverse effect of community noise on people. Because environmental noise fluctuates over time, these scales consider that the effect of noise on people is largely dependent on the total acoustical energy content of the noise, as well as the time of day when the noise occurs. The noise descriptors most often encountered when dealing with traffic, community, and environmental noise include the average hourly noise level (in L_{eq}) and the average daily noise levels/ community noise equivalent level (in L_{dn}/CNEL). The L_{eq} is a measure of ambient noise, while the L_{dn} and CNEL are measures of community noise (ECORP 2022d). Each is applicable to this analysis and defined in Table 3.13-1.

Table 3.13-1. Common Acoustical Descriptors

Descriptor	Definition
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.
Sound Pressure Level	Sound pressure is the sound force per unit area, usually expressed in micropascals (or 20 micronewtons per square meter), where 1 pascal is the pressure resulting from a force of 1 newton exerted over an area of 1 square meter. The sound pressure level is expressed in decibels as 20 times the logarithm to the base 10 of the ratio between the pressures exerted by the sound to a reference sound pressure (e.g., 20 micropascals). Sound pressure level is the quantity that is directly measured by a sound level meter.
Frequency, Hertz (Hz)	The number of complete pressure fluctuations per second above and below atmospheric pressure. Normal human hearing is between 20 Hz and 20,000 Hz. Infrasonic sound are below 20 Hz and ultrasonic sounds are above 20,000 Hz.
A-Weighted Sound Level, dBA	The sound pressure level in decibels as measured on a sound level meter using the A weighting filter network. The A-weighting filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Equivalent Noise Level, L_{eq}	The average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.
L_{max}, L_{min}	The maximum and minimum A-weighted noise level during the measurement period.

Table 3.13-1. Common Acoustical Descriptors

Descriptor	Definition
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded 1%, 10%, 50%, and 90% of the time during the measurement period.
Day/Night Noise Level, L_{dn} or DNL	A 24-hour average L_{eq} with a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the nighttime. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.4 dBA L_{dn}.
Community Noise Equivalent Level, CNEL	A 24-hour average L_{eq} with a five dBA "weighting" during the hours of 7:00 p.m. to 10:00 p.m. and a 10 dBA "weighting" added to noise during the hours of 10:00 p.m. to 7:00 a.m. to account for noise sensitivity in the evening and nighttime, respectively. The logarithmic effect of these additions is that a 60 dBA 24-hour L_{eq} would result in a measurement of 66.7 dBA CNEL.
Ambient Noise Level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Intrusive	That noise which intrudes over and above the existing ambient noise at a given location. The relative intrusiveness of a sound depends on its amplitude, duration, frequency, and time of occurrence and tonal or informational content as well as the prevailing ambient noise level.
Decibel, dB	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure. The reference pressure for air is 20.

The dBA sound level scale gives greater weight to the frequencies of sound to which the human ear is most sensitive. Because sound levels can vary markedly over a short period of time, a method for describing either the average character of the sound or the statistical behavior of the variations must be utilized. Most commonly, environmental sounds are described in terms of an average level that has the same acoustical energy as the summation of all the time-varying events (ECORP 2022d).

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within approximately one dBA. Various computer models are used to predict environmental noise levels from sources, such as roadways and airports. The accuracy of the predicted models depends on the distance between the receptor and the noise source. Close to the noise source, the models are accurate to within approximately one to two dBA (ECORP 2022d).

3.13.1.4 Fundamentals of Environmental Groundborne Vibration

Vibration Sources and Characteristics

Sources of earthborne vibrations include natural phenomena (e.g., earthquakes, volcanic eruptions, sea waves, landslides) or manmade causes (explosions, machinery, traffic, trains, construction equipment, etc.). Vibration sources may be continuous (e.g., factory machinery) or transient (e.g., explosions) (ECORP 2022d).

Ground vibration consists of rapidly fluctuating motions or waves with an average motion of zero. Several different methods are typically used to quantify vibration amplitude. One is the peak particle velocity

(PPV), another is the root mean square (RMS) velocity. The PPV is defined as the maximum instantaneous positive or negative peak of the vibration wave. The RMS velocity is defined as the average of the squared amplitude of the signal. The PPV and RMS vibration velocity (VdB) amplitudes are used to evaluate human response to vibration (ECORP 2022d).

Table 3.13-2 displays the reactions of people and the effects on buildings produced by continuous vibration levels. The annoyance levels shown in the table should be interpreted with care since vibration may be found to be annoying at much lower levels than those listed, depending on the level of activity or the sensitivity of the individual. To sensitive individuals, vibrations approaching the threshold of perception can be annoying. Low-level vibrations frequently cause irritating secondary vibration, such as a slight rattling of windows, doors, or stacked dishes. The rattling sound can give rise to exaggerated vibration complaints, even though there is very little risk of actual structural damage. In high-noise environments, which are more prevalent where groundborne vibration approaches perceptible levels, this rattling phenomenon may also be produced by loud airborne environmental noise causing induced vibration in exterior doors and windows (ECORP 2022d).

Ground vibration can be a concern in instances where buildings shake and substantial rumblings occur. However, it is unusual for vibration from typical urban sources such as buses and heavy trucks to be perceptible. For instance, heavy-duty trucks generally generate groundborne VdB levels of 0.006 PPV at 50 feet under typical circumstances, which as identified in Table 3.13-2 is considered very unlikely to cause damage to buildings of any type. Common sources for groundborne vibration are planes, trains, and construction activities such as earth moving, which requires the use of heavy-duty earthmoving equipment. For the purposes of this analysis, a PPV descriptor with units of inches per second is used to evaluate construction-generated vibration for building damage and human complaints (ECORP 2022d).

Table 3.13-2. Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration Levels

PPV (inches/second)	Approximate VdB	Human Reaction	Effect on Buildings
0.006–0.019	64–74	Range of threshold of perception	Vibrations unlikely to cause damage of any type
0.08	87	Vibrations readily perceptible	Threshold at which there is a risk of architectural damage to extremely fragile historic buildings, ruins, ancient monuments
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Threshold at which there is a risk of architectural damage to fragile buildings. Virtually no risk of architectural damage to normal buildings
0.25	94	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to historic and some old buildings

Table 3.13-2. Human Reaction and Damage to Buildings for Continuous or Frequent Intermittent Vibration Levels

PPV (inches/second)	Approximate VdB	Human Reaction	Effect on Buildings
0.3	96	Vibrations may begin to feel severe to people in buildings	Threshold at which there is a risk of architectural damage to older residential structures
0.5	103	Vibrations considered unpleasant by people subjected to continuous vibrations	Threshold at which there is a risk of architectural damage to new residential structures and modern industrial/commercial buildings

Source: Caltrans 2020

3.13.1.5 Noise Sensitive Land Uses

Noise-sensitive land uses are generally considered to include those uses where noise exposure could result in health-related risks to individuals, as well as places where quiet is an essential element of their intended purpose. Residential dwellings are of primary concern because of the potential for increased and prolonged exposure of individuals to both interior and exterior noise levels. Additional land uses such as hospitals, historic sites, cemeteries, and certain recreation areas are considered sensitive to increases in exterior noise levels. Schools, churches, hotels, libraries, and other places where low interior noise levels are essential are also considered noise-sensitive land uses (ECORP 2022d). Sensitive receptors may also be non-human species. Many riparian bird species are sensitive to excessive noise (Reclamation and IID 2002a).

The nearest existing sensitive receptors to the Project Area are several single-family residences located on the Aisle of Palms, which is directly adjacent to the western border of the Project Area.

3.13.1.6 Existing Ambient Noise Environment

Imperial County General Plan Noise Element

The County of Imperial General Plan Noise Element establishes maximum allowable average-hourly noise limits for various land use designations as shown in Table 3.13-3. The standards imply the existence of a sensitive receptor on the adjacent, or receiving, property. In the absence of a sensitive receptor, an exception or variance to the standards may be appropriate (Reclamation and IID 2002a). In instances where the adjoining land use designations differ from that of the noise-generating land use, the more restrictive noise standard shall apply. Where the ambient noise level is equal to or exceeds the property line noise standard, the increase of the existing or proposed noise shall not exceed 3 dBA L_{eq} , which is a just-perceivable increase in noise (ECORP 2022d).

Table 3.13-3. Imperial County Property Line Noise Standards

Land Use Zones	Time Period	Average-Hourly Noise Level (dBA L_{eq})
Residential	7:00 a.m. – 10:00 p.m. 10:00 p.m. – 7:00 a.m.	50 45
Multi-Residential	7:00 a.m. – 10:00 p.m. 10:00 p.m. – 7:00 a.m.	55 50
Commercial	7:00 a.m. – 10:00 p.m. 10:00 p.m. – 7:00 a.m.	60 55
Light Industrial/Industrial Park	Any time	70
General Industrial	Any time	75

Source: Imperial County 2015c; Reclamation and IID 2002a
Notes: When the noise-generating property and the receiving property have different uses, the more restrictive standard shall apply. When the ambient noise level is equal to or exceeds the Property Line noise standard, the increase of the existing or proposed noise shall not exceed 3 dBA L_{eq}.

Construction Noise Standards

Construction noise, from a single piece of equipment or a combination of equipment, shall not exceed 75 dB L_{eq}, when averaged over an eight (8) hour period, and measured at the nearest sensitive receptor. This standard assumes a construction period, relative to an individual sensitive receptor of days or weeks. In cases of extended length construction times, the standard may be tightened so as not to exceed 75 dB L_{eq} when averaged over a one (1) hour period (ECORP 2022d).

Construction equipment operations are required to be limited to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, and 9:00 a.m. to 5:00 p.m. Saturday. No commercial construction operations are permitted on Sunday or holidays. In cases of a person constructing or modifying a residence for himself/herself, and if the work is not being performed as a business, construction equipment operations may be performed on Sundays and holidays between the hours of 9:00 a.m. and 5:00 p.m. Such non-commercial construction activities may be further restricted where disturbing, excessive, or offensive noise causes discomfort or annoyance to reasonable persons of normal sensitivity residing in an area (ECORP 2022d; Reclamation and IID 2002a).

3.13.2 Adopted 2002 EIR/EIS

In general, noise-generating activities include traffic and air travel, and industrial and agricultural. Noise-generating activities associated with the Transfer Project include construction and pump operation. Temporary and short-term impacts during construction and impacts from operation would occur, including impacts from vehicles and equipment required to construct, operate, and maintain new facilities (Reclamation and IID 2002a).

Construction of the water conservation components of the Transfer Project and Project Alternatives and of the habitat creation under the HCP would be typical of current on-farm building construction/ improvements in terms of equipment and traffic noise. Operation of the conservation components of the Transfer Project would include the use of various electric pumps similar to pumps currently in use on-farm (Reclamation and IID 2002a).

The Salton Sea subregion was not discussed in the impact analysis because under the Transfer Project, no new facilities would be constructed and no changes in operations would occur that would result in noise impacts (Reclamation and IID 2002a).

3.13.3 Analysis of Project Changes

3.13.3.1 Project Construction/Implementation Noise

Construction noise associated with the Proposed Project would be temporary and would vary depending on the nature of the activities being performed. Noise generated would primarily be associated with the operation of off-road equipment for onsite construction activities as well as construction vehicle traffic on area roadways. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction (e.g., land clearing, grading, excavation, paving). Noise generated by construction equipment, including earth movers, pile drivers, and portable generators, can reach high levels. Typical operating cycles for these types of construction equipment may involve one or two minutes of full power operation followed by three to four minutes at lower power settings. Other primary sources of acoustical disturbance would be random incidents, which would last less than one minute (such as dropping large pieces of equipment or the hydraulic movement of machinery lifts). During construction, exterior noise levels could negatively affect sensitive land uses in the vicinity of the construction site.

The nearest existing noise-sensitive land use to the Project Area are several single-family residences located along the western border of the Project Area boundary. As previously described, the County's General Plan Noise Element states construction equipment operation shall be limited to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturdays. No commercial construction operations are permitted on Sundays or holidays. Construction noise, from a single piece of equipment or a combination of equipment, must not exceed 75 dB L_{eq}, when averaged over an eight-hour period, and measured at the nearest sensitive receptor. This standard, established by the County to prevent physical and mental damage consistent with exposure to excessive noise, assumes a construction period, relative to an individual sensitive receptor of days or weeks.

It is assumed that construction would only take place during daytime hours (7:00 a.m. to 7:00 p.m.) (see Mitigation Measure NOI-1 below). The nearest off-site sensitive receptors to the Project Area are approximately 80 feet west of the Project Area boundary. However, it is acknowledged that the majority of construction equipment is not situated at any one location during construction activities, but rather spread throughout the Project Area and at various distances from sensitive receptors. Therefore, this analysis employs the FTA guidance for calculating construction noise, which recommends measuring construction noise produced by all construction equipment from the center of the Project Area (FTA 2018), which in this case is approximately 1,374 feet from the nearest sensitive receptor. The anticipated

short-term construction noise levels generated for the necessary stationary and mobile equipment during each phase is presented in Table 3.13-4.

Table 3.13-4. Construction Average (dBA) Noise Levels at Nearest Receptor

Equipment	Estimated Exterior Construction Noise Level at Existing Residences	Construction Noise Standards (dBA L_{eq})	Exceeds Standards?
Access Road Equipment	57.0 dBA	75	No
Irrigation Equipment	56.8 dBA	75	No
Sand Fencing Equipment	44.0 dBA	75	No
Site Exclusion Equipment	57.2 dBA	75	No
Site Preparation Equipment	53.4 dBA	75	No
Vegetation Enhancement Equipment	53.0 dBA	75	No
Well Construction and Aquifer Testing Equipment	50.4 dBA	75	No

Source: Construction noise levels were calculated by ECORP Consulting using the FHWA Roadway Noise Construction Model (FHWA 2006). Refer to Appendix E for Model Data Outputs.
Notes: Construction equipment used based on the Dust Control Plan for Bombay Beach Plot Study (Formation 2022a). The nearest residence is approximately 1,374 feet from the center of the Project Area. There is an estimated 3 dBA of shielding, due to the dirt berm along the western edge of the Project Area.
L_{eq} = The equivalent energy noise level, is the average acoustic energy content of noise for a stated period of time. Thus, the L_{eq} of a time-varying noise and that of a steady noise are the same if they deliver the same acoustic energy to the ear during exposure. For evaluating community impacts, this rating scale does not vary, regardless of whether the noise occurs during the day or the night.

As shown in Table 3.13-4, during construction activities no individual or cumulative piece of construction equipment would exceed the County's 75 dBA County construction noise standard during any phase of construction at the nearby noise-sensitive receptors.

3.13.3.2 Project Operational Noise

Operational noise impacts associated with the Project would include maintenance and monitoring of the irrigation system, would result in negligible noise impacts. Once construction is complete, no regular additional daily vehicle trips or personnel would be added to operate or maintain the Project Area. No major diesel-powered equipment would be required as part of ongoing Project operations. The operations of the Project include infrequent maintenance and monitoring of the irrigation system. This would produce brief, and in most cases, negligible noise levels.

3.13.3.3 Construction-Generated Vibration

Excessive groundborne vibration impacts result from continuously occurring vibration levels. Increases in groundborne vibration levels attributable to the Proposed Project would be primarily associated with short-term, construction-related activities. Construction on the Project Area would have the potential to

result in varying degrees of temporary groundborne vibration, depending on the specific construction equipment used and the operations involved. Ground vibration generated by construction equipment spreads through the ground and diminishes in magnitude with increases in distance.

Construction-related ground vibration is normally associated with impact equipment such as pile drivers, jackhammers, and the operation of some heavy-duty construction equipment, such as dozers and trucks. It is not anticipated that pile drivers would be necessary during Project construction. Vibration decreases rapidly with distance and it is acknowledged that construction activities would occur throughout the Project Area and would not be concentrated at the point closest to sensitive receptors. Groundborne vibration levels associated with typical construction equipment are summarized in Table 3.13-5.

Table 3.13-5. Representative Vibration Source Levels for Construction Equipment

Equipment Type	PPV at 25 Feet (inches per second)
Large Bulldozer	0.089
Pile Driver	0.170
Loaded Trucks	0.076
Hoe Ram	0.089
Jackhammer	0.035
Small Bulldozer/Tractor	0.003
Vibratory Roller	0.210

Source: FTA 2018; Caltrans 2020

Imperial County does not regulate vibrations associated with construction. However, a discussion of construction vibration is included for full disclosure purposes. For comparison purposes, the Caltrans recommended standard of 0.3 inch per second PPV with respect to the prevention of structural damage for older residential buildings is used as a threshold (Caltrans 2020). This is also the level at which vibrations may begin to annoy people in buildings. Consistent with FTA recommendations for calculating construction vibration, construction vibration was measured from the center of the Project Area (FTA 2018). The nearest structure of concern to the construction site, with regard to groundborne vibrations, are the residences on the western boundary of the Project Area, which are approximately 1,374 feet from the center of the Project Area.

Based on the representative vibration levels presented for various construction equipment types in Table 3.13-6 and the construction vibration assessment methodology published by the FTA (2018), it is possible to estimate the potential project construction vibration levels. The FTA provides the following equation:

$$[PPV_{equip} = PPV_{ref} \times (25/D)^{1.5}]$$

Table 3.13-6 presents the expected Project related vibration levels at a distance of 1,374 feet.

Table 3.13-6. Construction Vibration Levels at 1,374 Feet							
Receiver PPV Levels (in/sec)					Peak Vibration	Threshold	Exceed Threshold?
Large Bulldozer, Caisson Drilling, and Hoe Ram	Loaded Trucks	Jack-hammer	Pile Driver	Vibratory Roller			
0.000	0.000	0.000	0.000	0.001	0.001	0.2	No

Notes: Based on the Vibration Source Levels of Construction Equipment included on Table 3.13-5 (FTA 2018).
Distance to the nearest structure of concern is approximately 1.374 feet measured from Project Area Boundary

As shown in Table 3.13-6, vibration as a result of construction activities would not exceed 0.2 PPV at the nearest structure. Thus, Project construction would not exceed the recommended threshold.

3.13.3.4 Operational Groundborne Vibration

Project operations would not include the use of any large-scale stationary equipment that would result in excessive vibration levels. Therefore, the project would not result groundborne vibration impacts during operations.

3.13.3.5 Excessive Airport Noise

The Project Area is located approximately 13.4 miles northeast of the Salton City Airport in Salton City and 16.5 miles northwest of the Calipatria Municipal Airport in Calipatria. The Imperial County Airport Land Use Commission has established a set of land use compatibility criteria for lands surrounding the airports in Imperial County in the Imperial County Airport Land Use Compatibility Plan (1996). As identified in the Imperial County Airport Land Use Compatibility Maps, the Proposed Project Area lays outside of the noise contours of all airports (Imperial County 1996). Therefore, the Project would not expose Project workers to excessive airport noise

3.13.3.6 Best Management Practices

As listed in Section 2.5 of this report, the Proposed Project would implement the following best management practices:

- All construction equipment, fixed or mobile, will be equipped with properly operating and maintained mufflers, consistent with manufacturer standards.
- All stationary construction equipment will be placed so that emitted noise is directed away from the noise sensitive receptors nearest the Project Area.
- As applicable, shut off all equipment when not in use.

- Equipment staging shall be located in areas that create the greatest distance between construction-related noise/vibration sources and sensitive receptors surrounding the Project Area.
- No amplified music and/or voice will be allowed on the construction site.
- In accordance with the County Guidelines, construction equipment shall be limited to the hours of 7:00 a.m. to 7:00 p.m., Monday through Friday, and 9:00 a.m. to 5:00 p.m. on Saturdays. No commercial construction operations are permitted on Sundays or holidays.

3.13.3.7 Cumulative Impacts

Cumulative Construction Noise

Construction activities associated with the Proposed Project and other construction projects in the area may overlap, resulting in construction noise in the area. However, construction noise impacts primarily affect the areas immediately adjacent to the construction site. Construction noise for the Proposed Project was determined to be less than significant following compliance with the County construction noise standards. Cumulative development in the vicinity of the Project Area could result in elevated construction noise levels at sensitive receptors in the Project Area. However, each project would be required to comply with the applicable noise limitations on construction. Therefore, the Project would not contribute to cumulative impacts during construction.

Cumulative Stationary Source Noise Impacts

Long-term stationary noise sources associated with the development in the Project Area, combined with other cumulative projects, could cause local noise level increases. Noise levels associated with the Proposed Project and related cumulative projects together could result in higher noise levels than considered separately. As previously described, onsite noise sources associated with the Proposed Project were found to be minimal and would not be a substantial source of stationary noise. Therefore, the Project would not contribute to cumulative impacts during operations.

3.13.4 Findings Related to Noise

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to noise, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to noise that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no

substantial new information indicating that there would be a new significant impact to noise requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to noise identified in and considered by the adopted 2002 EIR/EIS.

3.13.5 Mitigation Measures

The 2002 EIR/EIS did not recommend mitigation measures as no significant impacts were identified. Given the analysis and information provided above, no changes to the analysis found in the 2002 EIR/EIS are required. Therefore, no mitigation measures are required for impacts associated with noise. Recommendations for best management practices during construction are incorporated into the project description (see Section 2.5) to avoid impacts related to noise.

3.14 Population and Housing

A complete discussion of the population and housing impacts of the Transfer Project as originally proposed is included in Section 3.14 and 5.2 of the Draft EIR/EIS and Section 3.17 of the Final EIR/EIS. As discussed below, the changes to the Project would result in no new impacts or substantial increase in the severity of the impacts to population and housing identified in the EIR/EIS. The overall impacts to population and housing would be similar to those described in the EIR/EIS.

The environmental setting for the Project Area is discussed below along with impacts from implementation of the Plot Study.

3.14.1 Existing Environmental Setting

The Project Area is located adjacent to the community of Bombay Beach, a census-designated place by the U.S. Census Bureau, within unincorporated Imperial County. Bombay Beach has a population of 215 and 415 total housing units (U.S. Census Bureau 2020). Of the 415 housing units, 88 units (approximately 21 percent) are occupied and 327 units are vacant (Census Reporter 2020).

The Plot Study Project Area is zoned for Open Space/Preservation (S-2-G) with a Community Area land use designation by Imperial County (Imperial County 2007, 2015a, 2022). The Project Area is surrounded by private land on the north, the community of Bombay Beach to the west, land owned by the Bureau of Reclamation and leased to State Parks on the east, and the Salton Sea to the south.

3.14.2 Adopted 2002 EIR/EIS

The Transfer Project analyzes population at the county level and using larger population centers. The population of Riverside County in 2000 was 1,545,387, mostly concentrated in the western portion of the County. In the vicinity of the Salton Sea, the larger population centers include Coachella (22,724), Indio (49,116), and Palm Desert (41,155). The combined population of all unincorporated areas in the County in 2000 was 32,773 (Reclamation and IID 2002a).

Under Impact S-5, implementation of the Transfer Project would result in an acceleration of the adverse effects on Riverside and Imperial Counties by up to 11 years as compared to the baseline conditions. Under the Transfer Project, all operational boat launching and mooring facilities would become non-operational in year 2007; salinization of the Salton Sea would be accelerated, resulting in changes to the Sea's sport fishing industry; and salinity of the Salton Sea would exceed the levels at which sargo, gulf croaker, and tilapia could successfully reproduce so populations of these sport fish would be expected to decline. The annual contribution to the regional economy associated with recreational uses of the Salton Sea would decrease. The value of the lost business output over this period would be about 790 million dollars. Additionally, the reduction of the elevation and increase in salinity of the Salton Sea could indirectly result in a decrease in population and/or housing growth in the communities surrounding the Sea as recreational resources associated with Salton Sea would be adversely impacted (Reclamation and IID 2002a).

3.14.3 Analysis of Project Changes

The population of Bombay Beach has decreased from 395 at the time of the 2002 Draft EIR/EIS to 215 in 2020. Additionally, housing vacancy has increased as 179 housing units were occupied in 2000 while 88 housing units are occupied as of 2020 (U.S. Census Bureau 2000, 2020).

The Plot Study does not involve construction of housing, and water generated under the study would be used to establish vegetation on the Salton Sea playa. Workers are expected to commute from nearby areas and construction would be short term in nature. Therefore, the Plot Study would not be expected to increase population or result in the need for additional housing in the area. Therefore, there would be no impact.

3.14.3.1 Cumulative Impacts

No cumulative impacts relating to population and housing are expected to occur as a result of the Proposed Project.

3.14.4 Findings Related to Population and Housing

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to population and housing, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to population and housing that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect

not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to population and housing requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to population and housing identified in and considered by the adopted 2002 EIR/EIS.

3.14.5 Mitigation Measures

The 2002 EIR/EIS did not recommend mitigation measures as no significant impacts were identified. Given the analysis and information provided above, no changes to the analysis found in the 2002 EIR/EIS are required. Therefore, no mitigation measures are required for impacts associated with population and housing.

3.15 Public Services

A complete discussion of the public services impacts of the Transfer Project as originally proposed is included in Section 3.12 of the Draft EIR/EIS. As discussed below, the changes to the Transfer Project would result in no new impacts or substantial increase in the severity of the impacts to public services identified in the EIR/EIS. The overall impacts to public services would be similar to those described in the EIR/EIS.

The environmental setting for the Project Area is discussed below along with impacts from implementation of the Plot Study.

3.15.1 Existing Environmental Setting

3.15.1.1 Police Services

Police services are provided by the Imperial County Sheriff's Office (ICSO), through the Niland substation which is located approximately 13.9 miles southeast of the Project Area. Bombay Beach is a part of ICSO's North County Patrol Division, which also includes Niland, Palo Verde, Salton City, and rural areas of Brawley, Calipatria, and Westmorland (ICSO 2022).

3.15.1.2 Fire Services

Fire services to the area are provided by Imperial County Fire Department and further supplemented by the Bombay Beach Volunteer Fire Association (Imperial County Fire Department 2022; Imperial County 1999). The nearest station is located in the community of Niland, approximately 14 miles southeast of the Project Area.

3.15.1.3 Schools

The Bombay Beach community area is located in the Calipatria Unified School District (CUSD), which serves the communities of Calipatria, Niland, and Bombay Beach in Imperial County. CUSD encompasses approximately 480 square miles, bordering the southeastern part of the Salton Sea (CUSD 2022). The nearest school, Grace Smith Elementary School, is approximately 13.70 miles southeast of the Project Area.

3.15.2 Adopted 2002 EIR/EIS

The Transfer Project would not induce population growth in the Salton Sea region, therefore fire protection, police service, parks, and schools would not be affected. No impacts to public services are expected and no mitigation is required (Reclamation and IID 2002a).

3.15.3 Analysis of Project Changes

The Proposed Project does not involve construction of housing and will not induce population growth. Construction workers are expected to commute from nearby areas and construction would be short term in nature. Therefore, the Plot Study would not be expected to result in the need for additional public services in the area. No impact would occur and no mitigation is required.

3.15.3.1 Cumulative Impacts

No cumulative impacts relating to public services are expected to occur as a result of the Proposed Project.

3.15.4 Findings Related to Public Services

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to public services, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to public services that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to public services requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to public services identified in and considered by the adopted 2002 EIR/EIS.

3.15.5 Mitigation Measures

The 2002 EIR/EIS did not recommend mitigation measures as no significant impacts were identified. Given the analysis and information provided above, no changes to the analysis found in the 2002 EIR/EIS are required. Therefore, no mitigation measures are required for impacts associated with Public Services.

3.16 Recreation

A complete discussion of the recreation impacts of the Transfer Project as originally proposed is included in Section 3.6 of the Draft EIR/EIS and Section 4, Errata of the Final EIR/EIS. As discussed below, the changes to the Project would result in no new impacts or substantially increase the severity of the impacts to recreation identified in the EIR/EIS. The overall impacts to recreation would be similar to those described in the EIR/EIS.

The environmental setting for the Project Area is discussed below along with impacts from implementation of the Plot Study.

3.16.1 Existing Environmental Setting

The varied terrain in the County allows for multiple parks and recreation opportunities including hiking, boating, fishing, hunting, and off-highway activities. Many of these opportunities are located on land under Federal or State jurisdiction, but multiple smaller parks are located in the urban areas of the County. The State and Federal governments manage large amounts of open space in Imperial County, the largest being the California Desert Conservation Area under BLM jurisdiction. State and Federal also has protected areas, including a number of wilderness areas (Imperial County 2016).

Five parks in the County are operated by ICPDS including Sunbeam Lake Park, Wiest Lake Park, Red Hill Marina Park, Ocotillo Community Park, and Palo Verde Park. These County parks offer a variety of passive and active recreation opportunities, including playground equipment, basketball courts, picnic tables, barbecue grills, campsites, walking trails, boating and fishing opportunities, and open space for passive recreation (Imperial County 2016).

Visitors travel to the Salton Sea year-round for recreational opportunities. In recent decades, recreational activities in the area of the Salton Sea have moved away from direct water/body contact activities, such as swimming and water skiing, to indirect water/body contact activities, such as sport fishing and boating. Additionally, the Salton Sea and surrounding areas provide other popular recreational activities, such as bird watching, wildlife observation, camping, hiking, picnicking, hunting, boating, and fishing (Reclamation and IID 2002a).

The east shore of the Sea extends from the community of Desert Beach to just south of the community of Bombay Beach. The relatively undifferentiated topography and low-growing desert scrub vegetation of the east shore afford the best views of the Salton Sea. Resort facilities along the east shore are in various

stages of disrepair because of increasing water elevations during the late 1970s which caused problems with paving, picnic tables, and landscaped areas of the North Shore Yacht Club and Marina. The boat launching facility at North Shore Marina is nonoperational. Three operational boat-launching facilities exist along the east shore, including one at the Salton Sea State Recreation Area. Recreational uses along the east shore include camping, power boating, sailing, personal watercraft racing, windsurfing, fishing, and sunbathing (Reclamation and IID 2002a).

3.16.2 Adopted 2002 EIR/EIS

The discussion of impacts in the 2002 EIR/EIS is based in part on visitor use numbers for the three major recreational facilities at the Salton Sea (Sonny Bono Salton Sea National Wildlife Refuge, Salton Sea State Recreation Area, and Imperial Wildlife Area – Wister unit) and modeling conducted by Reclamation to predict the salinity, elevation, and surface area of the Salton Sea (Reclamation and IID 2002a).

Potential recreational impacts are closely linked to the quality and physical character of the aquatic environment within each subregion; therefore, the discussion of impacts is related to those in the biological resources and water quality and hydrology sections. Additionally, aesthetic values, such as visual quality and occurrence of odors, could impact recreational resources. Therefore, the discussion of impacts is also related to the aesthetic impact assessment. Furthermore, potential impacts to recreation would indirectly affect the economic health of the project region of influence, linking this section to the socioeconomic impact assessment (Reclamation and IID 2002a).

Under Impact R-5, implementation of the Transfer Project would result in the reduction in the amount of Salton Sea area available for water-related recreation. With the Transfer Project, the elevation of the Sea is anticipated to decline to approximately -250 feet msl and the surface area would be reduced to 167,000 acres by the year 2077. This decline is the worst-case scenario and assumes a maximum level of conservation of 300 KAFY accomplished via on-farm irrigation improvements and water delivery system improvements with no fallowing. The reductions in surface area would reduce the amount of total water area available for recreation on the Salton Sea. Public recreation use information for the Salton Sea reflects a mean visitor use of 475,000 people annually (approximately 1,301 visitors per day). A calculation of the total number of visitors per day divided by the total number of square miles available under existing conditions yields a current (2002) use density of the Salton Sea of about 3.6 people per square mile. Under the Baseline, the use density would be about 3.8 people per square mile. Assuming visitor use numbers remained somewhat constant in the future, calculations of the reduced surface area show that implementation of the Transfer Project would result in an increase from the Baseline density of 3.8 to a density of 5.0 people per square mile. This increase in density of slightly more than one person per square mile of lake area would not significantly impact recreational use on the Sea (Reclamation and IID 2002a).

Under Impact R-6, an increase in exposed playa could be used as additional recreation area. Reduced water areas would result in increased amounts of exposed playa surrounding the Salton Sea. These areas could provide more area for land-based recreation activities, including camping and picnicking. This could be viewed as a potential beneficial impact to land-based recreation at the Salton Sea. It should be noted, however, that use of exposed playa for off-road vehicles recreation would significantly increase the

potential of fugitive dust. The estimated additional area available for recreation would be nearly 78 square miles, however, not all of this area would be accessible for recreation because of lack of access roads, for example, or access limitations by the property owners. Implementation of the Transfer Project accelerates shoreline exposure. The recreational impacts of acceleration of shoreline exposure would be minimal. Therefore, although exposure of the shoreline could be beneficial for land-based recreation, it is considered a less than significant impact (Reclamation and IID 2002a).

Under Impact R-7, a reduction in Salton Sea elevation would render boat launching and mooring facilities inoperable. The decline in Salton Sea elevation and surface area as a result of the Transfer Project would impact operational boat launching and mooring facilities that provide access to the Salton Sea for recreational boating. The Sea would recede from boating facilities gradually as inflows decline. Operational boat launching and mooring facilities currently extend an average of 20 to 30 feet from the existing shoreline and would be impacted if the shoreline of the Salton Sea receded beyond the extent of these facilities. This impact is anticipated when the elevation of the Salton Sea reaches -230 feet msl. Reduced inflows would result in areas of exposed playa primarily along the northern and southern shores of the Salton Sea where slope changes are gradual; however, areas of playa would also be exposed along the eastern and western shores where slope change is severe. The Transfer Project would be expected to reduce the elevation of the Sea to -230 feet msl by 2007, at which point all operational boat launching and mooring facilities would become nonoperational. By comparison, under the Baseline, the elevation of the Sea would decline to -230 feet msl by 2010. The Transfer Project would accelerate the occurrence of the impact by 3 years. In addition to accelerating the time when the boat launches are stranded in their existing location, the Transfer Project would result in an ultimate elevation of the Sea of approximately -250 feet msl compared to the Baseline, which results in an ultimate elevation of the Sea of approximately -235 feet msl. Impacts would be less than significant with the implementation of Mitigation Measure R-7 (Reclamation and IID 2002a).

Under Impact R-8, sport fishing opportunities would be reduced. Reduced inflow regimes from the Transfer Project would result in an accelerated increase in salinity in the Salton Sea. Increased salinity would impair fisheries, including sport fish and aquatic habitat and decrease the number of fish inhabiting the Sea. A reduction in the number of sport fish in the Salton Sea would potentially impact sport-fishing opportunities, as measured by a reduction in the number of visitor use days. As discussed in Section 3.14 of this Addendum, salinity of the Salton Sea under the Transfer Project would exceed the levels at which sargo, gulf croaker, and tilapia could successfully reproduce so populations of these sport fish would be expected to decline. Approximately 400,000 visitors use the Salton Sea for sport fishing every year (CVWD et al. 2002). This is a significant impact to recreation because it substantially decreases the opportunity for sport fishing by accelerating the decline projected under the Baseline. Impacts would be less than significant with implementation of Mitigation Measure R-8 (Reclamation and IID 2002a).

Under Impact R-9, there would be a reduced opportunity for bird watching and waterfowl hunting. Reduced inflow to the Salton Sea resulting from implementation of the Transfer Project would accelerate the increase in salinity in the Sea. Many avian species rely on the aquatic resources of the Salton Sea for food and habitat. Increasing salinity at the Sea would decrease food supply for fish-eating birds because the reproductive ability of fish would decline and would increase disease which would result in direct

mortality of avian species and a loss of habitat for avian nesting and foraging sites. Section 3.2 of the Draft EIR/EIS details the biological impacts to birds. However, avian habitat and hunting opportunities provided by managed wetlands in the vicinity of the Sea would not be directly impacted by loss of habitat because the wetlands and fowl management areas are hydraulically separate from the Salton Sea and because the facilities are managed independently. Loss of habitat through a reduction in water level at the Salton Sea would not occur at the managed wetlands. However, the quality of bird viewing at the Salton Sea would decrease, and the ability of visitors to view wildlife might decline. The effect of the Transfer Project would be to accelerate changes in fish abundance and the subsequent response of piscivorous birds by about 11 years compared to the Baseline. Impacts would be less than significant with implementation of Mitigation Measure R-9 (Reclamation and IID 2002a).

Under Impact R-10, a reduction in Salton Sea elevation could impact campgrounds and ancillary facilities. When water levels at the Salton Sea State Responsibility Area drop to 230 feet below msl, it would be necessary to relocate facilities, such as Varner Harbor and campgrounds, that are now located near the water. It also would be necessary to re-establish existing roads and trails that lead to the water, particularly in areas such as Mecca Beach, Sneaker Beach, and Old Camp. Decreasing water levels would expose footings and other remnants of the campgrounds that were covered when the water elevation increased during the late 1970s. These would have to be removed for safety and aesthetic considerations. In addition to accelerating the time when campgrounds are stranded from their existing location, the Proposed Project would result in an ultimate elevation of the Sea of approximately -250 feet msl compared to the Baseline which results in an ultimate elevation of the Sea of approximately -235 feet msl. Impacts would be less than significant with implementation of Mitigation Measure R-10 (Reclamation and IID 2002a).

3.16.3 Analysis of Project Changes

The Plot Study Project Area is zoned for Open Space/Preservation (S-2-G) with a Community Area land use designation by Imperial County (Imperial County 2007, 2015a, 2022). The Project Area is surrounded by private land on the north, the community of Bombay Beach to the west, land owned by the Bureau of Reclamation and leased to State Parks on the east, and the Salton Sea to the south.

The Plot Study will evaluate groundwater supply and quality, vegetation establishment in hedgerows, enhancement of existing vegetation through rainwater harvesting (bunds) techniques, and waterless DCMs. Access routes to the Project Area will be installed to support project development, operations, and maintenance of the wells and irrigation infrastructure. A speed limit of five miles per hour will be maintained by all vehicles to limit dust emissions. Due to the recreational uses of the playa, physical barriers will be installed to prevent vehicle disturbance to the Plot Study or damage to site features. Exclusion barriers will include hay bales, sand-fencing, and concrete barriers placed around the perimeter of the Project Area (Formation 2022a).

The Plot Study would not result in an increase in the population of the area. Therefore, there would be no impact on existing recreational facilities in the area. Public access to the Project Area would be prevented through the implementation of physical barriers, however, the Plot Study would not preclude or

significantly impact public access to the Salton Sea or other recreational uses in the area (Formation 2022a). Impacts would be less than significant.

3.16.3.1 Cumulative Impacts

No cumulative impacts relating to recreation are expected to occur as a result of the Proposed Project.

3.16.4 Findings Related to Recreation

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to recreation, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to recreation that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to recreation requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to recreation identified in and considered by the adopted 2002 EIR/EIS.

3.16.5 Mitigation Measures

Please refer to in Section 3.6 of the adopted 2002 EIR/EIS for complete analyses of Project impacts and mitigation measures (Reclamation and IID 2002a).

Mitigation Measure R-7: Implement one of the following two mitigations:

1. Select HCP (Salton Sea Portion) Approach 2. If Approach 2 is selected, impacts on elevation are avoided, and no impacts to boat launching facilities occur.

2. If HCP (Salton Sea Portion) Approach 1 is selected, impacts to the boat launching facilities would occur, so boat launching facilities and access to them must be relocated as the Sea declines to provide ongoing boat launching opportunities. The relocation of these facilities may be temporary and ongoing until the Sea reaches its minimum and stable elevation, at which point permanent facilities must be provided.

Mitigation Measure R-8: Selection of HCP (Salton Sea Portion) Approach 2 would be the only effective measure. This approach would include additional conservation via fallowing or other methods in the IID

water service area to allow drain water to continue to flow to the Sea at a rate equal to the Baseline, thereby avoiding impacts to the Sea associated with reduced flow: increased salinity leading to elimination of the sport fishery, elevation decline, and decreased surface area. With implementation of HCP Approach 2, this impact would be avoided; otherwise, the impact remains significant and unavoidable. Until an HCP Approach for the Salton Sea is selected, this impact will remain significant and unavoidable.

Mitigation Measure R-9: Implement one of the following two mitigations:

1. HCP (Salton Sea Portion) Approach 1 would create a fish hatchery and 5000 acres of ponds that would be maintained for the duration of the Transfer Project and provide piscivorous birds with a food source to replace the Salton Sea fishery. The ponds would be accessible to the public for bird watching. This approach would mitigate the impact to bird watching to less than significant.

2. HCP (Salton Sea Portion) Approach 2 would include additional conservation via fallowing or other methods in the IID water service area to allow drain water to continue to flow to the Sea at a rate equal to the Baseline, thereby avoiding impacts to the Sea associated with the reduced flow: increased salinity leading to elimination of sport fishery, elevation decline, and decreased surface area. Implementation of this approach would avoid impacts to bird watching.

Mitigation Measure R-10: Implement one of the following two mitigations:

1. Select HCP (Salton Sea Portion) Approach 2. If Approach 2 is selected, impacts to the elevation are avoided, and no impacts to camping and ancillary facilities occur.

2. If HCP (Salton Sea Portion) Approach 1 is selected, impacts to the camping facilities would occur, so these must be relocated as the Sea declines to provide ongoing camping opportunities. The relocation of these facilities may be temporary and ongoing until the Sea reaches its minimum, stable elevation, at which point permanent facilities must be provided.

3.17 Transportation

A complete discussion of the transportation and traffic impacts of the Transfer Project as originally proposed is included in Section 3.13 of the Final EIR/EIS. As discussed below, the changes to the Project would result in no new impacts or substantial increase in the severity of the impacts to transportation identified in the EIR/EIS. The overall impacts to transportation and traffic would be similar to those described in the EIR/EIS.

The environmental setting for the Project Area is discussed below along with impacts from implementation of the Plot Study.

3.17.1 Existing Environmental Setting

The community of Bombay Beach, California is located south of Highway 111, a two-lane state highway/expressway providing regional access to Imperial County. Highway 111 travels along the

northeast shore of the Salton Sea and is eligible for scenic highway designation from Bombay Beach to the County line (Imperial County 2008).

SR-78 is a two-lane east-west route running along the southwest shore of the Salton Sea. SR-78 is a two-lane conventional highway throughout its alignment, although some portions have been upgraded to a four-lane expressway and four-lane conventional highway (Imperial County 2008).

SR-86 is generally a north-south route and begins at the south near the Townsite of Heber as a two-lane conventional highway and ends to the north at the Riverside County line as a four-lane expressway and then to Interstate 10 (Imperial County 2008).

3.17.2 Adopted 2002 EIR/EIS

The 2002 EIR/EIS evaluation of transportation focused on the IID water service area because construction and operation of conservation measures could only occur there. The Salton Sea was not evaluated for impacts to traffic and transportation.

3.17.3 Analysis of Project Changes

The northwestern corner of the Project Area is east of the intersection of 1st Street and Aisle of Palms of the community of Bombay Beach.

Approximately 5,250 LF of access roads would be installed for access to the wells and irrigation infrastructure from the nearest improved roadway. Access roads will minimize impacts to existing vegetation. Access routes will be approximately 15 feet wide and will be traded and track rolled for compaction. A speed limit of five miles per hour will be maintained by all project-related vehicles to limit dust emissions. Access routes will be periodically moisture-conditioned using a water truck, as needed.

The Plot Study would generate a small amount of construction traffic on area roadways and occasional trips by employees involved in routine maintenance of the Project Area. The small number of irregular vehicle trips generated by these activities would not adversely affect the circulation in the area. Therefore, impacts would be less than significant.

The Project Area is not located in an area identified in an adopted emergency response plan or emergency evacuation plan. Plot Study activities would not impair the implementation of any adopted emergency response plan or emergency evacuation plan, or physically interfere with evacuation or emergency access to the area. Therefore, impacts would be less than significant.

3.17.3.1 Cumulative Impacts

No cumulative impacts relating to Transportation are expected to occur as a result of the Proposed Project.

3.17.4 Findings Related to Transportation

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002

EIR/EIS. The Proposed Project will not result in new significant environmental impacts to transportation and traffic, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to transportation and traffic that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to transportation and traffic requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to transportation and traffic identified in and considered by the adopted 2002 EIR/EIS.

3.17.5 Mitigation Measures

The 2002 EIR/EIS did not recommend mitigation measures as no significant impacts were identified. Based on the proposed modifications, the 2002 EIR/EIS was reviewed to determine whether or not changes to the Project would affect the mitigation measures contained therein. Given the analysis and information provided above, no changes to the analysis found in the 2002 EIR/EIS are required. Therefore, no mitigation measures are required for impacts associated with transportation and traffic.

3.18 Tribal Cultural Resources

A complete discussion of the cultural resources impacts, including on tribal cultural resources, of the Transfer Project as originally proposed is included in Sections 3.8 and 3.9 of the Draft EIR/EIS and Section 4, Errata of the Final EIR/EIS. As discussed below, the changes to the Project would result in no new impacts or a substantial increase in the severity of the impacts to tribal cultural resources identified in the EIR/EIS. The overall impacts to tribal cultural resources would be similar to those described in the EIR/EIS.

The environmental setting for the Project Area is discussed below.

3.18.1 Existing Environmental Setting

3.18.1.1 Ethnographic Context

Ethnohistorically documented tribes living in the Salton Sea region include the Kumeyayy/Kamia (part of the Salton Sea geographic subregion) and the Cahuilla (Salton Sea geographic subregion and southern Coachella Valley) (Reclamation and IID 2002a).

Kumeyayy/Kamia

South of the Salton Sea was home to the Kamia (a subdivision of the Kumeyaay), a sedentary agricultural people related culturally to the River Yumans (Reclamation and IID 2002a). The Kumeyaay (also known as Ipai and Tipai) are the Yuman-speaking native people of central and southwestern Imperial County, central and southern San Diego County, and the northern Baja Peninsula in Mexico. Spanish missionaries and settlers used the collective term Diegueño for these people, which referred to people living near the presidio and mission of San Diego de Alcalá. Today, these people refer to themselves as Kumeyaay or as Ipai and Tipai, which are northern and southern subgroups of Kumeyaay language speakers, respectively (Luomala 1978). The ancestral lands of the Kumeyaay extend north from Todos Santos Bay near Ensenada, Mexico to Agua Hedionda Lagoon in north San Diego County, and east to the Imperial Valley (ECORP 2022c).

While the Kumeyaay have been depicted as hunter/gatherers in ethnographic documents, some groups practiced agriculture in the Imperial Valley. Most groups had a mountain home base that provided acorns, greens, fruits, and abundant game. Each group operated out of its home base for most of the year. Seasonal campsites were scattered throughout their territory and used as needed, but their central villages were larger and permanently situated (Reclamation and IID 2002a).

Archaeological sites along the ancient shorelines of the Salton Trough are often recognized by a number of distinctive features, such as house rings with associated artifacts, sandstone slab hearths, cremations , artifacts sometimes covered with travertine, abundant obsidian and quartzite lithic debris, shell (abalone, *Olivella*, cardium, limpet, and mussel), fishbone, bird bones, and mammal bones (Reclamation and IID 2002a).

Cahuilla

The northern part of the Salton Sea was home to the Desert Cahuilla who practiced some agriculture. The southern border has been recorded as the San Felipe Creek and also as the Riverside/Imperial County line (Reclamation and IID 2002a).

The Cahuilla spoke a Takic language. The Takic group of languages is part of the Uto-Aztecan language family. The Cahuilla occupied a territory ranging from the San Bernardino Mountains in the north to the Chocolate Mountains and Borrego Springs in the south, and from the Colorado Desert in the east to Palomar Mountain in the west (ECORP 2022c).

Desert Cahuilla society was set up with a dozen or more land-holding clans, each with territory that ranged from desert or valley floor to mountain areas. Each clan included several lineages, each with an independent community area it owned within a larger clan area. Each lineage had ownership rights to various hunting and gathering areas. Hilly, rocky areas, cave sites, or walled cave sites were used for temporary camping, food storage, hunting blinds, and as fasting places for shamans (Reclamation and IID 2002a).

Cahuilla buildings consisted of dome-shaped or rectangular houses, constructed of poles covered with brush and above-ground granaries. Other material culture included baskets, pottery, and grinding implements; stone tools, arrow shaft straighteners and bows; clothing (e.g., loincloths, blankets, rope, sandals, skirts, and diapers); and various ceremonial objects made from mineral, plant, and animal substances (ECORP 2022c).

3.18.2 Adopted 2002 EIR/EIS

Cultural Resources

The Adopted 2002 EIR/EIS addresses ethnographic resources such as sites, areas, and materials important to Native Americans for religious, spiritual, or traditional uses. Ethnographic resources are often referred to as Tribal Cultural Resources (TCRs) under CEQA (Reclamation and IID 2002a).

For the Salton Sea geographic subregion, limited ethnographic existing setting information was collected from California Historical Resources Information System record searches conducted by the Imperial Valley College Desert Museum (Ocotillo) and University of California, Riverside. The NAHC was contacted to conduct a Sacred Lands File search for information on any sacred lands that might be present in the Salton Sea subregion and to secure a list of MLDs who should be contacted for information on TCRs. The NAHC reported no sacred lands within the Salton Sea geographic subregion (Reclamation and IID 2002a).

TCRs were identified through the joint efforts of Reclamation and Tetra Tech. Letters were sent to 29 tribal organizations in California and Arizona with traditional and historic ties to the area. The intent of correspondence was to initiate consultation on TCRs important to the tribes that may be affected by the Transfer Project. Of the 29 tribes contacted, 22 tribes stated they had no direct concerns about the Transfer Project. Four groups said they might have concerns. One group, the Torres-Martinez Desert Cahuilla Indians, stated specific concerns about cultural and ethnographic resources in and around the Salton Sea and about archaeological sites located on the US Navy Test Base that may be affected by restoration efforts. Several groups stated that they would like to participate in monitoring sensitive areas. The Kumeyaay Cultural Repatriation Committee stated they should be contacted immediately if human remains or buried goods are found during any construction activities (Reclamation and IID 2002a).

Indian Trust Assets

The 2002 EIR/EIS addresses existing Indian Trust Assets (ITAs) in the Salton Sea geographic subregion and potential impacts to ITAs associated with the implementation of federal components of the Transfer Project: (1) Reclamation's approval of the change in the point of diversion of up to 300 KAFY of Colorado River water conserved by IID (this action has the potential to affect ITAs along the Lower Colorado River); and (2) USFWS' approval of an Incidental Take Permit, under Section 10 of the Endangered Species Act (ESA) (this action has the potential to affect ITAs in the Salton Sea geographic subregion) (Reclamation and IID 2002a).

ITAs are legal assets associated with rights or property held in trust by the US for the benefit of federally recognized Indian Tribes or individuals. The US, as trustee, is responsible for protecting and maintaining rights reserved by, or granted to, Indian Tribes or individuals by treaties, statutes, and executive orders. All federal bureaus and agencies share a duty to act responsibly to protect and maintain ITAs. Reclamation's

policy is to protect ITAs from adverse impacts resulting from its programs and activities whenever possible. Reclamation, in cooperation with Tribe(s) potentially impacted by a given Project, must inventory and evaluate assets, and then mitigate, or compensate, for adverse impacts to the asset. While most ITAs are located on a reservation, they can also be located off-reservation. Examples of ITAs include lands, minerals, water rights, and hunting and fishing rights. ITAs include property in which a Tribe has legal interest (Reclamation and IID 2002a).

Torres-Martinez Desert Cahuilla Indians

The Torres Martinez Reservation is located on about 24,000 acres along the northern shore of the Salton Sea . About 11,800 acres of the reservation are currently inundated by the Sea. The Torres Martinez Indians have sought damages and compensation for lands claimed to be inundated or damaged by the Salton Sea. In 1996, a Settlement Agreement was reached to provide compensation to the Tribe and provide a permanent flowage easement to IID and CVWD over the Indian Trust lands. The issue was resolved when legislation required to implement the settlement was passed in 2001 as Title VI of Public Law 106-568 (Torres Martinez Desert Cahuilla Settlement Claims Act) (Reclamation and IID 2002a).

The Tribe's existing water rights (surface water and groundwater rights) are held in trust by the US. No specific hunting or fishing rights other than those granted to all citizens with proper CDFW permits have been identified in the subregion. CDFW regulates hunting and fishing in and around the Salton Sea , except within the Torres-Martinez Indian Reservation, where the Tribe is the primary regulatory and management authority. Significant gold deposits have been located on the Torres Martinez Reservation and are considered an ITA. The Torres Martinez Indians have indicated that they consider cultural resources located within the Torres Martinez Reservation to be ITAs as well (Reclamation and IID 2002a).

Reclamation's ITA Policy and NEPA Implementing Procedures (1994) indicate that cultural resources on tribal lands are frequently considered ITAs. Regardless, Torres-Martinez owns such resources on lands owned by the Tribe. Currently, approximately 70 archaeological resources are known to exist on the Torres Martinez Reservation. Cultural resources located off-reservation are unlikely to be considered trust assets of the Torres Martinez Band (Reclamation and IID 2002a).

Under Impact ITA-1, reduced inflow to the Salton Sea (-250 feet msl over the 75-year duration of the Transfer Project compared to the Baseline elevation of -235 feet msl) would result in the exposure of land containing natural and cultural resources that are considered by the Torres Martinez Desert Cahuilla Indians to be ITAs. This could have both adverse and beneficial impacts. Beneficial impacts could result from allowing scientific investigations of exposed resources, including archaeological data collection and natural resource exploitation. Exposure also could result in damage from vandalism and erosion, however (Reclamation and IID 2002a).

The Tribe has also expressed concerns that exposed land might be spoiled by salts, DDT, or other contaminants in the soils. The soils have not been tested for contamination. If this land were found to be suitable for agriculture or other purposes, exposure of the land would be a beneficial impact to the Tribe. The Tribe has also indicated that possible benefits could result if lower water levels prevented the use of existing boat launching facilities that are not tribally owned. If public boat ramp access is lost and access

moved onto tribal lands, the Torres Martinez Desert Cahuilla Indians would be able to charge boaters to launch their boats from tribal lands obtain revenues from public use of tribally-owned recreation facilities. There would be no impacts to ITAs under HCP (Salton Sea Portion) Approach 1 or Approach 2 (Reclamation and IID 2002a).

3.18.3 Analysis of Project Changes

A record search of the NAHC Sacred Lands File was completed for the Proposed Project and results were positive. The NAHC recommended contacting the Torres-Martinez Desert Cahuilla Indians for more information and provided a list of Native American tribes that may have knowledge of resources within the Project Area. These tribes include:

- Agua Caliente Band of Cahuilla Indians
- Quechan Tribe of the Fort Yuma Reservation
- Santa Rosa Band of Cahuilla Indians
- Soboba Band of Luiseno Indians
- Torres-Martinez Desert Cahuilla Indians

Pending the completion of agency consultation with Native American tribes, there are no Historical Resources, as defined by CEQA or Historic Properties, as defined by the NHPA, present within the Project Area. Recommendations for the management of unanticipated discoveries were provided and are incorporated into the Project Description (see Section 2.5) to avoid impacts on tribal cultural resources.

3.18.3.1 Cumulative Impacts

No cumulative impacts relating to tribal cultural resources are expected to occur as a result of the Proposed Project.

3.18.4 Findings Related to Tribal Cultural Resources

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to tribal cultural resources, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to tribal cultural resources that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no

substantial new information indicating that there would be a new significant impact to tribal cultural resources requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to tribal cultural resources identified in and considered by the adopted 2002 EIR/EIS.

3.18.5 Mitigation Measures

Please refer to Section 3.9 of the adopted 2002 EIR/EIS for complete analyses of Project impacts and mitigation measures (Reclamation and IID 2002a). As previously noted, recommendations for the management of unanticipated discoveries were provided and are incorporated into the Project description (see Section 2.5) to avoid impacts on tribal cultural resources.

HCP (Salton Sea Portion) Approach 1: Hatchery and Habitat Replacement: This HCP approach would provide for construction of 5,000 acres of ponds and one or more fish hatcheries on the Salton Sea. Final locations for the ponds have not been determined, but all would be located on the south end of the Sea, and none would impact the lands of the Torres Martinez Indian Reservation. Fish hatchery locations have also not been determined, but would not be located on the Torres Martinez Indian Reservation without the approval and cooperation of the Tribe. Supplemental environmental review will occur once final locations and design of this HCP alternative are complete, and prior to construction. However, based on the above information, there would be no impacts to ITAs under this approach.

HCP (Salton Sea Portion) Approach 2: Use of Conserved Water as Mitigation: This HCP approach would totally compensate for reduced inflow to the Sea, so that the impacts described in Impact ITA-1 would not occur. Since the inflow to the Sea would be maintained at Baseline levels, the impact from the reduced water surface elevation would be identical to the No Project condition, and there would be no impact to ITAs from the Proposed Project [Transfer Project].

3.19 Utilities and Service Systems

A complete discussion of the utilities and service system impacts of the Transfer Project as originally proposed is included in Section 3.12 of the Draft EIR/EIS. As discussed below, the changes to the Transfer Project would result in no new impacts or substantial increase in the severity of the impacts to utilities and service systems identified in the EIR/EIS. The overall impacts to utilities and service systems would be similar to those described in the EIR/EIS.

The environmental setting for the Project Area is discussed below along with impacts to utilities and service systems from implementation of the Plot Study.

3.19.1 Existing Environmental Setting

3.19.1.1 Water Service

CVWD supplies domestic water services to the Bombay Beach community area, not including the Project Area (Imperial County 1999). The Project Area is a part of IID's Imperial Unit, however there are no rights to water service (IID 2022b).

3.19.1.2 Wastewater and Storm Drainage

CVWD provides sewer service to the Bombay Beach community area. The CVWD sewage treatment plant is located on the north side of Highway 111 and the Southern Pacific Railroad (Imperial County 1999).

3.19.1.3 Electricity

Electrical service to the Bombay Beach area is provided by IID (Imperial County 1999). The IID energy service territory covers 6,471 square miles, including all of Imperial County along with parts of Riverside and San Diego counties (IID 2022c).

3.19.1.4 Natural Gas

There are no natural gas pipelines that serve the area (Imperial County 1999).

3.19.2 Adopted 2002 EIR/EIS

Public services and utilities related to potable water supply, treatment, and distribution; and wastewater collection, treatment, and disposal will not be impacted by the Transfer Project and alternatives because the water conservation and transfer would not result in the need for additional facilities, changes to distribution system components, or treatment of water delivered within any of the subregions. In addition, the Transfer Project and alternatives do not involve wastewater collection, treatment, or disposal or solid waste collection, disposal, or recycling. No impact would occur and no mitigation is required.

3.19.3 Analysis of Project Changes

The Proposed Project is not anticipated to require utility connections or the use of service systems. Solar-powered submersible electric pumps would be utilized to complete the new water wells and for initial testing. Four to six solar panels will be installed adjacent to each wellhead and wired to a pump controller, breaker, and lightning arrestor. Diesel generators or mobile equipment would be utilized for construction. Portable toilets would be utilized onsite for wastewater and the construction contractor would be responsible for bringing sufficient potable water onsite for their workers and disposing of any solid waste generated during construction in the nearest municipal landfill. Given the small number of workers anticipated and small amount of construction debris that would be generated, solid waste generated from the Plot Study would be minimal. Therefore, there would be less than significant impacts.

3.19.3.1 Cumulative Impacts

No cumulative impacts relating to utilities and service systems are expected to occur as a result of the Proposed Project.

3.19.4 Findings Related to Utilities and Service Systems

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to utilities and service systems, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to utilities and service systems that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to utilities and service systems requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to utilities and service systems identified in and considered by the adopted 2002 EIR/EIS.

3.19.5 Mitigation Measures

The 2002 EIR/EIS did not recommend mitigation measures as no significant impacts were identified. Given the analysis and information provided above, no changes to the analysis found in the 2002 EIR/EIS are required. Therefore, no mitigation measures are required for impacts associated with utilities and service systems.

3.20 Wildfire

A complete discussion of the hazards, including wildfire hazard, impacts of the Project as originally proposed is included in the QSA Programmatic Environmental Impact Report (PEIR). As discussed below, the changes to the Project would result in no new impacts or substantial increase in the severity of the impacts to hazards, including wildfire hazards, identified in the EIR/EIS. The overall impacts to hazards, including wildfire hazards, would be similar to those described in the EIR/EIS.

The environmental setting for the Project Area is discussed below.

3.20.1 Existing Environmental Setting

Imperial County recently updated its Multi-Jurisdictional Hazard Mitigation Plan (MHMP). The potential for wildfire or a major fire in the unincorporated areas of Imperial County is generally low due to the desert and agriculture topography of the County. Two fire hazard sites exist in the County, namely the fuel storage farms located south of the City of Imperial and east of Niland (Imperial County 2021).

In the event of a fire, assistance from various fire departments within the County would be required. The threat of fire spreading and causing major problems to other areas of the County are minimal due to the isolated locations of the fuel storage farms (Imperial County 2021).

The only area that shows a wildfire potential in Imperial County is a small area west of Ocotillo where San Diego and Imperial County merge. This area has very minimum risks because it is isolated and not near any residences. All other areas of the County have medium risks due to brush, but not wildfire areas containing large timber that present large scale disaster incidents that occur in other areas of Southern California (Imperial County 2021).

The California Department of Forestry and Fire Protection (CAL FIRE) Fire Hazard Severity Zone (FHSZ) Viewer shows that the Project Area and the surrounding area are not within a FHSZ, but are within a Local Responsibility Area (CAL FIRE 2022).

3.20.2 Adopted 2002 EIR/EIS

The 2002 EIR/EIS relied upon information developed in the QSA PEIR in assessing impacts related to wildfire. According to the QSA PEIR, no aspects of the Project would impair the implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan or increase the risk of or public exposure to wildland fires. The public would not be exposed to new hazardous situations. For the Salton Sea area, the QSA PEIR noted that the Transfer Project would accelerate the Sea's water surface elevation which would expose additional shoreline. The amount of bottom sediment that would be exposed would be relatively small which would limit the potential for public exposure to significant new hazardous conditions. Impacts would be less than significant (CVWD et al. 2002).

3.20.3 Analysis of Project Changes

The Project Area is located to the east of the community of Bombay Beach within the exposed former bed, or playa, of the Salton Sea which has been exposed over the last 16 years a result of seawater evaporation and decreased agricultural inflows. Slopes in the Project Area are very flat, ranging from 1 to 3 inches of vertical drop every 100 feet (ECORP 2022b).

The Plot Study is not within or near a State Responsibility Area or lands classified as a FHSZ (CAL FIRE 2022). In addition, the Project Area is located on a bare playa and due to the lack of fuel for a wildland fire, Plot Study activities would not exacerbate a risk of wildland fire. The Project Area is not in an area identified in an adopted emergency response plan or emergency evacuation plan. Project activities would not impair the implementation of, or physically interfere with any adopted emergency response plan or emergency evacuation plan.

Maintenance activities will include repairs to water supply and storage facilities as well as any needed repairs to drip laterals. Vegetation maintenance includes gap-filling and replanting of any dead or poorly performing plants. Maintenance of sand fence may include repair and replacement. Minor maintenance of the bunds to repair erosion associated with large storm flows may occur one to two times per year. Access routes will be installed for access to the wells and irrigation infrastructure and will minimize impacts to existing vegetation. These routes will be graded and track rolled for compaction. They will be periodically moisture-conditioned using a water truck, as needed. Access routes would not exacerbate fire risk. No impact would occur and no mitigation is required (Formation 2022a).

3.20.3.1 Cumulative Impacts

No cumulative impacts relating to wildfire are expected to occur as a result of the Proposed Project.

3.20.4 Findings Related to Wildfire

No New Significant Effects Requiring Major Revisions. Based on the foregoing analysis and information, there is no evidence that project modifications require a major change to the adopted 2002 EIR/EIS. The Proposed Project will not result in new significant environmental impacts to wildfire, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS.

No Substantial Change in Circumstances Requiring Major Revisions. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to wildfire that would require major changes to the adopted 2002 EIR/EIS.

No New Information Showing Greater Significant Effects than the Adopted EIR/EIS. This Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to wildfire requiring major revisions to the adopted 2002 EIR/EIS.

No New Information Showing Ability to Reduce Significant Effects in Previous EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to wildfire identified in and considered by the adopted 2002 EIR/EIS.

3.20.5 Mitigation Measures

The 2002 EIR/EIS did not recommend mitigation measures as no significant impacts were identified. Based on the proposed modifications, the 2002 EIR/EIS was reviewed to determine whether or not changes to the Project would affect the mitigation measures contained therein. Given the analysis and information provided above, no changes to the analysis found in the 2002 EIR/EIS are required. Therefore, no mitigation measures are required for impacts associated with wildfire.

3.21 Mandatory Findings of Significance

3.21.1 Mandatory Findings of Significance (XXI) Environmental Checklist and Discussion

With implementation of standard BMPs discussed in Section 2.5, implementation of the Proposed Project would not substantially increase the severity of impacts to fish and wildlife beyond those impacts discussed in the EIR/EIS for the Transfer Project. The Plot Study would result in no new significant environmental impacts to humans, either directly or indirectly. Additionally, the Plot Study is expected to result in a net benefit to air quality by reducing the emissivity of the Salton Sea playa in the area. Implementation of the Plot Study would not create new cumulative impacts, or substantially increase the severity of cumulative impacts beyond those impacts discussed in the Transfer Project EIR/EIS. Therefore, impacts would be less than significant.

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TECHNICAL MEMORANDUM

FORMATION ENVIRONMENTAL

UPDATED GROUNDWATER RESOURCES IMPACT ASSESSMENT, BOMBAY BEACH VEGETATION PROJECT, IMPERIAL COUNTY, CALIFORNIA

PREPARED FOR: Imperial Irrigation District

PREPARED BY: Mike Tietze, PG, CHG, CEG, Formation Environmental, LLC
Nat Beal, PG, Formation Environmental, LLC

DATE: June 2024

REGISTERED GEOLOGIST MICHAEL TIETZE No. HG 63 EXP. 04/30/25 CERTIFIED HYDROGEOLOGIST STATE OF CALIFORNIA

This technical memorandum presents the methods and results of an updated Groundwater Resources Impact Assessment (GRIA) to evaluate potential impacts associated with the extraction of groundwater for irrigation of vegetation at the Bombay Beach Vegetation Project (Project Site). An initial GRIA was developed by IID (2023) using preliminary data to provide an initial assessment of potential impacts to support preparation of an environmental document for the Bombay Beach Vegetation Project under the California Environmental Quality Act (CEQA). This updated GRIA provides a refined analysis based on conditions observed during installation and testing of three test wells.

As described by IID (2024), a test well program was initiated in 2023 to investigate the quality and quantity of shallow groundwater resources (less than 120 feet below ground surface [bgs]) for use as an irrigation water supply for long-term vegetation enhancement at the Project Site. As a result, the simulated model inputs and pumping rates used in the initial GRIA have been updated to reflect the site-specific data collected during the investigation. Thus, the predicted model results in the updated GRIA differ slightly from the preliminary results reported by IID (2023) in the initial GRIA; however, they do not change the impact conclusions summarized in Section 5.

The updated GRIA will be used to support the application for a Conditional Use Permit (CUP) required by Imperial County to operate the test wells as groundwater extraction wells. The updated groundwater model assumptions used to simulate the effects and potential environmental impacts from pumping the wells is described in Section 4. As summarized in Section 5, the potential groundwater resources-related impacts associated with the proposed groundwater extraction from the three supply wells over an operational period of 20 years will be less than significant without mitigation. Because the information provided in the updated GRIA does not change any impact conclusions or provide substantial new information, additional analysis under CEQA is not warranted or required.

1 BACKGROUND

The Project Site is located along the eastern shore of the Salton Sea, in Imperial County, California (Figure 1). Vegetation enhancement, which includes expansion and maintenance of existing vegetation, is

planned as a part of the Imperial Irrigation District's (IID) Salton Sea Air Quality Mitigation Program (SS AQMP).

Irrigation water supply development is necessary to support the Bombay Beach Vegetation Project. Water supplies are limited in this area, with no agricultural drains or other currently developed sources readily available for irrigation use. Potential water sources that are currently feasible to support the Bombay Beach Vegetation Project are limited to retention of storm water runoff and groundwater. Stormwater availability is not sufficient to meet the vegetation project objectives.

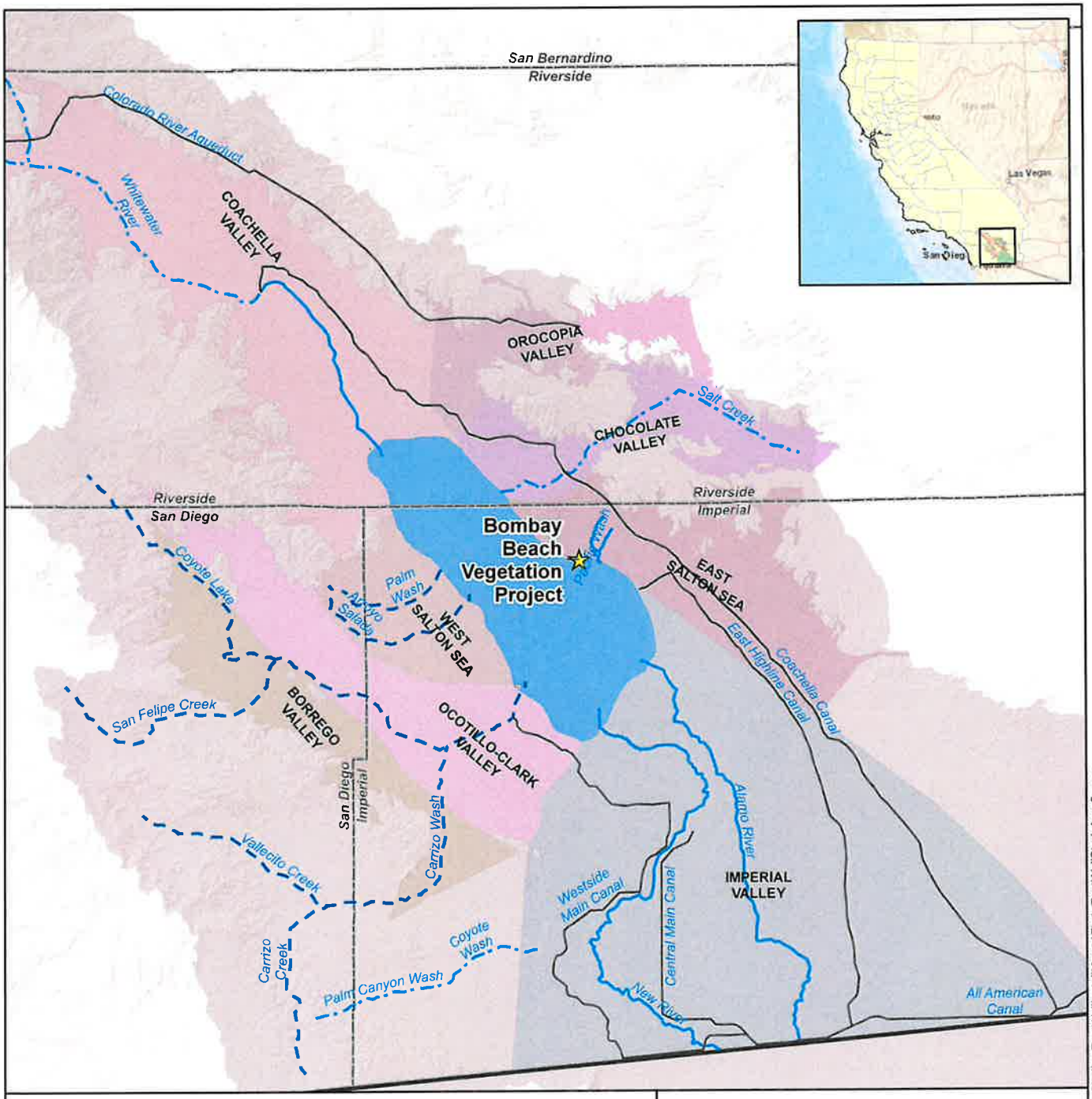
In 2023, three test wells (BB-TW-1 through BB-TW-3) were completed to total depths ranging from approximately 111 to 118 feet below ground surface (bgs). A groundwater supply zone was characterized from approximately 80 to 120 feet bgs. Investigation results demonstrate groundwater quality in the supply zone is feasible as planned for the long-term irrigation of salt-tolerant vegetation and raises no new concerns about potential adverse effects related to water quality. However, groundwater will need to be blended with a fresher water source during the short-term (three to four months) germination phase, due to the salinity levels measured in the test wells and plant sensitivity to salinity during germination. Water demand is minimal during germination, and blending can be readily accomplished by transporting limited quantities of freshwater obtained from a local water supply system into the water storage tanks installed as part of the irrigation system. Based on the limited duration, water quantity and freshwater quality involved, no impacts are anticipated. In addition, the water supply capacities for the shallow test wells are adequate to meet the project water demands.

2 PROJECT DESCRIPTION

A detailed project description is included in the Final Addendum for the Bombay Beach Plot Study (IID 2023a) and key information is summarized below for the purposes of this GRIA. The Bombay Beach Vegetation Project is located on the east side of the Salton Sea (Figure 1) west of Highway 111, and is immediately east of the community of Bombay Beach, California (Figure 2). The Project Site is located on IID-owned land on Assessor's Parcel Number 002-640-002, and is surrounded by private land on the north, the community of Bombay Beach to the west, land owned by the Bureau of Reclamation (BOR) and leased to State Parks on the east, and the Salton Sea to the south (Figure 2). The locations of the test wells are shown in Figure 2.

The Bombay Beach Vegetation Project includes groundwater supply development, establishment of new vegetation, maintenance of existing vegetation, stormwater retention and spreading features (bunds), and waterless dust control measures (DCMs). The overall goal of the Project is to mitigate dust and understand the site-specific factors that affect DCM effectiveness, as well as project operations, maintenance, and costs. The Project includes potential expansion of vegetation-based dust control on the east side of the Salton Sea. The test wells will be converted to supply wells under a CUP. New vegetation will be established in hedgerows, irrigated, and monitored; and existing vegetation will be monitored and irrigated as needed to maintain and enhance plant vigor.

Vegetation will be established by planting the *Allenrolfea occidentalis* (ALOC) Playa Seed Mix developed for use around the Salton Sea in hedgerows to augment existing drought-resistant and salt-tolerant vegetation in the area. Initially, planting will take place on about 85 acres within the Project Site shown in Figure 3. In the future, this area may be expanded as stated above.



State Boundary
Counties
Salton Sea
Salton Sea Watershed

Rivers and Streams

Stream; Braided Stream
Ephemeral Stream
Stream Intermittent
Canal; Aqueduct; Intracoastal Waterway

Groundwater Basins

Borrego Valley
Chocolate Valley
Coachella Valley
East Salton Sea
Imperial Valley
Ocotillo-Clark Valley
Orocopia Valley
West Salton Sea

Notes:
1. Background imagery source: ESRI Base Imagery, Terrain Hillshade: Airbus, USGS, NGA, NASA, CGIAR, NCEAS, NLS,OS, NMA, Geodatastyrelsen, GSA, GSI and the GIS User Community

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Air Quality Mitigation Program
Salton Sea

Figure 1
Project Location

DATE: JUN 27, 2024

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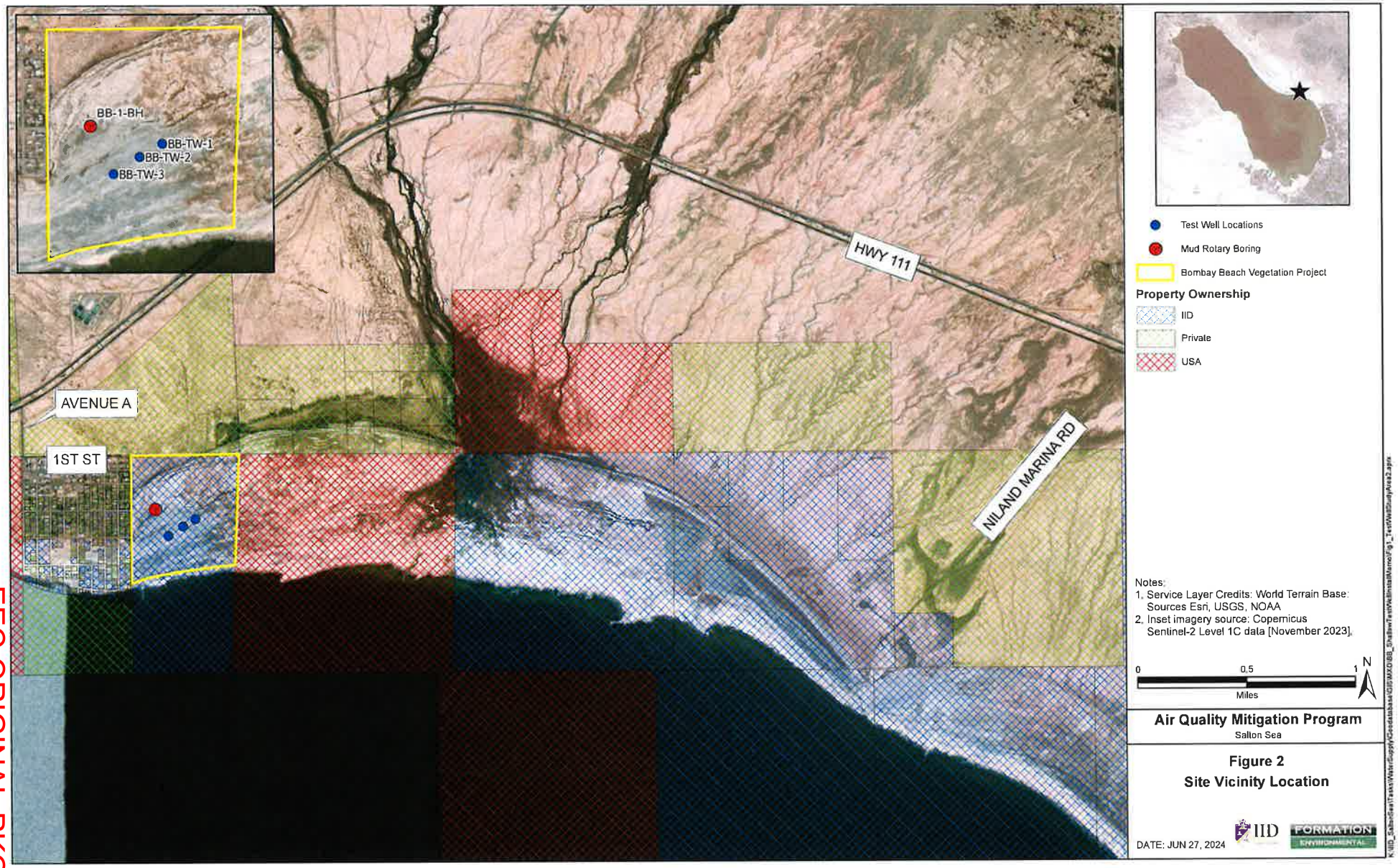

Air Quality Mitigation Program
Salton Sea

Figure 2
Site Vicinity Location

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The average annual groundwater irrigation demand to establish and maintain new vegetation as part of the Bombay Beach Vegetation Project is summarized in Table 1. The calculated demand assumes that ALOC Playa Seed Mix is planted in hedgerows that provide approximately 8 percent ground cover in the designated planting area. The irrigation water demand is proposed to be met by extracting groundwater (Table 1).

As noted in Table 1, based on the information available to date, the wells will likely provide excess pumping capacity above the demand of the planned vegetation hedgerows at the Project Site. Excess water may be used to irrigate a greater area or density of vegetation hedgerows, maintain existing drought-resistant and salt-tolerant vegetation in the surrounding portions of the Project Site and surrounding IID-owned land, and/or to help facilitate natural recruitment of additional vegetation in micro-catchments designed to retain storm water runoff. In some of these areas, existing ALOC, *Atriplex canescens* (ATCA), and *Sueda nigra* (SUNI) may be dependent on the regional groundwater table and could experience long-term stress due to ongoing groundwater level declines associated with receding water levels in the Salton Sea (Section 3.2). In other areas, ALOC, ATCA, and SUNI appear to use groundwater that temporarily perches on a shallow clay layer following significant rain events (Section 3.2). This shallow clay is relatively widespread beneath the playa east of Bombay Beach and is believed to be associated with deposition of lakebed sediments in ancient Lake Cahuilla (Section 3.3). The objective of this portion of the vegetation project is to augment the water supply for existing and naturally recruited vegetation as needed, using an adaptive management approach to address any observed plant stress.

Groundwater extraction will occur from three wells using solar-powered pumps, and irrigation water will only be pumped during daylight hours; however, the pumping rates summarized in Table 1 are presented as daily and long-term annual average rates. During vegetation establishment, it is assumed for this analysis that the combined average daily extraction rate over a 24-hour period from the supply wells will be 32 gallons per minute (gpm) (Table 1), which is equivalent to a combined pumping rate of 85 gpm for nine hours (maximum instantaneous pumping rate during daylight hours). It is assumed that the long-term average annual combined pumping rate will be 52 acre-feet/year (afy) for the wellfield. These rates are increased from those assumed in the initial GRIA based on the findings of the test well investigation and will not result in substantively changed effects or different impact conclusions, as discussed herein.

TABLE 1. AVERAGE ANNUAL WATER DEMAND AND GROUNDWATER SUPPLY

Water Balance Component	Average Annual Water Demand and Supply		
	gallons/day	acre-feet/year	gallons/minute
Irrigation Water Demand – 85 acres, up to 8% cover, within a 149-acre Project Site			
Year 1 (1.8 feet/year for planted area, including soil reclamation (salt flushing) and establishment of seedlings)	11,120	12.5	7.7
Years 2 through 4 (1.8 feet/year to establish juvenile plants in planted area)	11,120	12.5	7.7
Long-Term (10 inches/year for planted area)	5,148	5.8	3.6
Groundwater Supply to Meet Irrigation Water Demand			
Shallow Zone Groundwater Pumping Capacity (assumes pumping for 24 hrs/day)	46,080	52	32

Notes: Surplus groundwater will be used to irrigate existing vegetation in the plot study and surrounding IID-owned land within the area potentially affected by project drawdown, and potentially to supply future vegetation-based dust control measures.

As discussed in Section 3.3.3, a shallow supply zone was characterized from approximately 80 to 120 feet bgs. The San Andreas fault zone has been interpreted by others to extend within the Project Site where it bisects the wellfield. The precise location and hydraulic properties of the fault are not known, but faults often act as hydraulic barriers. Two test wells (BB-TW-1 and BB-TW-2) are located on the eastside of the mapped fault boundary and one test well is located on the westside of the fault boundary (BB-TW-3). As described in Section 4, the properties of the fault boundary were varied to evaluate the reasonable range of potential conditions associated with fault zone.

A long-term pumping test (up to approximately one month) will be conducted to assess the performance of the test wells, water quality, and water level response during diurnal solar pumping for an extended period. This test will be conducted under the test well construction permit issued for the Project, prior to approval of the CUP for long-term operation of the wells.

3 PROJECT SETTING

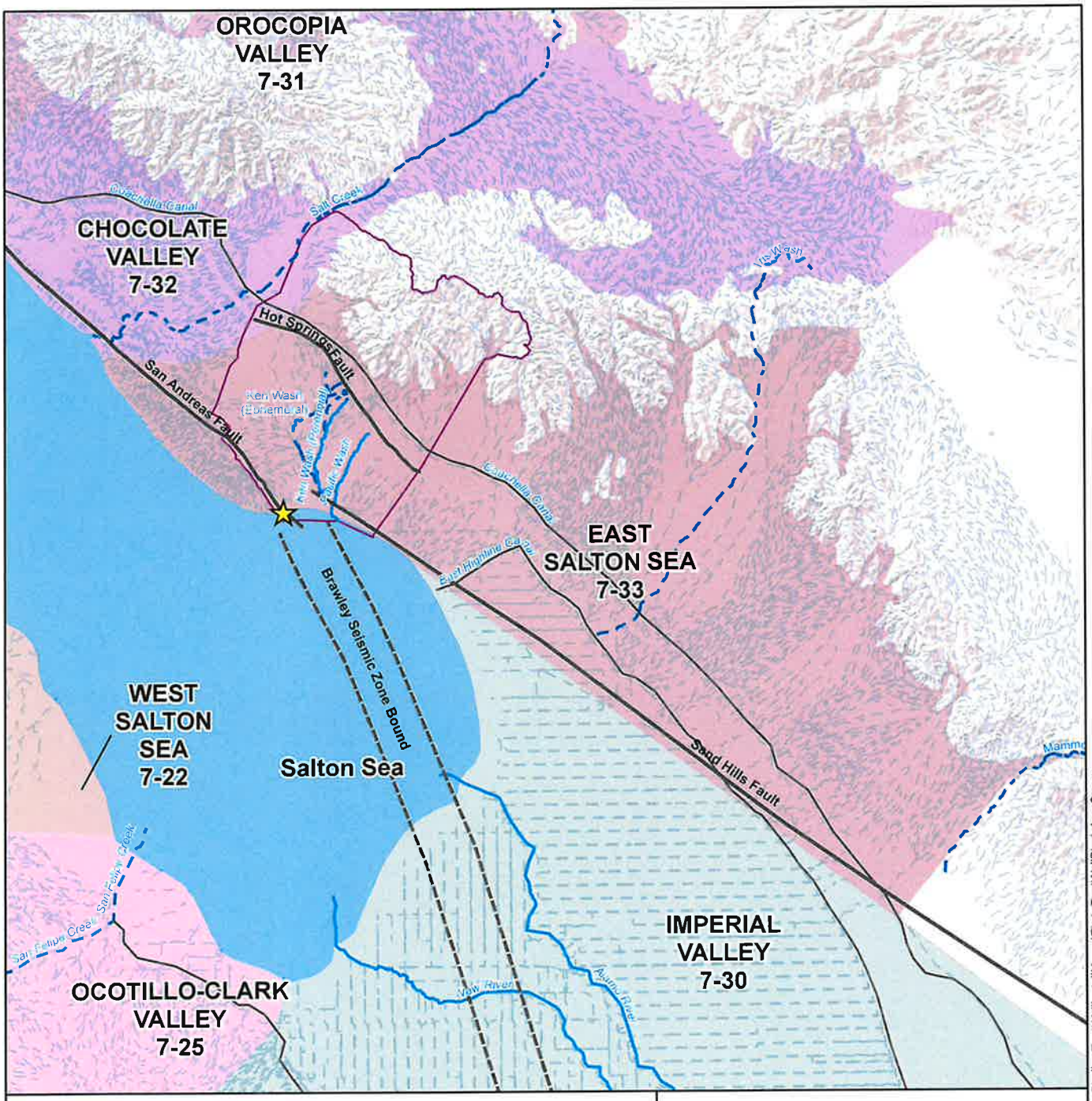
3.1 SURFACE HYDROLOGY

The watershed surrounding the Project Site is shown in Figure 4. The East Salton Sea Groundwater Basin is drained by Mammoth Wash and Iris Wash in the eastern portion and by Ken Wash and Pacific Wash in the western portion (Figure 4). Ken and Pacific Washes drain into the Bombay Beach Wetland, east of the Project Site, which drains directly into the Salton Sea (Figure 5). The Salton Sea is a terminal or closed basin with no outlets. Pacific wash receives perennial flow from the Fountain of Youth resort community

and its wastewater treatment plant in the Hot Mineral Spa area. Ken Wash has an east and a west channel (Figure 5). The west channel is ephemeral while the east channel receives perennial flow from Pacific Aqua Farms and two RV resort communities in the Hot Mineral Spa area (Bashford's Hot Mineral Spa), and an additional wastewater treatment plant. As discussed in Section 3.2, a relatively impermeable clay layer associated with deposits from ancient Lake Cahuilla is present in the shallow subsurface beneath these washes, keeping discharge from seeping into the subsurface and maintaining the flow in the washes. These washes converge at the Bombay Beach wetland, which is located approximately 1 mile east of the proposed test wells (Figure 5) and is maintained by their flow.

The Coachella Canal is located approximately 5 miles northeast of the Project Site, at the foot of the Chocolate Mountains. This canal runs from the southeast to northwest and is lined (Figure 5). As discussed in Section 3.2, there is evidence that leakage from the canal contributes to surface water discharge upslope from the Hot Mineral Spa area, and may contribute to perennial flow in Pacific Wash and the eastern branch of Ken Wash.

Several small wastewater treatment ponds operated by the Bombay Beach Community Services District are located to the northeast and northwest of the Project Site (Figure 5). No apparent surface water discharge occurs from these ponds.



Rivers and Streams

- Stream; Braided Stream
- Ephemeral Stream
- Canal; Aqueduct; Intracoastal Waterway

Faults Near Study Area

(Dashed Where Inferred)

- Brawley Seismic Zone
- Faults Near Study Area

- Salton Sea
- Approximate Watershed Bombay Beach Area

Groundwater Basins

- Chocolate Valley
- East Salton Sea
- Imperial Valley
- Ocotillo-Clark Valley
- Orocopia Valley
- West Salton Sea

Notes:

1. Background imagery source: ESRI Base Imagery, Terrain Hillshade: Airbus, USGS, NGA, NASA, CGIAR, NCEAS, NLS,OS, NMA, Geodatastyrelsen, GSA, GSI and the GIS User Community

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Air Quality Mitigation Program

Salton Sea

Figure 4

Hydrogeologic Setting

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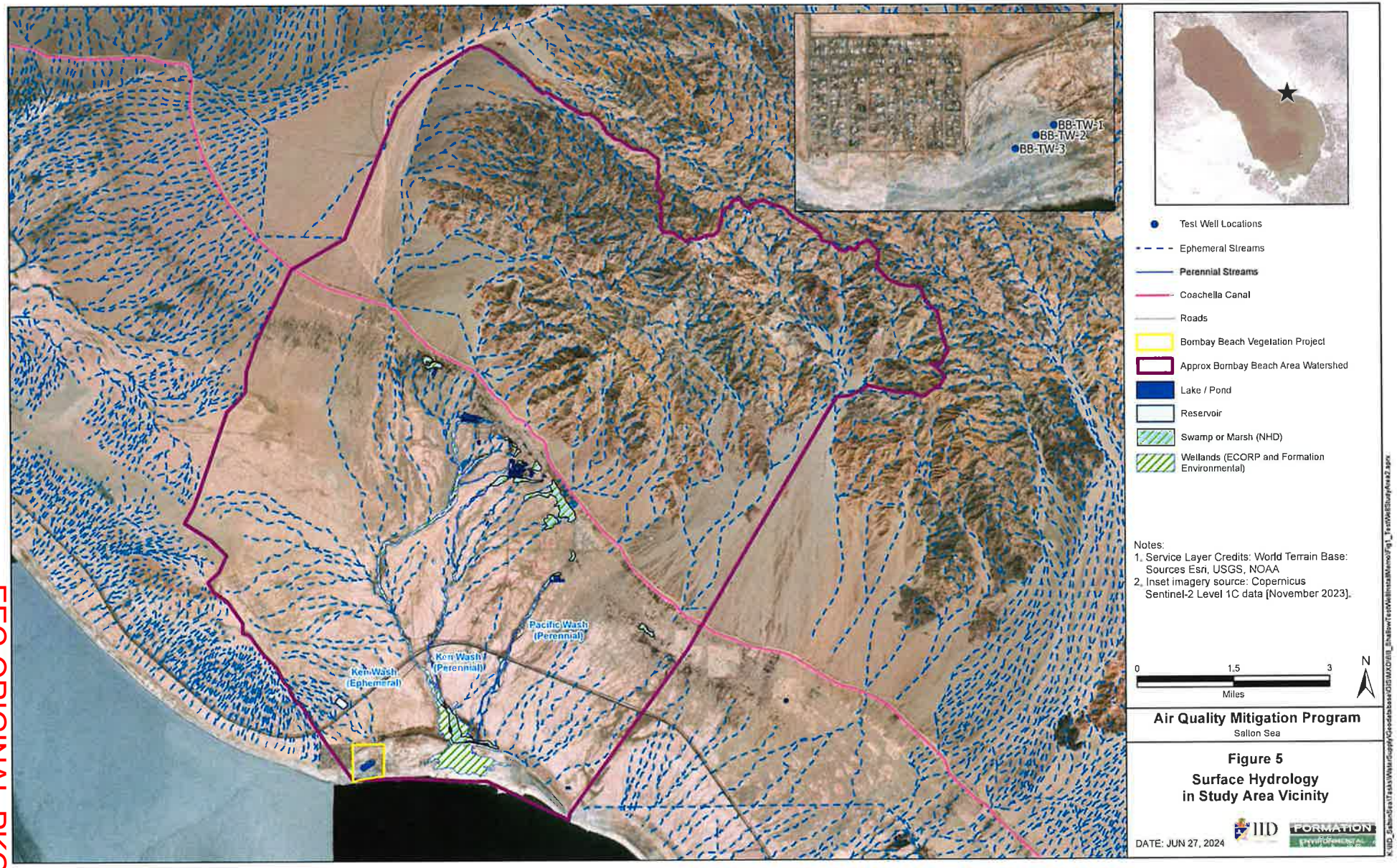

Air Quality Mitigation Program
Salton Sea

Figure 5
Surface Hydrology in Study Area Vicinity

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EEC ORIGINAL PKG

3.2 POTENTIAL GROUNDWATER-DEPENDENT VEGETATION

Potential groundwater dependent ecosystems (GDEs) near the Project Site are shown in Figure 6. These potential GDEs were identified using the Natural Communities Commonly Associated with Groundwater (NCCAG) dataset developed for the DWR by The Nature Conservancy (TNC) in cooperation with the California Department of Fish and Wildlife. Data were downloaded from the GDE Pulse website (TNC 2021). The mapped GDEs include the Bombay Beach wetland, aquatic and emergent wetland vegetation along Pacific and Ken Washes, and several areas of mapped alkali shrub wetland located north of the Salton Sea 2002 shoreline berm and near the Hot Mineral Spa and Frink areas. Additionally, recent vegetation mapping conducted by Formation in December 2021, identified local occurrences of ALOC and SUNI, which are classified as obligate phreatophyte species, at elevations below -201 feet above mean sea level (amsl) in the vicinity of the Project Site (Figure 6). Other potentially groundwater-dependent vegetation, including ATCA and *Atriplex lentiformis* (ATLE), were also found below this elevation. Finally, tamarisk (*Tamarix sp.*), a highly invasive phreatophyte species that utilizes large quantities of groundwater, is evident along Ken and Pacific Wash and in the upslope portions of the Bombay Beach wetland.

Our observations indicate that in some of the areas, the plant species described above may be dependent on the regional shallow groundwater table. The depth to the regional groundwater table increases with distance from the Salton Sea, which may explain the observed general limitation of these species below certain elevations. In these areas, this elevation line may be expected to shift seaward as the Salton Sea shoreline recedes and shallow groundwater levels fall.

Evidence of groundwater perching on a widespread shallow clay layer believed to be associated with sediments deposited in ancient Lake Cahuilla has been observed in many areas east and northeast of Bombay Beach. Near the Bombay Beach wetland and the perennial washes, this perched water appears to occur perennially, whereas, further to the east and west, perching of shallow groundwater appears to occur only after significant precipitation events. Phreatophyte vegetation dependent on perched groundwater would not be expected to be affected by decreases of shallow groundwater levels.

In the Durmid Hill area, described in Section 3.3.3 and located north and northwest of the community of Bombay Beach, the depth to groundwater is inferred to be greater than 20 feet bgs and there are no continuous clay layers that perch water. Thus, no GDEs are expected to occur in this area.

EEC ORIGINAL PKG

3.3 HYDROGEOLOGY

3.3.1 HYDROGEOLOGIC SETTING

The Bombay Beach Vegetation Project is located in the East Salton Sea Groundwater Basin (DWR Basin No. 7-33) (Figure 4). The East Salton Sea Groundwater Basin is bounded by rocks of the Chocolate Mountains on the north and east, by the San Andreas Fault on the south and west, and by the Sand Hills Fault on the south (Figure 4). The basin is 306 square miles in area (196,000 acres) (DWR 2004). A summary regarding the East Salton Sea Groundwater Basin is provided in Table 2. According to the California Department of Water Resources (DWR 2004, Sims 2017), the storage capacity is estimated to be approximately 360,000 acre-feet; however, the actual amount of groundwater in storage is qualified as unknown. Groundwater in the area generally moves in a southwesterly direction and presumably discharges to the Salton Sea or as evapotranspiration from the surrounding playa. Annual recharge to the basin is stated as being about 200 AFY but is also qualified as uncertain. The California Statewide Groundwater Elevation Monitoring (CASGEM) program designates the basin as a "very low" priority (DWR 2019). There are no CASGEM monitoring wells in the basin. The basin is not listed as being in critical overdraft (DWR 2016). According to the DWR (1999), water level measurements collected between 1963 and 2000 indicate that a steady decline has occurred; however, the location of these measurements is not indicated. A more detailed analysis of recent local groundwater level trends is presented in Section 3.3.4.

TABLE 2. SUMMARY OF EAST SALTON SEA GROUNDWATER BASIN

DWR Groundwater Basin Number	Approximate Area	CASGEM Priority	Critical Overdraft
7-33	196,000 acres	Very Low	No
Sources: DWR 2004, DWR 2016, DWR 2019			

Groundwater resources in the East Salton Sea Groundwater Basin are very sparsely developed. No evidence of current groundwater use has been observed or reported in the area within about 5 miles of the Project Site. According to the "Groundwater Exchange" website,[1] there are no drinking water supply wells in the basin. Several low-temperature shallow geothermal wells are located approximately 5 to 5.5 miles to the north of the Project Site in the Hot Mineral Spa geothermal area, which is further described in Section 3.3.3. These wells supply geothermal groundwater to the Fountain of Youth Spa, Bashford's Hot Mineral Spa, and Lark Spa, and to the Pacific Aquafarms fish farm. Discharges from these facilities provide perennial flow to Pacific Wash and the eastern branch of Ken Wash and represent a source of recharge to the perched aquifers that underly the lower portions of these watersheds, as discussed in Section 3.3.4.

[1] https://groundwaterexchange.org/basin/east-salton-sea-7-033

The groundwater quality in the basin is reported as not being suitable for domestic, municipal, or agricultural purposes (DWR 2004).

3.3.2 GEOLOGIC SETTING

The East Salton Sea Groundwater Basin is located within the Salton Trough, which is the northern extension of the Gulf of California tectonic zone and is the result of active rifting of the continental crust (Barker 2001). The Salton trough consists of a series of deep, complex pull-apart structures that formed as a result of strike-slip motion between the Pacific and North-American plates, after the Farallon plate subduction ceased. The San Andreas Fault system developed during the Miocene Epoch.

Pull-apart basins formed at step-overs along the strike-slip faults of the San Andreas Fault system, resulting in the actively subsiding Brawley Seismic Zone in Imperial Valley and beneath the southern portion of the Salton Sea. In the Gulf of California, the pull-apart basins evolved into short seafloor spreading segments (Ikediobi 2013).

In the vicinity of the Project Site, a transpressional ridge underlies Durmid Hill north of the community of Bombay Beach, where the southernmost San Andreas Fault zone changes gradually along the strike into the transtensional Brawley seismic zone (Figure 7) (Janecke et al. 2018). The active East Shoreline fault zone extends along the southwest side of the Durmid Hill area, whereas the San Andreas Fault is located to the northeast. In this area, Pliocene to modern sediments have been strongly folded and faulted by hundreds of faults that form the "Durmid ladder structure." This area is being uplifted, and the land surface consists of a wave-cut platform eroded during the most recent high water-level stand of Lake Cahuilla. Further to the east and southeast of Bombay Beach, gravity data indicate that the land is subsiding and is underlain by an accumulation of lacustrine and alluvial basin-fill sediments.

The portion of the Salton Trough in which the Salton Sea is located has been filled predominantly with continental sediments derived from the Colorado River delta from the north and by sediment from the adjacent Peninsular and Transverse Ranges from the west and northwest (Barker 2001). The oldest basin fill rock is the upper Miocene to Pliocene Imperial Formation, which is composed of marine sediments deposited in shallow water resulting from a transgression of the Gulf of California. Fluvial and deltaic sediments deposited by the Colorado River cut the Salton Sea area of the Salton Trough off from the Gulf of Mexico between 5.5 and 4.0 million years before present (Ma) and are represented by the Diablo Formation and transitional sediments attributed to the Palm Springs Group (Kirby et al. 2007, Belgarde 2007). The Borrego Formation was deposited in a mud-dominated perennial lake in the Pliocene and early Pleistocene, and consists primarily of mudstone and claystone, with minor amounts of sandstone derived from the Colorado River (Kirby et al. 2007).

Beginning approximately 1.1 Ma, lacustrine and alluvial sediments of the Brawley and Ocotillo Formations prograded abruptly over the Borrego Formation. These consist of fluvial-deltaic sands and silts of Colorado River origin; lacustrine clays, silts, and fine sands of Colorado River or local origin; mudstones with common sand-filled desiccation cracks; occasional eolian sands; and occasional evaporites of the Brawley Formation. Near the margins of the basin, these are interbedded with and grade into the Ocotillo

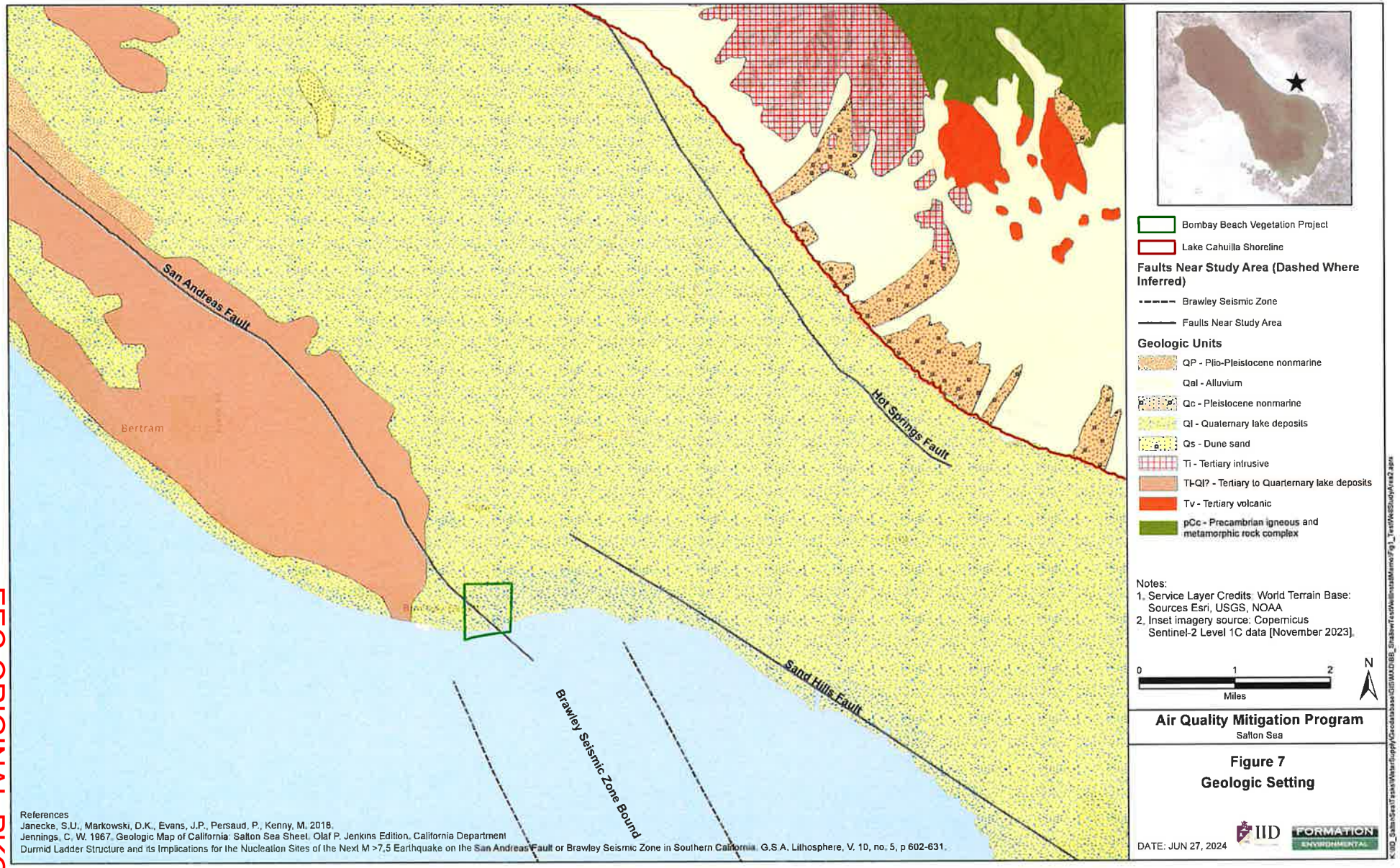
Formation, which consists of locally derived sands, pebbly sands and conglomerates of alluvial fan origin, and sands of local fluvial origin (Kirby et al. 2007). These sediments reflect repeated cycles of Colorado River inflow, lake formation, drying and subaerial exposure, and the influence of continued local sediment influx and alluvial fan progradation.

Holocene and Recent processes have deposited sedimentary sequences as a result of repeated filling of the ancient Lake Cahuilla basin when avulsions of the Colorado River caused it to flow northward into the basin instead of southward into the Gulf of Mexico. When the Colorado River flowed southward into the Gulf of Mexico, ancient Lake Cahuilla dried and subaerial exposure occurred. During these periods, sediments were derived primarily from local sources. At least four cycles of lake inundation and drying were inferred by Waters (1983) in the last 2,000 years, but other works have inferred additional inundation cycles related to Colorado River influx and climatic variability from the late Pleistocene to the present (Demere and Ekdale 2011). Reported sediment thicknesses range from less than 1 foot (deposited on a wave-cut surface, Hudnut 1989) to approximately 22 feet (Waters 1983); however, the timing and duration of inundation periods and the thickness of the accumulated sediments is an area of active research.

The groundwater-bearing sediments in the vicinity of the Project Site primarily consist of Holocene lacustrine and alluvial deposits overlying older Pleistocene to Pliocene lacustrine deposits of the Brawley Formation (Figure 7), and were deposited in ancient Lake Cahuilla, as described above. The lacustrine deposits are comprised of silts and clays with interbedded sandy zones. The layered packages of silts, clays, and interbedded fine sands are likely thicker toward the center of the basin and become thinner towards the mountain front where the topography slopes above the basin floor. This depositional process created lacustrine packages with laterally extensive confining units near the Project Site, resulting in the shallow and deeper groundwater zones described in Section 3.3.3. Along the mountain front, coarser sand and gravel alluvial deposits are present, with less fines. According to the DWR (2004), recharge to the basin is thought to be primarily from infiltration through these mountain front alluvial deposits.

Figure 7, based on Janecke and others (2018) and Jennings (1967), shows the mapped faults, along with the mapped geology, in the vicinity of the Project Site. The DWR (2004) described the San Andreas Fault as a potentially restrictive structure that may be an impedance to groundwater flow. The Hot Springs fault is also likely an impedance to groundwater flow. Finally, the Sand Hills fault is also potentially a restrictive structure. As described in Section 4, the extent and exact location of the San Andreas fault zone, which is mapped within Project Site by others and potentially bisects the wellfield, has not been confirmed. Modeling scenarios that span a reasonable range of conditions were therefore run to assess the potential effects of the fault.

The nearest reported subsidence monitoring station is the GPS monitoring station P505 (Imperial SpCS2006) NAM14 operated by UNAVCO. It is located approximately 6 miles north of the Project Site (UNAVCO 2022). No subsidence has been reported at this station since recording began in 2006.



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Jennings, C. W. 1967. Geologic Map of California: Salton Sea Sheet. Olaf P. Jenkins Edition. California Department
Durmid Ladder Structure and its Implications for the Nucleation Sites of the Next M >7.5 Earthquake on the San Andreas Fault or Brawley Seismic Zone in Southern California. G.S.A. Lithosphere, V. 10, no. 5, p 602-631.

3.3.3 HYDROSTRATIGRAPHIC UNITS

Figure 8 illustrates the hydrogeologic conceptual understanding of the area surrounding the Project Site, including the inferred extent of the major conceptual hydrostratigraphic units found in the upper 120 feet of strata. The aerial extent of these units is interpreted from the mapped geologic structures and geologic contacts between alluvial and lacustrine sediments. These hydrostratigraphic units define the groundwater systems found in the vicinity of the Project Site and represent the upper 120 feet of stratigraphy in the basin. Deeper hydrostratigraphic units are not described herein, because they are below the shallow groundwater supply zone evaluated herein.

The major hydrostratigraphic units in the vicinity of the Project Site are described below:

- **Lacustrine Units:** Includes a shallow lacustrine unit (upper groundwater zone) and a deeper sandy unit (shallow supply zone) that could be of lacustrine, alluvial or aeolian origin unit. The upper groundwater zone and the shallow supply zone are separated by a thick (30 feet) lacustrine aquitard (see Section 3.3.4.1 for more details). The test wells are completed within the deeper sandy materials the represent the shallow groundwater supply zone. Sediments are Pleistocene to Recent in age. The shallow lacustrine unit is comprised of interbedded packages consisting of sands, silty sands, and sandy silts, with a few thin clay interbeds. The deeper sandy unit is comprised of massive sands and sandy silts. Toward the mountain front, sediments may be increasingly interbedded with coarser alluvium that is locally derived from the Chocolate Mountains.

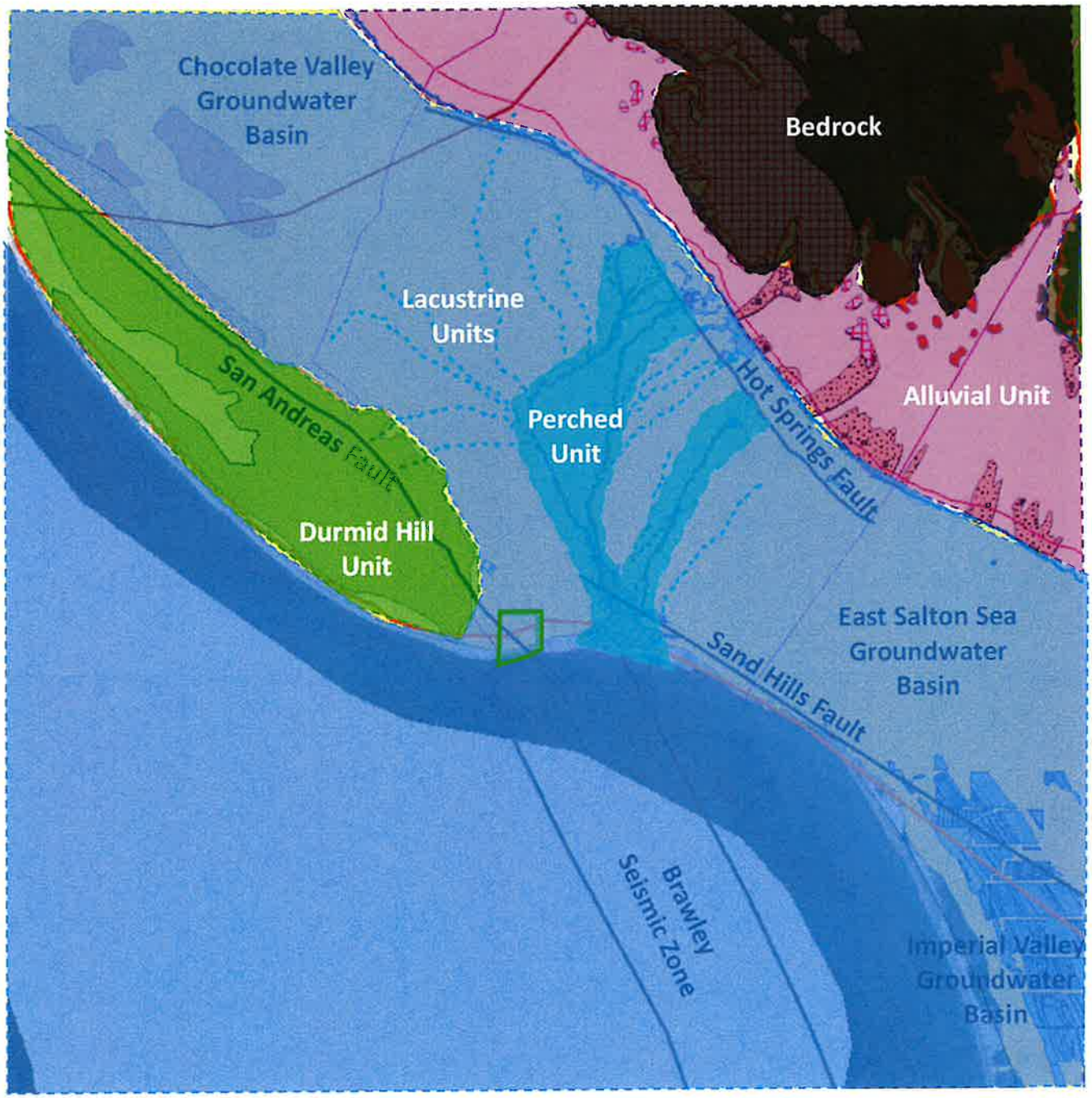
- **Alluvial Unit:** The alluvial unit borders the lacustrine unit to the north and northeast and is characterized by the coarser-grained sands and gravels that are proximal to the mountain front. The materials were derived from the Chocolate Mountains and deposited in alluvial fans along the mountain front, mostly uphill from the Hot Springs Fault.

- **Durmid Hill Unit:** The Durmid Hill unit borders the lacustrine unit to the west, in the area of the Durmid ladder structure. This unit is characterized by highly deformed, predominantly fine-grained lacustrine sediments of the Brawley Formation associated with the San Andreas Fault zone, described previously.

- **Perched Unit:** A perennial perched groundwater system, extending from the Bombay Beach wetland along Ken and Pacific washes, is comprised of sandy alluvial and aeolian water-bearing materials perched on top of fine-grained lacustrine sediments deposited during the latest incursion of ancient Lake Cahuilla, which hydraulically separates the perched horizon from the underlying lacustrine unit. Groundwater may also temporality perch elsewhere in the Project Site, following significant precipitation events, where the lacustrine perching unit(s) are present.

Major structural features important to our conceptual hydrogeologic understanding of the area include the Hot Springs and San Andreas Fault Zones, which may act as restrictive structures to groundwater flow, the contact between permeable alluvial sediments and crystalline bedrock of the Chocolate Mountains along the northeast side of the basin, and the contact between highly deformed, relatively low

permeability rocks underlying the Durmid Hill area with the more permeable and horizontally extensive lacustrine basin fill sediments to the south and southeast.



Legend

- Perched Unit Extent
- Alluvial Unit Extent
- Lacustrine Units Extent
- Durmid Hill Unit Extent
- Bedrock (no flow)

Bombay Beach Vegetation Project

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Salton Sea

Figure 8

Hydrogeologic Conceptual Model

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3.3.4 AQUIFER PROPERTIES

Aquifer properties have been reported for a range of fine-grained (e.g., silts, silty clays, and clays) and coarse-grained (e.g., gravelly sands, sands, and silty sands) materials found in the southern region of the Salton Sea Basin, including the East Salton Sea Groundwater Basin, West Salton Sea Groundwater Basin, Ocotillo-Clark Valley Groundwater Basin, and Imperial Valley Groundwater Basin (basins are shown in Figure 1). Estimates pertinent to the hydrostratigraphic units in the vicinity of the Project Site are summarized in Table 3.

TABLE 3. SUMMARY OF PUBLISHED HYDRAULIC CONDUCTIVITY ESTIMATES FOR THE REGION

Author	Fine-Grained (ft/day)	Coarse-Grained (ft/day)
Lawrence Livermore National Laboratory (LLNL) (2008)	0.6	100
Davids Engineering (2007)	0.26 to 0.65	22 to 25
GEI Consultants (2012)	--	13 to 71
Tetra Tech (1999)	--	36 to 428
Montgomery Watson (1995)	0.67 to 0.94	97 to 401

GEI (2012) estimated that storativity values of shallow sediments in the Salton Sea basin range from 0.01 to 0.0001.

3.3.4.1 LACUSTRINE AND AEOLIAN UNITS

The test well investigation characterized three distinct hydrostratigraphic units (see Attachment A for the boring logs). These units are illustrated in the conceptual cross-section shown in Figure 9 and are described below.

- **Shallow Lacustrine Unit (upper groundwater zone)** – Occurs from first groundwater (approximately 5 feet bgs) to approximately 30 feet bgs, averaged between the three boreholes. This unit consists of cyclical deposits of unconsolidated to weakly consolidated sands, silty sands, and sandy silts, with a few, thin clay interbeds emplaced in a lacustrine (subaqueous and nearshore) environment. Sands are primarily very fine- to fine-grained. Groundwater conditions are unconfined.

- **Lacustrine Aquitard** – Occurs from the bottom of the Lacustrine Unit (30 feet bgs) to about 80 feet bgs, averaged between the three boreholes. The boundary between the overlying lacustrine unit and the aquitard is marked by a subtle increase of clay content in the form of more frequent and thicker clay layers. Most clay layers comprising the lacustrine aquitard are brown to strong

brown, firm to hard, and exhibit high plasticity. Some clay layers contain a few, what have been interpreted as, sand-filled desiccation cracks. The cracks are typically less than 2 inches wide, may be up to several feet long, and are sub-vertical. The features could alternatively be clastic dikes (fissure fill) formed during seismic events. In either case, they present the opportunity for leakage across clay layers. The aquitard also contains sandy and silty interbeds.

- **Deeper Sandy Unit (shallow supply zone)** – Occurs from the base of the aquitard (approximately 80 feet bgs) to approximately 120 feet bgs. This unit is comprised of sands and sandy silts that are massive, and relatively homogeneous in appearance, and include fine-grained, well rounded, well sorted sands. The majority of the sands were likely transported into the basin via the Colorado River and deposited in a deltaic/lacustrine environment but may have been subsequently reworked by alluvial or aeolian processes. Unlike other beds observed in the borings, the Deeper Sandy Unit can be correlated across the boreholes, with thickness ranging from 18.5 to 30 feet.

Based on interpretation of available groundwater-level data, groundwater in the shallow lacustrine and deeper sandy units generally flows to the south, away from the mountain front, in the direction of the Salton Sea shoreline (Figure 8).

Shallow Lacustrine Unit (upper groundwater zone)

The upper groundwater zone, which is found within the Shallow Lacustrine Unit, consists of the unconfined water table aquifer, and it occurs from approximately 5 to 30 feet bgs (Figure 9). Beneath the Salton Sea playa, the upper groundwater zone generally has a saline groundwater quality. Groundwater quality in the upper zone has been monitored by Formation in access tubes,[2] which have been installed in the Project Site since 2015. Groundwater samples collected from the access tubes show Total Dissolved Solids (TDS) concentrations ranging from approximately 40,000 to 50,000 milligrams per liter (mg/L).

Groundwater-level data have been collected from the access tubes since 2016 by periodic manual measurements and routine measurements from pressure transducers equipped with data loggers. The access tubes were installed on the playa in a transect oriented perpendicular to the shoreline of the Salton Sea. Recent groundwater-level measurements indicate that the depth to groundwater becomes shallower down-transect, in the direction of the shoreline, ranging from approximately 3.5 feet bgs near the current shoreline to approximately 9 feet bgs 2,000 feet upslope from the shoreline, at the most distal access tube.

Figure B-1 in Attachment B shows the hydrographs for the access tubes installed in the Project Site. These data show an overall groundwater elevation trend that is declining, with intermittent groundwater elevation spikes following seasonal recharge events. Groundwater elevations appear to be declining at a long-term rate of approximately 0.5 foot per year. These data suggest that groundwater levels in the uppermost groundwater-bearing zone beneath the playa are declining as water levels in the Salton Sea recede. Further declines are expected as the Salton Sea continues to recede. Groundwater in the upper

[2] Access tubes are temporary groundwater monitoring locations completed within first-encountered groundwater at depths ranging from approximately 5 to 13 feet bgs.

groundwater zone generally flows to the south, away from the mountain front, in the direction of the Salton Sea shoreline (Figure 8).

Laboratory grain-size analyses were conducted on a representative sample collected from the upper sand stratum (Attachment A). The grain-size distribution was used to estimate the hydraulic conductivity of these strata using the methods described by Devlin (2015). The calculated hydraulic conductivity was estimated at approximately 19 feet per day (ft/day), which is the lower end of the range for coarse-grained materials reported in Table 3.

Deeper Sandy Unit (Shallow Supply Zone)

The shallow groundwater supply zone at the Project Site occurs between approximately 80 to 120 feet bgs and is overlain by a clayey lacustrine aquitard from approximately 30 to 80 feet bgs (Figure 9) that produces semi-confined conditions. Deeper supply zones may exist based on the results of a geophysical investigation performed in 2020 (Ramboll 2022).

Based on the test well investigation, groundwater quality improves below the clayey confining unit. Preliminary groundwater quality measurements collected test well investigation indicate that TDS concentrations range from approximately 23,000 to 41,000 mg/L. In general, groundwater quality appears to improve from east to west in the formation. Upgradient, approximately 4.5 miles to the northeast of the Project Site, several groundwater monitoring wells have been installed in the supply zone to investigate the groundwater conditions underlying the Hot Spa Solid Waste Site. Groundwater samples collected from these monitoring wells between 2005 and 2015 indicate that TDS values range from approximately 7,000 to 14,000 mg/L. Figure B-2 in B shows TDS concentration trends for these monitoring wells. This groundwater is too saline for agricultural use, and State Water Resources Control Board Resolution 88-63 states that water containing TDS concentrations over 3,000 mg/L would not be considered suitable as a source of municipal or domestic supply.

Figure B-2 in Attachment B shows the groundwater level hydrographs for monitoring wells installed at the Hot Spa Solid Waste Site. Routine groundwater-level measurements were collected from 2005 to 2019. The most recent depth-to-water measurements ranged from approximately 85 to 97 feet bgs. The hydrographs show a steadily declining groundwater-level trend, at a rate of approximately 0.25 feet per year.

The constant discharge, step drawdown, and specific capacity pump testing results reported by IID (2024) indicate that hydraulic conductivity of the supply zone ranges from approximately 2 and 22 ft/day in the area investigated. Higher hydraulic conductivity results were reported for the step drawdown and constant discharge test at BB-TW-1, ranging between 19 and 22 ft/day. The specific capacity tests of the test wells completed closer to the inferred trace of the San Andreas Fault zone (BB-TW-2 and BB-TW-3) indicate lower hydraulic conductivity sediments are present in this area, with conductivity values ranging from 2 to 3 ft/day.

As discussed previously, the DWR (2004) described the San Andreas Fault as a potentially restrictive structure that may be an impedance to groundwater flow. Pump testing results were inconclusive regarding the conductance of the fault zone. Furthermore, the extent and depth of the fault zone mapped at the Project Site as bisecting the wellfield has not been investigated. During the test well investigation, potential displacement of the strata was evident in the supply zone, suggesting that the stratigraphy may have been offset by the mapped San Andreas fault and/or the Brawley shear zone shown in Figure 7. However, no direct evidence of the San Andreas fault trace was observed during the test well investigation. Characterizing the trace of the San Andreas fault zone was not an objective of the test well investigation. Therefore, the presence of the fault zone within the Project Site is inferred based on the best available information reported in the literature. As discussed in Section 4, several modeling scenarios were run to address the reasonable range of conditions associated with the fault zone and the extent of the lower hydraulic conductivity sediments characterized in the vicinity of the mapped fault.

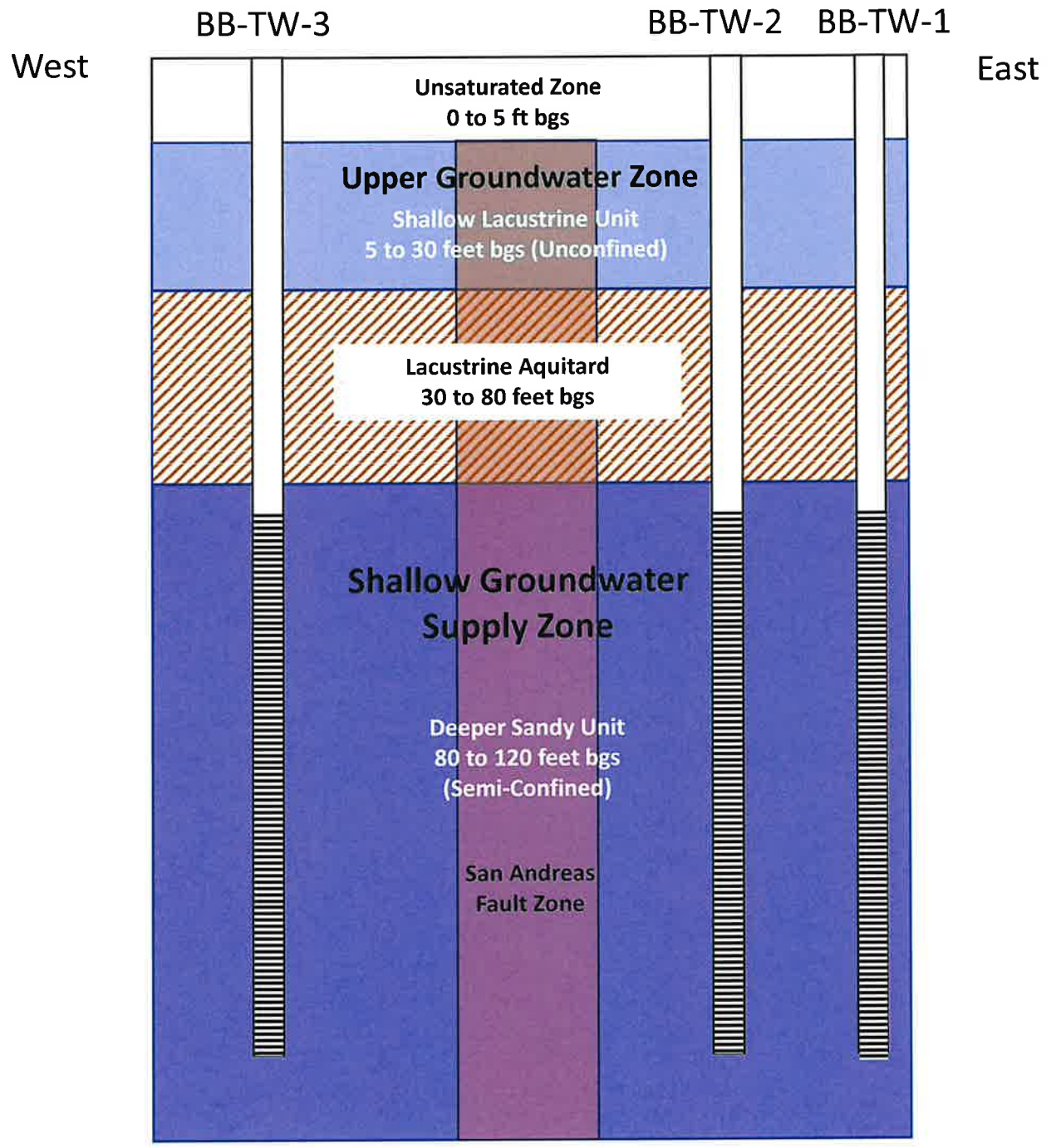
Groundwater in the shallow supply zone generally flows to the south, away from the mountain front, in the direction of the Salton Sea shoreline (Figure 8).

3.3.4.2 PERCHED UNIT

The perched unit is comprised of alluvial materials deposited along the Ken and Pacific washes and modern sandy alluvial and aeolian sediments deposited on shallow lacustrine clays beneath the Salton Sea playa. In March 2020, Formation investigated the perched groundwater system on the east and west side of the Bombay Beach wetland. The perched system appears to be perennially mounded on top of a competent and laterally extensive clay perching unit. The saturated thickness of the perched unit is greatest in the center and thins on the edges. Thus, the perennial system has a limited lateral extent, and primarily underlies the washes and wetland. An approximately 5-foot-thick unsaturated zone was observed below the perched confining unit at the investigation locations. The perched zone is believed to extend upgradient (north) from the wetland along the Ken and Pacific washes, to the mountain front (Figure 8). Groundwater may also temporality perch elsewhere in the Project Site, following significant precipitation events, where the lacustrine perching unit(s) are present.

Recharge to the perched system is likely from the surface waters found in the Ken and Pacific washes. Groundwater in the perched zone has TDS values of 60,000 mg/L, near the western edge of the Bombay Beach wetland. The TDS of the wetland ranges from approximately 5,000 to 16,000 mg/L, suggesting that perched water beneath the wetland may contain lower TDS concentrations.

Groundwater in the perched unit generally flows to the south, away from the mountain front, in the direction of the Salton Sea shoreline (Figure 8).



NOT TO SCALE

Notes:

1. bgs = below ground surface

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Salton Sea

Figure 9

Hydrostratigraphy

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3.3.4.3 ALLUVIAL UNIT

The alluvial unit is comprised of alluvial materials deposited proximal to the mountain front, upslope of the contact with the mapped ancient Lake Cahuilla shoreline. Limited information is available for the alluvial unit, which is located to the north of the Project Site (Figure 8). Based on the available information, the thickness of the alluvial unit is estimated at 50 to 100 feet. The alluvial unit transitions into the Hot Springs Aquifer with depth, as described below. The hydraulic conductivity of the Alluvial Unit is estimated at approximately 20 ft/day based on the material properties evident in the available boring logs in the area and the published values summarized in Table 3.

Regional circulation of geothermal waters occurs along the northern margin of the Salton Trough on the northeastern (upgradient) side of the Hot Springs Fault shown in Figure 7. According to Hunter (1992), the geothermal waters are predominantly confined to an approximately 130-foot-thick body of Holocene alluvial sand and gravel, encountered by several flowing artesian hot spring wells completed at depths ranging from 65 to 420 feet. This coarse-grained deposit is absent in the wells to the south and west of the Hot Springs Fault where a 4,000-foot-thick sequence of clay, mudstone, and siltstone are present (Hunter 1992). Thus, the fault appears to define the southwestern boundary of the Hot Springs Aquifer. Holocene clay and mudstone lake deposits serve at the upper confining unit for the geothermal waters (Hunter 1992).

The water quality of the Hot Springs Aquifer has TDS values ranging from approximately 2,100 to 3,800 mg/L (Hunter 1992). Production rates from wells tapping the aquifer are reported to range from 150 gallons per minute (gpm) via pumping (Coachella Valley Pump and Supply, Inc. 1972) to 900 gpm by artesian flow (Hardt and French 1976). Youngs (1994) reported a flow rate of 400 gpm for wells at the Hot Mineral Spa geothermal area. Sims (2017) reported that an artesian well continuously discharges 510 gpm at Pacific Aquafarms. Thompson et al. (2008) identified a well in this area as producing 600 to 2,700 gpm. As of 1998, 23 wells were reported to be drilled into the producing zone in the Hot Mineral Spa area, of which 14 were used for aquaculture and/or recreation (Hunter 1992). The aquifer was reported to produce a combined flow of approximately 4,000 acre-feet of thermal water per year (Hunter 1992).

Water that is not consumptively used in this area is discharged to Pacific Wash and the eastern branch of Ken Wash. Deep percolation of discharge from the recreational facilities, fish farm, and wastewater treatment plants, coupled with seepage across the Hot Springs Fault, leakage from the Coachella Canal, and mountain front recharge, are likely recharge sources to the Perched and Lacustrine/Aeolian Units.

Groundwater in the alluvial aquifer generally flows to the south-southwest, away from the mountain front, in the direction of the Salton Sea shoreline (Figure 8).

3.3.4.4 DURMID HILL UNIT

The Durmid Hill unit is comprised of highly deformed and faulted lacustrine sediments of the Brawley Formation. These generally fine-grained and highly deformed sediments, described previously, likely would not yield significant volumes of water to wells because of the discontinuity between the water-bearing zones from the folding and faulting in the area.

Limited information is available for the Durmid Hill unit. A well records search in the area shows several wells completed in this area to depths ranging from 160 to 800 feet bgs. The well yield and groundwater quality in these wells are not reported, and no wells are reported to currently be pumping. In general, fine-grained lacustrine sediments that are highly deformed would not be expected to have significant permeability or lateral continuity. It is assumed that the hydraulic conductivity of these materials is approximately 1 ft/day.

Groundwater in the Durmid Hill unit is assumed to generally flow to the south-southwest in the direction of the Salton Sea shoreline (Figure 8). The depth to groundwater in this unit is assumed to be greater than 20 feet bgs based on the hydrogeologic setting.

4 EFFECTS ANALYSIS

4.1 CONCEPTUAL APPROACH

As described in Section 2, three shallow supply test wells were installed at the Project Site and will be operated as supply wells for the Bombay Beach Vegetation Project. The data to characterize the aquifer system in the East Salton Sea Groundwater Basin is limited, and groundwater resources in the shallow groundwater supply zone are not currently being used, so use of an analytical element model with conservative simplifying assumptions is appropriate to evaluate the potential effects of operating the wells.

To simulate drawdown, a multi-layered model was developed using the AnAqSim modeling code (Fitts Geosolutions 2020), which is a three-dimensional (multi-layer) analytical element modeling code capable of simulating groundwater flow to wells under confined, unconfined, or semiconfined aquifer conditions. AnAqSim can simulate a variety of boundary conditions (e.g., no-flow, constant flux, variable flux, general head, and constant head), line or area sources and sinks (e.g., rivers and recharge), and flow barriers (e.g., faults). AnAqSim can be used to simulate transient conditions as a result of pumping from single or multiple wells at constant or varying rates and calculates the head and discharge as functions of location and time across a designated model grid or at designated points.

The boundary conditions and inputs of the updated model are illustrated in Figure 10a/b/c. These inputs were updated from the initial GRIA (IID 2023) based on the findings of the test well investigation. A head-dependent normal flux boundary was modeled to the east, west, and south of the Project Site. A constant head boundary was modeled north of the Project Site to represent the Alluvial Unit, along the mountain front, which appears to maintain relatively stable groundwater levels. The model domain measures approximately 8 miles from west to east and 12 miles from north to south so that boundaries are located remote from the pumping wells in order to help minimize unintended boundary effects. These boundary conditions are consistent with the initial GRIA.

A leaky barrier line boundary was used to simulate the faults in the model domain. These faults include the San Andreas Fault, Sand Hills Fault, and Hot Springs Fault. To address the uncertainties with respect to the extent and depth of the mapped San Andreas Fault that bisects the wellfield at the Project Site

three scenarios were used to simulate the potential effects from the San Andreas Fault, as described in Section 4.2 and shown in Figures 10a, 10b, and 10c. These scenarios are updates to the initial GRIA included simulating the fault as an impeding flow barrier that extends across the model domain, an impeding barrier that extends partway across that model domain, and simulation of the model domain without an impeding flow barrier.

An interdomain boundary was used on the north side of the Hot Springs fault as in the previous model to simulate the transition to the alluvial aquifer, represented by a single layer to simulate the coarser grained sediments (refer to cross-section A-A' in Figure 10a/b/c). A second interdomain boundary was used as previously to simulate the transition to the Durmid Hill Unit, an area characterized by highly deformed sediments associated with the San Andreas Fault zone. The Durmid Hill Unit is represented by three layers, with identical input values, meant to simulate a single unit (refer to cross-section B-B' in Figure 10a/b/c). The multi-layer design was used to compute drawdown in each layer for comparison to the three-layer hydrostratigraphic system in the vicinity of the Project Site described below. These boundary conditions are consistent with the initial GRIA.

The area that is represented in the model as a multi-later (unit) system includes the following (Figure 10a/b/c):

- **Layer 1** represents a relatively thin (25 feet) unconfined upper groundwater zone occurring from approximately 5 to 30 feet bgs, comprised of sandy sediments. This layer has poor water quality and is in potential communication with groundwater dependent ecosystems (GDEs).
- **Layer 2** extends from approximately 30 to 80 feet bgs and is represented as a continuous, laterally extensive, 50-foot-thick clay unit based on the exploration boreholes from the test well investigation. This layer represents the confining unit separating the upper and lower groundwater zones.
- **Layer 3** represents the shallow supply zone aquifer extending from approximately 80 to 120 feet bgs. This 40-foot-thick layer is semi-confined and is comprised of massive sands and sandy silts. Based on available data, the water quality improves considerably in Layer 3, as compared to Layer 1.

The thickness of the model layers in the initial GRIA were updated based on the Site-specific data collected during the test well investigation.

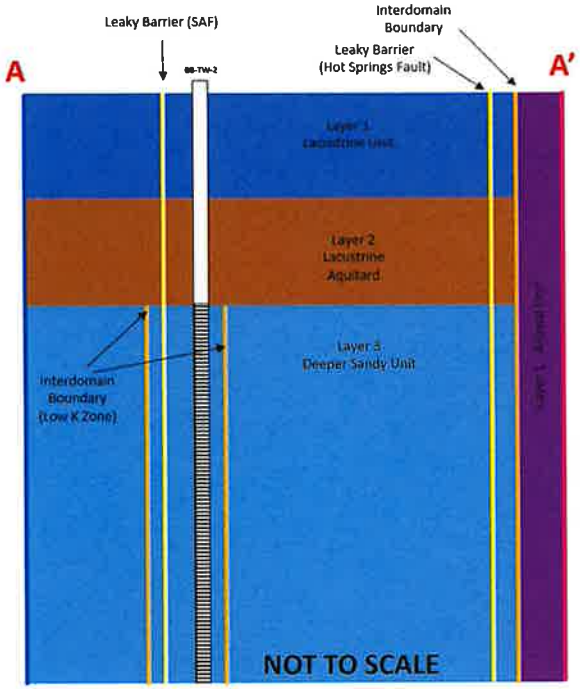
The following additional assumptions are incorporated into the model:

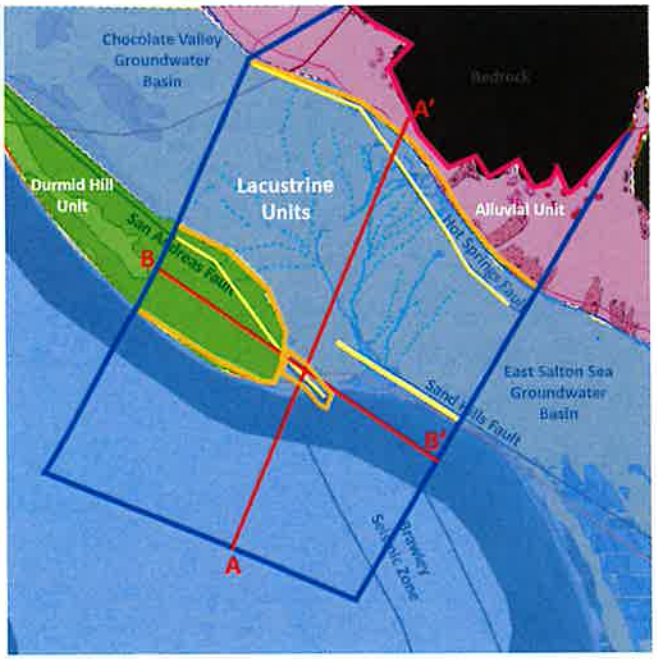
- The pumped layer (Layer 3) is homogeneous. This is a common simplifying assumption.
- The layers are uniform in thickness. This is a common simplifying assumption.
- The groundwater surface is flat in all layers. This is a common simplifying assumption used in "superposition" or "impact modeling," and is an appropriate assumption when the drawdown

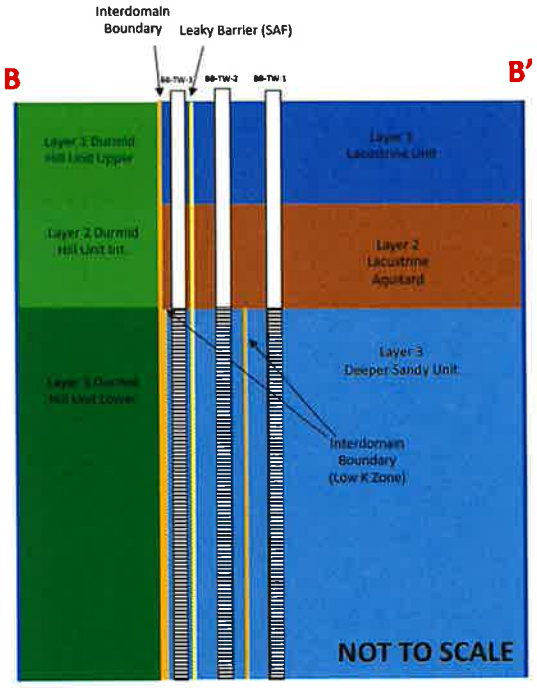
effects of project pumping are isolated by subtracting them from a baseline condition, and exact groundwater elevations or flow rates do not need to be known.

- Predicted drawdown is measured from the initial heads, which are set at zero feet in all layers at time zero; this is appropriate when using a superposition or impact modeling approach.
- The model receives no recharge, and all flow from the pumping wells comes from storage. This simplifying assumption tends to produce a conservative result that over-predicts drawdown.
- The well pumping rates in the producing zone are constant and simulated as long-term averages. This is a reasonable assumption for a non-seasonal water supply project, especially when examining drawdown effects at a distance from the pumping wells.
- The narrow-perched hydrostratigraphic unit described in Section 3 overlies Layer 1 and is hydraulically separated from Layer 1 by a lacustrine clay aquitard. Therefore, the perched unit is not simulated in the model.
- To address uncertainty in the hydraulic properties of the faults in the model domain, the unitless conductance term for the faults was estimated at $1x10^{-6}$, which is on the low end for fault boundaries. In addition, the presence and absence and lateral extent of the San Andreas fault boundary was varied within the model domain to address the reasonable range of conditions relative to the inferred fault in this area.
- The aquitard represented by Layer 2 is assumed to have a uniform thickness of 50 feet. This unit appears to be laterally continuous across the Project Site. A vertical hydraulic conductivity value of $5x10^{-4}$ ft/day was assigned to this clay layer to account for leakage across this unit given the uncertainties with respect to the lateral continuity and thickness of the aquitard in the model domain. Site specific data analyzed in the laboratory from discrete samples collected from the aquitard indicated that the vertical hydraulic conductivity is an order of magnitude lower, estimated at $1x10^{-5}$ ft/day (IID 2024).
- Long-term daily average pumping rates (combined 32 gpm) were simulated to represent the higher, instantaneous, diurnal pumping rates (combined 85 gpm) of the solar powered pumps, which were assumed to operate for an average of 9 hours per day.
- Pumping was simulated for a period up to 20 years, after which drawdown is assumed to reach relatively stable conditions.

Western Interdomain Layer Description	Model Input Values						Central Domain Layer Description	Top and Bottom (feet bgs)	Model Input Values						Northern Interdomain Layer Description	Model Input Values					
	Thickness (feet)	K_h (feet/day)	Kh/Kv	Kv (feet/day)	S_y	S			Thickness (feet)	K_h (feet/day)	Kh/Kv	K_v (feet/day)	S_y	S		Thickness (feet)	K_h (feet/day)	Kh/Kv	Kv (feet/day)	S_y	S
Layers 1 to 3 - Durmid Hill Unit	115	1	1/1000	0.001	0.1	0.001	Layer 1 - Upper Lacustrine Unit	5 to 30	25	10	1/20	0.5	0.1	0.1	Layer 1 - Alluvial Unit	115	20	1/20	1	0.1	0.1
							Layer 2 - Lacustrine Aquitard	30 to 80	50	0.005	1/10	0.0005	0.01	0.001							
							Layer 3 - Deeper Sandy Unit	80 to 120	40	20	1/100	0.2	0.1	0.001							
							Layer 3 - Low K Zone Interdomain within Deeper Sandy Unit	80 to 120	40	2	1/100	0.02	0.1	0.001							







LEGEND:

Well Screen Interval

Head-Dependent Normal Flux Boundary (3rd type)

Leaky Barrier

Interdomain Boundary

Head Specified Boundary (Constant Head)

NOTES:

1. Kh = horizontal hydraulic conductivity
2. Kv = vertical hydraulic conductivity
3. Sy = specific yield
4. S = Storativity
5. SAF = San Andreas Fault

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Figure 10a

Scenario 1 - Model Domain and Inputs

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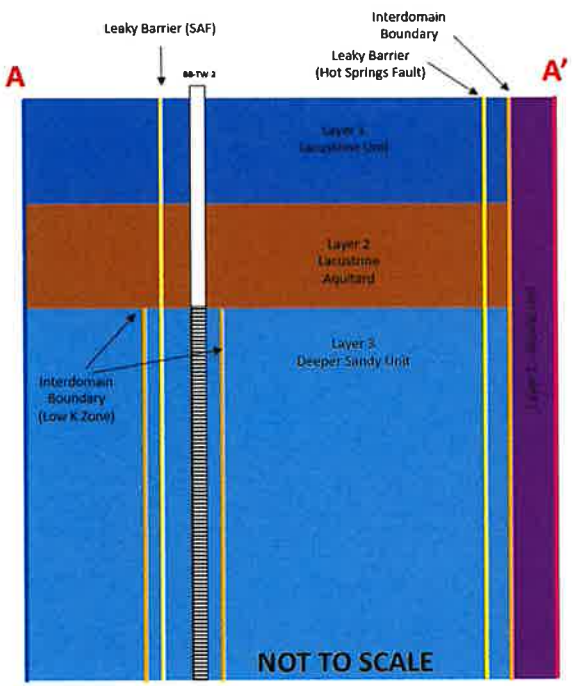
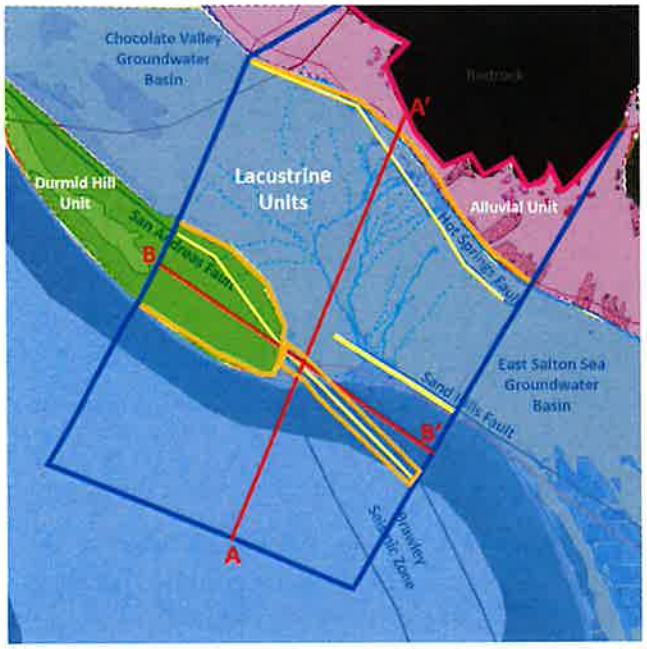
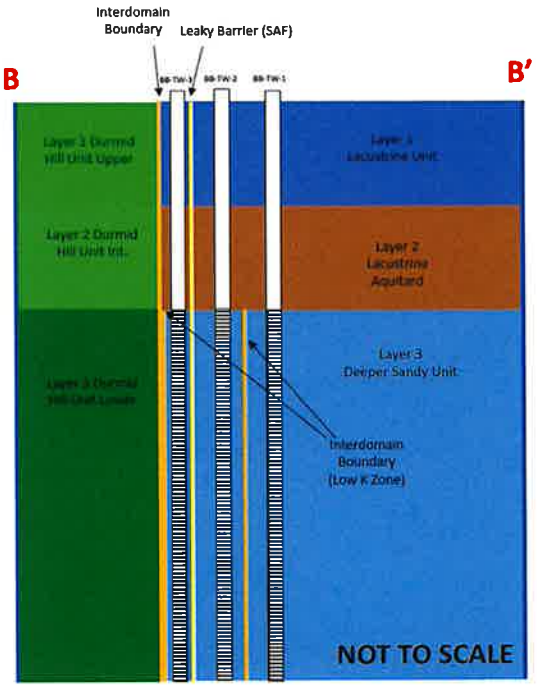
Western Interdomain Layer Description	Model Input Values						Central Domain Layer Description	Top and Bottom (feet bgs)	Model Input Values						Northern Interdomain Layer Description	Model Input Values					
	Thickness (feet)	K_h (feet/day)	Kh/Kv	Kv (feet/day)	S_y	S			Thickness (feet)	K_h (feet/day)	Kh/Kv	K_v (feet/day)	S_y	S		Thickness (feet)	K_h (feet/day)	Kh/Kv	Kv (feet/day)	S_y	S
Layers 1 to 3 - Durmid Hill Unit	115	1	1/1000	0.001	0.1	0.001	Layer 1 - Upper Lacustrine Unit	5 to 30	25	10	1/20	0.5	0.1	0.1	Layer 1 - Alluvial Unit	115	20	1/20	1	0.1	0.1
							Layer 2 - Lacustrine Aquitard	30 to 80	50	0.005	1/10	0.0005	0.01	0.001							
							Layer 3 - Deeper Sandy Unit	80 to 120	40	20	1/100	0.2	0.1	0.001							
							Layer 3 - Low K Zone Interdomain within Deeper Sandy Unit	80 to 120	40	2	1/100	0.02	0.1	0.001							







LEGEND:

- Well Screen Interval
- Head-Dependent Normal Flux Boundary (3rd type)
- Leaky Barrier
- Interdomain Boundary
- Head Specified Boundary (Constant Head)

NOTES:

1. Kh = horizontal hydraulic conductivity
2. Kv = vertical hydraulic conductivity
3. Sy = specific yield
4. S = Storativity
5. SAF = San Andreas Fault

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Figure 10b

Scenario 2 - Model Domain and Inputs

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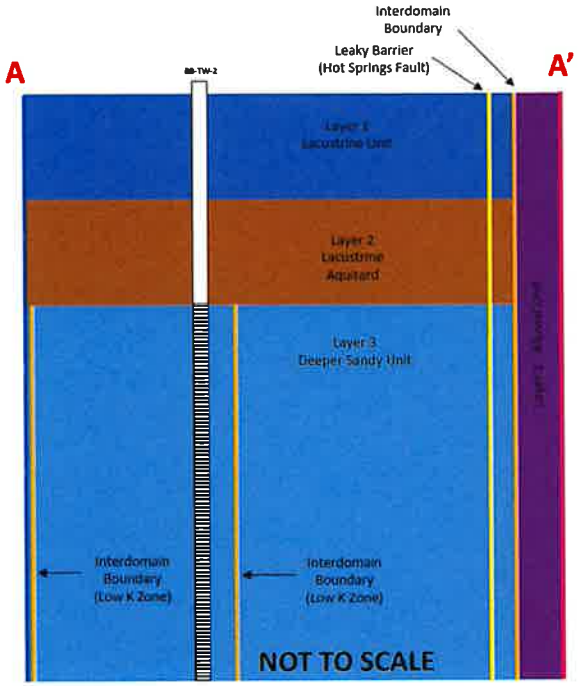
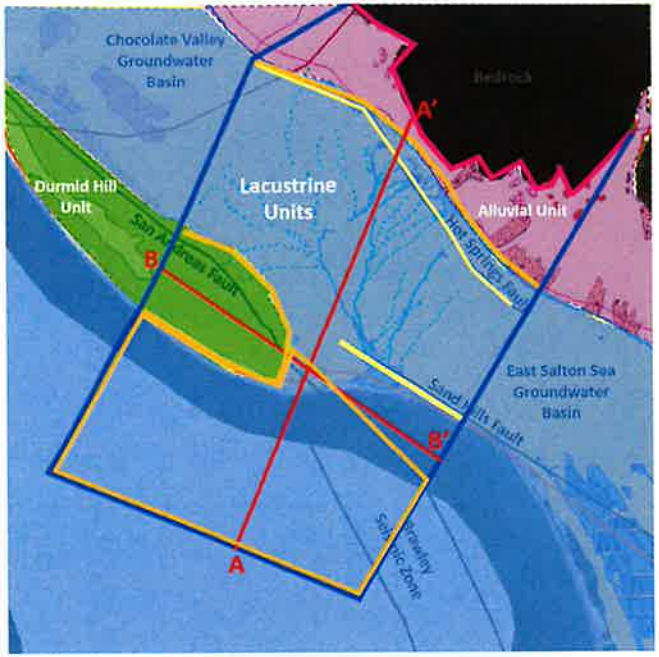
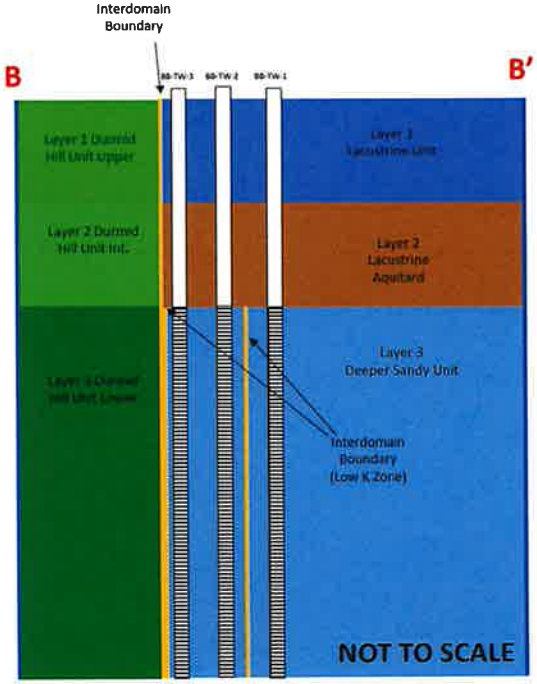
Western Interdomain Layer Description	Model Input Values					
	Thickness (feet)	K_h (feet/day)	Kh/Kv	Kv (feet/day)	S_y	S
Layers 1 to 3 - Durmid Hill Unit	115	1	1/1000	0.001	0.1	0.001

Central Domain Layer Description	Top and Bottom (feet bgs)	Model Input Values					
		Thickness (feet)	K_h (feet/day)	Kh/Kv	K_v (feet/day)	S_y	S
Layer 1 - Upper Lacustrine Unit	5 to 30	25	10	1/20	0.5	0.1	0.1
Layer 2 - Lacustrine Aquitard	30 to 80	50	0.005	1/10	0.0005	0.01	0.001
Layer 3 - Deeper Sandy Unit	80 to 120	40	20	1/100	0.2	0.1	0.001
Layer 3 - Low K Zone Interdomain within Deeper Sandy Unit	80 to 120	40	2	1/100	0.02	0.1	0.001

Northern Interdomain Layer Description	Model Input Values					
	Thickness (feet)	K_h (feet/day)	Kh/Kv	Kv (feet/day)	S_y	S
Layer 1 - Alluvial Unit	115	20	1/20	1	0.1	0.1







LEGEND:

- Well Screen Interval
- Head-Dependent Normal Flux Boundary (3rd type)
- Leaky Barrier
- Interdomain Boundary
- Head Specified Boundary (Constant Head)

NOTES:

1. Kh = horizontal hydraulic conductivity
2. Kv = vertical hydraulic conductivity
3. Sy = specific yield
4. S = Storativity
5. SAF = San Andreas Fault

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Figure 10c

Scenario 3 - Model Domain and Inputs

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4.2 METHODS

The model inputs for the layers described in Section 4.1 are summarized in Figures 10a/b/c. The lateral hydraulic conductivity (K_h) value for Layer 1 was estimated based on calculated values from lithologic data available for the exploratory borehole drilled (BB-1-BH) in the Project Site (refer to Figure 2 for location and Attachment A for boring log), as described in Section 3.3.4. The published hydraulic conductivity values summarized in Table 3 for the region were also considered for this layer. The lateral hydraulic conductivity (K_h) values for Layer 3 were estimated based on the results of the pumping tests described in Section 3.3.4.

For Layer 1, a lateral hydraulic conductivity (K_h) value of 10 ft/day was assigned, which is approximately one-half of the estimated hydraulic conductivity based on the geotechnical samples collected from the exploration borehole drilled at the Project Site to represent a reasonable lower bound of hydraulic conductivity. This assumption is conservative and will likely lead to over-estimation of drawdown at the water table beneath the playa. The vertical hydraulic conductivity value (K_v) for Layer 1 was estimated at $1/20^{th}$ of the horizontal hydraulic conductivity value, which is also conservative for lacustrine deposits of this type.

For Layer 2, a lateral hydraulic conductivity (K_h) value of $5x10^{-3}$ ft/day was estimated for the clay intervals described between 30 and 80 feet bgs in the test well boring logs included in Attachment A. This value is higher than the upper bound of $3x10^{-5}$ ft/day described by Fetter (2001), which is a conservative assumption from an impact analysis viewpoint. A vertical hydraulic conductivity (K_v) value of $5x10^{-4}$ ft/day was assumed to be $1/10^{th}$ of the horizonal hydraulic conductivity and this upper bound estimate accounts for leakage across this unit, which is also conservative. Site specific data analyzed in the laboratory from discrete samples collected from the aquitard indicated that the vertical hydraulic conductivity is an order of magnitude lower, estimated at $1x10^{-5}$ ft/day (IID 2024).

The properties for Layer 3 were based on the pumping test results described by IID (2024). The vertical hydraulic conductivity values (K_v) for Layer 3 were assumed to be $1/100^{th}$ of the horizontal hydraulic conductivity values.

Hydraulic conductivity values for the domain areas of the model surrounding the Project Site were assigned based on the range of values summarized in Table 3. A lower hydraulic conductivity value was assigned for the Durmid Hill Unit because the extensive folding and faulting impedes the hydraulic conductivity of this unit. The K_v of the Durmid Hill Unit was assumed to be $1/1000^{th}$ of the horizonal hydraulic conductivity, because of the degree of deformation. A higher hydraulic conductivity value was estimated for the alluvial unit because of the coarser grained materials found along the mountain front.

Specific yield values (Sy) were estimated based on reasonable values for the sands encountered in groundwater-bearing Layers 1 and 3 (Fetter 2001). Storativity (S) values were based on professional judgment, assigning a reasonable value for unconfined aquifers for Layer 1, confined units for Layer 2, and semi-confined aquifers for Layer 3. The range of storativity values published by GEI (2012) was also considered.

The simulated pumping rate for the shallow test wells simulated in Layer 3 is summarized in Table 4. As described in Section 2, irrigation water will only be pumped during daylight hours; however, the pumping rates summarized below are long-term averages and assume a combined constant rate of 32 gpm over a 24-hour period to simplify the modeling scenarios, which is equivalent to a combined pumping rate of 85 gpm for 9 hours. A sensitivity analysis was conducted on the pumping rates to evaluate the effects for the three modeling scenarios. The combined pumping rate of 32 gpm over a 24-hour period for the three test wells is estimated to be the maximum sustainable yield of the wellfield.

TABLE 4. PUMPING INPUTS

Pumping	Combined Pumping for Three Wells (24 hours/day constant rate)	Additional Comments
Supply Zone	32 gpm	BB-TW-1 = 22.5 gpm; BB-TW-2 = 3.8 gpm; and BB-TW-3 = 5.6 gpm averaged over a 24-hour period

The various modeling scenarios are summarized in Table 5. All model input parameters remained constant, except the extent and presence/absence of the San Andreas fault zone and the extent of the low hydraulic conductivity zone characterized by the pumping test results from test wells BB-TW-2 and BB-TW-3. All scenarios simulated the effects of pumping for 20 years from Layer 3 (20 years is the expected operational life of the project).

The following scenarios were developed to address the reasonable range of possibilities regarding the extent and presence/absence of the San Andreas fault zone, which is mapped within Project Site and potentially bisects the wellfield. In addition, a range of possibilities regarding the extent of the lower hydraulic conductivity zone characterized near the fault boundary were addressed. The range of modeling scenarios were simulated to address the most likely and potentially worst-case scenarios for the drawdown effects in Layers 1 and 3. Layer 1 represents the overlying groundwater bearing zone, which may be hydraulically connected to the potential GDEs which were considered a potentially sensitive receptor. Layer 3 represents the groundwater supply zone.

Scenario 1 (Figures 10a and 11) – simulated the effects of the San Andreas fault zone as mapped by Janecke and others (2018) and a narrow low hydraulic conductivity zone surrounding the fault in Layer 3. This scenario is judged to represent the most likely scenario for drawdown effects in Layer 1 and 3.

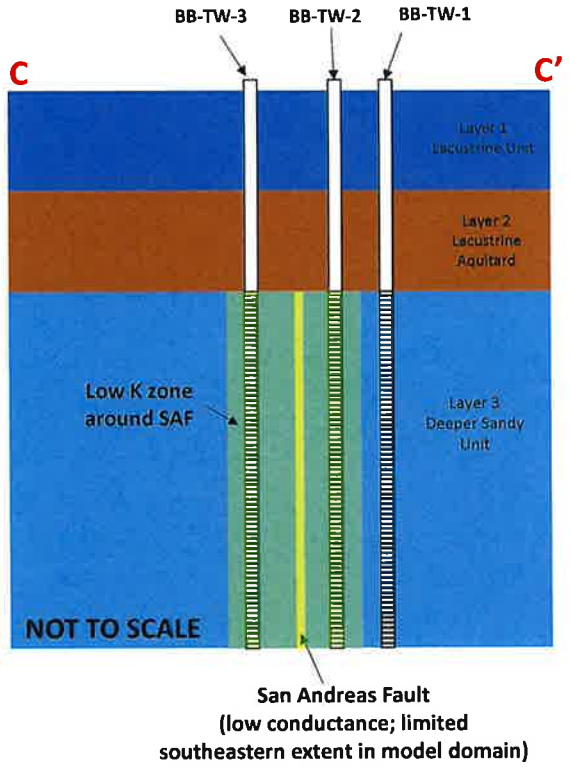
Scenario 2 (Figures 10b and 11) – simulated the effects of the San Andreas fault zone extended to the eastern edge of the model domain and a narrow low hydraulic conductivity zone surrounding the extended fault zone in Layer 3. This scenario represents a potentially worst-case scenario for drawdown effects in Layer 1.

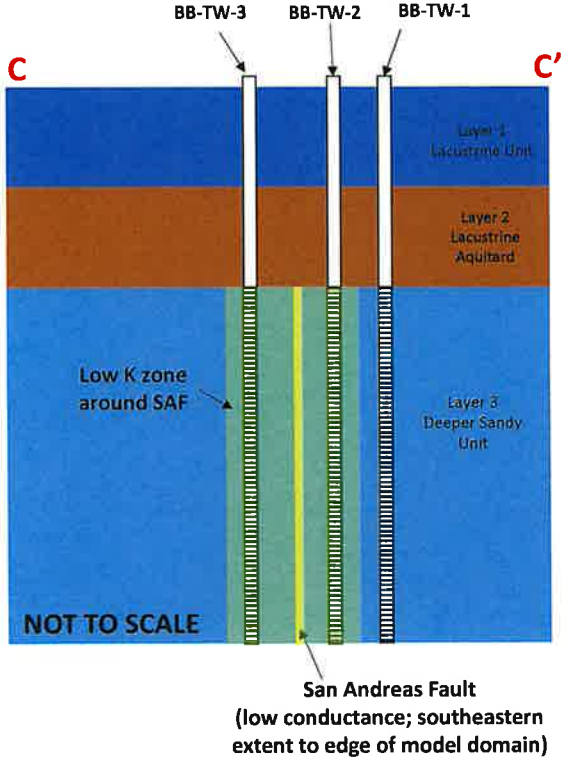
Scenario 3 (Figures 10c and 11) – simulated the effects of omitting the San Andreas fault zone from the model domain (assuming no fault impedance is present) and expanding the lower hydraulic conductivity zone across the southern half of the model domain in Layer 3. This scenario represents a potentially worst-case scenario for drawdown effects in Layer 3, including beneath the community of Bombay Beach, which is a potential sensitive receptor when evaluating potential subsidence effects.

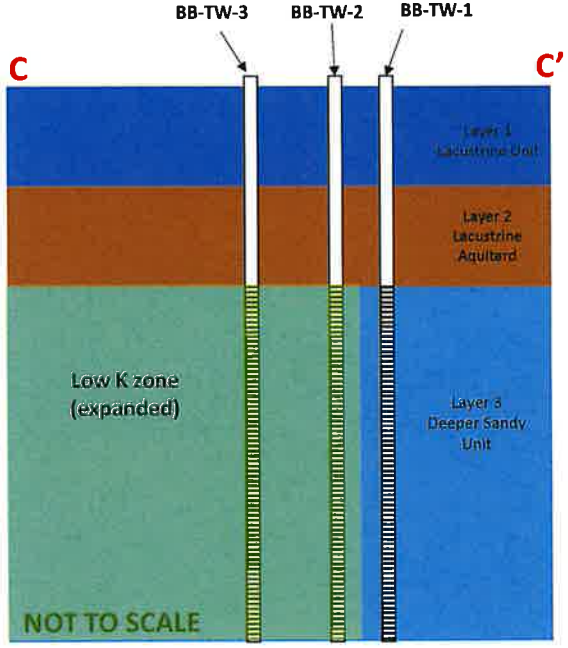
TABLE 5. MODELING SCENARIOS

Scenario	Shallow Supply Zone			
	Combined Average Daily Discharge Rate (gpm)	**SAF Fault Extent**	**Low K Zone in Layer 3**	**Other Parameters**
1	32	As Mapped	Narrow zone surrounding mapped fault	Constant (Figure 10a)
2	32	Extended to eastern edge of model domain	Narrow zone surrounding extended fault	Constant (Figure 10b)
3	32	No Fault	Extended across southern half of model domain	Constant (Figure 10c)

Note: SAF = San Andreas Fault; K = hydraulic conductivity







NOTES:

1. SAF = San Andreas Fault
2. K = hydraulic conductivity

Well Screen Interval

- **Scenario 1 - Low conductance fault zones and low K zone around SAF within Deeper Sandy Unit**
- **Scenario 2 – Low conductance fault zones, SAF extended to eastern edge of model domain, and low K zone around SAF within Deeper Sandy Unit**
- **Scenario 3 - Low conductance fault zones, no SAF fault boundary, and expanded low K zone within Deeper Sandy Unit.**

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Figure 11

Wellfield Simulation Scenarios

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4.3 RESULTS

The predicted drawdown associated with pumping of the existing test wells, for the scenarios described in Section 4.2, is summarized in Table 6. Figure 11 illustrates the various wellfield simulation scenarios.

Figure 12 illustrates the distribution and magnitude of the simulated drawdown in Model Layers 1 (water table) and 3 (pumped aquifer) for Scenarios 1, 2, and 3. The results for **Scenario 1** are described below.

- In Model Layer 1 (the water-table zone that is potentially connected to GDEs), drawdowns of up to approximately 1.2 feet are predicted during Scenario 1 after 20 years of pumping (Table 6). The maximum drawdown is predicted within the Project Site boundaries. Outside of the Project Site, drawdowns of less than 1.2 feet are predicted in the area on the playa potentially occupied by GDEs (below an elevation of -201 feet amsl) (Figure 12). The maximum drawdown is predicted on the northern edge of the IID property boundary. The range of predicted drawdown described above would generally not be distinguishable from normal seasonal and inter-annual groundwater level fluctuations measured in the nearby shallow access tubes described in Section 3 (see Attachment B for hydrographs). Furthermore, less than 1 foot of drawdown is predicted during the first year of pumping, giving plants suited to the variable groundwater depth of the playa environment an opportunity to adapt. Predicted drawdown is greater on the east side of the fault than the west side of the fault along the simulated fault alignment.

- In Model Layer 3, the pumping layer, drawdowns of up to approximately 7.6 feet are predicted during Scenario 1 near the wellfield after 20 years of pumping (Table 6). The maximum drawdown occurs within the Project Site boundaries. Drawdown is predicted to attenuate rapidly with distance from the wells. Predicted drawdowns exceeding 5 feet are limited to within the Project Site boundary (Figure 12). The community of Bombay Beach is located to the west of the test wells and the magnitude of the predicted drawdown under the developed area was considered during this analysis. The maximum predicted drawdown under the community of Bombay Beach is 3.2 feet and is predicted to occur in the northeast corner of the town on the east side of the mapped San Andreas fault (Figure 12 and Table 6). On the west side of the fault zone, drawdowns of less than 2 feet are predicted. In addition, the effects from the fault boundary attenuate to the southeast where the fault is not mapped.

The predicted drawdowns for **Scenario 2** are summarized in Table 6 and shown in Figure 12. The distribution and magnitude of the simulated drawdown in Model Layers 1 (water table) and 3 (pumped aquifer) are described below.

- In Model Layer 1 (the water-table zone that is potentially connected to GDEs), drawdowns of up to approximately 1.5 feet are predicted during Scenario 2 after 20 years of pumping (Table 6). As with Scenario 1, the maximum drawdown is predicted within the Project Site boundaries. Outside of the Project Site, drawdowns of less than 1.3 feet are predicted in the area on the playa potentially occupied by GDEs (below an elevation of -201 feet amsl) (Figure 12). The maximum drawdown is predicted on the northern edge of the IID property boundary. Consistent with

Scenario 1, the range of predicted drawdown described above would generally not be distinguishable from normal seasonal and inter-annual groundwater level fluctuations measured in the nearby shallow access tubes described in Section 3 (see Attachment B for hydrographs). Furthermore, less than 1 foot of drawdown is predicted during the first year of pumping, giving plants suited to the variable groundwater depth of the playa environment an opportunity to adapt. Predicted drawdown is greater on the east side of the fault than the west side of the fault along the simulated fault alignment. As a result of the extended fault zone, significantly less area is affected by predicted drawdown on the west side of the fault compared to Scenario 1.

- In Model Layer 3, the pumping layer, drawdowns of up to approximately 7.9 feet are predicted near the wellfield during Scenario 2 after 20 years of pumping (Table 6). The maximum drawdown occurs within the Project Site boundaries. Drawdown is predicted to attenuate rapidly with distance from the wells. As with Scenario 1, predicted drawdowns exceeding 5 feet are limited to within the Project Site boundary (Figure 12). The community of Bombay Beach is located to the west of the test wells and the magnitude of the predicted drawdown under the developed area was considered during this analysis. The maximum predicted drawdown under the community of Bombay Beach is 3.3 feet and is predicted to occur in the northeast corner of the town on the east side of the mapped San Andreas fault, which is comparable to Scenario 1 (Figure 12 and Table 6). On the west side of the fault zone, drawdowns of less than 2 feet are predicted and the pumping effects are more attenuated due to the fault zone as compared to Scenario 1.

The predicted drawdowns for **Scenario 3** are summarized in Table 6 and shown in Figure 12. The distribution and magnitude of the simulated drawdown in Model Layers 1 (water table) and 3 (pumped aquifer) are described below.

- In Model Layer 1 (the water-table zone that is potentially connected to GDEs), drawdowns of up to approximately 1.3 feet are predicted during Scenario 3 after 20 years of pumping (Table 6). As with Scenarios 1 and 2, the maximum drawdown is predicted within the Project Site boundaries. Outside the Project Site, drawdowns of less than 1.25 feet are predicted in the area on the playa potentially occupied by GDEs (below an elevation of -201 feet amsl) (Figure 12). The maximum drawdown is predicted on the northern edge of the IID property boundary. Consistent with Scenarios 1 and 2, the range of predicted drawdown described above would generally not be distinguishable from normal seasonal and inter-annual groundwater level fluctuations measured in the nearby shallow access tubes described in Section 3 (see Attachment B for hydrographs). Furthermore, less than 1 foot of drawdown is predicted during the first year of pumping, giving plants suited to the variable groundwater depth of the playa environment an opportunity to adapt. Without the groundwater flow impedance from the San Andreas fault zone, the simulated effects of no fault zone result in a more uniform cone of depression compared to Scenarios 1 and 2.

- In Model Layer 3, the pumping layer, drawdowns of up to approximately 8 feet are predicted during Scenario 3 after 20 years of pumping (Table 6). The maximum drawdown occurs within the Project Site boundaries. Drawdown is predicted to attenuate rapidly with distance from the wells.

As with Scenarios 1 and 2, predicted drawdowns exceeding 5 feet are limited to within the Project Site boundary (Figure 12). The community of Bombay Beach is located to the west of the test wells and the magnitude of the predicted drawdown under the developed area was considered during this analysis. The maximum predicted drawdown under the community of Bombay Beach is 4.6 feet and is predicted to occur in the southeast corner of the town because this scenario evaluated drawdown effects with no San Andreas Fault boundary (Figure 12 and Table 6).

It should be noted that the distribution of the drawdown effects is strongly influenced by the simulated San Andreas fault. However, the magnitude of the drawdown in key sensitive areas such as the area on the playa potentially occupied by GDEs and the structures and infrastructure found within the community of Bombay Beach were comparable, varying by only a few tenths of feet, between the most likely and potentially worst-case scenarios.

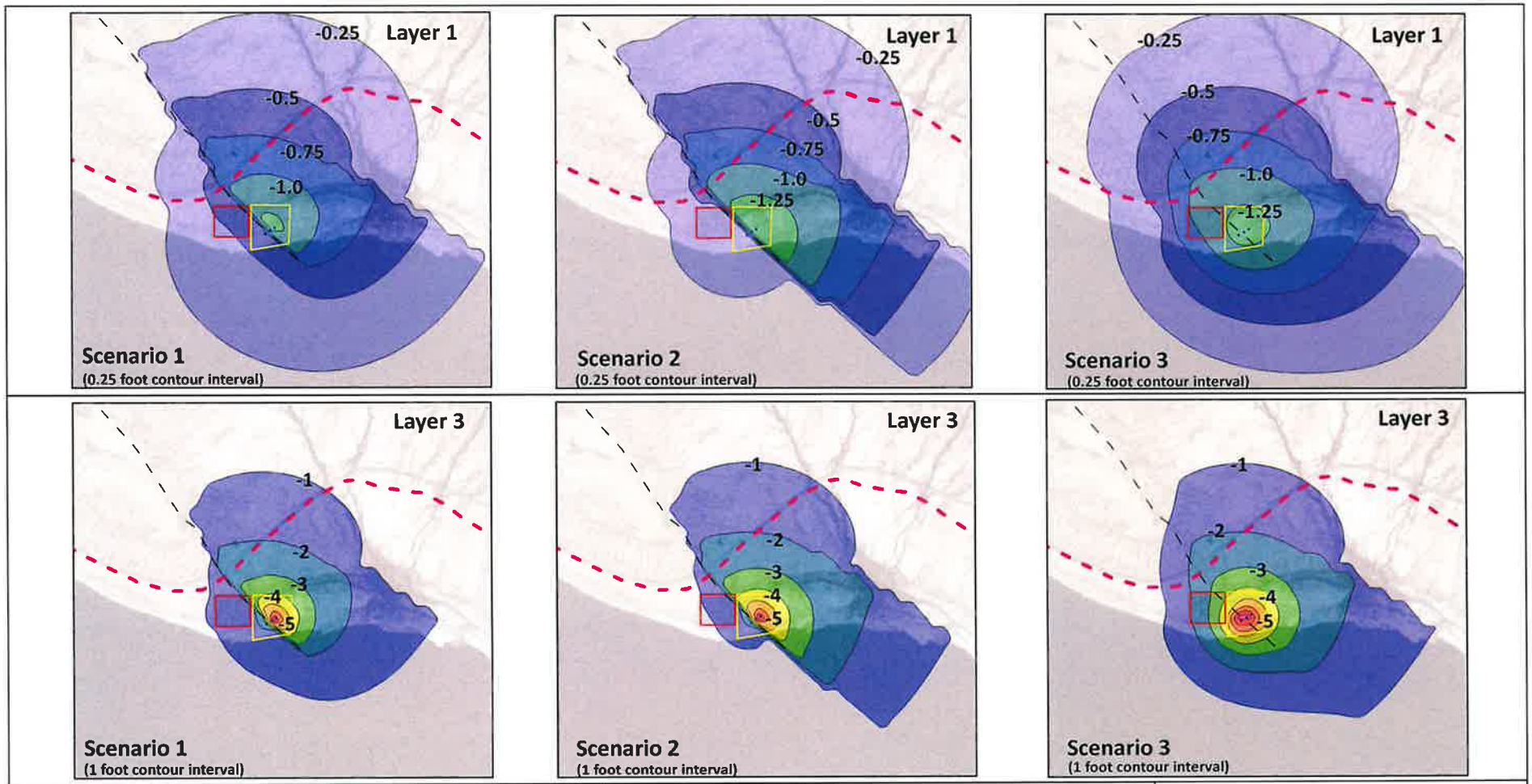
TABLE 6. PREDICTED DRAWDOWN

Scenario	Scenario Description	Layer 1 (upper 30 feet bgs)		Layer 3 (80 to 120 feet bgs)	
		Max Predicted Drawdown (feet)	Max Drawdown at IID Property Boundary (feet)	Max Predicted Drawdown (feet)	Maximum Predicted Drawdown Within Bombay Beach Community (feet)
1	Low conductance fault zones and low K zone around SAF within Lower Lacustrine Unit	1.3	1.2	7.6	3.2
2	Low conductance fault zones, SAF extended to eastern edge of model domain, and low K zone around SAF within Lower Lacustrine Unit	1.5	1.3	7.9	3.3
3	Low conductance fault zones, no SAF fault boundary, and expanded low K zone within Lower Lacustrine Unit	1.3	1.25	8.0	4.6

Note:

Layer 1: Model layer simulating drawdown in the water table groundwater zone that is potential communication with GDEs.

Layer 3: Pumped model layer simulating drawdown in the groundwater production zone.



LEGEND:

- Community of Bombay Beach
- Vegetation Project Area
- Inferred Maximum Extent of ALOC and SUNI, -201 feet amsl
- Test Well Locations
- San Andreas Fault (SAF)

NOTES:

1. Scenario 1 – Low conductance fault zones and low K zone around SAF within Deeper Sandy Unit.
2. Scenario 2 – Low conductance fault zones, SAF extended to eastern edge of model domain and low K zone around SAF within Deeper Sandy Unit
3. Scenario 3 – Low conductance fault zones, no SAF fault boundary, and expanded low K zone within Deeper Sandy Unit.
4. amsl = above mean sea level
5. K = hydraulic conductivity
6. Contours show feet of drawdown after 20 years of pumping.

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Figure 12

Predicted Drawdown

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5 IMPACT ANALYSIS

This section presents an evaluation of the potential environmental impacts associated with groundwater extraction if the test wells are converted into long-term supply wells. The impact evaluation is provided in the form of reasoned evaluations in answer to each of the applicable significance questions contained in Appendix G of the CEQA Guidelines, listed below, but the evaluations under the threshold questions are limited to assessing impacts related only to hydrogeologic effects. The questions are grouped into "Undesirable Results" from the Sustainable Groundwater Management Act (SGMA) that are potentially applicable to the area surrounding the wells.

5.1 GROUNDWATER-DEPENDENT ECOSYSTEMS AND INTERCONNECTED SURFACE WATER

Question IV(a): Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

Question IV(b): Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFG or USFWS?

Question IV(c): Would the project have a substantial adverse effect on state or federally protected wetlands (including marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

The potential areas where GDEs could occur that were identified near the Project Site are shown in Figure 6. Several potential GDEs have been mapped in the vicinity of the Project Site. In addition, areas where ALOC and SUNI that are at least partially dependent on groundwater, may exist on the playa below an elevation of -201 feet amsl based on recent studies conducted by IID, as shown in Figure 6. The locations of these areas relative to the maximum predicted drawdown in Layer 1 are shown in Figure 12. Based on the modeling results, the following conclusions may be made:

- The maximum predicted drawdown in Layer 1 after 20 years of pumping the wells is predicted to be up to approximately 1.3 feet or less in the areas where potential GDEs or vegetation that is groundwater-dependent may be present (Figure 12). This drawdown is likely over-predicted due to conservative assumptions used in the modeling predictions. Drawdown is predicted to occur slowly, and the potential groundwater-dependent vegetation species that could be affected would be expected to be able to adapt to such a small amount of drawdown over such a long period of time. Furthermore, maximum drawdowns were predicted within the Project Site, where irrigation water will be applied to support the enhancement of GDEs.

- Predicted drawdown in Layer 1 after 20 years of pumping the wells is not predicted to exceed approximately 0.75 feet in the Bombay Beach wetland area. Furthermore, the Bombay Beach

wetland is primarily supported by drainage from the Ken and Pacific Washes, which is perched on a lacustrine clay unit and is therefore hydraulically disconnected from potential pumping effects in the deeper groundwater zones. Figure 8 shows the inferred extent of the Perched Unit.

- Based on the available information, impacts to GDEs from operating the supply wells will be less than significant.

5.2 WATER QUALITY

Question IX(a): Would the project violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Question IX(e): Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The groundwater in the shallow supply zone shown in Figure 11 contains TDS at concentrations that range from approximately 23,000 to 41,000 mg/L. Upgradient, approximately 4.5 miles to the northeast of Project Site, several groundwater monitoring wells have been installed in the portion of the groundwater supply zone that underlies the Hot Spa Solid Waste Site. Groundwater samples collected from these monitoring wells between 2005 and 2015 indicate that TDS concentrations range from approximately 7,000 to 14,000 mg/L, suggesting groundwater quality improves towards the mountain front. These groundwater salinity results exceed agricultural water quality standards. Furthermore, State Water Resources Control Board Resolution 88-63 states that water containing TDS concentrations over 3,000 mg/L would not be considered suitable as a municipal or domestic water supply. However, the saline water found in the shallow groundwater supply zone is suitable for long-term irrigation of salt-tolerant vegetation once it is established (i.e., post-germination phase). Based on this information, pumping of groundwater from the wells is unlikely to result in groundwater quality degradation that would impact existing or potential beneficial uses.

The shallow groundwater in the Upper Lacustrine Unit (water table groundwater zone shown on Figure 11) has much higher TDS concentrations as compared to the shallow groundwater supply zone (Aeolian Unit), with concentrations ranging from approximately 40,000 to 50,000 mg/L. As discussed in Section 4.3, communication of drawdown across the aquitard unit is impeded, isolating the upper groundwater zone from the effects of groundwater pumping and impeding the vertical migration of high TDS water into the pumped aquifer. The likelihood of significant groundwater quality degradation that would interfere with existing or potential beneficial uses of groundwater as a result of pumping the wells is therefore low.

Based on the information described above, operation of the supply wells will not interfere with implementation of a Water Quality Control Plan given the likely limited water quality effects from pumping and the limited beneficial uses for the groundwater within the area of project-induced effects.

Figure 13 shows reported nearby contamination sites. Two sites have reported gasoline releases, and five sites have the primary contaminant of concern listed as "explosives." These sites are located outside of the area of predicted drawdown effects greater than 1 foot in Model Layer 1, after 20 years of simulated

pumping (Figure 12) and more than ½ mile from the project's wellfield. Thus, if any residual contamination exists at these sites, it is not expected to be affected by gradient changes that would interfere with required discharge requirements or cleanups. Furthermore, the Ski Inn gasoline leaking underground storage tanks (LUST) release site, which is the nearest release location from the Project Site (approximately 0.5 miles), was closed in 1992. The Hot Spa Waste Management facility is located approximately 5 miles to the north of the Project Site, and simulated drawdown effects were not predicted in this area; thus, there are no predicted gradient changes in this area. The landfill has not been operated since 2018 and site reclamation was completed in 2020. Based on this information, pumping the proposed wells is not likely to interfere with ongoing cleanup or other water quality regulatory efforts, or to result in migration of contamination.

Based on the above information, potential impacts to water quality will be less than significant.

Site Name	Contaminant	Program
CA Fish & Game Wister Niland	Gasoline	LUST
Presumed Bomb Float Target	Explosives	DTSC
Salton Sea Bomb Target (FBT 12) (#53)	Explosives	DTSC
Salton Sea Bomb Target (FBT 16) (#57)	Explosives	DTSC
Salton Sea Bomb Target (FBT 17) (#58)	Explosives	DTSC
Salton Sea Bomb Target (FBT 18) (#59)	Explosives	DTSC
Ski Inn	Gasoline	LUST

Bombay Beach Vegetation Project

Hot Spa Waste Management Facility

Contamination Sites

DTSC

LUST

Notes:
1. Service Layer Credits: World Terrain Base: Sources Esri, USGS, NOAA
2. Inset imagery source: Copernicus Sentinel-2 Level 1C data (November 2023).

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Figure 13
Nearby Contamination

DATE: JUN 27, 2024

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5.3 SUBSIDENCE

Question VII(c): Would the project be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Land subsidence can occur when compressible clays are depressurized because of groundwater extraction, triggering water to flow from the clays into the surrounding aquifer, and ultimately causing consolidation of the clay under pressure from the overlying sediments. In general, most subsidence occurs when an aquifer is initially depressurized, but it can continue for months, or even years, after clays slowly dewater and adjust to the new pressure regime. If groundwater levels subsequently recover, subsidence generally does not resume (or does not progress as rapidly) until groundwater levels fall below historical low levels. Subsidence can occur especially in confined aquifer conditions, where the drawdown associated with groundwater extraction is greater than in unconfined aquifers.

As described in Section 3, no subsidence has been reported in the vicinity of the Project Site. The proposed test wells will extract a relatively limited amount of water from the groundwater system. Drawdown is predicted to attenuate rapidly with distance from the supply wells. Drawdown exceeding 5 feet is predicted to be limited to Project Site, on land owned by IID.

The community of Bombay Beach is located to the west of the supply wells, and the magnitude of the predicted drawdown under the residential area was considered during this analysis. A maximum drawdown of 4.6 feet is predicted during Scenario 3 (Table 6). The other scenarios predicted maximum drawdowns of 3.3 feet or less after 20 years of pumping. Less than 5 feet of drawdown is unlikely to result in measurable land subsidence or damage to infrastructure (JJ&A 2018).

Given the limited amount of drawdown predicted to be associated with the operation of the supply wells and the lack of reported subsidence near the Project Site, subsidence that substantially interferes with surface land uses and infrastructure is unlikely. No impacts are expected.

5.4 CHRONIC DRAWDOWN AND DIMINUTION OF SUPPLY

Question IX(b): Would the project substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Question IX(e): Would the project conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

The potential for operation of the supply wells to interfere with implementation of a water quality control plan is discussed in Section 5.2. The East Salton Sea Groundwater Basin is designated as a very low-priority basin by the DWR, and a Groundwater Sustainability Plan (GSP) is not required and has not been prepared or proposed to be prepared. Therefore, pumping of the wells would not conflict with or obstruct the implementation of a GSP.

Based on the TDS concentrations of groundwater in the area, is considered unsuitable as a source of domestic or municipal water supply and has no designated beneficial uses. Nevertheless, we note the long-term groundwater extraction associated with the supply wells will be relatively limited. The maximum average annual water supply capacity is at most 52 AFY, which is equivalent to a combined daily average pumping rate of approximately 32 gpm for all three wells (Table 1). This would be the only known anthropogenic groundwater demand in the shallow supply zone and is not anticipated to interfere with existing beneficial environmental groundwater uses by GDEs.

Operation of the supply wells is predicted to result in limited drawdown in close proximity to the pumping wells. Drawdown exceeding 1 foot is predicted to be limited to within approximately 2 miles of the pumping center. No known groundwater wells are located within this area, and such a small amount of drawdown would not result in an observable decrease in well yield, if a well were present. In addition, the limited amount of drawdown induced by the wells would not significantly change the amount of groundwater in storage or interfere with foreseeable groundwater demands.

Based on the above information, project impacts to groundwater supplies, aquifer volume, and lowering of the groundwater table will be less than significant.

5.5 CUMULATIVE IMPACTS

Question XVIII(b): Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

As described in Section 3, groundwater resources in the East Salton Sea Groundwater Basin are very sparsely developed. No active groundwater production wells are located in the area, and the town of Bombay Beach is served by the Coachella Valley Water District. The maximum predicted drawdown at the water table after 20 years of pumping (Table 6) represents a small fraction of the anticipated groundwater-level decline in the area as a result of existing trends (approximately 0.5 feet per year) and is not expected to be distinguishable from seasonal and interannual groundwater level fluctuations.

Based on these considerations, the groundwater resources impacts associated with the project will be less than cumulatively considerable.

5.6 WATER SUPPLY AND ENTITLEMENTS

Question XVII(d): Would the project have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?

IID would be able to extract groundwater for beneficial use on its property under an overlying groundwater right. The basin is not listed as being in critical overdraft or managed under a Groundwater Sustainability Plan. Based on the TDS concentrations of groundwater in the area, is considered unsuitable as a source of domestic or municipal water supply and has no designated beneficial uses. There are no existing or reasonably foreseeable groundwater demands that would change or stress the availability of

groundwater supplies during climatic fluctuations. The basin has sufficient resources to reliably supply the Project water demand during normal, dry, and multiple dry years.

6 REFERENCES

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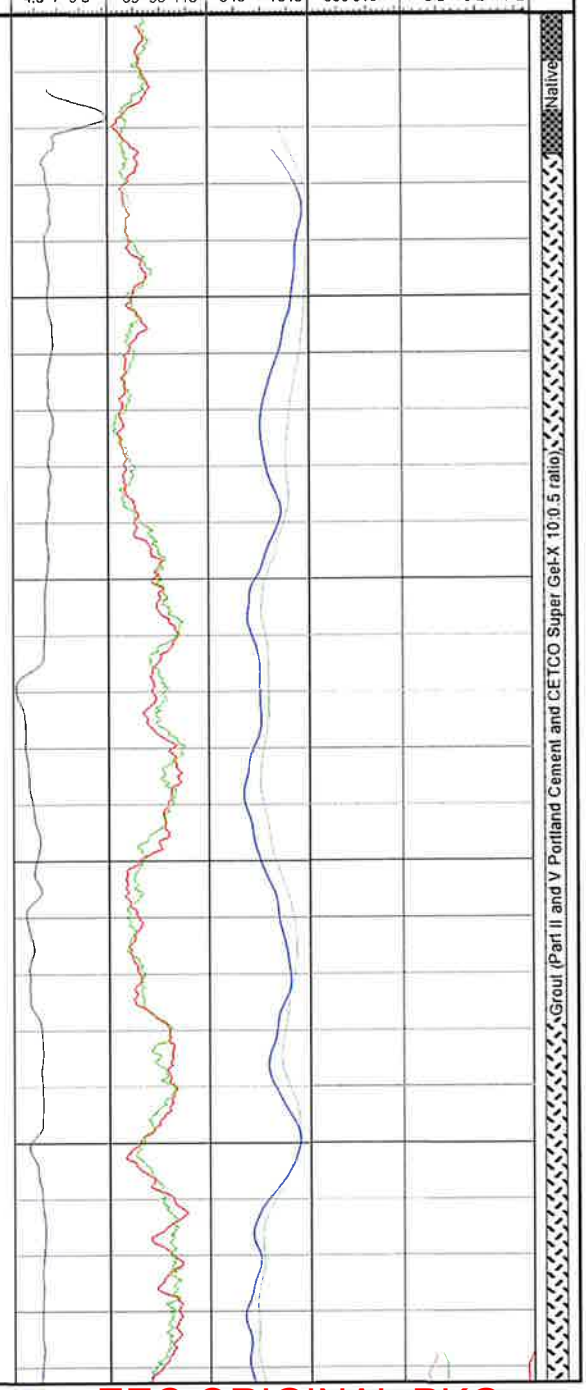
ATTACHMENT A – BORING LOGS

FORMATION ENVIRONMENTAL

Log of Boring Completion: IID20200506_S01_BB_001_BH

Bombay Beach **SALTON SEA, CA**	Drilling Company: **Cascade Drilling, Upland, CA**	Logged By: **Hank Dickey**	Latitude (decimal degrees): **33.3492**
	Drilling Method: **Mud Rotary**	Borehole Diameter (inches): **4.75**	Longitude (decimal degrees): **-115.7239**
Project Number: **061-012 Task 7.3**	Sampling Method: **Hand Auger, Terzaghi Split Spoon (Standard Penetration, 2" O.D., 1.375" I.D.), Cuttings**	Ground Elevation (NAVD 88): **-230.58**	Total Depth (ft bgs): **101.5**
	Top of Casing Elevation: **N/A**	Date Started: **5/4/2020**	Date Completed: **5/6/2020**

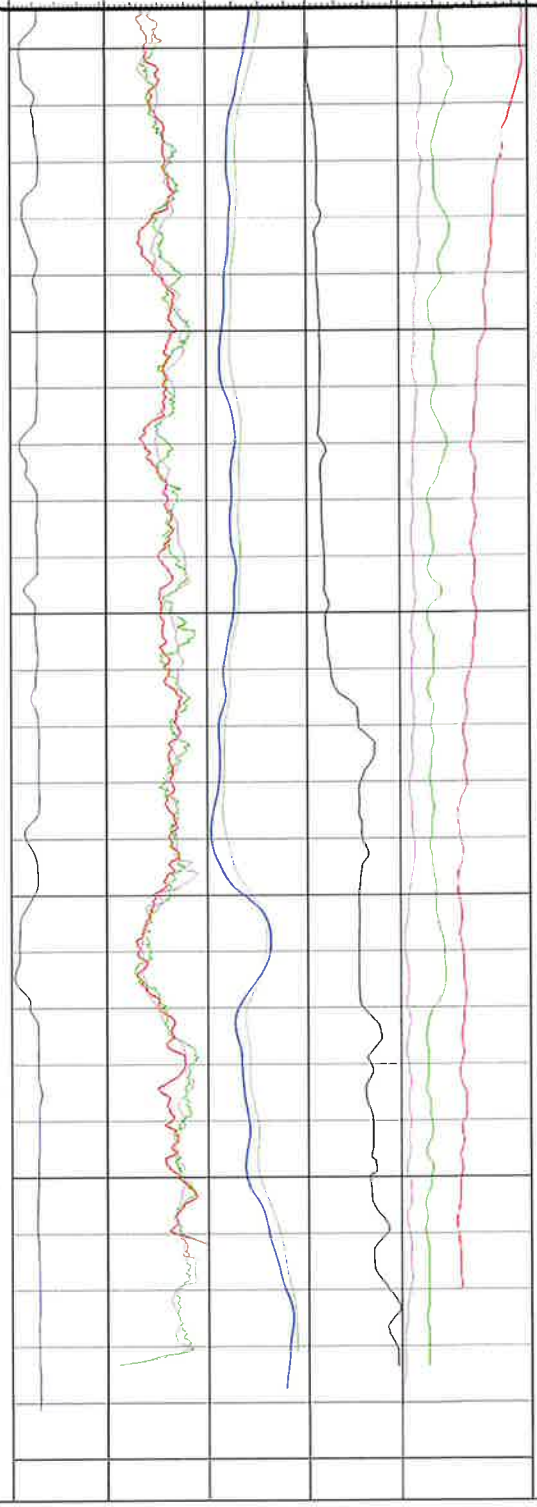
Depth (feet)	Description	USCS	Sample Type (Blow Count) (% Recovery)
0	SAND, subrounded, poorly graded, medium grained (~65% Quartz, ~25% feldspathic, ~5% micaceous), ~5% fines, loose, yellowish brown (10YR 5/6), wet/saturated	SP	Hand Auger
6	First Water		
10	Subangular, fine to medium grained (~5% micaceous), <5% fines, dark yellowish brown (10YR 4/4)		Split Spoon (5/5/5) (100%)
12	Angular, very coarse grained (~75% Shells, ~25% siliclastic), light grey (10YR 7/2)		
14			Cuttings
16	SAND, well graded, fine grained, dark yellowish brown (10YR 4/4)	SW	
18			
20	CLAY, lean, medium plasticity, compact, dark yellowish brown (10YR 4/4), ~1 mm oxidized laminations	CL	Split Spoon (5/5/5) (100%)
22	GRAVEL, 2.5x3.5 cm angular gravel at bottom of sample, very dark grey (10YR 3/1), possible shell caste fossil	CL	
24	SANDY CLAY, ~75% lean clay, dark yellowish brown (10YR 4/4), ~25% subangular, very coarse grained sand, dark reddish brown (2.5YR 3/4)		Cuttings
26			
28			
30	~85% lean clay, ~15% fine grained sand, compact		Split Spoon (10/10/10) (88%)
32	SAND, subangular, poorly graded, medium grained, <5% fines, dark yellowish brown (10YR 4/6)	SP	
34	Angular, ~50% fine to medium grained, siliclastic, reddish brown (2.5 YR 4/4), ~50% medium to coarse grained shells, white (10YR 8/1)		Cuttings
36	CLAY, lean, yellowish brown (10YR 5/4), 1.5x0.75 cm pebble included in sample	CL	
38			
40			Split Spoon (10/10/16) (100%)
42	SAND, poorly graded, fine grained, yellowish brown (10YR 5/6)	SP	
44	SAND, subangular, well graded, ~70% very coarse grained (~25% shells, white 10YR 8/1), ~30% fine to medium grained, yellowish brown (10YR 5/4)	SW	Cuttings
46			
48			



FORMATION
ENVIRONMENTAL

Log of Boring Completion: IID20200506_S01_BB_001_BH

Depth (feet)	Description	USCS	Sample Type (Blow Count) (% Recovery)
50	SILTY SAND, ~80% subrounded, fine grained sand, ~20% silt, brown (10YR 5/3), ~1 mm oxidized laminations, yellowish red (5YR 4/6)	SM	Split Spoon (10/10/20) (100%)
52			
54			Cuttings
56	SAND, subangular, well graded, medium to very coarse grained, ~15% shells, <5% fines, dark yellowish brown (10YR 4/4)	SW	
58			
60	CLAY, high plasticity, hard, dark grey (10YR 4/1), <1mm oxidized laminations, yellowish brown (10YR 5/8)	CH	Split Spoon (6/6/10) (100%)
62			
64	CLAYEY SAND, well graded, ~70% sand (~30% angular, very coarse grained, ~25% subangular, medium grained, ~10% fine grained, ~5% shells, white (10YR 8/1)), ~30% clay, brown (10YR 4/3)	SC	Cuttings
66			
68	CLAY, fat, high plasticity, compact, olive grey (5Y 4/2), small isolated ~2 mm oxidized enclaves	CH	
70			Split Spoon (6/8/10) (50%)
72			
74	CLAYEY SAND, well graded (~75% subrounded, fine grained, ~15% subangular, coarse grained, ~5% subangular, very coarse grained, <2% shells white (10YR 8/1)), ~20% fines, yellowish brown (10YR 5/4)	SC	Cuttings
76			
78			
80	SILTY CLAY, ~85% low plasticity clay, ~15% silt, dark grey (2.5Y 4/1)	CL	Split Spoon (6/24/63) (88%)
82	SILTY SAND, subrounded fine sand with silt, yellowish brown (10YR 5/4), very faint laminations ~80 subrounded, fine grained sand, ~10% subangular, coarse sand, ~10% silt, light yellowish brown (10YR 6/4)	SM	
84	CLAY, low to medium plasticity, dark grey (2.5Y 4/1)	CL	Cuttings
86			
88			
90			Split Spoon (10/10/20) (100%)
92	CLAYEY SAND, well graded, ~80% subangular, fine grained sand (~45% quartz, ~45% feldspathoids, ~10% micas), ~10% subangular, coarse grained sand, ~10% silt, dark yellowish brown (10YR 4/6)	SC	
94			Cuttings
96			
98			Split Spoon (7/10/16) (100%)
100	CLAY, fat clay, high plasticity, very dark grey (2.5Y 3/1)	CH	



Backfill: Grout (Part II and V Portland Cement and CETCO Super Gel-X 10:0.5 ratio)

Notes: Blow Counts assessed every 6"
NAVD 88: North American Vertical Datum of 1988
ft bgs: Feet below ground surface
CPS: Gamma in counts per second
O.D.: Outside Diameter

mS/m: Millisiemens per meter
mV: Millivolts
Ohm-m: Ohms per meter
mm: Millimeter
I.D.: Inside Diameter

Reviewed by: Stephen Carlton, PG #4730

FORMATION ENVIRONMENTAL

Detailed Boring Log: **BB-TW-1**

Bombay Beach **SALTON SEA, CA**	Drilling Company: **Yellow Jacket Drilling**	Logged By: **C. Zarn**	Latitude (NAD 83): **TBD**
	Drilling Method: **Rotosonic**	Borehole Diameter (inches): **10"**	Longitude (NAD 83): **TBD**
Project Number: **061-016**	Sampling Method: **Continuous Core**	Ground Elevation (NAVD 88): **TBD**	Total Depth (ft bgs): **120.0**
BORING LOG: BB-TW-1	Top of Casing Elevation: **TBD**	Date Started: **8/17/2023**	Date Completed: **10/20/2023**

Depth (feet)	Description	USCS	Well Construction	Samples Collected
0	SILTY SAND, light olive gray (5Y6/2), dry. With about 30-40% nonplastic plastic fines. With about 10-20% broken shell fragments. Sand is fine grained, subangular to subrounded and spherical. Reacts with HCl.	SM	Concrete surface seal	
	SILT/ELASTIC SILT with significant silt fraction and locally mottled with grayish fine sand (10-20%), strong brown (7.5YR 5/6), moist. Firm to hard (3.5 PSI) and characterized by medium dry strength. Reacts with HCl. 3.2 ft bgs -This is when first wet soil conditions were encountered. Actual water levels changed after well construction and development.	ML/MH		
5	SILTY SAND, strong brown (7.5YR 5/6), wet. With about 15- 20% nonplastic plastic fines. Sand is fine (7/10) to medium (3/10) grained, subangular to subrounded and spherical. Quartz>feldspathoid>lithics. Contains about 2-3% clear and black micas. Reacts with HCl. At 5 ft bgs - color changes to yellowish brown (10YR 5/6) with about 15% silt.	SM	5.27 ▼	
	Sandy LEAN CLAY/FAT CLAY, strong brown (7.5YR 5/6), moist. Sub horizontal clay injected by subvertical fine to medium sand (sand filled desiccation cracks). Firm and characterized by no dilatancy, medium to high plasticity, and high dry strength. Reacts with HCl.	CL/CH		
10	SILTY SAND, yellowish brown (10YR 5/6), wet. With about 15- 30% nonplastic plastic fines and 3-5% white shell fragments. Increasing fines with depth. Sand is fine grained, subangular to subrounded and spherical. With about 2-3% micas. Quartz>feldspathoid>lithics. With about 2-3%, 1-3 mm in size, intact, white gastropod shells. Reacts with HCl.	SM		
	SILTY SAND/SANDY SILT, yellowish brown (10YR 5/4), wet. With about 2-3%, 1-3 mm in size, intact, white gastropod shells. Soft. Sand is fine grained. Reacts with HCl.	ML/SM	Cement Bentonite Grout	
	SILTY SAND, yellowish brown (10YR 5/4), wet (saturated). With about 35-40% nonplastic fines. Sand is fine (9/10) to medium (1/10) grained, subangular to subrounded and spherical. Quartz>feldspathoids>lithics. Contains trace white shells. Reacts with HCl.	SM		
15	SANDY ELASTIC SILT, dark yellowish brown (10YR 4/4), very moist. Soft and characterized by medium dry strength. With about 30-40% fine sand. Locally with trace shell fragments. Reacts with HCl. Contains a significant clay fraction.	MH		
	SANDY SILT, dark yellowish brown (10YR 4/4), very moist to wet. With about 40-45% fine sand. Soft and characterized by low to medium dry strength. With trace, white, mostly intact, gastropod shells typically measuring between1-3 mm in size. Reacts to HCl.	ML	6-inch Sch 080 PVC Blank Riser	
	SILTY SAND, dark yellowish brown (10YR 4/4), wet (saturated). With about 30-40% non to low plasticity fines. Sand is fine grained, subangular to subrounded and spherical. Quartz>feldspathoid>lithics. With trace, white, mostly intact, gastropod shells typically measuring between 1-3 mm in size. Reacts with HCl.	SM		
20	SILTY SAND/SANDY SILT, dark yellowish brown (10YR 4/4), wet. Locally somewhat plastic and very soft. Sand is fine grained. With trace, white, mostly intact, gastropod shells typically measuring between1-3 mm in size. Reacts with HCl.	SM/ML		
	SILT locally clayey, dark yellowish brown (10YR 4/4), moist. Firm. Faint laminae. With trace, white,			

CH: Inorganic clays of high plasticity, fat clays

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ML: Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity

SW: Well-graded sands, gravelly sands, little to no fines

SP: Poorly graded sands, gravelly sands, little to no fines

SM: Silty sands, sand-silt mixtures

SC: Clayey sands, sand clay mixtures

NOTES:

HCl: Hydrochloric Acid

ft bgs: Feet below ground surface

GW: Groundwater Sample

SO: Soil Sample

Project Number: 061-016	Sampling Method: Continuous Core	Ground Elevation (NAVD 88): TBD	Total Depth (ft bgs): 120.0
BORING LOG: BB-TW-1	Top of Casing Elevation: TBD	Date Started: 8/17/2023	Date Completed: 10/20/2023

Depth (feet)	Description	USCS	Well Construction	Samples Collected
	mostly intact, gastropod shells typically measuring between 1-3 mm in size. Reacts with HCl.	ML		
	LEAN CLAY/FAT CLAY, brown (7.5YR 5/4), moist. Hard (4.5 PSI) and characterized by high dry strength. Reacts with HCl.	CL/CH		
25	SILTY SAND, yellowish brown (10YR 5/4), wet. With about 35-40% nonplastic fines. Sand is fine (8/10) to medium (2/10) grained, subangular to subrounded and spherical. Reacts with HCl (possible slough?).	SM		
	SILTY SAND/SANDY SILT, dark yellowish brown (10YR 4/4) locally with grayish hue, very moist to wet. Soft. Sand is fine grained. Reacts with HCl.	SM/ML		
30			6-inch Sch 080 PVC Blank Riser	
	SILTY SAND, yellowish brown (10YR 5/4), wet. Slightly oxidized. With about 20% nonplastic fines. Sand is fine (7/10) to medium (3/10) grained subangular to subrounded and spherical. Reacts with HCl.	SM		
	SILTY SAND/SANDY SILT, dark yellowish brown (10YR 4/4) locally with grayish hue, very moist to wet. Soft. Sand is fine grained. Reacts with HCl.	SM/ML		
35	SANDY SILT/ELASTIC SILT, dark yellowish brown (10YR 4/4), very moist to wet. Soft and characterized by medium dry strength. With about 30-40% very fine sand and few disseminated white nodules (gypsum?). Content of clay in matrix appears to increase with depth. Reacts to HCl.	ML/MH		
	LEAN CLAY/FAT CLAY, brown (7.5YR 5/3), moist. Firm to hard (4 PSI) and characterized by medium to high plasticity, and high dry strength. Reacts with HCl.	CL/CH		
	SANDY SILT, brown (7.5YR 5/3), very moist. Sub horizontal but undulating laminae characterized by faint oxidation at the contact between sand and fines. Somewhat plastic. Reacts to HCl.	ML		
	LEAN CLAY, brown (7.5YR 5/3), moist. Firm to hard and characterized by medium to high dry strength. Sand appears to be injected along subvertical cracks near the base of this unit (soft sediment deformation). Reacts with HCl.	CL	Cement Bentonite Grout	
40	SILTY SAND, brown (7.5YR 5/3) with a faint yellowish hue, wet. With about 15% nonplastic fines. Sand is fine (8/10) to medium (2/10) grained subangular to rounded and spherical. Sand becomes finer with depth. Quartz>>feldspathoid>lithics. Reacts with HCl.	SM		
	SANDY CLAYEY SILT, brown (7.5YR 5/3), very moist. Soft to firm. Has massive appearance. Contains about 30-40% fine sand. With trace white shell fragments. Reacts with HCl.	ML		
	LEAN CLAY, brown (7.5YR 5/3), moist. Firm to hard and characterized by medium to high dry strength. Reacts with HCl.	CL		
	SILTY SAND/SANDY SILT, brown (7.5YR 5/4), wet. Soft. Sand is fine grained. With trace white shell (gastropod) fragments. Reacts with HCl.	SM/ML		
45	LEAN CLAY/FAT CLAY, brown (7.5YR 5/3), moist. Firm to hard (4.5 PSI) and characterized by medium to high plasticity, and high dry strength. Starting at 46 ft bgs- becomes sandy. At 46.3 ft bgs- 2-inch silty sand stringer. Reacts with HCl.	CL/CH		
	SILTY SAND, brown (7.5YR 5/3), wet. With about 30% non to low plasticity fines. Sand is fine grained			

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Project Number: 061-016	Sampling Method: Continuous Core	Ground Elevation (NAVD 88): TBD	Total Depth (ft bgs): 120.0
BORING LOG: BB-TW-1	Top of Casing Elevation: TBD	Date Started: 8/17/2023	Date Completed: 10/20/2023

Depth (feet)	Description	USCS	Well Construction	Samples Collected
	subangular to rounded and spherical. Quartz>feldspathoid>lithics. Reacts with HCl.	SM		
	SANDY LEAN CLAY, brown (7.5YR 5/4), moist to very moist. Firm to hard (3.5 PSI) and characterized by medium plasticity and high dry strength. Locally clay is mottled with 20-35% fine sand and has faintly developed laminae. Between 53.5 and 55 ft bgs - 1 zone with 30-40% sub angular fine to coarse sand mixed with 5-10% broken shell fragments (mollusks). Reacts with HCl.			TW1BB-48-50_GW001
50				
		CL		
55			6-inch Sch 080 PVC Blank Riser	
60	LEAN CLAY/FAT CLAY, strong brown (7.5YR 5/6), moist. Firm to hard (4.5 PSI) and characterized by medium to high plasticity and high dry strength. Locally significant silt fraction and with well defined sub horizontal but somewhat undulating laminae. With few (<5-10%) lensoidal sandy pockets, typically less than 2-inches in size. At 65 ft bgs - Clay with alternating silt and fine sand laminae. Reacts with HCl. - Between 65 and 73 ft bgs - relatively massive little to no silt and sand laminae. At 68 ft bgs and 72 ft bgs - 3.7 PSI. At 73 ft bgs - increasing sand and silt laminae with depth. Laminated zones are oxidized sub horizontal and undulating.		Cement Bentonite Grout	BB-TW1-63-63.5_SO
65		CL/CH		
70				

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Project Number: 061-016	Sampling Method: Continuous Core	Ground Elevation (NAVD 88): TBD	Total Depth (ft bgs): 120.0
BORING LOG: BB-TW-1	Top of Casing Elevation: TBD	Date Started: 8/17/2023	Date Completed: 10/20/2023

Depth (feet)	Description	USCS	Well Construction	Samples Collected
75	LEAN CLAY with disseminated sand, brown (7.5YR 5/4), moist. Firm (2.5 PSI). Relatively homogeneous and contains about 20% of disseminated fine sand. High dry strength and no dilatancy. Reacts to HCl. At 75 ft bgs - the upper contact consist of a 1-inch thick oxidized zone consisting of alternating sandy, silty and clayey laminae.	CL	Cement Bentonite Grout	
80	FAT CLAY, strong brown (7.5YR 5/6), moist. Firm to hard (3.2 PSI) and characterized by medium to high plasticity and high dry strength. Locally significant silt fraction and with well defined sub horizontal but somewhat undulating laminae. Some the individual laminae pinch out. At 77.2 ft bgs - 1/4-inch thick oxidized silty sand stringer. Between 79 and 79.6 ft bgs - well developed sub horizontal and undulating laminae. The sand fraction is typically oxidized. Between 83.5 and 83.8 ft bgs - oxidized sandy stringer. From 83.8 ft bgs - relatively massive with faint laminae.	CH	Bentonite pellets #60 Sand	
85				BB-TW1-85.5-86_SO
90	POORLY GRADED SAND with SILT, yellowish brown (10YR 5/4), wet. Sand is fine (9.5/10) to medium (0.5/10) grained, subangular to rounded and spherical. Between 86.8 and 93 ft bgs sand becomes gradually coarser with depth but is still almost entirely fine grained. From 93 ft bgs sand becomes slightly finer with depth. Past 95 ft bgs - slight coarsening. At 100 ft bgs - minor oxidation stains. At 104.5 ft bgs - light yellowish brown (10YR 6/4). Starting at 105 ft bgs - few faintly oxidized stained sub horizontal laminae. Quartz>>feldspathoid>lithics. Reacts to HCl.		6-inch Sch 080 PVC Blank Riser	
95			6-inch Sch 080 PVC Screen 0.020" Slot #1C Sand	

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Project Number: 061-016	Sampling Method: Continuous Core	Ground Elevation (NAVD 88): TBD	Total Depth (ft bgs): 120.0
BORING LOG: BB-TW-1	Top of Casing Elevation: TBD	Date Started: 8/17/2023	Date Completed: 10/20/2023

Depth (feet)	Description	USCS	Well Construction	Samples Collected
100		SP-SM	6-inch Sch 080 PVC Screen	TW1BB-98.5-100_GW 001
105			#1C Sand	BBTW1_GW001
110				
115			Mixed #2/12 Sand and Slough	
	SANDY SILT, locally clayey, grayish brown (10YR 5/2), moist. Firm and characterized by low plasticity and slow dilatancy. Undulating laminae and locally mottled with oxized fine sand. Reacts with HCl.		6-inch Sch 080 PVC Blank Sump with Cap	
120		ML	Mixed #2/12 Sand and Slough	

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SW: Well-graded sands, gravelly sands, little to no fines

SP: Poorly graded sands, gravelly sands, little to no fines

SM: Silty sands, sand-silt mixtures

SC: Clayey sands, sand clay mixtures

NOTES:

HCl: Hydrochloric Acid

ft bgs: Feet below ground surface

GW: Groundwater Sample

SO: Soil Sample

FORMATION ENVIRONMENTAL

Well Design/Vol.

DATE: 10/20/23

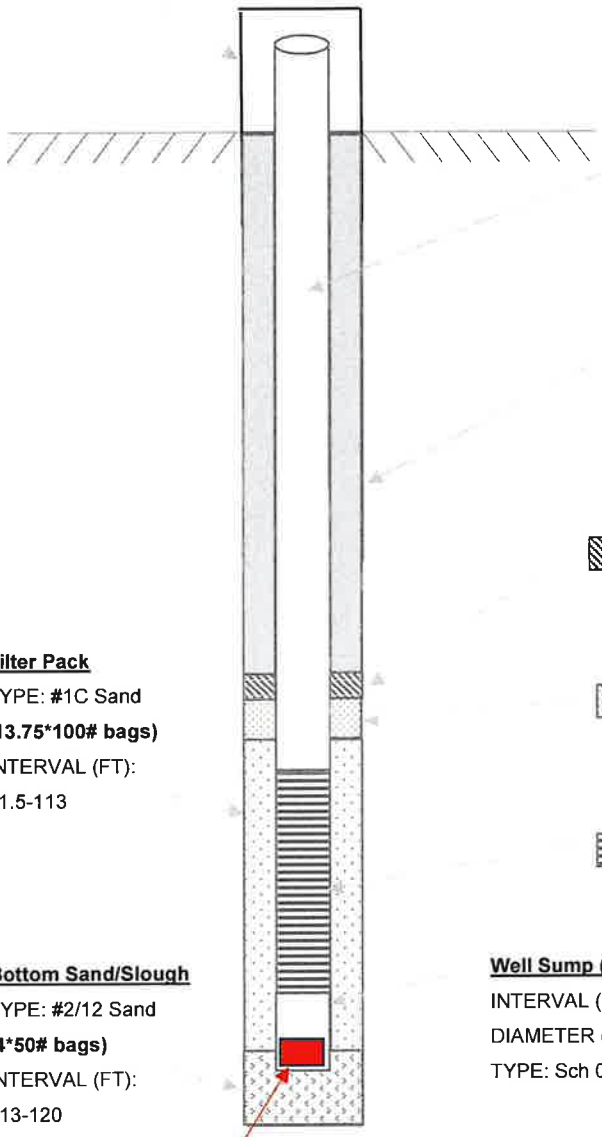
LOCATION ID:

BB-TW-1

Steel Monument

INTERVAL (FT): (+) **3.00 – 2.00*** **(*at development – will change when wellhead finalized)**

DIAMETER (IN): **10**



Blank Casing

INTERVAL (FT): (+) **2.6*** – 92.69

DIAMETER (IN): 6

TYPE: Sch 080 PVC

Annular Seal

TYPE: Cement grout

(34 Bags of Portland, 2 bags of Hydrogel)

INTERVAL (FT): 2- 76

Transition Seal

TYPE: Bentonite pellets **(1.5*5 Gal. Buckets)**

INTERVAL (FT): 76-79

Transition Sand

TYPE: #60 Sand **(1.5*50# Bags)**

INTERVAL (FT): 79-81.5

Well Screen

INTERVAL (FT): 92.69-112.44

TYPE: 0.020 slotted Sch 080 PVC

Filter Pack

TYPE: **#1C Sand**

(13.75*100# bags)

INTERVAL (FT):

81.5-113

Bottom Sand/Slough

TYPE: #2/12 Sand

(4*50# bags)

INTERVAL (FT):

113-120

Well Sump (with bottom cap to first slot)

INTERVAL (FT): 112.44-117.69

DIAMETER (IN): 6

TYPE: Sch 080 PVC

SS Centralizers (FT):

4, 44,82, and 114

Well Plug:

New well TD = 117.38

Boring Diameter:

10"

Note: The bottom sand likely dropped deeper under the weight of the filterpack. The well casing dropped about 3" during construction.

EEC ORIGINAL PKG

State of California

Well Completion Report

Form DWR 188 Submitted 4/10/2024

WCR2024-003114

Owner's Well Number: BB-TW-1 | Date Work Began: 08/17/2023 | Date Work Ended: 10/20/2023

Local Permit Agency: Imperial County Planning and Development Services

Secondary Permit Agency: | Permit Number: 61660 | Permit Date: 07/03/2023

Well Owner (must remain confidential pursuant to Water Code 13752)

Name: IMPERIAL IRRIGATION DISTRICT,

Mailing Address: PO BOX 937

City: IMPERIAL | State: CA | Zip: 92251

Planned Use and Activity

Activity: New Well

Planned Use: Test Well

Well Location

Address:

City: | Zip: | County: Imperial

Latitude: 33 (Deg.) 20 (Min.) 49.7507 (Sec.) N | Longitude: -115 (Deg.) 43 (Min.) 16.1147 (Sec.) W

Dec. Lat.: 33.347153 | Dec. Long.: -115.721143

Vertical Datum: | Horizontal Datum: WGS84

Location Accuracy: | Location Determination Method:

APN: 002640002

Township: 09 S

Range: 12 E

Section: 33

Baseline Meridian: San Bernardino

Ground Surface Elevation:

Elevation Accuracy:

Elevation Determination Method:

Borehole Information

Orientation: Vertical | Specify:

Drilling Method: Sonic | Drilling Fluid: None

Total Depth of Boring: 120 Feet

Total Depth of Completed Well: 117 Feet

Water Level and Yield of Completed Well

Depth to first water: (Feet below surface)

Depth to Static Water Level: (Feet) | Date Measured:

Estimated Yield*: (GPM) | Test Type:

Test Length: (Hours) | Total Drawdown: (feet)

*May not be representative of a well's long term yield.

Geologic Log - Free Form

Depth from Surface Feet to Feet		Description
0	120	See attached Lithology.

Casings

Casing #	Depth from Surface Feet to Feet		Casing Type	Material	Casings Specificatons	Wall Thickness (inches)	Outside Diameter (inches)	Screen Type	Slot Size If any (inches)	Description
1	0	92	Blank	PVC	OD: 6.625 in. | Thickness: 0.432 in.	0.432	6.625			Blank
1	92	112	Screen	PVC	OD: 6.625 in. | Thickness: 0.432 in.	0.432	6.625	Milled Slots	0.02	Screen
1	112	117	Blank	PVC	OD: 6.625 in. | Thickness: 0.432 in.	0.432	6.625			Blank

Annular Material

Depth from Surface Feet to Feet		Fill	Fill Type Details	Filter Pack Size	Description
0	76	Cement	Portland Cement/Neat Cement		Cement Grout
76	79	Bentonite	Other Bentonite		Bentonite Pellets
79	81	Filter Pack	Other Gravel Pack		Transition Sand #60
81	113	Filter Pack	Other Gravel Pack		#1C Sand
113	120	Filter Pack	Other Gravel Pack		#2/12 Sand

Other Observations:

Borehole Specifications

Depth from Surface Feet to Feet		Borehole Diameter (inches)
0	120	10

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name: YELLOW JACKET DRILLING SERVICES LLC (Person, Firm or Corporation)

PO BOX 801 (Address) | GILBERT (City) | AZ (State) | 85299 (Zip)

Signed: *electronic signature received* (C-57 Licensed Water Well Contractor) | 04/10/2024 (Date Signed) | 1034407 (C-57 License Number)

Attachments

BB-TW-1 Well Design.pdf - Well Construction Diagram

BB-TW-1 Lithology.pdf - Geologic Log

DWR Use Only

CSG #	State Well Number	Site Code	Local Well Number

N — Latitude Deg/Min/Sec

W — Longitude Deg/Min/Sec

TRS:

APN:

FORMATION ENVIRONMENTAL

Detailed Boring Log: **BB-TW-2**

Bombay Beach **SALTON SEA, CA**	Drilling Company: **Yellow Jacket Drilling**	Logged By: **C. Zarn**	Latitude (NAD 83): **TBD**
	Drilling Method: **Rotosonic**	Borehole Diameter (inches): **10"**	Longitude (NAD 83): **TBD**
Project Number: **061-016**	Sampling Method: **Continuous Core**	Ground Elevation (NAVD 88): **TBD**	Total Depth (ft bgs): **120.0**
BORING LOG: BB-TW-2	Top of Casing Elevation: **TBD**	Date Started: **10/13/2023**	Date Completed: **10/26/2023**

Depth (feet)	Description	USCS	Well Construction	Samples Collected
0	SILTY SAND, light olive gray (5Y 6/2), dry. With about 30% nonplastic plastic fines. With about 15-20% broken shell fragments. Sand is fine to medium grained, angular to subrounded and spherical. At 2 ft bgs - color changes to brown (7.5YR 5/4) with decreasing silt fraction. Reacts with HCl.	SM	Concrete surface seal	
	LEAN CLAY with SAND, brown (7.5YR 5/4), very moist. Very soft to soft and characterized by medium to high dry strength. Few scattered gypsum crystals fill voids. Reacts with HCl.	CL		
	CORE LOSS	CORE LOSS		
5	SILTY SAND, brown (7.5YR 5/3), wet (first water). With about 20-25% nonplastic plastic fines in matrix. With trace disseminated shell fragments. Sand is fine to medium grained, angular to subrounded and spherical. Reacts with HCl. 5 ft bgs -This is when first wet soil conditions were encountered. Actual water levels changed after well construction and development.	SM	5.66 ▼	
	POORLY GRADED SAND with SILT, brown (7.5YR 5/4), wet. Sand is fine (7/10) to medium (3/10) grained, subangular to subrounded and spherical. Quartz>feldspathoid=lithics. Reacts to HCl.	SP-SM		
10	LEAN CLAY, sandy in places, strong brown (7.5YR 5/6), very moist. Firm (2.5 PSI) becoming very soft past 9.5 ft where sandy and silty. Between 8.5 and 9.5 ft bgs - subvertical cracks (2 " wide) filled by sand (desiccation cracks). At 12.3 ft bgs - gastropod rich pocket. Reacts with HCl.	CL	Cement Bentonite Grout	
	SANDY SILT, brown (7.5YR 5/3), very moist to wet. Soft and characterized by non to low plasticity. Reacts with HCl.	ML		
	LEAN CLAY/FAT CLAY, strong brown (7.5YR 5/6), moist. Firm and characterized by medium to high plasticity, and high dry strength. Subvertical cracks (dessication) are filled by sand and associated with zones with up to 20% gastropod shells. Reacts with HCl.	CL/CH		
15	SILTY SAND, brown (7.5YR 5/3), wet. With about 15-25% nonplastic plastic fines in matrix. With about 1-2% disseminated shell fragments. Sand is fine grained, subangular to subrounded and spherical. Quartz>feldspathoid=lithics. Reacts with HCl.	SM		
	SANDY SILT, brown (7.5YR 5/3), wet. With about 30-40% fine sand. Becomes clayey with depth. Soft and characterized by non to low plasticity. Reacts with HCl.	ML		
	SILTY SAND, brown (7.5YR 5/3), very moist to wet. With about 25% nonplastic plastic fines in matrix. Sand is fine grained. Reacts with HCl.	SM		
	SANDY SILT, brown (7.5YR 5/3), very moist to wet. Contains about 20-40% fine sand and is locally somewhat clayey. With trace 1-2 mm intact gastropod shells disseminated throughout. Reacts with HCl.	ML	6-inch Sch 080 PVC Blank Riser	
20	LEAN CLAY/FAT CLAY, strong brown (7.5YR 5/6), moist. Firm to hard and characterized by medium to high plasticity, and medium to high dry strength. Contains a silty pocket rich in shell fragments. Reacts with HCl.	CL/CH		
	SILTY SAND/SANDY SILT, brown (7.5YR 5/4), very moist. Soft. Sand is fine grained. Reacts with HCl.	SM/ML		

CH: Inorganic clays of high plasticity, fat clays

CL: Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays and lean clays

ML: Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity

SW: Well-graded sands, gravelly sands, little to no fines

SP: Poorly graded sands, gravelly sands, little to no fines

SM: Silty sands, sand-silt mixtures

SC: Clayey sands, sand clay mixtures

NOTES:

HCl: Hydrochloric Acid

ft bgs: Feet below ground surface

GW: Groundwater Sample

SO: Soil Sample

Project Number: 061-016	Sampling Method: Continuous Core	Ground Elevation (NAVD 88): TBD	Total Depth (ft bgs): 120.0
BORING LOG: BB-TW-2	Top of Casing Elevation: TBD	Date Started: 10/13/2023	Date Completed: 10/26/2023

Depth (feet)	Description	USCS	Well Construction	Samples Collected
	LEAN CLAY/FAT CLAY, brown (10YR 5/3), moist. Hard (>4.5 PSI) and characterized by medium to high plasticity, and high dry strength. Reacts with HCl.	CL/CH		
25	SANDY SILT, brown (7.5YR 5/3), very moist to wet. Nonplastic and characterized by rapid dilatancy. With trace 1-2 mm intact gastropod shells disseminated throughout. Reacts with HCl.	ML		
	SILTY SAND/SANDY SILT, brown (7.5YR 5/3), very moist to wet. With sub horizontal laminae. Soft. Sand is fine grained. Reacts with HCl.	SM/ML		
	LEAN CLAY, brown (10YR 5/4), dry to moist. Firm to hard and characterized by high dry strength. Groundmass reacts with HCl.	CL		
	SILTY SAND, brown (7.5YR 5/3), wet (saturated). With about 30-40% nonplastic plastic fines in matrix. Sand is fine grained. Gradually fining with depth. Reacts with HCl.	SM		
30	SILTY SAND/SANDY SILT, brown (7.5YR 5/3), wet. Very soft and locally with trace clay. Sand is fine grained. Reacts with HCl.	SM/ML	6-inch Sch 080 PVC Blank Riser	
	LEAN CLAY/FAT CLAY, brown (7.5YR 5/4), moist. Hard (4.5 PSI) and characterized by medium to high plasticity, and high dry strength. Becomes siltier with depth. Reacts with HCl.	CL/CH		
	SILTY SAND/SANDY SILT, brown (7.5YR 5/3), very moist to wet. Sand is fine grained. Horizontal contact with overlaying clay. Reacts with HCl.	SM/ML		
35	SANDY SILT, brown (7.5YR 5/3) with a slight grayish hue, very moist to wet. Very soft and contains about 40% fine sand. With trace 1-2 mm intact gastropod shells disseminated throughout. The lower portion of this unit is characterized by few undulating oxidized sandy laminae, typically spaced 1/4-1" apart. Becomes gradually more clayey approaching the underlying layer. Reacts with HCl.	ML		
	LEAN CLAY, brown (7.5YR 5/3), moist. Hard (4.5 PSI) and characterized by high dry strength. Few disseminated transluscent crystal growths (1- 2 mm - gypsum?). Groundmass reacts with HCl.	CL		
40	LEAN CLAY/FAT CLAY, brown (7.5YR 5/3), moist. Hard (4.0 PSI) and characterized by medium to high plasticity, and high dry strength. Becomes siltier with depth. Trace white crystal growths (gypsum?) disseminated throughout. Reacts with HCl.	CL/CH	Cement Bentonite Grout	
45	SANDY SILT, brown (7.5YR 5/4) with a slight reddish hue, very moist to wet. Very soft and contains about 25% fine sand near the top increasing to 40% fine sand with depth. The upper 1/2 is also somewhat plastic suggesting some clay content. Well developed sub horizontal laminae. At 43.5 ft bgs - color has a slightly grayish hue. From 45 ft bgs - soft and somewhat plastic suggesting significant clay content. Reacts with HCl.	ML		
	LEAN CLAY/FAT CLAY, brown (7.5YR 5/4), moist. Firm to hard and characterized by medium to high plasticity, and high dry strength. Reacts with HCl.	CL/CH		
	SILTY SAND/SANDY SILT, brown (7.5YR 5/3), wet. Very soft and somewhat plastic. Sand is fine grained. Reacts with HCl.	SM/ML		

CH: Inorganic clays of high plasticity, fat clays

CL: Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays and lean clays

ML: Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity

SW: Well-graded sands, gravelly sands, little to no fines

SP: Poorly graded sands, gravelly sands, little to no fines

SM: Silty sands, sand-silt mixtures

SC: Clayey sands, sand clay mixtures

NOTES:

HCl: Hydrochloric Acid

ft bgs: Feet below ground surface

GW: Groundwater Sample

SO: Soil Sample

Project Number: 061-016	Sampling Method: Continuous Core	Ground Elevation (NAVD 88): TBD	Total Depth (ft bgs): 120.0
BORING LOG: BB-TW-2	Top of Casing Elevation: TBD	Date Started: 10/13/2023	Date Completed: 10/26/2023

Depth (feet)	Description	USCS	Well Construction	Samples Collected
	LEAN CLAY/FAT CLAY, brown (7.5YR 5/4), moist. Firm to hard and characterized by medium to high plasticity, and high dry strength. Reacts with HCl.	CL/CH		
	SILTY SAND/SANDY SILT, brown (7.5YR 5/3), wet. Very soft and somewhat plastic. Sand is fine grained. Reacts with HCl.	SM/ML		TW2BB-48-50_GW001
	LEAN CLAY/FAT CLAY, brown (7.5YR 5/4), moist. Firm to hard and characterized by medium to high plasticity, and high dry strength. Reacts with HCl.	CL/CH		
50	SILTY SAND, brown (7.5YR 5/3), wet. With about 25-30% nonplastic plastic fines in matrix. With about 1-2% disseminated gastropod shell fragments. Sand is fine grained, subangular to rounded and spherical. Quartz>feldspathoid=lithics. Reacts with HCl.	SM		
	LEAN CLAY/FAT CLAY, brown (7.5YR 5/4) to strong brown (7.5YR 5/6), moist. Hard (4.7 PSI) and characterized by medium to high plasticity, and very high dry strength. Reacts with HCl.	CL/CH		
	CORE LOSS	Core Loss		
55	POORLY GRADED SAND, yellowish brown (10YR 5/6), wet. Sand is fine (9/10) to medium (1/10) grained, subangular to rounded and spherical. This unit has a massive appearance and is homogeneous but is locally oxidized and cross-bedded. Quartz>>feldspathoid>lithics. Reacts to HCl. "aeolian deposit".	SP	6-Inch Sch 080 PVC Blank Riser	
	SILTY SAND/SANDY SILT, yellowish brown (10YR 5/6), wet. Very soft and becomes somewhat plastic with depth. Sand is fine grained. With trace gastropod shells disseminated throughout. Reacts with HCl.	SM/ML		
	LEAN CLAY, brown (10YR 5/3), moist. Firm to hard and characterized by medium dry strength.	CL		
60	SANDY SILT, locally clayey, brown (7.5YR 5/3) with a slight grayish hue, very moist to wet. Very soft (0.5 PSI) and contains about 30% fine sand. Undulating sub horizontal laminae of silt alternating with oxidized sand. Clay fraction increasing with depth. Trace gastropod shells near the top of this unit. Reacts with HCl.	ML	Cement Bentonite Grout	
	LEAN CLAY/FAT CLAY, brown (7.5YR 5/4) with a grayish hue, moist. Firm to hard (4.0 PSI) and characterized by medium to high plasticity, and high dry strength. At 64 ft bgs - 2" sandy stringer associated with gastropod shells. Reacts with HCl.	CL/CH		
65	SANDY LEAN CLAY, brown (10YR 5/3), moist. Contains about 40% fine sand mixed with the groundmass. Faintly developped laminae. Firm to hard and characterized by medium dry strength. At 66 ft bgs - silt fraction appears to increase with depth and color changes to brown (7.5YR 5/3). Groundmass reacts with HCl.	CL		
	SANDY SILT/SANDY LEAN CLAY, brown (7.5YR 5/3), moist. Firm and characterized by low plasticity and medium dry strength. Reacts with HCl.	ML/CL	Bentonite pellets	
70	LEAN CLAY/FAT CLAY, brown (7.5YR 5/3), moist. Hard (4.5 PSI) and characterized by no dilatancy, medium to high plasticity, and very high dry strength. Locally with few lensoidal sandy pockest (up to 2" wide and 1.5" high). At 72.3 ft bgs- sand content increases from 10% to 40%. Reacts with HCl.	CL/CH	#60 Sand	
			#1C Sand	

CH: Inorganic clays of high plasticity, fat clays

CL: Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays and lean clays

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SW: Well-graded sands, gravelly sands, little to no fines

SP: Poorly graded sands, gravelly sands, little to no fines

SM: Silty sands, sand-silt mixtures

SC: Clayey sands, sand clay mixtures

NOTES:

HCl: Hydrochloric Acid

ft bgs: Feet below ground surface

GW: Groundwater Sample

SO: Soil Sample

Project Number: 061-016	Sampling Method: Continuous Core	Ground Elevation (NAVD 88): TBD	Total Depth (ft bgs): 120.0
BORING LOG: BB-TW-2	Top of Casing Elevation: TBD	Date Started: 10/13/2023	Date Completed: 10/26/2023

Depth (feet)	Description	USCS	Well Construction	Samples Collected
75	SILTY SAND, locally clayey, redish yellow (7.5YR 6/6), wet. With about 35-45% non to low plasticity fines in matrix. Hard clayey pebbles are scattered thoughout. Sand is fine to medium grained, subangular to rounded and spherical. Quartz>feldspathoid>lithics. Reacts with HCl.	SM		
	SILTY SAND/SANDY SILT, brown (7.5YR 5/3), wet. Very soft to firm and homogeneous in appearance. Sand is fine grained. Reacts with HCl.	SM/ML	6-inch Sch 080 PVC Blank Riser	TW2BB-78-80_GW001
80	LEAN CLAY/FAT CLAY, brown (7.5YR 5/3) to strong brown (7.5YR 5/6), moist. Firm to hard (4.0 PSI) and characterized by no dilatancy, medium to high plasticity, and high dry strength. Locally sandy. Reacts with HCl.	CL/CH		
	SILTY SAND/SANDY SILT, brown (7.5YR 5/3), wet. Somewhat plastic in places. Sand is fine grained. Reacts with HCl.	SM/ML		
	SILTY SAND, brown (7.5YR 5/3), wet (saturated near the top). With about 15-20% nonplastic plastic fines in matrix. Sand is homogeneous and 100% fine grained, subangular to rounded and spherical. This sandy unit appears somewhat compacted possibly due to a small fraction of clayey material in the matrix. Quartz>feldspathoid=lithics. Reacts with HCl.	SM		
	CORE LOSS - likely sandy material.	CORE LOSS		
85	SILTY SAND, brown (7.5YR 5/4) to strong brown (7.5YR 5/6), wet. Typically with about 15-20% non to low plasticity fines in matrix. Sand is homogeneous and more than 95% fine grained, subangular to rounded and spherical. This sandy unit appears somewhat compacted and partially cemented, possibly due to a small fraction of clayey material in the matrix. Quartz>>feldspathoid>lithics. Reacts with HCl. At 104 ft bgs - silt fraction increases to 20-30%. At 114 ft bgs - with about 15-20% fines and slightly coarser. At 115 ft bgs - brown (7.5YR 5/4). (Note that some of the core from 95 to 96.1 and 105 to 108 ft bgs slipped into the hopper - upon examination the lost material was the same as that which was recovered).		#1C Sand	
90				
95			6-inch Sch 080 PVC Screen 0.020" Slot	

CH: Inorganic clays of high plasticity, fat clays

CL: Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays and lean clays

ML: Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity

SW: Well-graded sands, gravelly sands, little to no fines

SP: Poorly graded sands, gravelly sands, little to no fines

SM: Silty sands, sand-silt mixtures

SC: Clayey sands, sand clay mixtures

NOTES:

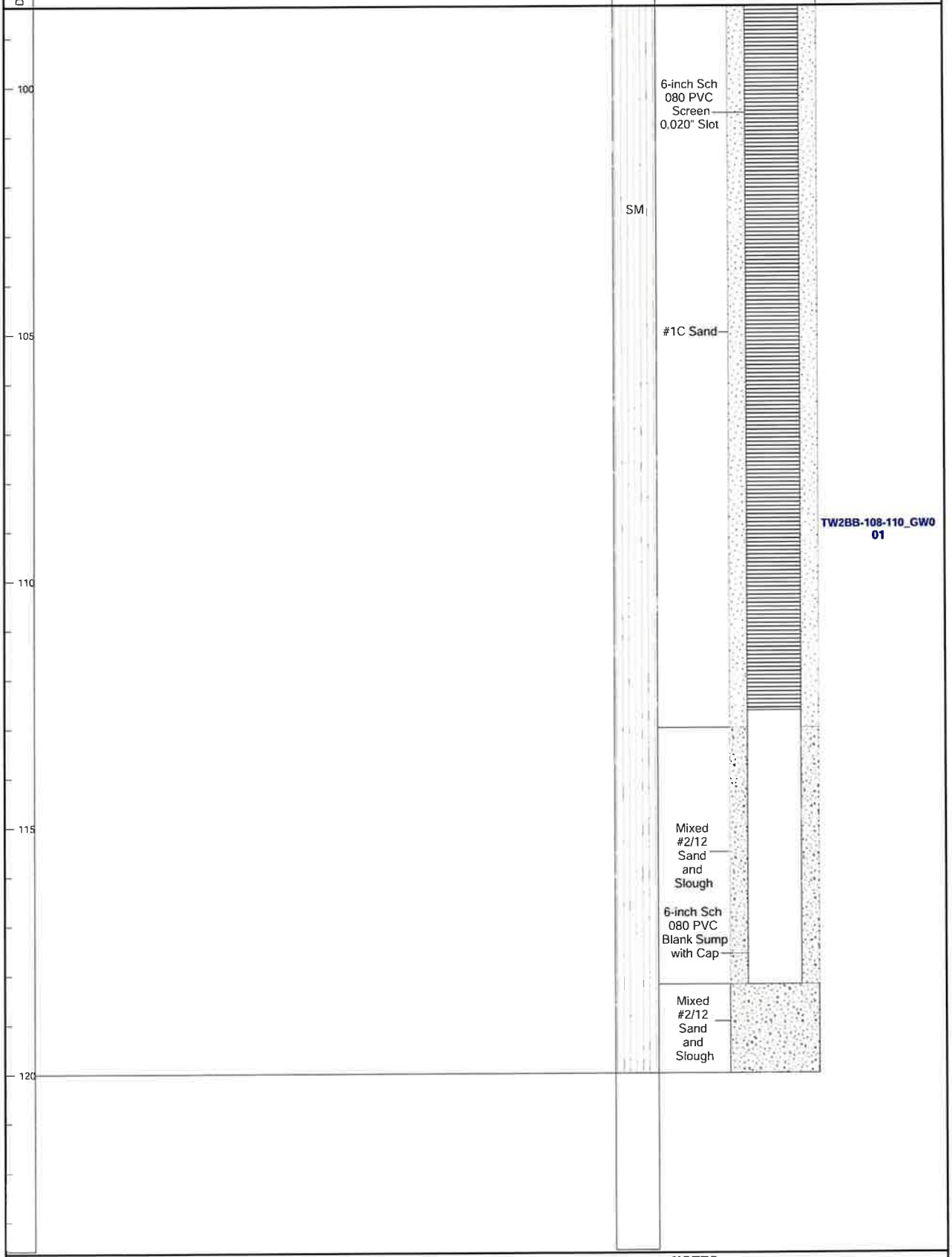
HCl: Hydrochloric Acid

ft bgs: Feet below ground surface

GW: Groundwater Sample

SO: Soil Sample

Project Number: 061-016	Sampling Method: Continuous Core	Ground Elevation (NAVD 88): TBD	Total Depth (ft bgs): 120.0
BORING LOG: BB-TW-2	Top of Casing Elevation: TBD	Date Started: 10/13/2023	Date Completed: 10/26/2023



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SM: Silty sands, sand-silt mixtures

SC: Clayey sands, sand clay mixtures

NOTES:

HCl: Hydrochloric Acid

ft bgs: Feet below ground surface

GW: Groundwater Sample

SO: Soil Sample

FORMATION ENVIRONMENTAL

Well Design/Vol.

DATE: 10/26/23

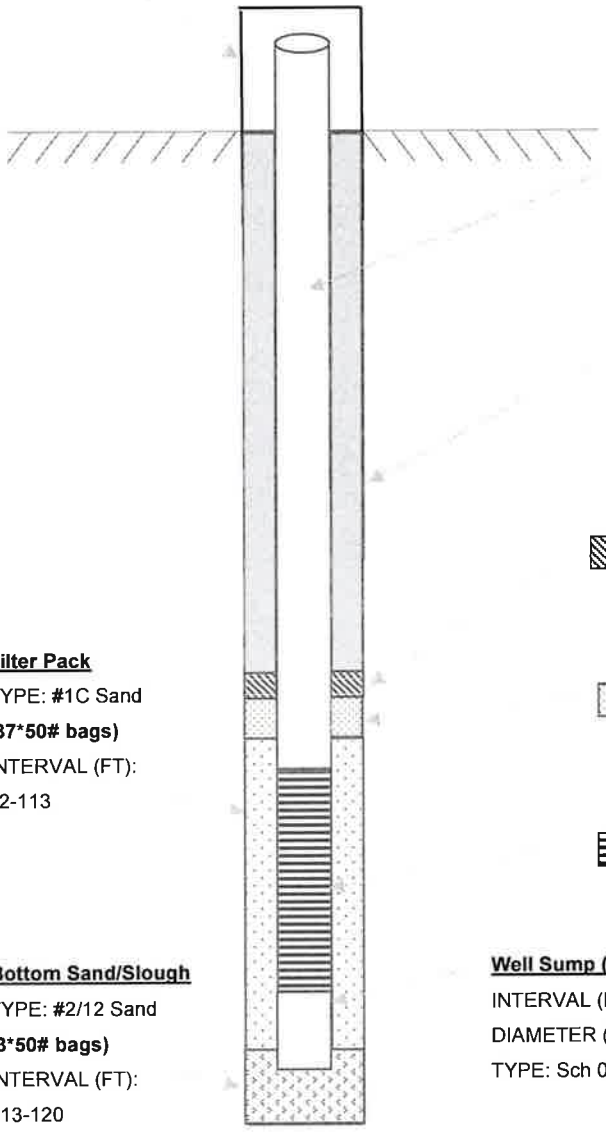
LOCATION ID:

BB-TW-2

Steel Monument

INTERVAL (FT): (+) **2.97 – 2.03*** **(*at development – will change when wellhead finalized)**

DIAMETER (IN): **10**



Blank Casing

INTERVAL (FT): (+) **2.31*** – 82.9.9

DIAMETER (IN): 6

TYPE: Sch 080 PVC

Annular Seal

TYPE: Cement grout

(32 Bags of Portland, 1 bag of Hydrogel)

INTERVAL (FT): 2- 65

Transition Seal

TYPE: Bentonite pellets **(1.75*5 Gal. Buckets)**

INTERVAL (FT): 65-69

Transition Sand

TYPE: #60 Sand **(1.5*50# Bags)**

INTERVAL (FT): 69-72

Well Screen

INTERVAL (FT): 82.9-112.65

TYPE: 0.020 slotted Sch 080 PVC

Filter Pack

TYPE: #1C Sand

(37*50# bags)

INTERVAL (FT):

72-113

Bottom Sand/Slough

TYPE: #2/12 Sand

(3*50# bags)

INTERVAL (FT):

113-120

Well Sump (with bottom cap to first slot)

INTERVAL (FT): 112.65-118.2

DIAMETER (IN): 6

TYPE: Sch 080 PVC

SS Centralizers (FT):

4, 44,82, and 114

Boring Diameter:

10"

Note: The bottom sand likely dropped deeper under the weight of the filterpack. The well casing dropped about 9" during construction.

State of California

Well Completion Report

Form DWR 188 Submitted 4/22/2024

WCR2024-003511

Owner's Well Number: BB-TW-2 | Date Work Began: 10/13/2023 | Date Work Ended: 10/26/2023

Local Permit Agency: Imperial County Planning and Development Services

Secondary Permit Agency: | Permit Number: 61660 | Permit Date: 07/03/2023

Well Owner (must remain confidential pursuant to Water Code 13752)

Name: IMPERIAL IRRIGATION DISTRICT,

Mailing Address: PO BOX 937

City: IMPERIAL | State: CA | Zip: 92251

Planned Use and Activity

Activity: New Well

Planned Use: Test Well

Well Location

Address:

City: | Zip: | County: Imperial

Latitude: 33 (Deg.) 20 (Min.) 49.7507 (Sec.) N | Longitude: -115 (Deg.) 43 (Min.) 16.1147 (Sec.) W

Dec. Lat.: 33.347153 | Dec. Long.: -115.721143

Vertical Datum: | Horizontal Datum: WGS84

Location Accuracy: | Location Determination Method:

APN: 002640002

Township: 09 S

Range: 12 E

Section: 33

Baseline Meridian: San Bernardino

Ground Surface Elevation:

Elevation Accuracy:

Elevation Determination Method:

Borehole Information

Orientation: Vertical | Specify:

Drilling Method: Sonic | Drilling Fluid: None

Total Depth of Boring: 120 Feet

Total Depth of Completed Well: 118 Feet

Water Level and Yield of Completed Well

Depth to first water: (Feet below surface)

Depth to Static Water Level: (Feet) | Date Measured:

Estimated Yield*: (GPM) | Test Type:

Test Length: (Hours) | Total Drawdown: (feet)

*May not be representative of a well's long term yield.

Geologic Log - Free Form

Depth from Surface Feet to Feet		Description
0	120	See attached Lithology.

Casings

Casing #	Depth from Surface Feet to Feet		Casing Type	Material	Casings Specificatons	Wall Thickness (inches)	Outside Diameter (inches)	Screen Type	Slot Size if any (inches)	Description
1	0	82	Blank	PVC	OD: 6.625 in. | Thickness: 0.432 in.	0.432	6.625			Blank
1	82	112	Screen	PVC	OD: 6.625 in. | Thickness: 0.432 in.	0.432	6.625	Milled Slots	0.02	Screen
1	112	118	Blank	PVC	OD: 6.625 in. | Thickness: 0.432 in.	0.432	6.625			Blank

Annular Material

Depth from Surface Feet to Feet		Fill	Fill Type Details	Filter Pack Size	Description
0	65	Cement	Portland Cement/Neat Cement		Cement Grout
65	69	Bentonite	Other Bentonite		Bentonite Pellets
69	72	Filter Pack	Other Gravel Pack		Transition Sand #60
72	113	Filter Pack	Other Gravel Pack		#1C Sand
113	120	Filter Pack	Other Gravel Pack		#2/12 Sand

Other Observations:

Borehole Specifications

Depth from Surface Feet to Feet		Borehole Diameter (inches)
0	120	10

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name: YELLOW JACKET DRILLING SERVICES LLC (Person, Firm or Corporation)

PO BOX 801 (Address) | GILBERT (City) | AZ (State) | 85299 (Zip)

Signed: *electronic signature received* (C-57 Licensed Water Well Contractor) | 04/22/2024 (Date Signed) | 1034407 (C-57 License Number)

Attachments

BB-TW-2 Well Design.pdf - Well Construction Diagram

BB-TW-2 Lithology.pdf - Geologic Log

DWR Use Only

CSG #	State Well Number	Site Code	Local Well Number

N — Latitude Deg/Min/Sec

W — Longitude Deg/Min/Sec

TRS:

APN:

FORMATION ENVIRONMENTAL

Detailed Boring Log: **BB-TW-3**

Bombay Beach **SALTON SEA, CA**	Drilling Company: **Yellow Jacket Drilling**	Logged By: **C. Zarn**	Latitude (NAD 83): **TBD**
	Drilling Method: **Rotosonic**	Borehole Diameter (inches): **10"**	Longitude (NAD 83): **TBD**
Project Number: **061-016**	Sampling Method: **Continuous Core**	Ground Elevation (NAVD 88): **TBD**	Total Depth (ft bgs): **120.0**
BORING LOG: BB-TW-3	Top of Casing Elevation: **TBD**	Date Started: **8/15/2023**	Date Completed: **10/24/2023**

Depth (feet)	Description	USCS	Well Construction	Samples Collected
0	SILTY SAND, light olive gray (5Y 6/2), dry. With about 20% nonplastic fines. Sand is fine (9/10) to medium (1/10) grained, subangular to subrounded and spherical. Rich in shell fragments. Reacts with HCl.	SM	Concrete surface seal	
	LEAN CLAY, gray (2.5Y 5/1), very moist to wet. Characterized by low to medium plasticity and very soft. Contains high silt fraction. Reacts to HCl.	CL		
	SILTY SAND, light olive gray (5Y 6/2) to strong brown (7.5YR 5/6), dry. With about 30% nonplastic fines. Sand is fine (9/10) to medium (1/10) grained, subangular to subrounded and spherical. Rich in shell fragments. Reacts with HCl.	SM		
	SANDY LEAN CLAY, strong brown (7.5YR 5/6), moist. With about 30-40% sandy patches and blebs in the upper half of this layer. Soft to firm (1.2 PSI) and characterized by low to medium plasticity and high dry strength. At 5 ft bgs - with subvertical cracks filled by light gray sand (desiccation cracks?). Clay consistency increases with depth and becomes firm (1.7 PSI).	CL	4.97 ▼	
5				
	SILTY SAND, brown (7.5YR 5/4), wet. With about 30% non to low plasticity fines. Sand is fine grained, subangular to rounded and spherical. Rich in shell fragments. Reacts with HCl. At 8 ft bgs - moist to wet, laminated and with increasing clay fraction. Quartz>feldspathoid=lithics. 6.3 ft bgs -This is when first wet soil conditions were encountered. Actual water levels changed after well construction and development.	SM		
10	SILTY SAND/SANDY SILT, brown (7.5YR 5/4), very moist to wet. Soft. Sand is very fine. Reacts with HCl.	SM/ML	Cement Bentonite Grout	
	SILTY SAND, brown (7.5YR 5/4), wet. With about 15-20% nonplastic fines. Sand is fine grained, subangular to subrounded and spherical. Reacts with HCl. Quartz>feldspathoids>lithics.	SM		
	SANDY LEAN CLAY, brown (7.5YR 5/3), dry. Hard (4.0 PSI) and characterized by low to medium plasticity and medium to high dry strength. Clay is mottled with oxidized sand and silt fraction.	CL		
15	SILTY SAND, yellowish brown (10YR 5/4), wet. With about 20-35% non to low plasticity fines. Sand is fine grained, micaceous, subangular to subrounded and spherical. Between 17.5 and 18.4 ft bgs - rich in shell fragments, primarily white gastropods 1-2mm in size. Reacts with HCl. Quartz>feldspathoids=lithics.	SM	6-inch Sch 080 PVC Blank Riser	
	SANDY SILT, yellowish brown (10YR 5/4), very moist to wet. Soft. With about 40% very fine to fine grained sand. Reacts with HCl.	ML		
20	SILTY SAND with trace gravel, yellowish brown (10YR 5/4), wet. With about 15-20% non to low plasticity fines. Sand is fine (7/10) to medium (3/10) grained, subangular to subrounded and spherical. Locally, with disseminated shell fragments, primarily white gastropods 1-2mm in size. Reacts with HCl. Starting at 21.6 ft bgs - fining with depth.	SM		
	SILTY SAND/SANDY SILT, brown (7.5YR 5/4) to yellowish brown (10YR 5/4), moist to very moist. Soft.			

CH: Inorganic clays of high plasticity, fat clays

CL: Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays and lean clays

ML: Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity

SW: Well-graded sands, gravelly sands, little to no fines

SP: Poorly graded sands, gravelly sands, little to no fines

SM: Silty sands, sand-silt mixtures

SC: Clayey sands, sand clay mixtures

NOTES:

HCl: Hydrochloric Acid

ft bgs: Feet below ground surface

GW: Groundwater Sample

SO: Soil Sample

Project Number: 061-016	Sampling Method: Continuous Core	Ground Elevation (NAVD 88): TBD	Total Depth (ft bgs): 120.0
BORING LOG: BB-TW-3	Top of Casing Elevation: TBD	Date Started: 8/15/2023	Date Completed: 10/24/2023

Depth (feet)	Description	USCS	Well Construction	Samples Collected
	Sand is very fine and with few white gastropod shells locally. Reacts with HCl.	SM/ML		
25	SILTY SAND, yellowish brown (10YR 5/4), very moist to wet. With about 35-45% non to low plasticity fines. Sand is very fine to fine grained, subangular to subrounded and spherical. Locally, with trace disseminated shell fragments, primarily white gastropods. Reacts with HCl. Quartz>>feldspathoids>lithics.	SM		
	POORLY GRADED SAND with SILT, yellowish brown (10YR 5/4), wet. Sand is fine (8/10) to medium (2/10) grained, angular to subrounded and spherical. Quartz>feldspathoid>lithics. Reacts to HCl. Becoming gradually coarser between 25 and 28 ft bgs. At 26 ft bgs - one foot zone with gastropod shells.	SP-SM		
30	SILTY SAND, yellowish brown (10YR 5/4), wet. With about 20% nonplastic fines. Sand is fine (9/10) to medium (1/10) grained, subangular to subrounded and spherical. Locally, with trace disseminated shell fragments, primarily white gastropods. Reacts with HCl.	SM	6-inch Sch 080 PVC Blank Riser	
	POORLY GRADED SAND with SILT, yellowish brown (10YR 5/4), wet. Sand is fine (9/10) to medium (1/10) grained (almost entirely fine), angular to subrounded and spherical. Quartz>feldspathoid=lithics. Reacts to HCl.	SP-SM		
35	SILTY SAND, yellowish brown (10YR 5/4) with a reddish hue, wet. With about 20% nonplastic fines increasing to 35% with depth. Sand is fine (9/10) to medium (1/10) grained, angular to subrounded and spherical. Locally, with well developed sub horizontal laminae and trace disseminated shell fragments, primarily white gastropods. Reacts with HCl.	SM		
	SANDY LEAN CLAY with significant silt fraction, strong brown (7.5YR 5/6), moist. Firm and characterized by low to medium plasticity, slow dilatancy, and relatively high dry strength. Reacts to HCl.	CL		
40	SILTY SAND, yellowish brown (10YR 5/4), wet. With about 20% nonplastic fines increasing to 40% with depth. Sand is fine grained, subangular to subrounded and spherical. Grain size fining downward. Reacts with HCl. Quartz>feldspathoids>lithics.	SM	Cement Bentonite Grout	
	SILTY SAND/SANDY SILT, yellowish brown (10YR 5/4), wet. Soft. Sand is very fine. Faint sub horizontal laminae and thin clayey stringers are observed between 43.6 and 44 ft bgs. The lower foot of this unit has a reddish hue. Reacts with HCl.	SM/ML		
45	LEAN CLAY, brown (7.5YR 5/3), slightly moist. Firm to hard (3.5 PSI) and characterized by medium plasticity, and medium to high dry strength. Reacts with HCl.	CL		
	SILTY SAND, yellowish brown (10YR 5/4), very moist to wet. With about 20% nonplastic fines increasing to 40% with depth. Sand is fine grained, subangular to rounded and spherical. Grain size fining downward. Reacts with HCl. Quartz>feldspathoids=lithics.	SM		

CH: Inorganic clays of high plasticity, fat clays

CL: Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays and lean clays

ML: Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity

SW: Well-graded sands, gravelly sands, little to no fines

SP: Poorly graded sands, gravelly sands, little to no fines

SM: Silty sands, sand-silt mixtures

SC: Clayey sands, sand clay mixtures

NOTES:

HCl: Hydrochloric Acid

ft bgs: Feet below ground surface

GW: Groundwater Sample

SO: Soil Sample

Project Number: 061-016	Sampling Method: Continuous Core	Ground Elevation (NAVD 88): TBD	Total Depth (ft bgs): 120.0
BORING LOG: BB-TW-3	Top of Casing Elevation: TBD	Date Started: 8/15/2023	Date Completed: 10/24/2023

Depth (feet)	Description	USCS	Well Construction	Samples Collected
50	LEAN CLAY, brown (7.5YR 5/3), moist. Firm to hard (3.5 PSI) and characterized by no dilatancy, medium plasticity, and medium to high dry strength. Reacts with HCl.	CL		
	SANDY LEAN CLAY/SILT, brown (7.5YR 5/3), moist to wet. Mottled silt and clay with about 30% fine sand. Reacts to HCl.	CL/ML		
	POORLY GRADED SAND with SILT, yellowish brown (10YR 5/4), wet. Sand is fine (9/10) to medium (1/10) grained (almost entirely fine), subangular to rounded and spherical. Quartz>>feldspathoid=lithics. Reacts to HCl.	SP-SM		
55	SILTY SAND, yellowish brown (10YR 5/4), wet. With about 25% nonplastic fines near the upper contact increasing to 45% with depth. Sand is fine grained, subangular to subrounded and spherical. Grain size fining downward. Trace well preserved gastropod shells locally. Reacts with HCl.	SM		BB-TW3-53-54_SO
	SANDY SILT, yellowish brown (10YR 5/4), very moist to wet. Soft. With about 30 to 40% very fine to fine grained sand and becoming somewhat clayey with depth. Alternating silt and sand laminae in the upper half and with few clayey laminae near the base of this unit. At 59 ft bgs - color changes to dark yellowish brown (10YR 4/4) and soil appears saturated. Reacts with HCl.	ML	6-inch Sch 080 PVC Blank Riser	
60	LEAN CLAY/FAT CLAY, strong brown (7.5YR 5/6), moist. Firm to hard (3.5 PSI) and characterized by no dilatancy, medium plasticity, and high dry strength. High silt fraction. Reacts with HCl.	CL/CH	Cement Bentonite Grout	TW3BB-60-62_GW001
	SILT locally sandy and with significant clay fraction, strong brown (7.5YR 5/6), moist. Firm (2.5 PSI). Characterized by low plasticity and low to medium dry strength. Reacts with HCl.	ML		
65	SILTY SAND/SANDY SILT, yellowish brown (10YR 5/4), very moist to wet. Soft. Sand is fine grained. With trace white shell fragments. From 65 ft bgs - with slight reddish hue. Reacts with HCl.	ML/SM		
	SILTY SAND, yellowish brown (10YR 5/4), wet (saturated). With about 40% nonplastic to low plasticity fines suggesting a significant clay fraction. Sand is fine grained, subangular to subrounded and spherical. Reacts with HCl.	SM	Bentonite pellets	
	SILT locally sandy and with significant clay fraction, brown (7.5YR 4/3), moist. Soft. Characterized by low plasticity and low dry strength. Reacts with HCl.	ML		
70	FAT CLAY/LEAN CLAY with few sub horizontal and undulating sand and silt laminae, brown (7.5YR 4/3), slightly moist. Hard (4.5 PSI) and characterized by no dilatancy, medium to high plasticity, and high dry strength. Some laminae are slightly oxidized. Sand content increases with depth and the layer appears increasingly disturbed (soft sedimentary deformation). Reacts with HCl.	CL/CH	#60 Sand	

CH: Inorganic clays of high plasticity, fat clays

CL: Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays and lean clays

ML: Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity

SW: Well-graded sands, gravelly sands, little to no fines

SP: Poorly graded sands, gravelly sands, little to no fines

SM: Silty sands, sand-silt mixtures

SC: Clayey sands, sand clay mixtures

NOTES:

HCl: Hydrochloric Acid

ft bgs: Feet below ground surface

GW: Groundwater Sample

SO: Soil Sample

Project Number: 061-016	Sampling Method: Continuous Core	Ground Elevation (NAVD 88): TBD	Total Depth (ft bgs): 120.0
BORING LOG: BB-TW-3	Top of Casing Elevation: TBD	Date Started: 8/15/2023	Date Completed: 10/24/2023

Depth (feet)	Description	USCS	Well Construction	Samples Collected
	SILTY SAND, light brown (10YR 6/4), wet. With about 15 to 20% nonplastic fines. Sand is fine (9/10) to medium (1/10) grained, subangular to rounded and spherical. Reacts with HCl. At 75 ft bgs - color changes to dark yellowish brown (10YR 4/6). Quartz>feldspathoids=lithics.	SM	#60 Sand	BB-TW3-73-74.5_SO
75				
	SILT mottled with about 30% clay and 20% fine sand, brown (7.5YR 4/4), moist. Reacts with HCl.	ML		
	LEAN CLAY mottled with SILT, brown (7.5YR 4/4), moist. Reacts with HCl.	ML/CL	6-inch Sch 080 PVC Blank Riser	
80	SILTY SAND, brown (7.5YR 4/4), wet (saturated). With about 30% nonplastic plastic fines increasing to 45% with depth. Sand is fine grained, subangular to subrounded and spherical. Reacts with HCl. Contact with the overlying layer is horizontal.	SM		
	FAT CLAY, brown (7.5YR 4/4), moist. Hard (4.5 PSI) and characterized by high plasticity, and high dry strength. Reacts with HCl.	CH		
	LEAN CLAY/SILT with sand, brown (7.5YR 5/4), very moist. Firm (2.1 PSI) and characterized by low plasticity and moderate dry strength. Clay, silt, and sand laminae are generally sub horizontal but often undulating. Reacts with HCl.	CL/ML		
85	SILTY SAND/SANDY SILT, strong brown (7.5YR 5/6), very moist to wet. Soft. Sand is mottled/mixed with silt. Appears highly disturbed with no systematic bed or laminae orientation. Sand is fine grained and slightly oxidized. Reacts with HCl.	ML/SM		
	POORLY GRADED SAND with SILT, brown (10YR 5/3), wet. Sand is fine (9.5/10) to medium (0.5/10) grained, subangular to rounded and spherical. Quartz>>feldspathoid>lithics. Reacts to HCl.	SP-SM		TW3BB-88-90_GW001
90	SILTY SAND/SANDY SILT, strong brown (10YR 5/6), wet. Locally, well defined grayish, sub horizontal silt laminae. Soft. Sand is fine grained. Reacts with HCl.	SM/ML		
	SILTY SAND, strong brown (7.5YR 5/6), wet. With about 35 to 45% nonplastic fines. Sand is fine grained, subangular to subrounded and spherical. Reacts with HCl. At 75 ft bgs - color changes to dark yellowish brown (10YR 4/6).	SM	#1C Sand	
	POORLY GRADED SAND with SILT, brown (10YR 5/3), wet. Sand is fine (9.5/10) to medium (0.5/10) grained, subangular to rounded and spherical. Sand becomes gradually coarser with depth. Quartz>>feldspathoid>lithics. Reacts to HCl.	SP-SM	6-inch Sch 080 PVC Screen 0.020" Slot	
95				BB-TW3-95-97_SO
	CORE LOSS - probably sandy material as clay/silt would likely have been recovered.	CORE LOSS		

CH: Inorganic clays of high plasticity, fat clays

CL: Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays and lean clays

ML: Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity

SW: Well-graded sands, gravelly sands, little to no fines

SP: Poorly graded sands, gravelly sands, little to no fines

SM: Silty sands, sand-silt mixtures

SC: Clayey sands, sand clay mixtures

NOTES:

HCl: Hydrochloric Acid

ft bgs: Feet below ground surface

GW: Groundwater Sample

SO: Soil Sample

Project Number: 061-016	Sampling Method: Continuous Core	Ground Elevation (NAVD 88): TBD	Total Depth (ft bgs): 120.0
BORING LOG: BB-TW-3	Top of Casing Elevation: TBD	Date Started: 8/15/2023	Date Completed: 10/24/2023

Depth (feet)	Description	USCS	Well Construction	Samples Collected
		CORE LOSS		
100	POORLY GRADED SAND with SILT, brown (7.5YR 5/4) to strong brown (7.5YR 5/6), wet. This sand layer has massive and homogeneous appearance. It is fine (9.5/10) to medium (0.5/10) grained, subangular to rounded and spherical. Quartz>>feldspathoid>lithics. Reacts to HCl. At 104.5 ft bgs - 1/2" lump of reddish brown clay.	SP-SM	6-inch Sch 080 PVC Screen 0.020" Slot	
105	LEAN CLAY/FAT CLAY, brown (7.5YR 5/4) to strong brown (7.5YR 5/6), moist. Firm (2.5 PSI at 107 ft bgs) to hard (4.5 PSI at 110 ft bgs) and characterized by medium to high plasticity, and high dry strength. The groundmass reacts with HCl. Numerous, typically steeply dipping fractures were observed between 108 and 117 ft bgs. At 108 ft bgs - core breaks along a 50-60 degree dipping fracture lined with very fine slightly oxidized sand and associated with secondary slickensided planes. At 109.3 ft bgs - 30-40 degree dipping fracture lined with brown sandy silt. At 110.8 ft bgs - Core breaks along a 70 degree dipping fracture plane lined with a thin sandy film. Core immediately below appears sliced by a vertical pipe filled by sandy silt.	CL/CH	#1C Sand 6-inch Sch 080 PVC Blank Sump with Cap Mixed #8X12 Sand and Slough	
110				
115			Mixed #8X12 Sand and Slough	
	FAT CLAY, grayish brown (10YR 5/2), moist. Firm to hard (3.7 PSI) and characterized by high plasticity, and high dry strength. It has well defined undulating sub horizontal laminations, with some partings lined with a black organic film. Groundmass reacts with HCl.	CH		BB-TW3-119-119.5_SO
120				

CH: Inorganic clays of high plasticity, fat clays

CL: Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays and lean clays

ML: Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity

SW: Well-graded sands, gravelly sands, little to no fines

SP: Poorly graded sands, gravelly sands, little to no fines

SM: Silty sands, sand-silt mixtures

SC: Clayey sands, sand clay mixtures

NOTES:

HCl: Hydrochloric Acid

ft bgs: Feet below ground surface

GW: Groundwater Sample

SO: Soil Sample

FORMATION ENVIRONMENTAL

Well Design/Vol.

DATE: 10/24/23

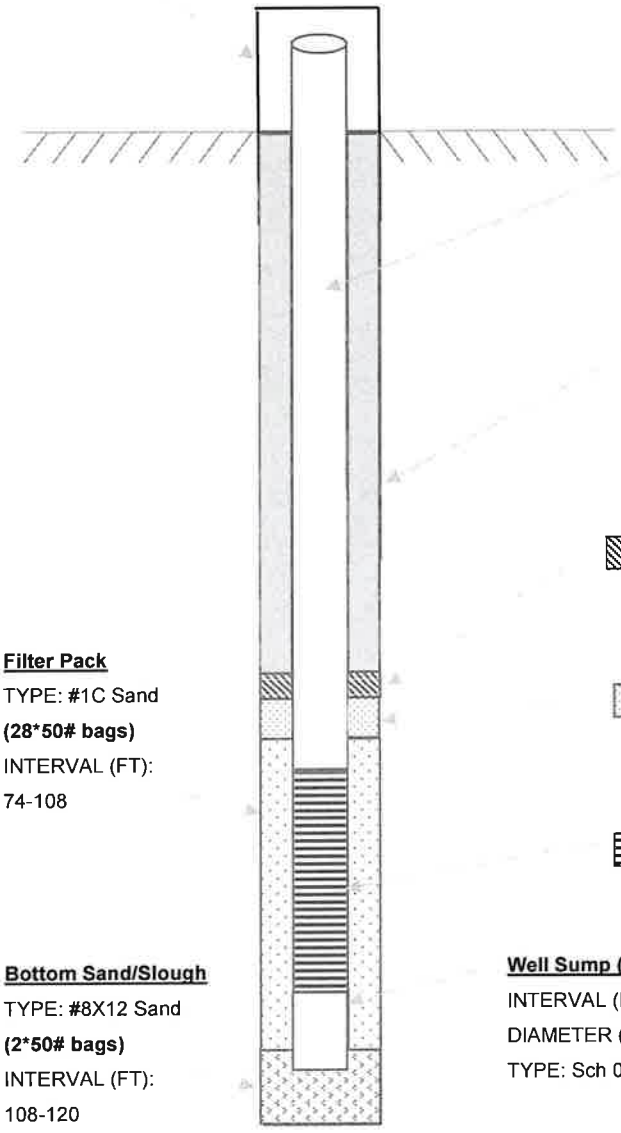
LOCATION ID:

BB-TW-3

Steel Monument

INTERVAL (FT): (+) **2.77 – 2.23*** **(*at development – will change when wellhead finalized)**

DIAMETER (IN): **10**



Blank Casing

INTERVAL (FT): (+) **2.27*** – 86.18

DIAMETER (IN): 6

TYPE: Sch 080 PVC

Annular Seal

TYPE: Cement grout

(28 Bags of Portland, 1 bag of Hydrogel)

INTERVAL (FT): 2- 67

Transition Seal

TYPE: Bentonite pellets **(2*5 Gal. Buckets)**

INTERVAL (FT): 67-70.5

Transition Sand

TYPE: #60 Sand **(2*50# Bags)**

INTERVAL (FT): 70.5-74

Well Screen

INTERVAL (FT): 86.18-105.93

TYPE: 0.020 slotted Sch 080 PVC

Filter Pack

TYPE: #1C Sand

(28*50# bags)

INTERVAL (FT):

74-108

Bottom Sand/Slough

TYPE: #8X12 Sand

(2*50# bags)

INTERVAL (FT):

108-120

Well Sump (with bottom cap to first slot)

INTERVAL (FT): 105.93-111.48

DIAMETER (IN): 6

TYPE: Sch 080 PVC

SS Centralizers (FT):

6,45,84,108

Boring Diameter:

10"

Note: The well dropped about 13" during construction.

State of California

Well Completion Report

Form DWR 188 Submitted 4/22/2024

WCR2024-003517

Owner's Well Number: BB-TW-3 | Date Work Began: 08/15/2023 | Date Work Ended: 10/24/2023

Local Permit Agency: Imperial County Planning and Development Services

Secondary Permit Agency: | Permit Number: 61660 | Permit Date: 07/03/2023

Well Owner (must remain confidential pursuant to Water Code 13752)

Name: IMPERIAL IRRIGATION DISTRICT,

Mailing Address: PO BOX 937

City: IMPERIAL | State: CA | Zip: 92251

Planned Use and Activity

Activity: New Well

Planned Use: Test Well

Well Location

Address:

City: | Zip: | County: Imperial

Latitude: 33 (Deg.) 20 (Min.) 49.7507 (Sec.) N | Longitude: -115 (Deg.) 43 (Min.) 16.1147 (Sec.) W

Dec. Lat.: 33.347153 | Dec. Long.: -115.721143

Vertical Datum: | Horizontal Datum: WGS84

Location Accuracy: | Location Determination Method:

APN: 002640002

Township: 09 S

Range: 12 E

Section: 33

Baseline Meridian: San Bernardino

Ground Surface Elevation:

Elevation Accuracy:

Elevation Determination Method:

Borehole Information

Orientation: Vertical | Specify:

Drilling Method: Sonic | Drilling Fluid: None

Total Depth of Boring: 120 Feet

Total Depth of Completed Well: 111 Feet

Water Level and Yield of Completed Well

Depth to first water: (Feet below surface)

Depth to Static Water Level: (Feet) | Date Measured:

Estimated Yield*: (GPM) | Test Type:

Test Length: (Hours) | Total Drawdown: (feet)

*May not be representative of a well's long term yield.

Geologic Log - Free Form

Depth from Surface Feet to Feet		Description
0	120	See attached Lithology.

Casings

Casing #	Depth from Surface Feet to Feet		Casing Type	Material	Casings Specificatons	Wall Thickness (inches)	Outside Diameter (inches)	Screen Type	Slot Size If any (inches)	Description
1	0	86	Blank	PVC	OD: 6.625 in. | Thickness: 0.432 in.	0.432	6.625			Blank
1	86	105	Screen	PVC	OD: 6.625 in. | Thickness: 0.432 in.	0.432	6.625	Milled Slots	0.02	Screen
1	105	111	Blank	PVC	OD: 6.625 in. | Thickness: 0.432 in.	0.432	6.625			Blank

Annular Material

Depth from Surface Feet to Feet		Fill	Fill Type Details	Filter Pack Size	Description
0	67	Cement	Portland Cement/Neat Cement		Cement Grout
67	70	Bentonite	Other Bentonite		Bentonite Pellets
70	74	Filter Pack	Other Gravel Pack		Transition Sand #60
74	108	Filter Pack	Other Gravel Pack		#1C Sand
108	120	Filter Pack	Other Gravel Pack		#2/12 Sand

Other Observations:

Borehole Specifications

Depth from Surface Feet to Feet		Borehole Diameter (inches)
0	120	10

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name: YELLOW JACKET DRILLING SERVICES LLC
Person, Firm or Corporation

PO BOX 801 (Address) | GILBERT (City) | AZ (State) | 85299 (Zip)

Signed: *electronic signature received* (C-57 Licensed Water Well Contractor) | 04/22/2024 (Date Signed) | 1034407 (C-57 License Number)

Attachments

BB-TW-3 Well Design.pdf - Well Construction Diagram

BB-TW-3 Lithology.pdf - Geologic Log

DWR Use Only

CSG #	State Well Number	Site Code	Local Well Number

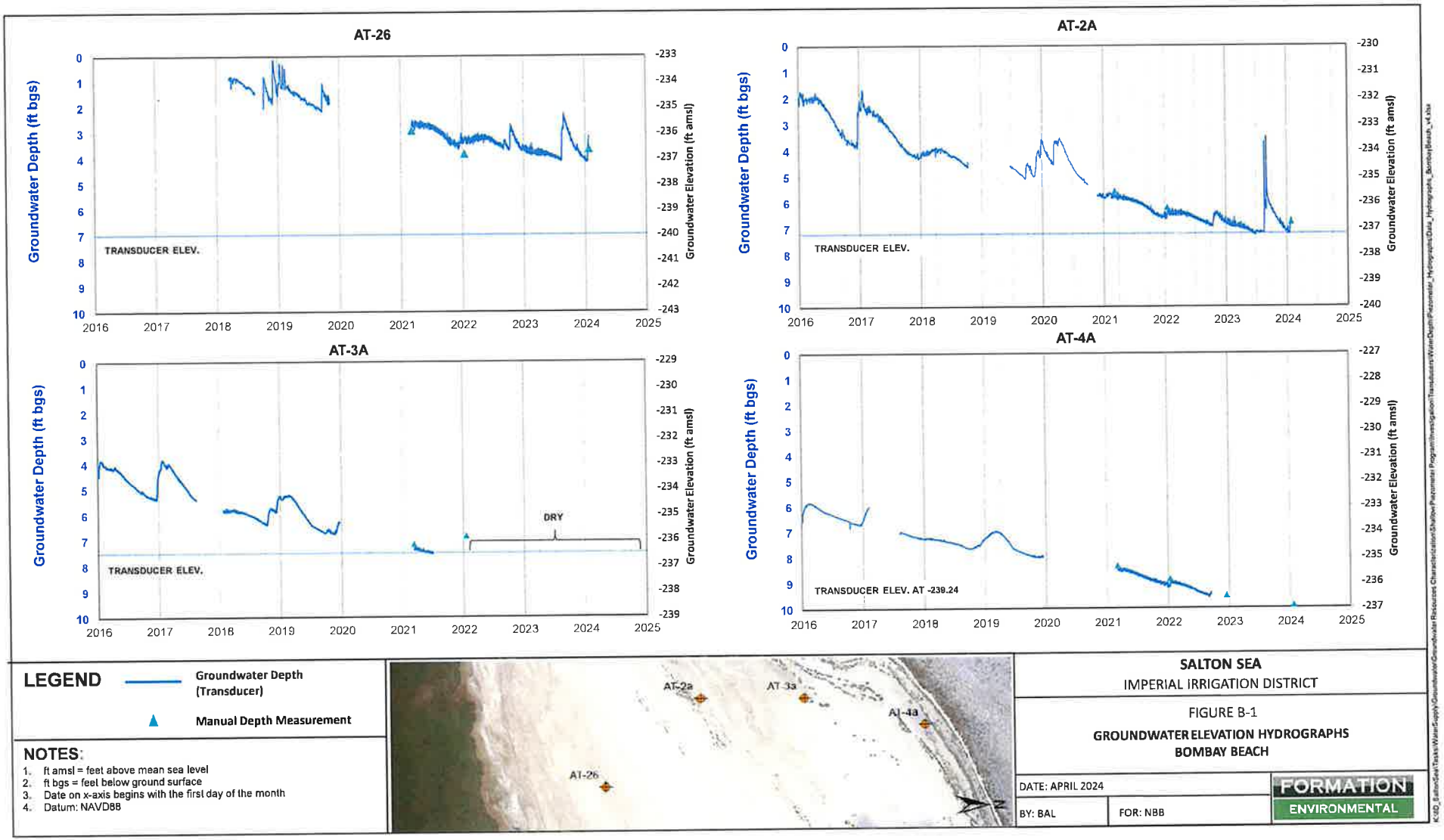
N — Latitude Deg/Min/Sec

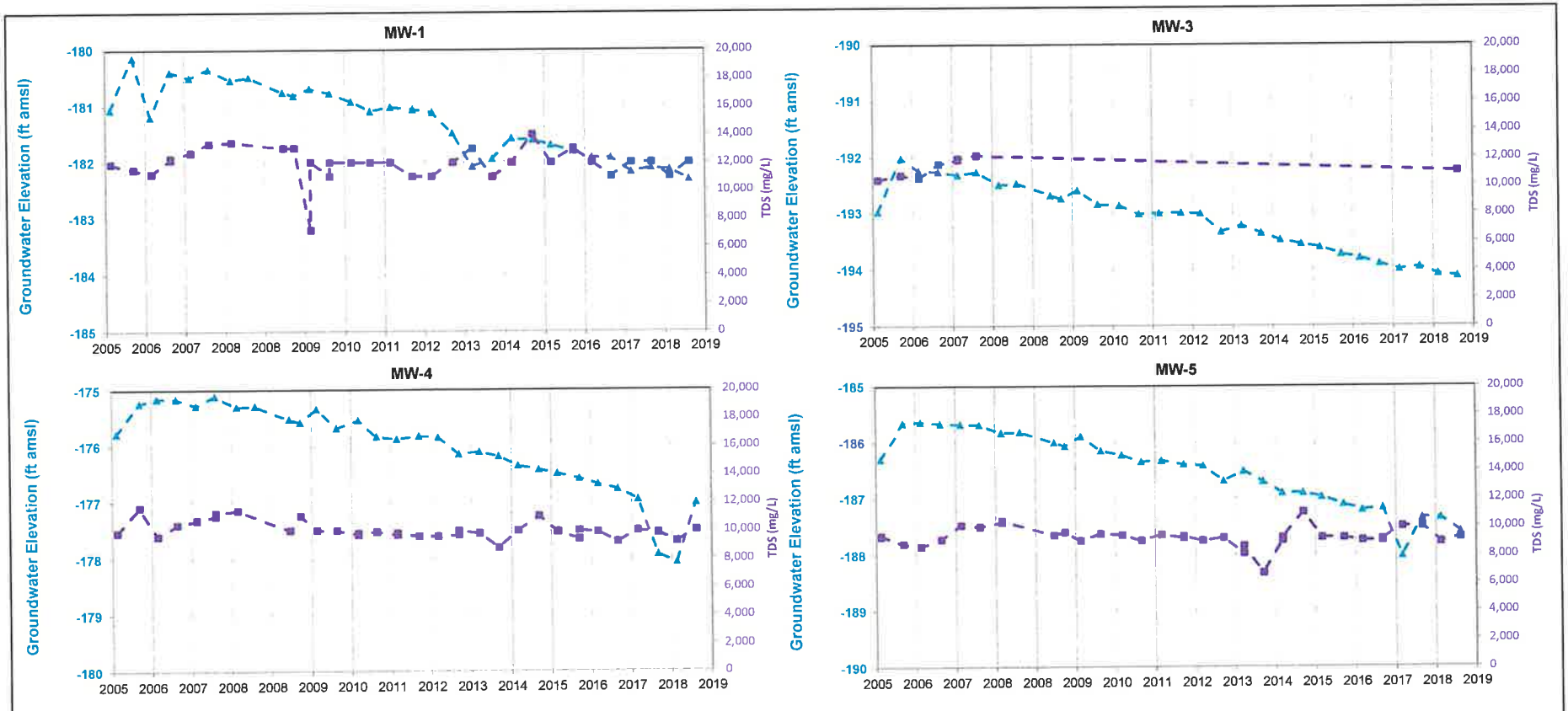
W — Longitude Deg/Min/Sec

TRS:

APN:

ATTACHMENT B – HYDROGRAPHS





LEGEND

- SPC (uS/cm)
- Groundwater Elevation (Transducer)
- Manual Measurement

NOTES:

1. ft amsl = feet above mean sea level
2. Date on x-axis begins with the first day of the month
3. TDS = total dissolved solids
4. mg/L= milligrams per liter

SALTON SEA
IMPERIAL IRRIGATION DISTRICT

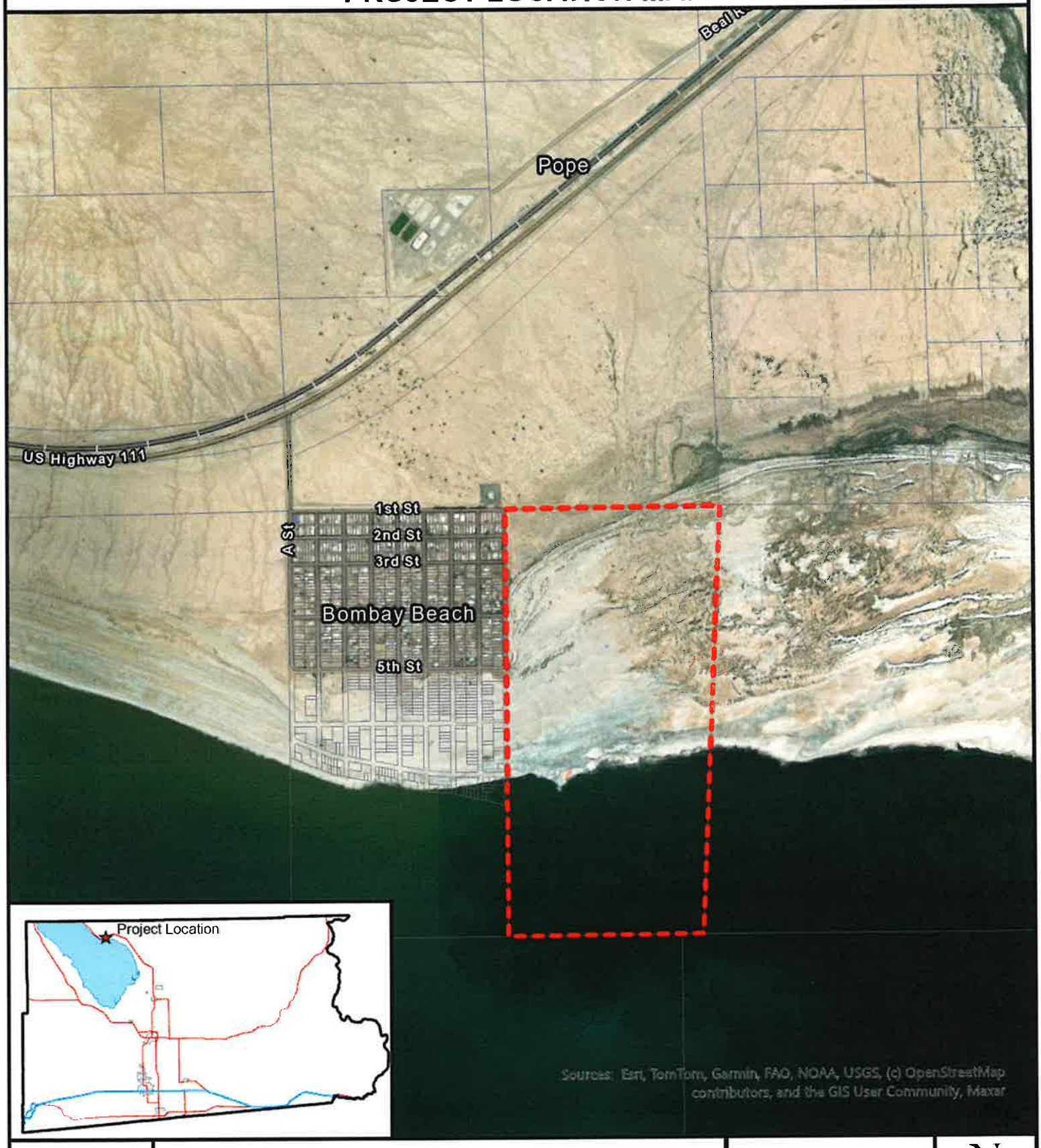
FIGURE B-2
GROUNDWATER ELEVATION HYDROGRAPHS AND TDS
HOT SPA LANDFILL

DATE: JUNE 2022
BY: NBB
FOR: BMS

FORMATION ENVIRONMENTAL

ATTACHMENT "A"
VICINITY MAP

PROJECT LOCATION MAP



IRRIGATION WATER SUPPLY WELLS
CUP #25-0006
IS #25-0014
APN: 002-640-002
9534 AISLE OF PALMS, BOMBAY BEACH

Project Location
Centerline
Parcels

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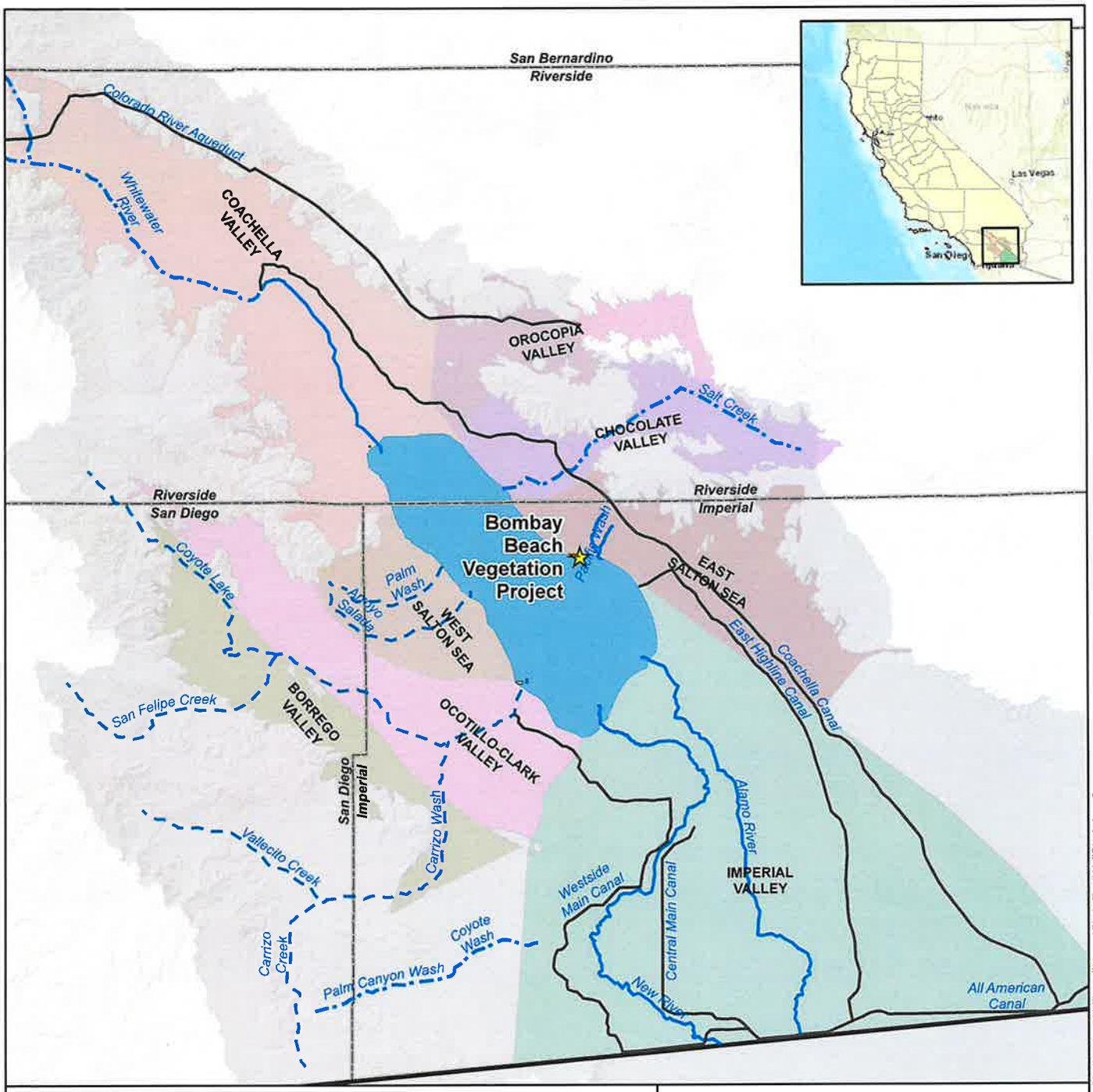
EEC ORIGINAL PKG

ATTACHMENT "B"
SITE PLAN

EEC ORIGINAL PKG



State Boundary
Counties
Salton Sea
Salton Sea Watershed

Rivers and Streams

Stream; Braided Stream
Ephemeral Stream
Stream Intermittent
Canal; Aqueduct; Intracoastal Waterway

Groundwater Basins

Borrego Valley
Chocolate Valley
Coachella Valley
East Salton Sea
Imperial Valley
Ocotillo-Clark Valley
Orocopia Valley
West Salton Sea

Notes:
1. Background imagery source: ESRI Base Imagery, Terrain Hillshade: Airbus, USGS, NGA, NASA, CGIAR, NCEAS, NLS,OS, NMA, Geodatastyrelsen, GSA, GSI and the GIS User Community

0 15 30
Miles

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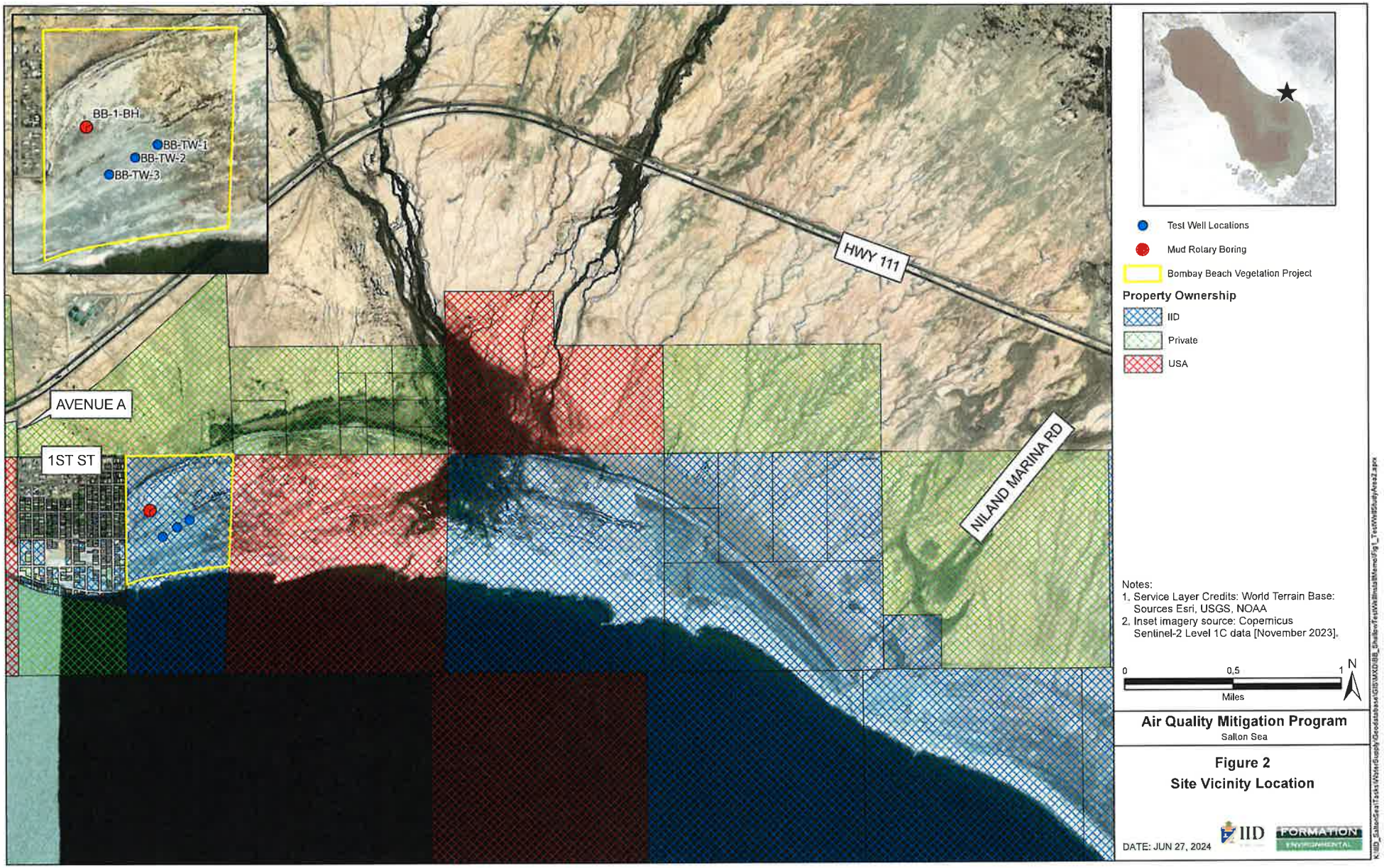
Air Quality Mitigation Program
Salton Sea

Figure 1
Project Location

DATE: JUN 27, 2024

IID
FORMATION ENVIRONMENTAL

K:\IID_SaltonSeaTasks\WaterSupply\Geodatabase\GIS\MXD\BB_ShallowTestWellInstallMemo\Fig1_TestWellStudyArea2.aprx



EEC ORIGINAL PKG

ATTACHMENT "C"

APPLICANT'S SUBMITTAL

EEC ORIGINAL PKG

CONDITIONAL USE PERMIT

I.C. PLANNING & DEVELOPMENT SERVICES DEPT.
801 Main Street, El Centro, CA 92243 (442) 265-1736

- APPLICANT MUST COMPLETE ALL NUMBERED (black) SPACES – Please type or print -

1.	PROPERTY OWNER'S NAME Imperial Irrigation District	EMAIL ADDRESS JLLhumes@IID.com	
2.	MAILING ADDRESS (Street / P O Box, City, State) PO Box 937, Imperial, CA	ZIP CODE 92251	PHONE NUMBER 760-472-6190
3.	APPLICANT'S NAME Imperial Irrigation District	EMAIL ADDRESS JLLhumes@IID.com	
4.	MAILING ADDRESS (Street / P O Box, City, State) PO Box 937, Imperial, CA	ZIP CODE 92251	PHONE NUMBER 760-472-6190
4.	ENGINEER'S NAME CA. LICENSE NO. N/A	EMAIL ADDRESS	
5.	MAILING ADDRESS (Street / P O Box, City, State)	ZIP CODE	PHONE NUMBER

6.	ASSESSOR'S PARCEL NO. 002-640-002	SIZE OF PROPERTY (in acres or square foot) 320 AC	ZONING (existing) S-2-G
7.	PROPERTY (site) ADDRESS 5th Street and Avenue E, Bombay Beach, CA		
8.	GENERAL LOCATION (i.e. city, town, cross street) The northwestern corner of the Project is one block east of the intersection of 1st St. and G Ave. in Bombay Beach, CA.		
9.	LEGAL DESCRIPTION The property is located in the northeastern quarter of Section 33of Township 9 South, Range 12 East		

PLEASE PROVIDE CLEAR & CONCISE INFORMATION (ATTACH SEPARATE SHEET IF NEEDED)

10.	DESCRIBE PROPOSED USE OF PROPERTY (list and describe in detail)	The proposed use includes converting three shallow groundwater test wells into water supply wells for irrigation of vegetation-based dust control. Construction activities associated with the completion of the test wells were permitted under separate construction permits. A full project description, CEQA analysis, and Groundwater Resources Impact Assessment are attached.
11.	DESCRIBE CURRENT USE OF PROPERTY	N/A
12.	DESCRIBE PROPOSED SEWER SYSTEM	N/A
13.	DESCRIBE PROPOSED WATER SYSTEM	N/A
14.	DESCRIBE PROPOSED FIRE PROTECTION SYSTEM	N/A
15.	IS PROPOSED USE A BUSINESS? ☐ Yes ☒ No	IF YES, HOW MANY EMPLOYEES WILL BE AT THIS SITE? N/A

I / WE THE LEGAL OWNER (S) OF THE ABOVE PROPERTY CERTIFY THAT THE INFORMATION SHOWN OR STATED HEREIN IS TRUE AND CORRECT.

Tina L. Shields — 3/28/25
Print Name — Date
Signature

Print Name — Date
Signature

REQUIRED SUPPORT DOCUMENTS

A. SITE PLAN
B. FEE
C. OTHER
D. OTHER

APPLICATION RECEIVED BY:	LB	DATE	4/8/25
APPLICATION DEEMED COMPLETE BY:		DATE	
APPLICATION REJECTED BY:		DATE	
TENTATIVE HEARING BY:		DATE	
FINAL ACTION ☐ APPROVED ☐ DENIED		DATE	

REVIEW / APPROVAL BY OTHER DEPT'S required
☐ P W
☐ E H S
☐ A P C D
☐ O E S
☐ _____
☐ _____

CUP #
25-0006
IS25-0014

EEC ORIGINAL PKG

Irrigation Water Supply Wells at Bombay Beach Vegetation Project

Project Background

The Bombay Beach Vegetation Project is a dust mitigation project being implemented by Imperial Irrigation District (IID) as a part of its Salton Sea Air Quality Mitigation Program. It includes native species planted on raised beds and enhancement of existing vegetation, both supported by drip irrigation from groundwater. It also includes stormwater retention and spreading features to stabilize existing vegetation. The overall goal of the Project is to mitigate dust and understand the site-specific factors that affect dust control measure effectiveness, as well as project operations, maintenance, and costs.

Irrigation water supply development is necessary to support the Bombay Beach Vegetation Project. Water supplies are limited in this area, with no agricultural drains or other currently developed sources readily available for irrigation use. Potential water sources that are currently feasible to support the Bombay Beach Vegetation Project are limited to retention of stormwater runoff and groundwater. Stormwater availability is not sufficient to meet the project objectives. In 2023, three test wells (BB-TW-1 through BB-TW-3) were completed to total depths ranging from approximately 111 to 118 feet below ground surface (bgs). A groundwater supply zone was characterized from approximately 80 to 120 feet bgs. Investigation results demonstrate groundwater quality in the supply zone is feasible as planned for the long-term irrigation of salt-tolerant vegetation and raises no new concerns about potential adverse effects related to water quality.

Project Description

The Bombay Beach Vegetation Project is located on the east side of the Salton Sea (Figure 1) west of Highway 111 (Figure 2). The project site is located on IID-owned land on Assessor's Parcel Number 002-640-002. It is surrounded by private land on the north, the community of Bombay Beach to the west, land owned by the Bureau of Reclamation (BOR) and leased to State Parks on the east, and the Salton Sea to the south (Figure 2). The locations of the test wells are shown in Figure 2.

Under the Conditional Use Permit (CUP), the test wells will be converted to supply wells to support irrigation. Vegetation will include approximately 85 acres of native, salt- and drought-tolerant species on raised seedbeds (Figure 3). The raised seedbeds will be spaced every 50 feet to provide for low-density vegetation (8 to 10% cover) for dust mitigation. In addition, existing vegetation will be monitored and irrigated as needed to maintain and enhance plant vigor.

Information Requests Identified during Pre-Application Meeting

IID and Imperial County participated in a pre-application meeting on October 3, 2024, related to the CUP application. Additional information was requested for several items. Each is described below.

- **Growth Characteristics of ALOC**. Vegetation to be seeded includes iodine bush (*Allenrolfea occidentalis* or ALOC) and big saltbush (*Atriplex lentiformis* or ATLE). ALOC is the primary species used for dust mitigation. ATLE is used primarily as a nurse plant to protect the ALOC as it matures. The Fire Department requested information about the growth habit of ALOC and whether it may increase potential fire risk. ALOC is a native, drought-tolerant shrub that typically grows three to five feet in height and width. Its maximum rooting depth ranges from approximately 10 to 15 feet below ground surface (bgs) and it connects to groundwater for long-term sustainability. It has succulent leaves with high water content, especially with irrigation (i.e., high fuel moisture), therefore it is not fire prone and can actually help to reduce fire hazard (Nord et al., 1971[1]). In addition, the raised seedbeds will be spaced every 50 feet to provide for low-density vegetation (8 to 10% cover) for dust mitigation. **Given the growth characteristics of ALOC and the low density planting, the project is not anticipated to increase fire risk in the area**. In addition, as shown in Figure 4, the shortest distance between the community and the vegetation establishment area is approximately 190 feet. Furthermore, the 2002 shoreline berm, which separates the community from the project area, would function as a natural containment barrier during a fire event.

  In contrast to the vegetation planned for the Bombay Beach Vegetation Project, reeds and cattails, like those found in the wetland complexes that recently burned north of the Alamo River, have been shown to present high fire risk. They grow very tall very quickly. In the fall when they die back, thick mats of dry, hollow stalks accumulate over several seasons thereby forming highly dense, fire-prone areas. Additionally, the hollow stems of dry reeds and other common wetland species act as conduits for oxygen to flow through the stand, causing these wetland areas to burn exceptionally hot and fast.

- **Base Flood Elevation at Well Heads**. The Planning Department requested information regarding the elevation of the three well heads relative to the base flood elevation (BFE). This request was in the context of Imperial County Ordinance Title 9 Division 16, which states that in a Zone A Special Flood Hazard Area (SFHA), non-residential construction must be elevated 2 feet above the base flood elevation (§ 91605.C.2). The BFE is colloquially known as the 100-year water surface elevation. Although it is not clear whether the definition of "non-residential construction" includes groundwater wells, IID completed an analysis of the well head elevations relative to the BFE. The existing effective (i.e., approved by FEMA) BFE at the Bombay Beach Vegetation Project is based on analysis performed in 1980 using Salton Sea elevation data from 1961-1978. Thus, the existing effective BFE is not appropriate post-2003 QSA as the Salton Sea has been in recession. **Surface water hydraulic modeling of the 100-year fluvial flood event at the project site indicates**

[1] Nord, E. C., Hartless, P. F., & Nettleton, W. D. (1971). Effects of several factors on saltbush establishment in California. Journal of Range Management, 24(3), 216-223.

freeboard greater than 2.0 feet from flood water elevations to the top of casing at each well head. A brief technical memorandum describing this analysis is included as Appendix A.

- **Project Description**. The CEQA document prepared for the project was completed in January 2023. Subsequent to the adoption of the CEQA Addendum by the IID Board of Directors, additional Project features were added to refine Project implementation procedures and to ensure the long-term viability of the Project. The Planning Department requested additional information regarding the consideration of these project features under CEQA. A brief technical memorandum is included as Appendix B that describes consideration of the additional Project features and concludes **no additional CEQA analysis is necessary**.

Imperial County Planning & Development Services
Planning / Building / Parks & Recreation

Jim Minnick
DIRECTOR

NOTICE TO APPLICANT

SUBJECT: PAYMENT OF FEES

Dear Applicant:

Pursuant to County Codified Ordinance Division 9, Chapter 1, Section 90901.02, all Land Use Applications must be submitted with their appropriate application fee. Failure to comply will cause application to be rejected.

Please note that once the Department application is received and accepted, a "time track" billing will commence immediately. Therefore, should you decide to cancel or withdraw your project at any time, the amount of time incurred against your project will be billed and deducted from your payment. As a consequence, if you request a refund pursuant to County Ordinance, your refund, if any, will be the actual amount paid minus all costs incurred against the project.

Please note there will be no exceptions to this policy. Thank you for your attention.

Sincerely yours,

Jim Minnick, Director
Planning & Development Services

RECEIVED BY: _____ DATE: 3/28/25

801 Main St. El Centro, CA 92243 442-265-1736 Fax 442-265-1745 planning@co.imperial.ca.us www.icpds.com

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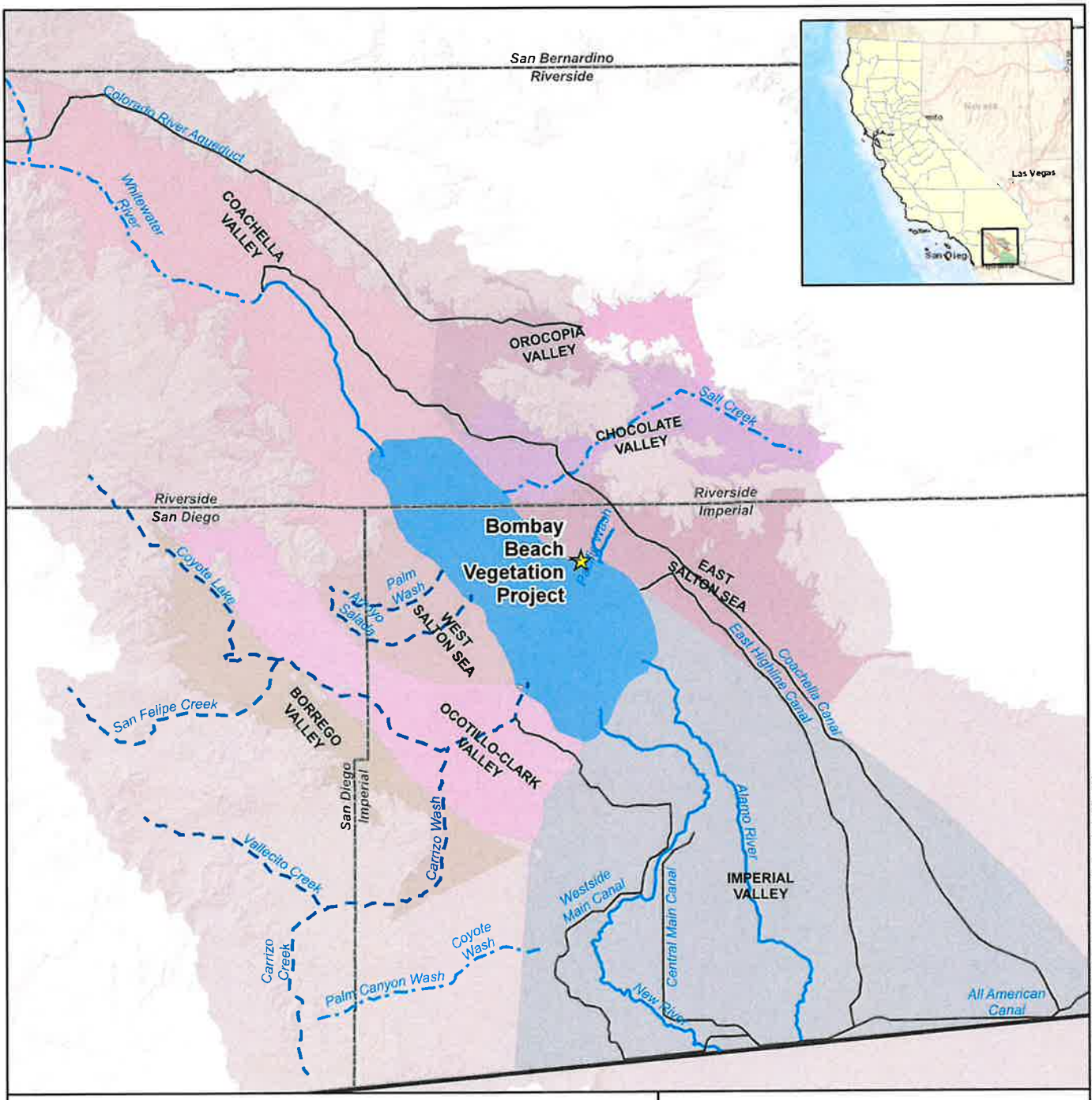

State Boundary
Counties
Salton Sea
Salton Sea Watershed

Rivers and Streams

Stream; Braided Stream
Ephemeral Stream
Stream Intermittent
Canal; Aqueduct; Intracoastal Waterway

Groundwater Basins

Borrego Valley
Chocolate Valley
Coachella Valley
East Salton Sea
Imperial Valley
Ocotillo-Clark Valley
Orocopia Valley
West Salton Sea

Notes:
1. Background imagery source: ESRI Base Imagery, Terrain Hillshade: Airbus, USGS, NGA, NASA, CGIAR, NCEAS, NLS,OS, NMA, Geodatastyrelsen, GSA, GSI and the GIS User Community

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Air Quality Mitigation Program
Salton Sea

Figure 1
Project Location

DATE: JUN 27, 2024

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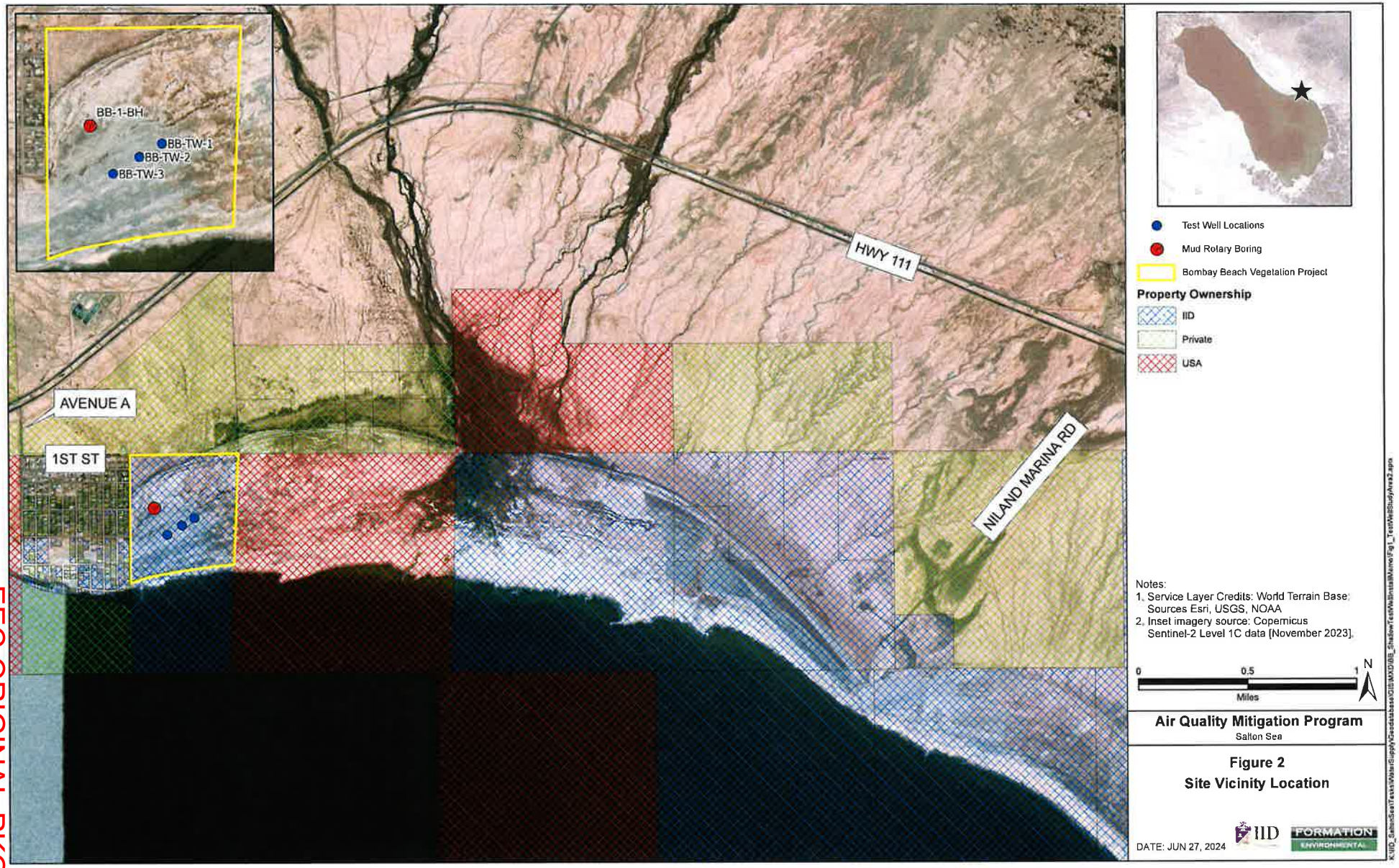
FORMATION ENVIRONMENTAL

K:\IID_SaltonSea\Tasks\WaterSupply\GeodatabaseGIS\MXD\BB_ShallowTestWellInstallMemo\Fig1_TestWellStudyArea2.aprx



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Appendix A. Determination of Base Flood Elevation at the Bombay Beach Vegetation Project

Determination of Base Flood Elevation at the Bombay Beach Vegetation Project

Date:	October 14, 2024
Project name:	Bombay Beach Vegetation Project
Project no:	D3850002
Client:	Imperial Irrigation District Formation Environmental
Prepared by:	Tim Bedford, PE / Jacobs
Reviewed by:	Jason Smesrud, PE / Jacobs

Jacobs
2020 SW Fourth Ave
Suite 300
Portland, OR 97206
United States

1. Background and Introduction

The Bombay Beach Vegetation Project is a dust mitigation project on approximately 150 acres located directly adjacent to the community of Bombay Beach. Dust control will include native species planted on raised beds and enhancement of existing vegetation supported by drip irrigation. In addition to the drip irrigation, natural recruitment will occur with surface water harvesting into low-impact landscape features, commonly known as bunds. Additional site features include an access road, a stormwater diversion berm (18 to 24 inches) to protect vegetation infrastructure from stormwater flows, and a community drainage swale to convey stormwater from the community of Bombay Beach through the project site (Figure 1).

Figure 1. Project Area

Imperial County Planning and Development Services Ordinance title 9 division 16 states that in a Zone A Special Flood Hazard Area (SFHA) non-residential construction must be elevated 2 feet above the base flood elevation (§ 91605.C.2). The base flood elevation (BFE) is colloquially known as the 100-year water surface elevation, or 1% annual chance elevation. The local ordinance is consistent with the code of federal regulations for floodplain management in flood prone areas (44 CFR §60.3). Project components subject to this ordinance include three groundwater wells with top of well casings which protrude above ground and support drip irrigation. This memorandum documents project compliance with Imperial County ordinance 91605.C.2.

2. Current Regulatory Base Flood Elevation

The BFE is defined in the Imperial County California and Incorporated Areas, Flood Insurance Study (FEMA, 2008) study number 06025CV001B effective in September 2008. The hydrologic and hydraulic analysis for unincorporated areas of Imperial County was performed between 1979 to 1981. Accompanying the FIS are the Flood Insurance Rate Map (FIRM) panels which show the spatial extent of SFHA. The project area is located within a Zone A SFHA where no BFE's are determined.

The FIS report (page 24) states that the1 percent annual chance Stillwater elevation at Bombay Beach is -223.7 feet. A screenshot of the FIRM panel is shown in Figure 2 below. This elevation was determined based on a water balance analysis using data from 1961 – 1978, a frequency analysis of total inflows, a constant evaporation rate and an initial equilibrium elevation of the sea. This analysis, while valuable is no longer appropriate based on the 2003 Quantification Settlement Agreement (QSA) reallocating a portion of the Sea's primary inflow. Satellite imagery analysis suggests the sea has dropped roughly 12 feet in the last 20 years (IID, 2024), and continues to recede as shown in Figure 3. The impact of this on the Bombay Beach Vegetation Project is that the Salton Sea will no longer reach pre-2003 water surface elevation based on hydrologic processes alone and therefore the BFE is not governed by flooding from the Sea but from upgradient fluvial sources.

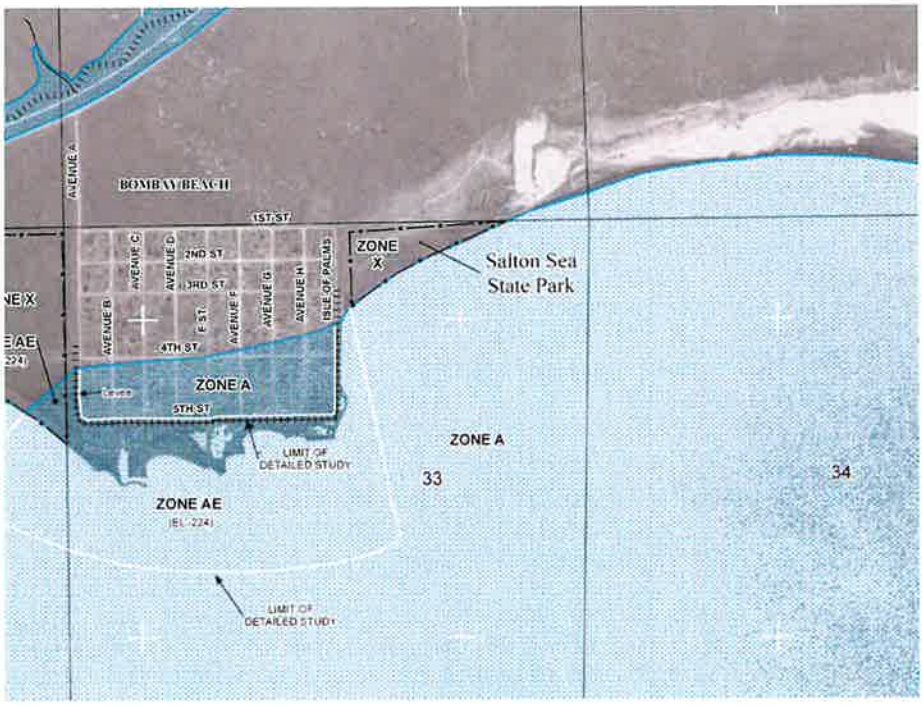


Figure 2. Screenshot of Flood Insurance Rate Map Number 06025C0380C (Attachment 1)

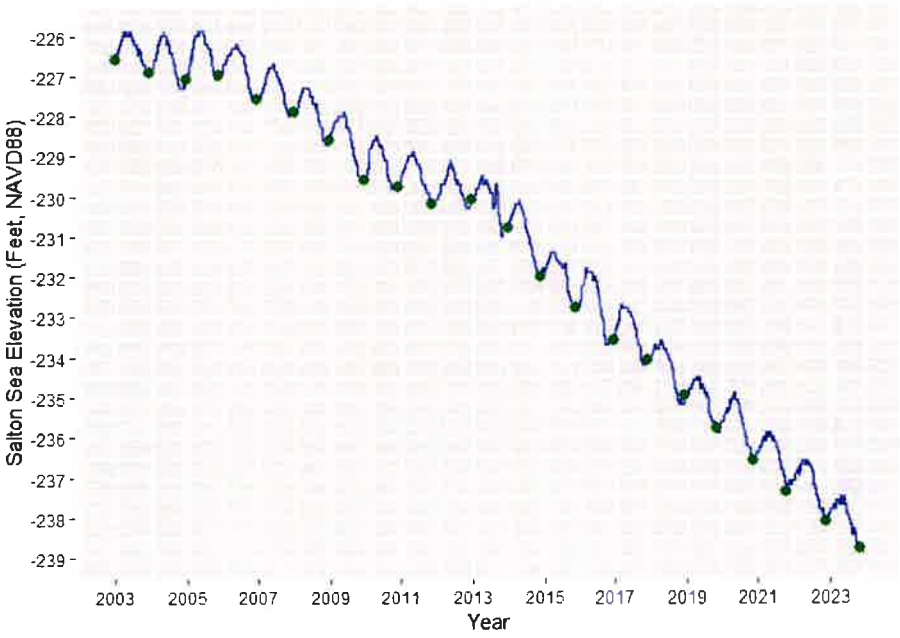


Figure 3. Salton Sea Elevation, 2003 to Present (Source: Salton Sea Playa Exposure Estimate, Formation 2024)

3. Proposed Regulatory Base Flood Elevation

Hydraulic modeling of the primary surface water channel into the project site was performed to aid the design of the bunds and diversion berm. The diversion berm is intended to prevent surface runoff from entering the western, drip irrigated portion of the project. The channel entering the project site is an ephemeral, unnamed tributary (UNT) to the Salton Sea. Return interval flows were developed based on CalTrans regional regression equations (Teal and Gusman, 2007) for the 900 acre watershed, with results shown in Figure 4.

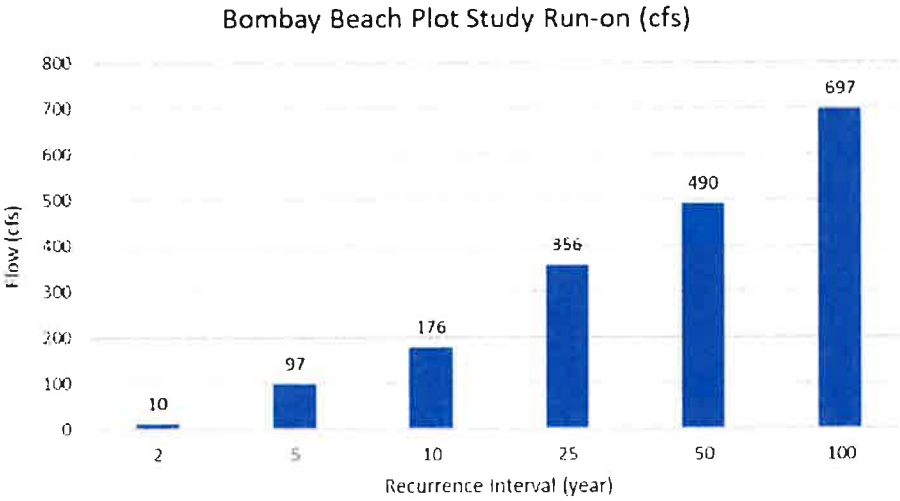


Figure 4. Peak Flow estimates for project site UNT, based on California Desert Hydrology, (2007)

The 100-year peak flow estimate for this application is synonymous with the base flood discharge, corresponding to the BFE. The 100-year event was run excluding the diversion berm, considering it to fail during the 100-year event, with water surface contours and depths shown in Figure 5. Water depth above

surrounding surface grade at the well locations is between 0 – 0.25 for the two western wells (TW-2 and TW-3) and 0.25 – 0.5 feet for the eastern well (TW-1), located closest to the UNT. The top of casing for TW-1 is 2.6 feet above grade, for TW-2 it is 3.06, and for TW-3 it is 3.27 feet. All three have greater than the minimum 2.0 feet of freeboard as specified in Imperial County ordinance § 91605.C.2 and as presented in Table 1.

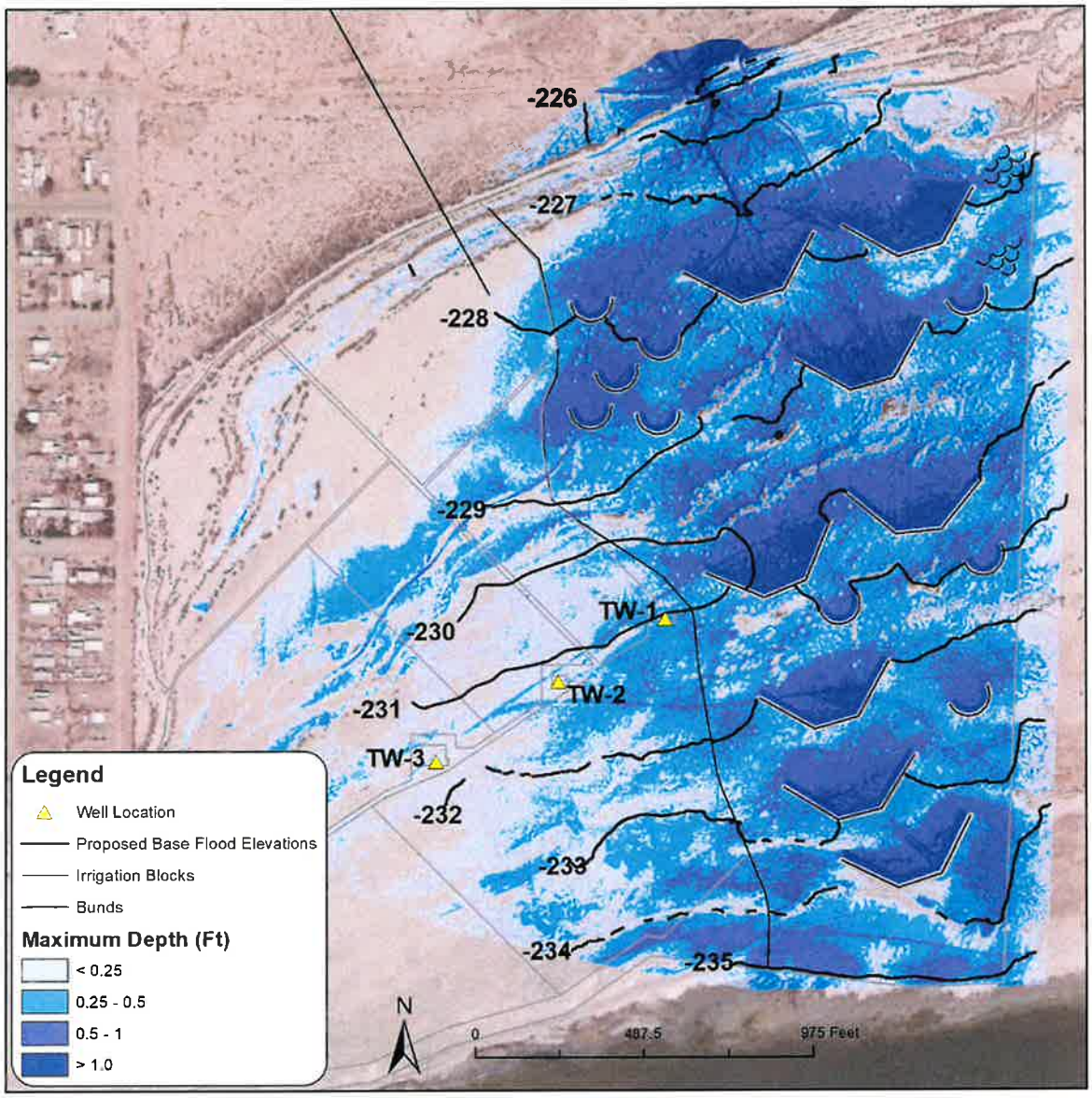


Figure 5. Peak Flow estimates for project site UNT, based on California Desert Hydrology, (2007)

Table 1. Results of Hydraulic Model at Groundwater Wells

Test Well ID	Ground Surface Elevation (ft)	Casing Stick-Up (ft)	100-year Water Surface Elevation (ft)	Water Depth (ft)	Freeboard (ft)
BB-TW-1	-231.47	2.60	-231.05	**0.42**	**2.2**
BB-TW-2	-231.50	3.06	-231.28	**0.22**	**2.8**
BB-TW-3	-231.55	3.27	-231.34	**0.21**	**3.1**

4. Conclusions

The existing effective Base Flood Elevation at the Bombay Beach Vegetation Project is based on analysis performed in 1980 using Salton Sea elevation data from 1961-1978. The BFE is not appropriate post-2003 QSA as the Salton Sea has been in recession, and this restoration project is being driven in response to the sea level recession. Surface water hydraulic modeling of the 100-year fluvial flood event at the project site was performed and water surface elevations indicate freeboard greater than 2.0 feet from flood water elevations to the top of casing at each well head.

5. References

Federal Emergency Management Agency, Flood Insurance Study, Imperial County, California and Incorporated Areas, September 26, 2008. Revised Date March 22, 2022.

IID. 2024. Salton Sea Playa Exposure Estimate. Prepared for Imperial Irrigation District by Formation Environmental, LLC, February 2024.

Teal, M. and J. Gusman. (2007). Improved Highway Design Methods for Desert Storms, Final Report No. CA07-0592. West Consultants, August 2007.

Appendix B. CEQA Memo

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

December 9, 2024

Jessica Humes, Senior Environmental Project Manager
Imperial Irrigation District
333 E. Barioni Boulevard
Imperial, CA 92251

SUBJECT: Documentation of Additional Project Features for the Bombay Beach Plot Study Project near the Community of Bombay Beach, Imperial County, California

Dear Ms. Humes:

The Imperial Irrigation District (IID) prepared a California Environmental Quality Act (CEQA) Addendum to the Final Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Water Conservation and Transfer Project (State Clearinghouse No. 1999091142) for the Bombay Beach Plot Study Project (Project). The Project entails the evaluation of the efficacy of several surface treatments to provide dust mitigation on an approximately 168-acre parcel located adjacent to and east of the community of Bombay Beach. Subsequent to the adoption of the CEQA Addendum by the IID Board of Directors, additional Project features were added to refine Project implementation procedures and to ensure the long-term viability of the Project. The additional Project features and refinements are described below:

- **Temporary Germination Water Supply**. Groundwater quality sampling results demonstrated that the groundwater quality in the supply zone is suitable for the long-term irrigation of salt-tolerant vegetation. However, groundwater will need to be blended with a fresher water source during the short-term (three to four months) plant germination phase, due to the salinity levels measured in the test wells and plant sensitivity to salinity during germination. A temporary connection to a Coachella Valley Water District (CVWD) hydrant will be used to provide germination water supply. Approximately five acre-feet will be used to support germination. A temporary above-ground system will be used to convey water from the hydrant to a storage tank for blending with groundwater.
- **Stormwater Diversion Berm**. A stormwater diversion berm will be installed to protect the well pads and irrigation infrastructure from high stormwater flows originating in the main wash of the wetland area for up to a 25-year event, with a minimum of 1 foot of freeboard. The stormwater diversion berm will be three feet wide, approximately one and a half feet tall with 2:1 side slopes, and approximately 2,350 feet long. Borrow material for the berm will be sourced from the area designated for vegetation hedgerows. Unsuitable material will be dispersed onsite.
- **Community Drainage Swale**. A community drainage swale will be installed to convey stormwater from the community of Bombay Beach through the Project Area and toward the Salton Sea. The upper portion of the community drainage swale has a bottom width of 5 feet with no side berms and the lower portion has a bottom width of 10 feet with side berms with top

widths of 3 feet and 3:1 exterior side slopes. The entire swale channel has 2:1 slopes. The total length of the community drainage swale is approximately 1,000 feet long.

Based on its review and consideration of the Addendum and pursuant to CEQA Guidelines section 15091, IID Board of Directors adopted CEQA findings on February 7, 2023 (IID Resolution No. 6-2023), as follows:

1. The Addendum to the Final EIR/EIS for the Water Conservation and Transfer Project (State Clearinghouse No. 1999091142) provides adequate environmental analysis to support all necessary approvals by IID for the Bombay Beach Plot Study Project.
2. No new significant impacts would occur under the Bombay Beach Plot Study Project and no new mitigation measures would be required. Therefore, no revisions to the Water Conservation and Transfer Project Final EIR/EIS's Mitigation, Monitoring and Reporting Program would be needed. The mitigation measures will be implemented and monitored as provided in the Final EIR/EIS for the Water Conservation and Transfer Project and no additional mitigation measures are being proposed or adopted by IID.

This letter is being submitted to document the additional Project features associated with the Project and evaluate and confirm the CEQA findings adopted by the IID Board of Directors.

Project Location and Background

The Project Area is located in the northeastern quarter of Section 33 of Township 9 South, Range 12 East, San Bernardino Base and Meridian as depicted on the 1998 Frink, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map (Figure 1). The northwestern corner of the Project Area is one block east of the intersection of 1st Street and Avenue G in the community of Bombay Beach.

The Bombay Beach Plot Study Project includes development of sufficient groundwater (both quantity and quality) to establish and sustain vegetation cover for dust mitigation. The Project was identified in IID's 2019/2020 Proactive Dust Control Plan (PDCP) for the Salton Sea Air Quality Mitigation Program (SS AQMP). The 2019/2020 PDCP recommended dust mitigation projects on approximately 7,000 acres implemented in a series of steps over three years, including plot studies and irrigation water supply development. The plot studies are designed to test the effectiveness of various DCMs including their operation, maintenance, and cost. Results of the plot studies will inform larger scale implementation of dust mitigation as a part of the SS AQMP.

The Project Area comprises approximately 168.39 acres to evaluate groundwater supply and quality, vegetation establishment, maintenance of existing vegetation, stormwater retention and spreading features (bunds), and waterless DCMs. Critical to the success of this Project is development of sufficient groundwater to establish and sustain vegetation cover within the Project Area. Waterless DCMs will include placement of perimeter sand-fencing. As shown in Figure 2, the Proposed Project will include:

- Development (drilling, testing, and operations) of up to three shallow supply wells (approximately 100 feet deep) on approximately 86 acres;
- Installation of approximately 5,000 feet, with a footprint of 4 acres, of perimeter sand-fencing;

- Placement of physical exclusion barriers including sand-fencing and concrete barriers around site perimeter;
- Installation of access routes totaling 5,250 linear feet (LF);
- Installation and operations of solar-powered electric submersible groundwater pumps;
- Placement and use of approximately three 5,000-gallon water storage tanks;
- Installation of irrigation system from wells to storage tanks and from storage tanks to vegetation on the exposed playa;
- Enhancement of up to 53 acres of existing vegetation through rainwater harvesting (bund) techniques and establishment of 86.5 acres of vegetated hedgerows, including site preparation, seeding, and installation of managed irrigation systems. Vegetation includes seeded iodine bush and big saltbush; and
- Ongoing operations, maintenance, and monitoring of the Project components.

The Project will be subject to a Conditional Use Permit issued by the County of Imperial for the new supply wells to be converted to production wells to support the vegetation (pursuant to the Imperial County Groundwater Management Ordinance [Title 9, Division 22 of the County Code]).

New Project features are shown in Figure 3.

Analysis of Project Changes

Temporary Germination Water Supply

The analysis provided in the CEQA Addendum did not consider a connection to the existing municipal water supply for Project implementation. Water quality from onsite groundwater extraction wells was considered to be adequate for irrigation of salt tolerant vegetation based on total dissolved solids (TDS) concentration values collected from monitoring wells between 2005 and 2015 within the Lower Lacustrine Unit.

As described above, sampling results demonstrate the groundwater quality in the supply zone is suitable for the long-term irrigation of salt-tolerant vegetation; however, groundwater will need to be blended with a fresher water source during the short-term (three to four months) germination phase, due to the salinity levels measured in the test wells and plant sensitivity to salinity during germination. The Project will require a temporary connection to an existing CVWD hydrant located on the eastern perimeter of the Bombay Beach community. A total of approximately five acre-feet of municipal water is needed to support the germination phase. This quantity is minor relative to the CVWD's annual delivery of approximately 87,960 acre-feet to its service area and would not impact its water supply, as described below.

Since 1984, the Urban Water Management Planning Act, has required urban water suppliers to develop written urban water management plans. While generally aimed at encouraging water suppliers to

implement water conservation measures, it also created long-term planning obligations. In preparing urban water management plans, urban water suppliers must describe the following:

- Existing and planned water supply and demand;
- Water conservation measures and a schedule for implementing and evaluating such measures; and
- Water shortage contingency measures.

The Urban Water Management Planning Act requires that urban water suppliers use a 20-year planning horizon and update the data in the urban water plans every five years. In preparing their 20-year management plans, water suppliers must directly address the subject of future population growth. The suppliers must also identify sources of supply to meet demand. The plan must "identify and quantify, to the extent practicable, the existing and planned sources of water available to the supplier."

The six urban water suppliers in the Coachella Valley, (CVWD, Coachella Water Authority, Desert Water Agency, Indio Water Authority, Mission Springs Water District, and Myoma Dunes Mutual Water Company), collaboratively prepared the 2020 Coachella Valley Regional Urban Water Management Plan (RUWMP 2021), including regional and individual agency content and other necessary elements as set forth in the Department of Water Resources' (DWR) 2020 UWMP Guidebook. Existing and future development within the CVWD's service area would demand additional quantities of water. The adopted RUWMP projects total population (permanent and seasonal) within the CVWD service area to increase from 268,952 in 2020 to 315,202 persons by the year 2030 and to 360,813 by the year 2040. Increases in population, square footage, and intensity of uses would contribute to increases in the overall regional water demand. Within the CVWD service area, water use is broken down by sector (residential, commercial, institutional/governmental, landscape, and other non-revenue water [e.g., distribution system losses and authorized non-billed water uses such as firefighting and flushing]). In addition, CVWD provides water for temporary construction activities and represents less than one percent of total water use and varies based on construction activity.

The RUWMP includes future municipal water demand projections within CVWD's jurisdictional boundary for years 2025 through 2045 in 5-year increments. Water use by sector is expected to decrease for future residential, commercial, and institutional/governmental uses in response to CalGreen requirements and for landscape uses through implementation of CVWD's Landscape Ordinance. The anticipated conversion of water-intensive uses (i.e., agriculture) and the implementation of existing water conservation measures and recycling programs would reduce the need for increased water supply.

Currently, all urban water uses within the CVWD service area are supplied from local groundwater. In addition to local groundwater, CVWD imports water from the State Water Project and the Colorado River and recycled water from two water reclamation plans which are used to meet CVWD's non-urban water demands and to replenish the groundwater basin.

The water service reliability assessment in the RUWMP indicates that urban water supplies during the normal year, single dry year and multiple dry year are fully reliable. This is because the RUWMP participating agencies collaborate on groundwater management plans for long-term sustainability and the agencies could produce additional groundwater if actual demands exceed projected demands.

Because CVWD would have water supplies for projected growth through 2045 in normal, dry, and multiple-dry years, cumulative impacts to water supply would be less than significant.

Stormwater Diversion Berm

As a part of project design, hydraulic modeling was completed to inform the final layout of the stormwater retention and spreading features (bunds). Results demonstrated the potential for stormwater flows to damage the well pads and irrigation infrastructure. Therefore, a stormwater diversion berm was added to protect the well pads and irrigation infrastructure from high stormwater flows that originate in the main wash of the wetland area for up to a 25-year storm event. This additional Project feature is required to ensure that the integrity of features is maintained for the life of the Project.

The analysis provided in the CEQA Addendum considered the installation of stormwater retention and spreading features (bunds) to mimic the surface water retention achieved by natural beach ridges and promote vegetation expansion into areas where natural beach ridges do not occur. Bund construction would consist of staking, grubbing, excavation, compaction, and site restoration. The CEQA Addendum also considered diversion swales to divert surface flow to the bund arrays, although these features were not included in final design. While the Addendum did not consider the construction and installation of a stormwater diversion berm, the equipment, methods of construction and maintenance of the berm would be similar to that required for the bunds and diversion swales, which were analyzed in the Addendum.

Following construction, all disturbed surfaces will be treated with stormwater erosion control features consisting of but not limited to coconut mats and straw rolls; therefore, the Project would not increase soil erosion. A National Pollutant Discharge Elimination System (NPDES) Permit for Stormwater Discharges from Construction Activities would be obtained for the Project and implementation of a Storm Water Pollution Prevention Plan (SWPPP) would be required through this process which would ensure that storm water runoff from the Project Area would not result in soil erosion. In addition, the goal of the Plot Study would be to reduce wind erosion of the Project Area. Therefore, impacts such as soil erosion or the loss of topsoil would be less than significant.

The proposed berm is a surface feature and would not require any additional groundwater extraction over what was considered in the Addendum; therefore, there would be no new impacts to groundwater-dependent ecosystems. groundwater supply and quality, or subsidence-related effects.

Surface runoff volumes would not be increased over existing conditions and this Project feature would be designed to maintain existing runoff rates and volumes and would not result in a significant change in flooding conditions on- or offsite.

The Proposed Project would result in habitat enhancement activities and would obtain coverage under sections 401 and 404 of the federal Clean Water Act. A small portion of the existing wetland located onsite would be impacted by construction of the proposed stormwater diversion berm and as described in the Addendum, **actions are expected to be temporary/temporal loss only and solely associated with the habitat enhancement activities within wetland habitat. Therefore, no net loss of aquatic resources is likely to occur as a result of the Project (a net increase of wetland habitat in the long term is anticipated), and no compensatory mitigation is required.**

Community Drainage Swale

Stormwater runoff from the community of Bombay Beach is currently contained by an earthen seawall surrounding the community and was previously diverted to a detention basin located at the southeast corner at the intersection of Aisle of Palms and 5th Street. In December 2023, the detention basin was intentionally breached and stormwater runoff now flows directly into the Project area. Hydraulic modeling results indicate the potential for stormwater flows to damage the irrigation infastructure.

As described above, a community drainage swale would be installed to convey stormwater from the community of Bombay Beach through the Project Area and toward the Salton Sea. This feature would not introduce new or additional impervious surfaces and would not result in a substantial alteration of the existing drainage pattern. The community drainage swale would terminate at the proposed sand fencing location along the southern border of the Project area.

Similar to the discussion related to the stormwater diversion berm, an NPDES Permit for Stormwater Discharges from Construction Activities would be obtained for the Project and implementation of a Storm Water Pollution Prevention Plan (SWPPP) would be required through this process which would ensure that stormwater runoff from the Project Area would not result in soil erosion. In addition, the goal of the Plot Study is to reduce wind erosion of the Project Area. Therefore, impacts such as soil erosion or the loss of topsoil would be less than significant. Furthermore, this feature would not increase the rate or amount of surface runoff in a manner which would result in flooding nor would it impede or redirect flood flows. **During construction, the contractor would implement BMPs for stormwater pollution control. The Project itself would not generate pollutants that may enter the storm drain system.**

Summary of Findings

The use of approximately five acre-feet of municipal water from the existing fire hydrant located along the perimeter of the community of Bombay Beach for a short-term period of three to four months to facilitate germination would not result in new significant environmental impacts to utilities and service systems, nor would there be a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to utilities and service systems that would require major changes to the adopted 2002 EIR/EIS. The Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to utilities and service systems requiring major revisions to the adopted 2002 EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to utilities and service systems identified in and considered by the adopted 2002 EIR/EIS.

The construction of the proposed berm and community drainage swale would not result in new significant environmental impacts to biological resources or hydrology and water quality, nor is there a substantial increase in the severity of impacts described in the adopted 2002 EIR/EIS. There is no information in the record or otherwise available that indicates that there are substantial changes in circumstances pertaining to biological resources or hydrology and water quality that would require major changes to the adopted 2002 EIR/EIS. The Addendum has analyzed all available relevant information to determine whether there is new information that was not available at the time the 2002 EIR/EIS was adopted, which would indicate

that a new significant effect not reported in that document might occur. Based on the information and analyses above, there is no substantial new information indicating that there would be a new significant impact to biological resources or hydrology and water quality requiring major revisions to the adopted 2002 EIR/EIS. There are no alternatives to the Project or additional mitigation measures that would substantially reduce one or more significant impacts pertaining to biological resources or hydrology and water quality identified in and considered by the adopted 2002 EIR/EIS.

I am available at (858) 279-4040 or datwater@ecorpconsulting.com if you have any questions on the content of this technical memorandum.

Sincerely,

ECORP Consulting, Inc.

David Atwater
Senior Environmental Planner

CC: Andrea Schmid, Formation Environmental, LLC

Attachments: **Figure 1 – Project Location and Vicinity**

Figure 2 –Site Plan

Figure 3 – Revised Site Plan

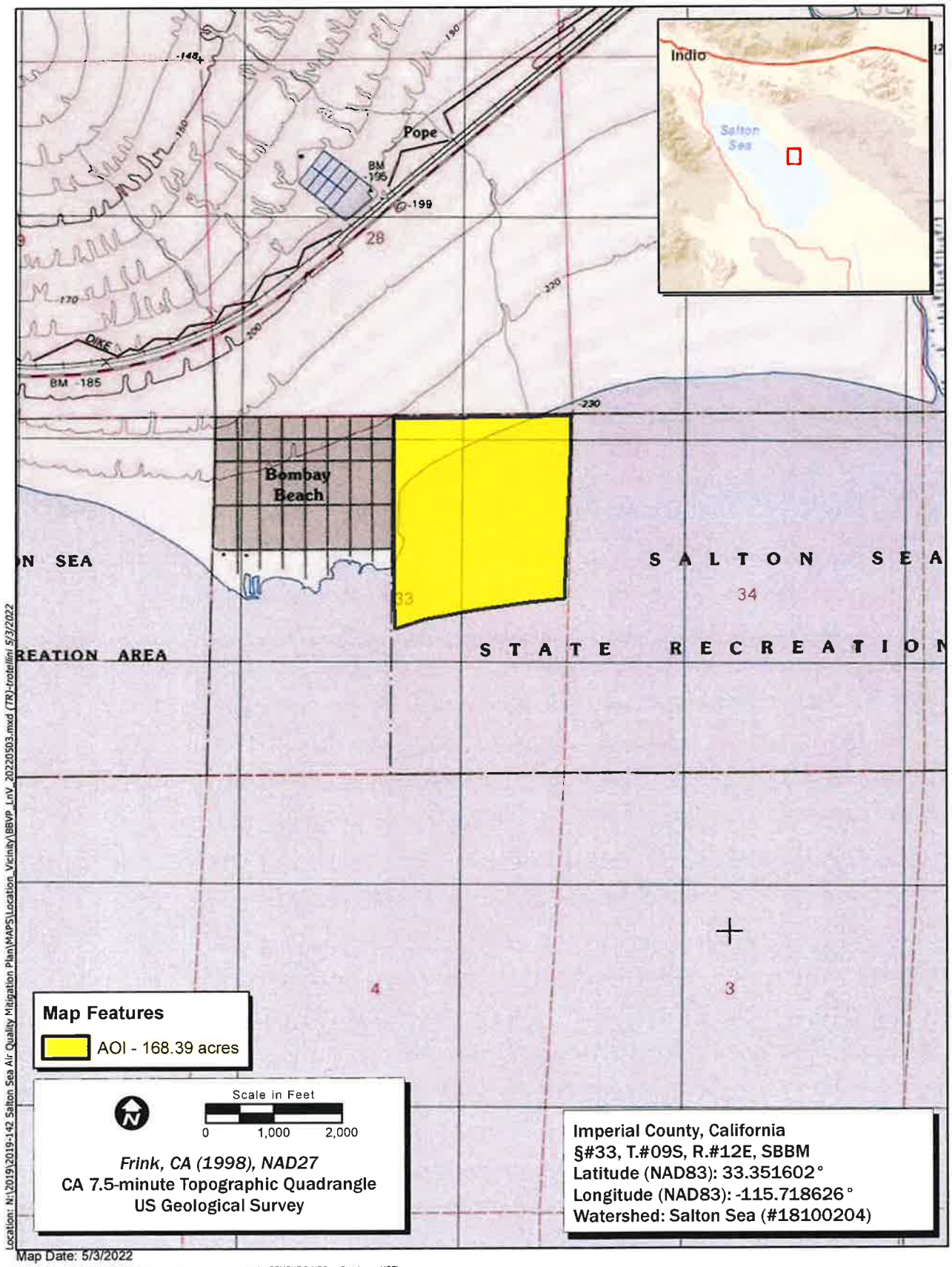
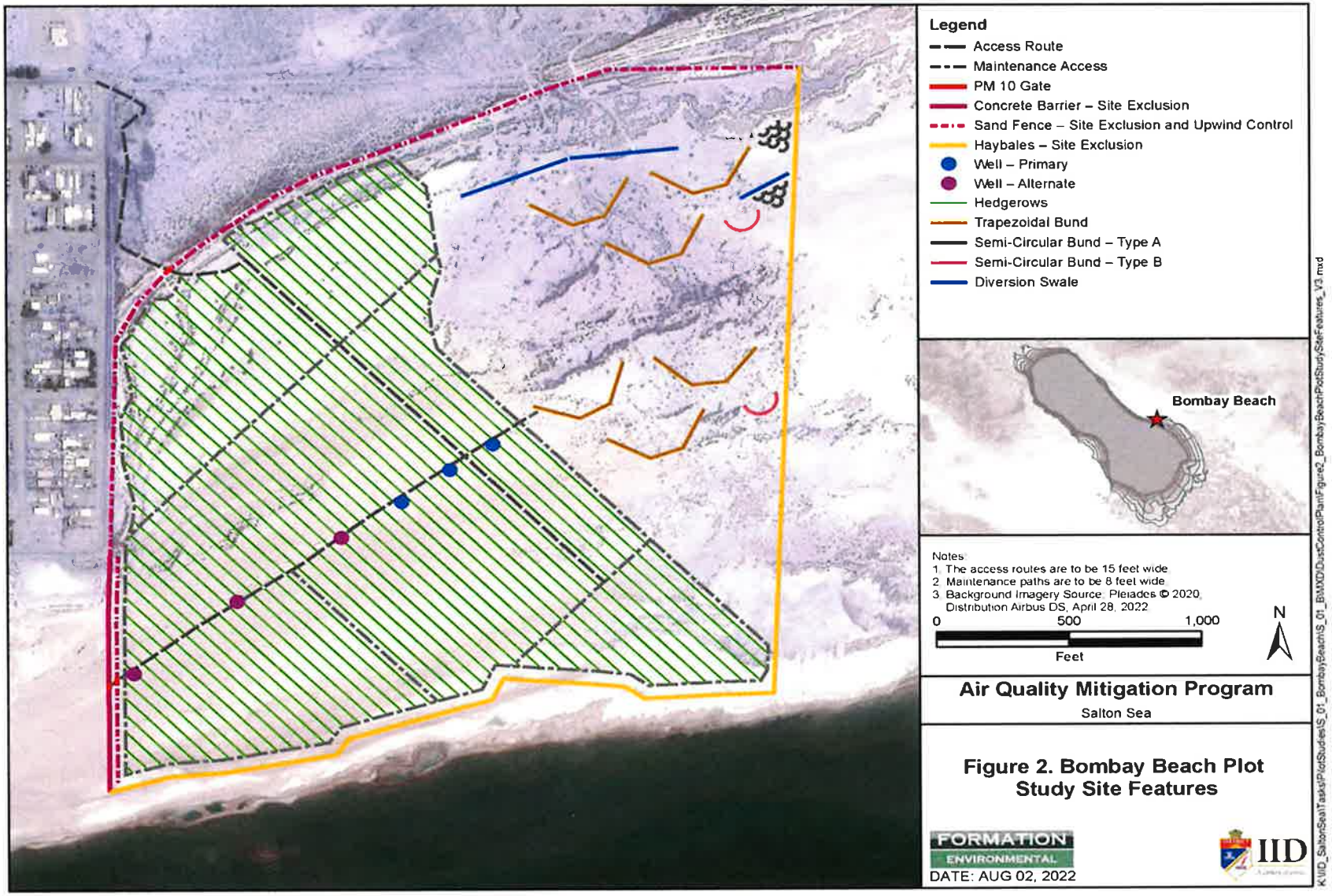


Figure 1. Project Location and Vicinity

2022-061 Bombay Beach Vegetation Plots

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

EEC ORIGINAL PKG



EEC ORIGINAL PKG

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 2. Site Plan
2019-142 Salton Sea Air Quality Mitigation Plan

Appendix C. CEQA Addendum

ATTACHMENT "D"
COMMENT LETTERS

Office of the Agricultural Commissioner
Sealer of Weights and Measures
852 Broadway, El Centro CA 92243

Jolene Dessert
Commissioner / Sealer

Rachel Garewal
Asst. Commissioner / Sealer

March 15, 2025

To Landscapers, Nurseries, Retailers, Homeowners, and Planning Departments:

This letter is to remind you of the legal requirements you must follow for transporting plants and plant materials into Imperial County. There are numerous quarantines in place to safeguard landscape plants, the agricultural industry of Imperial County, and the whole of California from exotic pests and diseases. Please see the attached "Summary of Shipment Requirements and Quarantines," for information on quarantines that most commonly affect Imperial County.

All plants coming into Imperial County are required by law to be held for inspection by the Agricultural Commissioner prior to planting or being made available for sale. This applies to plants brought in by any party, including commercial businesses and homeowners. It is very important that our office is notified immediately upon arrival of any plant shipment. You must not commingle incoming shipments with other plants until after they are inspected and released by our office.

Call our office as early as possible to schedule an inspection. Inspectors are usually available Monday through Friday, 8:00 a.m. to 4:00 p.m. If you intend to bring a shipment in on a weekend or County holiday, please call ahead to see if an inspector will be available.

If you have any questions or concerns, our office is here to help. Please call us at (442) 265-1500.

Sincerely,

Nelson Perez
Deputy Agricultural Commissioner
Pest Detection and Eradication

Summary of Shipment Requirements and Quarantines

- All nursery stock must be accompanied by valid proof of ownership.
- Nursery stock shipments may be released by phone at the discretion of the Agricultural Commissioner.
- Landscapers and other entities that have a growing ground or holding yard where nursery stock is held prior to delivery to the planting site must be licensed as a nursery.

Pierce's Disease and the Glassy-winged Sharpshooter

The Pierce's Disease Control Program (PDCP) exists in California to prevent the artificial movement and spread of the glassy-winged sharpshooter (GWSS), a vector of Pierce's Disease. Pierce's Disease is caused by the bacterium Xylella fastidiosa. It is deadly to many plant species, and its vector, GWSS, has an extensive list of hosts including many agricultural crops and landscape plants. Imperial County is the only Southern California County not infested with GWSS.

It is unlawful to bring plants into Imperial County from inside the GWSS-infested area; however, nurseries located within the infested area may do so under a compliance agreement from their county's Agricultural Commissioner. It is lawful to bring plants in from a nursery within the infested area so long as they meet the terms of their compliance agreement. These terms include (but are not limited to):

- Notify the Imperial County Agricultural Commissioner (CAC) at least 24 hours prior to shipment.
- Shipment paperwork is stamped with a GWSS compliance agreement number.
- Shipment is accompanied by a "Blue Tag" shipping permit stating "Warning – Hold for Inspection".
- Shipment is accompanied by a valid Certificate of Quarantine Compliance (CQC), if applicable.

For additional information regarding the PDCP or GWSS, please visit https://www.cdfa.ca.gov/pdcp/.

Other Plants with Quarantine Restrictions

- All **citrus species** from other California counties and other states.
- All **palms of the Phoenix genus**, including Pygmy Date Palms (P. roebelenii), except when originating from certain areas of Riverside County.
- Nursery stock originating in **Florida** (specifically Burrowing and Reniform Nematode [3 CCR § 3271] and Imported Fire Ant [7 CFR § 301.81]).
- Nursery stock originating in **Arizona** (specifically Ozonium Root Rot [3 CCR § 3261]).
- All **lettuce plants** are prohibited unless tested for Lettuce Mosaic Virus.
- All plants shipped *from* Imperial County must be certified free from Ozonium Root Rot by the CAC.

Penalties for Failure to Comply with Requirements (California Food and Agricultural Code [FAC])

Any violation of quarantine requirements is an infraction punishable by a fine of one thousand dollars ($1,000) for the first offense. Second and subsequent offenses within three years are punishable as misdemeanors. (FAC § 5309)

In addition to any other penalties, any person violating quarantine requirements may be liable civilly in an amount not exceeding ten thousand dollars ($10,000) for each violation. (FAC § 5310)

In lieu of civil action, the Agricultural Commissioner (CAC) may levy a civil penalty of up to two thousand five hundred dollars ($2,500) for each violation. (FAC § 5311)

Anyone who negligently or intentionally violates any state or federal law or regulation by importing any plant or other article infested by pest or disease and causes an infestation or causes the spread of an existing infestation beyond quarantine boundaries is liable civilly up to twenty-five thousand dollars ($25,000) for each act that constitutes a violation. (FAC § 5028)

150 SOUTH NINTH STREET
EL CENTRO, CA 92243-2850

TELEPHONE: (442) 265-1800
FAX: (442) 265-1799

AIR POLLUTION CONTROL DISTRICT

RECEIVED
By Imperial County Planning & Development Services at 1:55 pm, Jun 03, 2025

June 3, 2025

Mr. Jim Minnick
Planning & Development Services Director
801 Main St.
El Centro, CA 92243

SUBJECT: Conditional Use Permit 25-0006 / Initial Study 25-0014

Dear Mr. Minnick:

The Imperial County Air Pollution Control District ("Air District") thanks you for the opportunity to review the application for Conditional Use Permit 25-0006 on behalf of the Imperial Irrigation District (IID) that would convert three (3) test wells into supply wells to provide irrigation for the Bombay Beach Vegetation Project (BBVP) covering 85 acres adjacent to the eastern edge of the community of Bombay Beach, also identified as Assessor Parcel Number 002-640-002-000.

First, the Air District would like to acknowledge that vegetative projects, such as this one, are considered Best Available Control Measures under Regulation VIII, specifically Rule 804 Open Areas.

As CUP 25-0006 deals with the conversions of test wells into supply wells to provide irrigation for the BBVP, the Air District has limited its comments to such. However, the project packet included the following documents that were not reviewed, as to consistency with the Imperial County Air Pollution Control District California Environmental Quality Act handbook, at this time:

- Appendix C. Final Addendum to Environmental Impact Report (December 2022)
- Appendix D. Updated Groundwater Resources Impact Analysis
- Attachment A — Boring Logs
- Attachment B — Hydrographs

Any comments from the Air District on the Final Addendum to Environmental Impact Report (December 2022) should have been made at the time the document was released for public review.

Appendix A— Determination of Base Flood Elevation at the Bombay Beach Vegetation Project and Appendix B— CEQA Memo were referenced on page 3 of the CUP document. Appendix B

discusses the installation and use of solar-powered electric submersible groundwater pumps, but at no point in the application for a CUP is the use of solar-powered electric pumps identified. It is unclear if the final CUP will include the use of solar-powered electric pumps as a sole use or will other options be allowed. The Air District wishes to know what type of pumps are to be used at the onset and for the duration of project. Please provide clarity.

The type of pumping equipment raises other concerns such as contingency questions. What is the plan if one or more of the pumps or the solar panels should fail? This is directly tied to what the proposed CUP language would include. Will the CUP provide for the use of alternatives such as a generator or other type of combustion pump? Further, what is the intended schedule for operating the pumps? Please provide the proposed operational and maintenance schedule, identifying the expected life of the project. Page 1 of the application for CUP 25-0006 identifies "long-term" irrigation but does not define long term. In addition to supplying water for the BBVP there are also plans to irrigate existing vegetation as needed. Additionally, it is not clear if the planned irrigation system will be expanded beyond the current boundaries in the future. If so, are there planned contingencies that would be included in the CUP, should groundwater be drawn down beyond a sustainable level?

For all the above reasons, the Air District is requesting clarification on the types of pumps and associated power sources, contingencies for pump failures, power failures, water depletion or restrictions, and the associated contingency measures. Thus, the Air District would like to review the Draft CUP prior to recording to fully understand the project potentials and limitations.

Should you have questions, please call our office at (442) 265-1800.

Sincerely,

Curtis Blondell
APC Environmental Coordinator

Reviewed by,
Monica N. Soucier
APC Division Manager

COUNTY OF IMPERIAL

DEPARTMENT OF PUBLIC WORKS

155 S. 11th Street
El Centro, CA
92243

Tel: (442) 265-1818
Fax: (442) 265-1858

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https://twitter.com/CountyDpw/

Public Works works for the Public

ICDPW

May 29, 2025

RECEIVED
By Imperial County Planning & Development Services at 10:00 am, May 29, 2025

Mr. Jim Minnick, Director
Planning & Development Services Department
801 Main Street
El Centro, CA 92243

Attention: Rocio Yee, Planner II

SUBJECT: **CUP 25-0006 Imperial Irrigation District**
Located at 9534 Aisle of Palms, Bombay Beach, CA
APN 002-640-002

Dear Mr. Minnick:

This letter is in response to your submittal received by this department on May 15, 2025, for the above-mentioned project. The applicant proposes to convert test wells into supply wells to provide irrigation for the Bombay Beach Vegetation Project. The project involves planting approximately 85 acres of native, salt-tolerant, and drought-resistant vegetation on raised seedbeds.

Department staff have reviewed the package information, and **all the following comments shall be Conditions of Approval as described**:

1. The Applicant shall furnish a **Drainage and Grading Plan/Study** to provide for property grading and drainage control for earth works related to this project, such as the stormwater diversion berm, Bunds, Diversion Swales, well drilling and construction, and any site preparation or ground disturbance, which shall also include prevention of sedimentation of damage to off-site properties. The Study/Plan shall be submitted to the Department of Public Works for review and approval. Employment of the appropriate Best Management Practices (BMP's) should be included. Said plan shall be completed per the Engineering Design Guidelines Manual.

2. A record of survey is required, per Section 8762(b)(4)(5) of the Professional Land Surveyors' Act, (paraphrasing) "a record of survey is required to be filed after making a field survey that establishes one or more lines that are not shown on any subdivision map, official map, or record of survey, the positions of which are unascertainable from inspection of a subdivision map, official map, or record of survey".

INFORMATIVE

- **NPDES Permit:** The project may require a National Pollutant Discharge Elimination System (NPDES) permit and Notice of Intent (NOI) from the Regional Water

Quality Control Board (RWQCB) prior to county approval of the on-site grading plan.

- Any activity and/or work within Imperial County Right-of-Way shall be completed under a permit issued by this Department **(encroachment permit)** as per Chapter 12.12 - Excavations on or Near a Public Road of the Imperial County Ordinance. Encroachment Permit will be required for driveways, temporary traffic control devices, and any activities within County of Imperial Right-of-Way.

Should you have any questions, please do not hesitate to contact this office. Thank you for the opportunity to review and comment on this project.

Respectfully,

John A. Gay, PE
Director of Public Works

By: Atondo V.

Veronica Atondo, PE, PLS
Deputy Director of Public Works - Engineering

Office of the Agricultural Commissioner
Sealer of Weights and Measures
852 Broadway, El Centro CA 92243

Jolene Dessert
Commissioner / Sealer

Rachel Garewal
Asst. Commissioner / Sealer

May 28, 2025

Rocio Yee, Planner I
Planning & Development Services Department
County of Imperial
801 Main Street
El Centro, CA 92243

Re: Tina L Shields CUP#25-0006/IS#25-0014

Dear Ms. Yee:

Our department received and reviewed the documents pertaining to CUP#25-0006/IS#25-0014 as submitted by Tina L Shields. The proposal calls for converting three shallow groundwater test wells into irrigation wells and planting approximately 85 acres of native, salt-tolerant, drought-resistant vegetation on raised seedbeds at 9534 Aisle of Palms, Bombay Beach (APN 002-640-002-000).

Should the project require movement of plant material into Imperial County, the applicant must follow the requirements for movement of plant material into Imperial County from other counties or from out of state. The applicant can contact our Pest Detection and Eradication Division for any questions regarding the quarantines of movement of plant material, as there are several quarantines that must be observed. Please refer to the attached handout that will explain the legal requirements that must be followed for transporting plants and plant materials into Imperial County.

If you or the applicant have any questions, please feel free to contact our office at (442) 265-1500.

Respectfully,

Jolene Dessert

ADMINISTRATION / TRAINING
1078 Dogwood Road
Heber, CA 92249

Administration
Phone: (442) 265-6000
Fax: (760) 482-2427

Training
Phone: (442) 265-6011

OPERATIONS/PREVENTION
2514 La Brucherie Road
Imperial, CA 92251

Operations
Phone: (442) 265-3000
Fax: (760) 355-1482

Prevention
Phone: (442) 265-3020

June 10, 2025

RE: Conditional Use Permit #25-0006/IS#25-0014
Imperial Irrigation District (IID)
9534 Aisle of Palms, Bombay Beach, APN: 002-640-002

Imperial County Fire Department would like to thank you for the opportunity to review and comment on CUP #25-0006 for Imperial Irrigation District (IID) vegetation project located at 9534 Aisle of Palms, Bombay Beach CA APN: 002-640-002.

Imperial County Fire Department has the following comments and/or requirements.

- Fire department access and access roads shall be in accordance with the California Fire Code Chapter 5, with a width of at least 20 feet and all-weather surface capable of supporting fire apparatus. Fire department access roads will be provided with approved turn-round approved by Imperial County Fire Department.
- Maintain a defensible space of 100 feet from the property lines with all vegetation.
- Landscapoe plan shall be provided to the Imperial County Fire Department that shall include development and maintenance requirements for the vegetation management zone adjacent to structures and roadways, and to provide significant fire hazard reduction benefits for public and firefighting safety.
- Landscape plans shall contain the following:
    - Delineation of the 30-foot (9144 mm) and 100-foot (30.5 m) fuel management zones from all structures.
    - Identification of existing vegetation to remain and proposed new vegetation.
    - Identification of irrigated areas.
    - A plant legend with both botanical and common names, and identification of all plant material symbols.
    - Identification of ground coverings within the 30-foot (9144 mm) zone.

Cost Recovery

- The applicant shall provide cost reimbursement for direct fire protection services. Service rate will be consistent with Imperial County Fire Department adopted fee schedule. Cost reimbursement will be from time of call to the conclusion of the incident as defined by the fire department.

ADMINISTRATION / TRAINING
1078 Dogwood Road
Heber, CA 92249

Administration
Phone: (442) 265-6000
Fax: (760) 482-2427

Training
Phone: (442) 265-6011

OPERATIONS/PREVENTION
2514 La Brucherie Road
Imperial, CA 92251

Operations
Phone: (442) 265-3000
Fax: (760) 355-1482

Prevention
Phone: (442) 265-3020

The project shall be in compliance at all times with requirements in the California Fire Code and local ordinances and requirements. Imperial County Fire Department shall conduct annual fire and life safety inspections

Imperial County Fire Department reserves the right to comment and request additional requirements pertaining to this project regarding fire and life safety measures, California Building and Fire Code, and National Fire Protection Association standards at a later time as we see necessary.

If you have any questions, please contact the Imperial County Fire Prevention Bureau at 442-265-3020 or 442-265-3021.

Sincerely
Andrew Loper *Andrew Loper*
Deputy Fire Marshal
Imperial County Fire Department
Fire Prevention Division

CC
David Lantzer
Fire Chief
Imperial County Fire Department.

Olivia Lopez

From: Jill Mccormick <historicpreservation@quechantribe.com>
Sent: Friday, May 16, 2025 7:33 AM
To: Olivia Lopez; Rocio Yee
Cc: ICPDSCommentLetters
Subject: Re: [EXTERNAL]:CUP25-0006/IS25-0014 - Request for Comments

Good morning,
This email is to inform you that the Historic Preservation Office does not wish to comment on this project.
Jill

H. Jill McCormick, M.A.
Historic Preservation Office
Ft. Yuma Quechan Indian Tribe
P.O. Box 1899
Yuma, AZ 85366-1899
Office: 760-919-3631
Cell: 928-920-6521

From: Olivia Lopez <olivialopez@co.imperial.ca.us>
Sent: Thursday, May 15, 2025 4:38 PM
To: Antonio Venegas <AntonioVenegas@co.imperial.ca.us>; Jolene Dessert <JoleneDessert@co.imperial.ca.us>; Margo Sanchez <MargoSanchez@co.imperial.ca.us>; Belen Leon-Lopez <BelenLeon-Lopez@co.imperial.ca.us>; Monica Soucier <MonicaSoucier@co.imperial.ca.us>; Jesus Ramirez <JesusRamirez@co.imperial.ca.us>; Ryan Kelley <RyanKelley@co.imperial.ca.us>; Rosa Lopez <RosaLopez@co.imperial.ca.us>; Jorge Perez <JorgePerez@co.imperial.ca.us>; Jeff Lamoure <JeffLamoure@co.imperial.ca.us>; Alphonso Andrade <AlphonsoAndrade@co.imperial.ca.us>; Marco Topete <marcotopete@co.imperial.ca.us>; Sheila Vasquez-Bazua <sheilavasquezbazua@co.imperial.ca.us>; David Lantzer <davidlantzer@co.imperial.ca.us>; Andrew Loper <AndrewLoper@co.imperial.ca.us>; Carmen Zamora <carmenzamora@co.imperial.ca.us>; Veronica Atondo <VeronicaAtondo@co.imperial.ca.us>; John Gay <JohnGay@co.imperial.ca.us>; Carlos Yee <CarlosYee@co.imperial.ca.us>; rkelley@icso.org <rkelley@icso.org>; Fred Miramontes <fmiramontes@icso.org>; Robert Benavidez <RBenavidez@icso.org>; dvargas@iid.com <dvargas@iid.com>; marcuscuero@campo-nsn.gov <marcuscuero@campo-nsn.gov>; Tribal Secretary <tribalsecretary@quechantribe.com>; Jill Mccormick <historicpreservation@quechantribe.com>

Cc: Jim Minnick <JimMinnick@co.imperial.ca.us>; Michael Abraham <MichaelAbraham@co.imperial.ca.us>; Diana Robinson <DianaRobinson@co.imperial.ca.us>; Rocio Yee <rocioyee@co.imperial.ca.us>; Alan Molina <alanmolina@co.imperial.ca.us>; Adriana Ceballos <adrianaceballos@co.imperial.ca.us>; Aimee Trujillo <aimeetrujillo@co.imperial.ca.us>; Allison Galindo <allisongalindo@co.imperial.ca.us>; Kamika Mitchell <kamikamitchell@co.imperial.ca.us>; Kayla Henderson <kaylahenderson@co.imperial.ca.us>; Olivia Lopez <olivialopez@co.imperial.ca.us>; Valerie Grijalva <valeriegrijalva@co.imperial.ca.us>
Subject: [EXTERNAL]:CUP25-0006/IS25-0014 - Request for Comments

Good afternoon,

Please see attached Request for Comments packet for **CUP25-0006 / IS25-0014 (9534 Aisle of Palms, Bombay Beach) Imperial Irrigation District**

Comments are due by **May 30th, 2025, at 5:00PM.**

In an effort to increase the efficiency at which information is distributed and to reduce paper usage the Request for Comments packet is being sent to you via this email.

Should you have any questions, please feel free to contact Luis Bejarano at (442) 265-1736 or submit your comment letters to ICPDScommentletters@co.imperial.ca.us.

Thank you,

Olivia Lopez
Office Assistant III
IC Planning & Development Services
801 Main Street
El Centro, CA 92243
(P) (442) 265-1736
(F) (442) 265-1735