PROJECT REPORT

TO: ENVIRONMENTAL EVALUATION COMMITTEE

AGENDA DATE: March 23, 2023

FROM: PLANNING & DEVELOPMENT SERVICES DEPT.

AGENDA TIME 1:30 PM/No. 2

Information Item Only

Clubhouse Plot Study

PROJECT TYPE: IID Water Wells - CUP #23-0002 SUPERVISOR DIST: #4

LOCATION: 2902 Crystal Lake Ave APN: 008-010-006

Salton City, CA 92274 PARCEL SIZE: Approx. 254 acres

West Shore\Salton City Urban Area Plan

GENERAL PLAN (existing) Recreational/Open Space GENERAL PLAN (proposed) N/A

ZONE (existing) S-1 (Open Space/Recreation) 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: 03/23/2023

INITIAL STUDY: #23-0003

☐ 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 OFFICE	☐ NONE	☐ ATTACHED
OTHER		

REQUESTED ACTION:

(See Attached)

Imperial County Planning & Development Services
(Jim Minnick, Director)
801 MAIN ST., EL CENTRO, CA, 92243 442-265-1736
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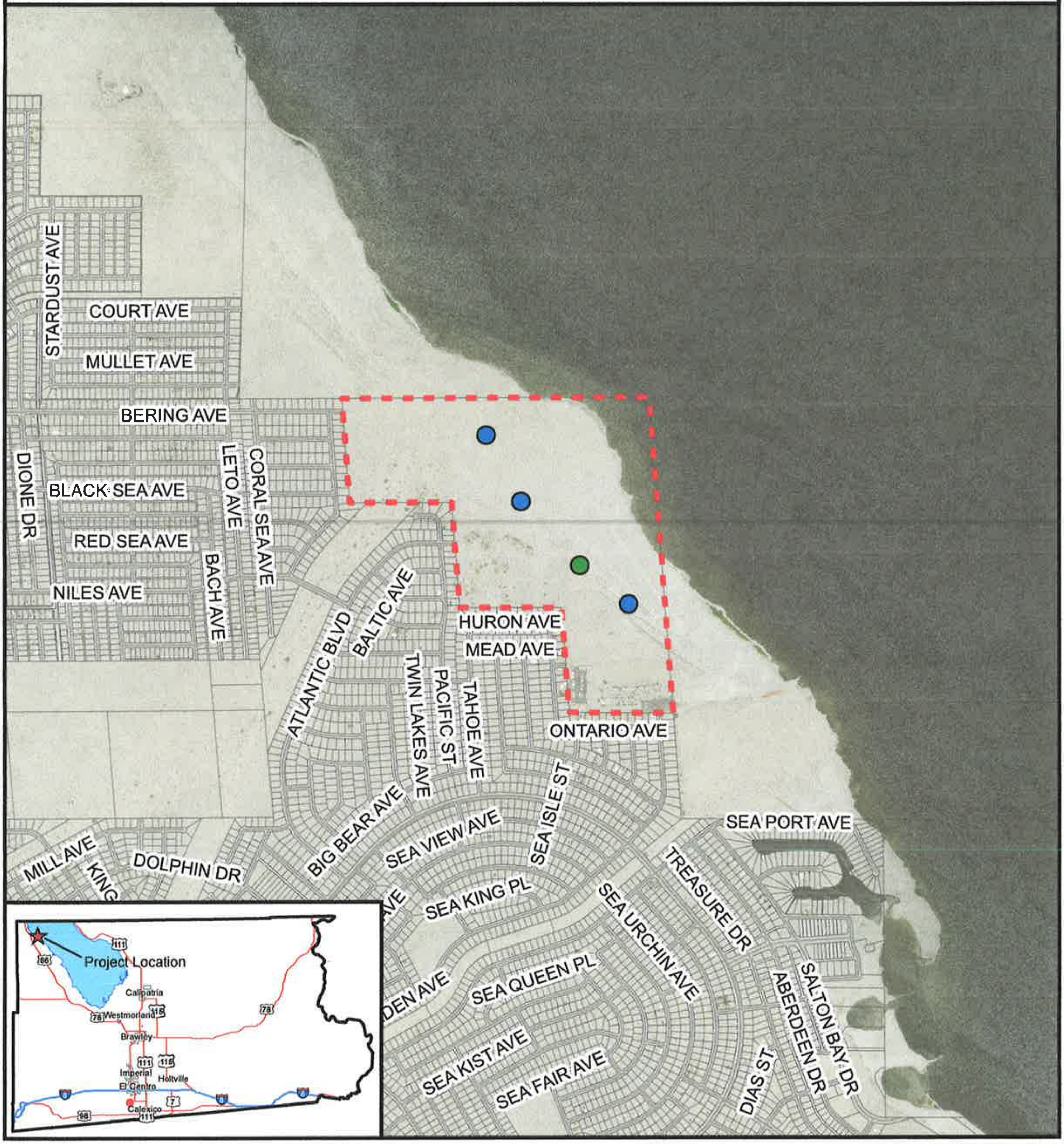
PROJECT LOCATION MAP



IMPERIAL COUNTY CALIFORNIA 1907

IMPERIAL IRRIGATION DISTRICT
CUP #23-0002 / IS #23-0003
APN 008-010-006-000

⬚ Project Location
□ Parcels
— Centerline
● Primary Shallow Test Well
● Deep Groundwater Supply Test Well

N

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Final Addendum To
Environmental Impact Report

Clubhouse Plot Study

Prepared for:

Imperial Irrigation District
333 East Barioni Boulevard
Imperial, California 92251

Prepared by:

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS
2525 Warren Drive
Rocklin, California 95677

August 2021

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TABLE OF CONTENTS

EEC ORIGINAL PKG

LIST OF TABLES

LIST OF FIGURES

EEC ORIGINAL PKG

LIST OF ATTACHMENTS

Attachment A – Air Quality and Greenhouse Gas Assessment

Attachment B – Biological Resources Assessment

Attachment C – Groundwater Resources Impact Assessment

Attachment D – Noise Impact Assessment

LIST OF ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
AFY	acre-feet per year
AJD	Approved Jurisdictional Determination
ALOC	*Allenrolfea occidentalis* (iodine bush)
AOI	Area of Interest
APE	Area of Potential Effect
APN	Assessor Parcel Number
ATV	all-terrain vehicle
BCC	Birds of Conservation Concern
bgs	below ground surface
BLM	U.S. Bureau of Land Management
BMPs	Best Management Practices
bsl	below sea level
CAA	Clean Air Act
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFG	California Department of Fish and Game (now CDFW)
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CH_4	methane
cm	centimeter
CNDDB	California Natural Diversity Data Base
CNEL	Community Noise Equivalent Levels
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent

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LIST OF ACRONYMS AND ABBREVIATIONS

CRHR	California Register of Historic Places
CRPR	California Rare Plant Rank
CUP	Conditional Use Permit
CVWD	Coachella Valley Water District
CWA	Clean Water Act
dBA	A-weighted decibels
DCMs	waterless dust control measures
DNL	day/night noise levels
DOC	California Department of Conservation
DPM	diesel particulate matter
DWR	California Department of Water Resources
EIR	Environmental Impact Report
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FHSZ	Fire Hazard Severity Zone
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
GDE	Groundwater Dependent Ecosystem
GHG	greenhouse gas
HCP	Habitat Conservation Plan
Hz	hertz
ICAPCD	Imperial County Air Pollution Control District
IID	Imperial Irrigation District
IPCC	International Panel on Climate Change
Leq	equivalent noise levels
LRA	Local Responsibility Area
MBTA	Migratory Bird Treaty Act
MLD	Most Likely Descendent
mph	miles per hour
MMRP	Mitigation Monitoring and Reporting Program
MWD	Metropolitan Water District
NAAQS	National Ambient Air Quality Standard
NAHC	Native American Heritage Commission
NCCAG	Natural Communities Commonly Associated with Groundwater
NPDES	National Pollutant Discharge Elimination System
N_2O	nitrous oxide
NO_2	nitrogen oxide
NO_x	nitrogen oxides
NRCS	Natural Resources Conservation Service

LIST OF ACRONYMS AND ABBREVIATIONS

NRHP	National Register of Historic Places
O_3	ozone
OPR	California 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	particle velocity
PRC	Public Resources Code
QSA	Quantification Settlement Agreement
Reclamation	Bureau of Reclamation
ROG	Reactive Organic Gases
RWQCB	Regional Water Quality Control Board
USACE	United States Army Corps of Engineers
SB	Senate Bill
SCAQMD	South Coast Air Quality Management District
SDCWA	San Diego County Water Agency
SIP	State Implementation Plan
SO_2	sulfur dioxide
SR-86	State Route 86
SRA	State Responsibility Area
SSAB	Salton Sea Air Basin
SSAQMP	Salton Sea Air Quality Mitigation Program
SSC	California species of special concern
SSMP	Salton Sea Management Program
SUNI	*Suaeda nigra* (bush seepweed)
SWPPP	Storm Water Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminants
TDS	total dissolved solids
TNC	The Nature Conservancy
Transfer Project	IID's Water Conservation and Transfer Project
UCMP	University of California Museum of Paleontology
USDA	U.S. Department of Agriculture
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
VdB	vibration velocity

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LIST OF ACRONYMS AND ABBREVIATIONS

VOC	volatile organic compound
VRI	Visual Resource Inventory
WDR	Waste Discharge Requirements

1.0 BACKGROUND

1.1 Summary

Project Title:	Clubhouse 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, 760-339-9703
Project Location:	The Project Area consists of 128.64 acres of property located in the northern half of Section 5 of Township 10 East, Range 10 South, San Bernardino Base and Meridian, as depicted on the 1998 Truckhaven, California U.S. Geologic Survey (USGS) 7.5-minute topographic quadrangle map (Figure 1-1). It is also known as Assessor Parcel Number (APN) 008-010-006 in Imperial County. It is located north of the intersection of Huron and Crystal Lake avenues in Salton City.

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 Clubhouse Plot Study (Proposed Project), which is identified as part of IID's 2019/2020 Proactive Dust Control Plan (PDCP) under the SSAQMP.

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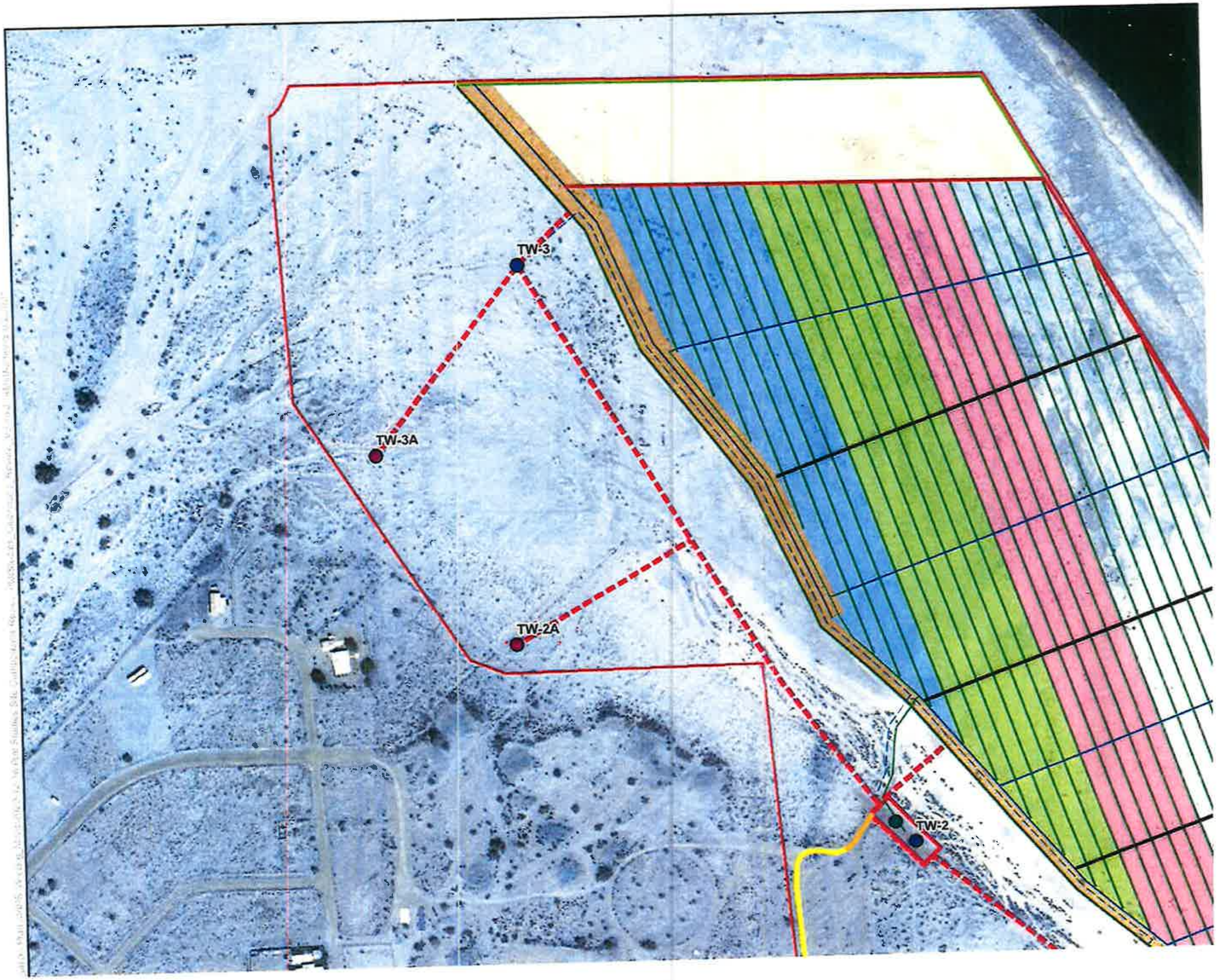

The SSAQMP was developed by IID to provide a comprehensive, science-based, adaptive approach to address air quality mitigation requirements associated with the Transfer Project. The Clubhouse Plot Study site comprises 128.64 acres which has been identified as a priority area to evaluate water supply options and vegetation establishment and maintenance requirements, as well as the efficacy of several waterless dust control measures. Critical to the success of this Project is development of sufficient groundwater to establish and sustain vegetation cover within the Project Area. Waterless dust control measures (DCMs) will include placement of hay bales and 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. The EIR/EIS was amended by the Amended and Restated Addendum to the EIR/EIS for the IID 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 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 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 toxic air contaminant concentrations associated with [receding Sea levels] and to provide a basis for mitigation efforts.*

    f. *If incremental increases in toxic air contaminants (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 PM10 emission reduction credits.*

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].*

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.

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 2019/2020 PDCP was prepared by IID as part of the SSAQMP to identify priority playa areas for dust control. The PDCP recommends dust mitigation projects on approximately 7,000 acres, including a series of plot studies and irrigation water supply development. 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;

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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.

In the PDCP, Planning Areas have been identified within the 7,000-acres for implementation of DCMs and are identified as follows:

Alamo South;

Bombay Beach;

Clubhouse;

Mundo;

New River East;

New River West;

Poe Road;

San Felipe;

Tule Fan; and

Travertine.

This CEQA Addendum addresses implementation of a proposed dust control plot study in the Clubhouse Planning Area identified in the 2019/2020 PDCP under the SSAQMP (titled the Clubhouse Plot Study).

1.5 Clubhouse Plot Study Project Description

The Clubhouse Plot Study site comprises 128.64 acres that has been identified as a priority playa area to evaluate water supply options and vegetation establishment and maintenance requirements, as well as the efficacy of several waterless dust control measures. The Clubhouse Plot Study site is located along the western 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 (Figure 1-1). As shown on Figure 1-1, the Clubhouse Plot Study would include:

Development (drilling, testing and operations) of one deep groundwater water well (approximately 300 feet deep) and up to three shallow groundwater wells (approximately 100 feet deep);

Installation and operations of solar-powered groundwater pumps;

Placement and use of approximately six 5,000-gallon water storage tanks;

- Installation of conveyance pipelines from wells to storage tanks and from storage tanks to vegetation on the exposed playa;
- Establishment of 58.57 acres of vegetation within the approximately 73.15-acre plot study perimeter and associated the installation of a drip irrigation system;
- Implementation of waterless DCMs on approximately 13.69 acres of the approximately 73.15-acre plot study perimeter;
- Improvements to 3,800 linear feet of access road; and
- Ongoing operations and maintenance 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 approximately 58.57 acres and implementation of DCMs on the remaining 13.68 acres that would be implemented as part of the 2019/2020 PDCP.

Vegetation would be seeded or transplanted iodine bush (*Allenrolfea occidentalis* or ALOC). Waterless DCMs will include placement of hay bales and sand fencing. Site preparation for vegetation establishment involves activities similar to surface roughening. For the purposes of this analysis, it is assumed that site preparation activities for vegetation establishment would be implemented throughout the entire plot Study Area to represent a "worst-case" ground disturbance scenario.

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 Clubhouse Plot Study 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 Clubhouse Plot Study 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 Clubhouse Plot Study 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 Clubhouse Plot Study including best management practices that have been incorporated into the Clubhouse Plot Study to avoid and/or minimize environmental impacts.

Section 3.0 consists of an environmental checklist form focusing specifically on impacts caused by the Clubhouse Plot Study. This form is based on the model prepared by the 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.

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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 acre-feet per year 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.

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

Proactive Dust Control Plan: 2019/2020 Annual Plan (PDCP). Prepared for Imperial Irrigation District by Formation Environmental LLC as part of the SSAQMP (IID 2020).

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2.0 PROJECT DESCRIPTION

2.1 Project Background

As described in the PDCP for the SSAQMP, the Clubhouse Plot Study (Project or Proposed Project) is proposed for implementation near the northern extent of Salton City to evaluate water supply options and vegetation establishment and maintenance requirements, as well as the efficacy of several waterless dust control measures. An approximately 128.64-acre Area of Interest (AOI) has been identified as the buffered area in which the Project would be implemented. A site plan for proposed physical improvements is shown on Figure 1-1.

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 plot Study Area would include waterless DCMs, including the placement of hay bales and sand fencing. Site preparation for vegetation establishment involves activities similar to surface roughening. For the purposes of this analysis, it is assumed that site preparation activities for vegetation establishment would be implemented throughout the entire plot Study Area under a "worst-case" ground disturbance scenario.

Information from this Proposed Project would be used to inform water supply development and planning for expanded future vegetation-based dust control on the west 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. ALOC would be planted in hedgerows that provide approximately 10 to 20 percent ground cover. Additional irrigation water would be used to irrigate and maintain existing ALOC and bush seepweed (*Suaeda nigra* or SUNI) in the AOI and surrounding IID-owned land.

2.2 Project Components

The following elements are proposed in association with the Project:

Development (drill, test, and operate) of one deep groundwater well (approximately 300 feet deep) and up to three shallow groundwater wells (approximately 100 feet deep);

Installation and operation of submersible, solar-powered groundwater pumps;

Placement and use of approximately six 5000-gallon water storage tanks;

Installation of conveyance pipelines from wells to storage tanks and from storage tanks to vegetation on the exposed playa;

Establishment of up to 58.57 acres of vegetation within an approximately 73.15-acre plot study perimeter, including site preparation, seeding and transplanting, and installation of managed irrigation systems. Vegetation would be seeded or transplanted iodine bush (ALOC);

Installation of up to 13.68 acres of waterless DCMs within the 73.15-acre plot Study Area, including the placement of hay bales and sand fencing.

Up to 3,800 linear feet (0.9-acre at 10-footwidth) of access road improvements; and

Ongoing operations and maintenance of Project components.

2.3 Project Characteristics

2.3.1 Well Development

2.3.1.1 Well Construction

Up to three shallow supply test wells and one deeper groundwater supply test well would be constructed as described below.

Deep Test Well

One deep test well, screened between approximately 150 and 300 feet below ground surface (bgs), is proposed to investigate and develop the deeper confined groundwater system. For construction of the deep water well in the Clubhouse Planning Area, the test well would be installed using the rotosonic drilling method. There would be no need for external power, water, or other infrastructure during construction as all operations would be self-contained within the construction site. The deep test well is expected to be constructed using four-inch-diameter PVC screen/casing, depending on the conditions encountered. Well construction would be conducted by a crew of approximately three drillers and one geologist on a 12-hour shift. Lighting would be provided for night work, if any. The wells would be installed using a truck-mounted rotosonic drill rig (approximately 40,000 to 70,000 pounds) with an extendable mast approximately 30 to 40 feet high, a stem/pipe truck to carry drilling rods, and forklift and hopper to shuttle equipment, materials, and drill cuttings. A backhoe, compressors, generators, and pumps may also be used for some operations. In addition, the drilling site would include a logging and equipment table, a shaded rest area, portable restroom facilities, and possibly a trailer. Drilling crew and geologists' trucks would be temporarily parked in designated vehicle parking areas at the site each day that work is conducted.

An area of approximately 70 feet by 200 feet would be needed for the deep well construction and associated activities, including construction support, parking, truck turnaround, and equipment laydown. The total construction area during deep well construction, including undisturbed parking and laydown areas, would measure approximately one-third of an acre. The well construction area would be protected by a temporary chain link construction fence topped with three strands of barbed wire.

The native drill soil cuttings from installation of all wells would be spread on site. Any hazardous materials 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.

Shallow Test Wells

The three shallow test wells, screened from approximately 50 to 100 feet bgs, are proposed to investigate and develop the shallow semi-confined groundwater system (less than 100 feet bgs). Shallow groundwater supply test wells would be undertaken in the following steps: (1) drilling of a pilot boring to a depth of approximately 100 feet to characterize subsurface conditions, sample water quality, and collect data necessary for design of the test well; and (2) determination of whether a suitable supply well can be developed at each location in the depth interval explored. Well drilling and development equipment would include a track-mounted drilling rig, a pipe truck, a development/pump maintenance truck, a forklift, pickup trucks, light stands, generators, pumps, and other ancillary equipment. Well construction would be conducted by a crew of approximately three drillers and one geologist on a 12-hour shift. Well drilling and construction at each site would take one to two days. Lighting would be provided for night work, if any. The wells would be installed using a track-mounted, Rotosonic drill rig (approximately 12,000 to 15,000 pounds) with an extendable mast approximately 20 feet high, a stem/pipe truck to carry drilling rods, and forklift and hopper to shuttle equipment, materials, and drill cuttings. A backhoe, compressors, generators, and pumps may also be used for some operations. In addition, the drilling site would include a logging and equipment table, a shaded rest area, portable restroom facilities, and possibly a trailer. Drilling crew and geologists' trucks would be temporarily parked in designated vehicle parking areas at the site each day that work is conducted.

The shallow well construction areas would measure approximately 50 by 100 feet and would be protected by a temporary chain link construction fence topped with three strands of barbed wire. A 36-inch silt fence would be attached at the base of the temporary construction fence and embedded into the ground at least 10 centimeters deep and function as a wildlife exclusion barrier.

The native drill soil cuttings from installation of all wells would be spread on site. Any hazardous materials 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.

Initial Pump Testing

After well construction, a step-drawdown and 24-hour constant discharge pumping test would be performed. The temporary exclusion and security fences around the test well area would remain in place during this time. A pump/development truck would be used to install an electric submersible test pump capable of pumping approximately 250 gallons per minute (gpm). Water levels would be allowed to equilibrate and the pump would be operated using a gasoline-powered generator. The pumping test water from both the deep well and shallow wells would be used for irrigation of test areas on the playa using a Rain-Bird-type water cannon.

2.3.1.2 Well Completion

After initial pump testing, if the deep well proves to be successful, the well would be fitted with a solar-powered submersible production pump using a truck-mounted pump and development rig. The deep well would be completed with approximately 180 feet of casing, 120 feet of screen, a gravel pack

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surrounding the screen, and a 20-foot sanitary grout seal at the ground surface. The surface completion would be in a steel "stove pipe-type" riser centered on a concrete pad that measures approximately 3 feet wide by 3 feet long. Construction of the concrete pad would require two days and require the use of a bulldozer. A protective, fenced, locking, 8-foot-high, chain-link privacy fence enclosure topped with barbed wire and measuring about 6 feet wide by 12 feet long would be installed around the well location. At the wellhead, a series of photovoltaic panels would be mounted on racks on top of 4-inch diameter steel pipes cemented into the ground to a depth of approximately 2 feet. Approximately four to six panels would be installed adjacent to the wellhead and wired to a pump controller, breaker and lightning arrestor installed at the wellhead.

After initial pump testing, if the shallow wells prove to be successful, production pumps would be installed. The shallow well construction areas would measure approximately 50 feet wide by 100 feet long and would be protected by a temporary chain link construction fence topped with three strands of barbed wire. A 36" silt fence would be attached at the base of the temporary construction fence and embedded into the ground at least 10 cm and function as a wildlife exclusion barrier. Concrete pads would not be constructed for shallow wells.

Developed groundwater would be pumped through PVC supply lines to polyethylene storage tanks each with a capacity of 5,000 gallons at the deep well location. Conveyance pipelines between the pumps and storage tanks would be installed on the ground surface; installation would require two days with a bulldozer and a light-duty pickup truck. At the tanks, a pressurizing pump for irrigation would be installed. Pump installation and testing would require one day and a light-duty pickup truck. Irrigation pumps would also be powered by solar power.

2.3.1.3 *Long-Term Pump Testing*

After initial pump testing and surface completion of the wells, a long-term pumping test may be conducted for up to approximately one-month to assess long-term well performance, water quality, and water level response during diurnal solar pumping for an extended period. The pumping test water from both the deep well and shallow wells would be used for irrigation of test areas on the playa using a Rain-Bird-type water cannon.

2.3.1.4 *Alternate Drilling Locations*

If initial attempts to drill the shallow wells are unsuccessful, attempts to drill a second location per well would be implemented but within the AOI for the plot study. For the deep well, a second attempt may be performed immediately adjacent to the first location.

2.3.1.5 *Well Abandonment if Not Successful*

Should initial pump testing results or long-term pump testing results prove to be unsuccessful, the well would be sealed/abandoned in compliance with the most current edition of State Water Resources Control Board Bulletin #74-81.

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2.3.2 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.

Site preparation includes seedbed preparation and the installation of an irrigation system. Activities would include construction of furrows through land leveling and cutting the furrows into place while avoiding existing vegetation. Construction would require a narrow-bottom grader/shaper and a single furrow plough. The grader/shaper is required to create a sloped, level-top seedbed suitable for pulling a furrow. Following furrow bed earthworks, the plough would be used to pull furrows or to shank in pressure-compensation subsurface drip lines. For sections that are surface irrigated, furrow runs would be short and range from 180 to 380 feet in length. For drip-irrigated areas, furrows would range from 175 to 1,000 feet in length. This work would require a tractor.

Irrigation for vegetation would include approximately 80-percent surface drip and 20-percent subsurface drip. Vegetation hedgerows would be oriented perpendicular to the prevailing winds. Surface drip is installed on top of the soil surface, whereas subsurface drip is shanked in. Pipelines would be used to convey water supply to all irrigation laterals. Both methods of drip irrigation require pressure to operate. A portion of the pressure is supplied through gravity with the remainder through a pressurizing pump.

Irrigation water would be supplied through two- and three-inch mainlines. For drip-irrigated furrows, filtered water would be delivered through the mainline and would be connected with a manual valve to laterals that are then pinned to the top of the furrow. For surface-irrigated furrows, a gated-pipe mainline would be used. Installation of the mainline and drip laterals would require an all-terrain vehicle (ATV) with a trailer. Surface and subsurface drip irrigation systems would be installed and operated for reclamation purposes prior to transplanting ALOC. During reclamation and transplant establishment, these irrigation systems would be operated every three days.

Two ALOC transplants, approximately six inches tall, along with a fertilizer sachet, would be planted every two meters along a furrow. Transplants would be planted next to drip emitters. This work would require an ATV. Once an entire furrow run has been planted, the irrigation system would be operated per the prescribed schedule.

2.3.3 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. Site preparation for vegetation establishment involves activities similar to surface roughening. Surface roughening typically includes disturbance to a depth of approximately two feet with a tractor and tillage implements, similar to tillage for agricultural purposes. For the purposes of this analysis, it is assumed that site preparation activities for vegetation establishment would be implemented throughout the entire plot Study Area under a "worst-case" ground disturbance scenario.

For the purposes of the impact analysis, proposed site preparation activities would be carried out using the following:

up to two tractors per site for eight hours per day each; and

up to 60 tractor hours per 200 acres.

Colors compatible with the natural landscape would be selected for the sand fencing.

In addition, IID would provide routine performance monitoring and operations/maintenance for the plot Study Area. Performance monitoring data is necessary to guide operations and maintenance activities, such as gap-filling vegetation in poorly performing areas.

2.3.4 Access Roads

Access roads would be developed to each well site from the nearest existing improved paved or unpaved road. The roads would be constructed using track dozers, motor-graders and water trucks, or other similar equipment as appropriate. At Clubhouse, approximately 3,800 feet of access routes would be installed for access to the shallow wells. The access roads would be approximately eight to 12 feet wide and would be graded along the land contour and track rolled for compaction. If unstable soils are encountered, they may be stabilized using geotextile and native or imported soil as deemed appropriate. Unstable areas may be compacted using vibratory rollers and moisture conditioned using water trucks, as appropriate.

The access tracks may be maintained using a loader or backhoe and would be periodically moisture-conditioned using a water truck, if needed. A speed limit of five miles per hour (mph) would be maintained by all construction vehicles on the unpaved access route to limit dust emissions. It is anticipated that access roads may require periodic maintenance to flatten ruts, restore stability or repair washouts. Maintenance would be conducted using similar equipment as construction.

2.3.5 Operations, Maintenance, and Monitoring

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

Operations include seedbed reclamation and irrigation. During reclamation, irrigation events would occur every three days for one month. Following reclamation, the managed irrigation system would be used to establish and maintain transplants. 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. All irrigation events would be staffed.

The irrigation system and vegetation stand would be monitored and maintained during each irrigation event. Soil, vegetation, and water sampling would occur two times per year requiring one day for each event and a light-duty truck.

2.4 Project Timing

Drilling and testing of the deep well is planned to occur in September 2021 and drilling and testing of the shallow wells is planned to occur in November 2021. Production of the wells and installation of plantings is planned to occur in the winter of 2021/2022, starting in November 2021.

3.4 Access Road Development - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	1.7589	19.6040	8.3117	0.0190		0.8618	0.8618		0.7928	0.7928	0.0000	1,839.0171	1,839.0171	0.5948		1,853.8864
Total	**1.7589**	**19.6040**	**8.3117**	**0.0190**	**8.6733**	**0.8618**	**9.5351**	**3.5965**	**0.7928**	**4.3893**	**0.0000**	**1,839.0171**	**1,839.0171**	**0.5948**		**1,853.8864**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0518	0.0315	0.3724	4.4000e-004	4.3365	2.9000e-004	4.3368	0.4386	2.7000e-004	0.4389		43.7370	43.7370	3.5200e-003		43.8250
Total	**0.0518**	**0.0315**	**0.3724**	**4.4000e-004**	**4.3365**	**2.9000e-004**	**4.3368**	**0.4386**	**2.7000e-004**	**0.4389**		**43.7370**	**43.7370**	**3.5200e-003**		**43.8250**

4.0 Operational Detail - Mobile

3.4 Access Road Development - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	1.7589	19.6040	8.3117	0.0190		0.8618	0.8618		0.7928	0.7928		1,839.0171	1,839.0171	0.5948		1,853.8864
Total	**1.7589**	**19.6040**	**8.3117**	**0.0190**	**8.6733**	**0.8618**	**9.5351**	**3.5965**	**0.7928**	**4.3893**		**1,839.0171**	**1,839.0171**	**0.5948**		**1,853.8864**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0518	0.0315	0.3724	4.4000e-004	8.6352	2.9000e-004	8.6355	0.8685	2.7000e-004	0.8688		43.7370	43.7370	3.5200e-003		43.8250
Total	**0.0518**	**0.0315**	**0.3724**	**4.4000e-004**	**8.6352**	**2.9000e-004**	**8.6355**	**0.8685**	**2.7000e-004**	**0.8688**		**43.7370**	**43.7370**	**3.5200e-003**		**43.8250**

3.3 Surface Roughening - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1863	0.0000	6.1863	0.6680	0.0000	0.6680			0.0000			0.0000
Off-Road	0.3746	3.7916	4.5205	6.2100e-003		0.2236	0.2236		0.2057	0.2057	0.0000	601.8002	601.8002	0.1946		606.6660
Total	**0.3746**	**3.7916**	**4.5205**	**6.2100e-003**	**6.1863**	**0.2236**	**6.4098**	**0.6680**	**0.2057**	**0.8736**	**0.0000**	**601.8002**	**601.8002**	**0.1946**		**606.6660**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0324	0.0197	0.2328	2.8000e-004	2.7103	1.8000e-004	2.7105	0.2741	1.7000e-004	0.2743		27.3356	27.3356	2.2000e-003		27.3907
Total	**0.0324**	**0.0197**	**0.2328**	**2.8000e-004**	**2.7103**	**1.8000e-004**	**2.7105**	**0.2741**	**1.7000e-004**	**0.2743**		**27.3356**	**27.3356**	**2.2000e-003**		**27.3907**

3.3 Surface Roughening - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1863	0.0000	6.1863	0.6680	0.0000	0.6680			0.0000			0.0000
Off-Road	0.3746	3.7916	4.5205	6.2100e-003		0.2236	0.2236		0.2057	0.2057		601.8002	601.8002	0.1946		606.6660
Total	**0.3746**	**3.7916**	**4.5205**	**6.2100e-003**	**6.1863**	**0.2236**	**6.4098**	**0.6680**	**0.2057**	**0.8736**		**601.8002**	**601.8002**	**0.1946**		**606.6660**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0324	0.0197	0.2328	2.8000e-004	5.3970	1.8000e-004	5.3972	0.5428	1.7000e-004	0.5430		27.3356	27.3356	2.2000e-003		27.3907
Total	**0.0324**	**0.0197**	**0.2328**	**2.8000e-004**	**5.3970**	**1.8000e-004**	**5.3972**	**0.5428**	**1.7000e-004**	**0.5430**		**27.3356**	**27.3356**	**2.2000e-003**		**27.3907**

3.2 Vegetation Plot- Conveyance line & Irrigation Instillation - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8493	21.0286	12.9232	0.0259		0.9658	0.9658		0.8885	0.8885	0.0000	2,510.5564	2,510.5564	0.8120		2,530.8555
Total	**1.8493**	**21.0286**	**12.9232**	**0.0259**		**0.9658**	**0.9658**		**0.8885**	**0.8885**	**0.0000**	**2,510.5564**	**2,510.5564**	**0.8120**		**2,530.8555**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0971	0.0591	0.6983	8.3000e-004	8.1310	5.5000e-004	8.1315	0.8224	5.0000e-004	0.8229		82.0069	82.0069	6.6000e-003		82.1720
Total	**0.0971**	**0.0591**	**0.6983**	**8.3000e-004**	**8.1310**	**5.5000e-004**	**8.1315**	**0.8224**	**5.0000e-004**	**0.8229**		**82.0069**	**82.0069**	**6.6000e-003**		**82.1720**

Reduce Vehicle Speed on Unpaved Roads

3.2 Vegetation Plot- Conveyance line & Irrigation Instillation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8493	21.0286	12.9232	0.0259		0.9658	0.9658		0.8885	0.8885		2,510.556 4	2,510.556 4	0.8120		2,530.855 5
Total	**1.8493**	**21.0286**	**12.9232**	**0.0259**		**0.9658**	**0.9658**		**0.8885**	**0.8885**		**2,510.556 4**	**2,510.556 4**	**0.8120**		**2,530.855 5**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0971	0.0591	0.6983	8.3000e-004	16.1910	5.5000e-004	16.1915	1.6284	5.0000e-004	1.6289		82.0069	82.0069	6.6000e-003		82.1720
Total	**0.0971**	**0.0591**	**0.6983**	**8.3000e-004**	**16.1910**	**5.5000e-004**	**16.1915**	**1.6284**	**5.0000e-004**	**1.6289**		**82.0069**	**82.0069**	**6.6000e-003**		**82.1720**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Access Road Development	Air Compressors	0	6.00	78	0.48
Access Road Development	Excavators	0	8.00	158	0.38
Access Road Development	Graders	1	8.00	187	0.41
Surface Roughening	Excavators	0	8.00	158	0.38
Access Road Development	Rubber Tired Dozers	1	8.00	247	0.40
Access Road Development	Scrapers	0	8.00	367	0.48
Access Road Development	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Vegetation Plot- Conveyance line & Irrigation Instillation	Graders	2	8.00	187	0.41
Vegetation Plot- Conveyance line & Irrigation Instillation	Trenchers	1	8.00	78	0.50
Access Road Development	Other Construction Equipment	1	5.00	172	0.42
Surface Roughening	Rubber Tired Dozers	0	8.00	247	0.40
Surface Roughening	Graders	0	8.00	187	0.41
Surface Roughening	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Vegetation Plot- Conveyance line & Irrigation Instillation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Vegetation Plot- Conveyance line & Irrigation Instillation	Rubber Tired Dozers	0	8.00	247	0.40
Surface Roughening	Scrapers	0	8.00	367	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Vegetation Plot- Conveyance line & Irri	6	15.00	0.00	0.00	7.30	8.90	20.00	LD_Mix	HDT_Mix	HHDT
Surface Roughening	2	5.00	0.00	0.00	7.30	8.90	20.00	LD_Mix	HDT_Mix	HHDT
Access Road Development	3	8.00	0.00	0.00	7.30	8.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Vegetation Plot- Conveyance line & Irrigation Instillation	Trenching	2/1/2021	3/12/2021	5	30	
2	Surface Roughening	Grading	3/13/2021	4/2/2021	5	15	
3	Access Road Development	Grading	4/3/2021	4/30/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 22.99

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.4787	9.3000e-004	0.1022	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2192	0.2192	5.7000e-004		0.2336
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.4787**	**9.3000e-004**	**0.1022**	**1.0000e-005**	**0.0000**	**3.6000e-004**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**3.6000e-004**		**0.2192**	**0.2192**	**5.7000e-004**	**0.0000**	**0.2336**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.4787	9.3000e-004	0.1022	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2192	0.2192	5.7000e-004		0.2336
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.4787**	**9.3000e-004**	**0.1022**	**1.0000e-005**	**0.0000**	**3.6000e-004**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**3.6000e-004**		**0.2192**	**0.2192**	**5.7000e-004**	**0.0000**	**0.2336**

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2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.9464	21.0877	13.6215	0.0268	17.3085	0.9664	18.1706	4.4650	0.8891	5.2581	0.0000	2,592.5632	2,592.5632	0.8186	0.0000	2,613.0274
Maximum	**1.9464**	**21.0877**	**13.6215**	**0.0268**	**17.3085**	**0.9664**	**18.1706**	**4.4650**	**0.8891**	**5.2581**	**0.0000**	**2,592.5632**	**2,592.5632**	**0.8186**	**0.0000**	**2,613.0274**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.9464	21.0877	13.6215	0.0268	13.0099	0.9664	13.8719	4.0351	0.8891	4.8282	0.0000	2,592.5632	2,592.5632	0.8186	0.0000	2,613.0274
Maximum	**1.9464**	**21.0877**	**13.6215**	**0.0268**	**13.0099**	**0.9664**	**13.8719**	**4.0351**	**0.8891**	**4.8282**	**0.0000**	**2,592.5632**	**2,592.5632**	**0.8186**	**0.0000**	**2,613.0274**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**24.84**	**0.00**	**23.66**	**9.63**	**0.00**	**8.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	VendorPercentPave	50.00	90.00
tblOnRoadDust	VendorPercentPave	50.00	90.00
tblOnRoadDust	VendorPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	50	90
tblTripsAndVMT	VendorTripLength	11.90	8.90
tblTripsAndVMT	VendorTripLength	11.90	8.90
tblTripsAndVMT	VendorTripLength	11.90	8.90
tblTripsAndVMT	WorkerTripLength	10.20	7.30
tblTripsAndVMT	WorkerTripLength	10.20	7.30
tblTripsAndVMT	WorkerTripLength	10.20	7.30
tblVehicleTrips	CC_TL	9.50	5.00
tblVehicleTrips	CNW_TL	11.90	8.90
tblVehicleTrips	CW_TL	16.40	6.70

2.0 Emissions Summary

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	10
tblConstructionPhase	NumDays	35.00	20.00
tblConstructionPhase	NumDays	35.00	15.00
tblConstructionPhase	PhaseEndDate	11/9/2022	4/30/2021
tblConstructionPhase	PhaseEndDate	4/14/2021	4/2/2021
tblConstructionPhase	PhaseEndDate	2/24/2021	3/12/2021
tblConstructionPhase	PhaseStartDate	10/13/2022	4/3/2021
tblConstructionPhase	PhaseStartDate	2/25/2021	3/13/2021
tblConstructionPhase	PhaseStartDate	2/11/2021	2/1/2021
tblGrading	AcresOfGrading	0.00	87.50
tblGrading	AcresOfGrading	10.00	50.00
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

Clubhouse- Vegetation Plots, Surface Roughening & Acess Roads

Imperial County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	1,001.50	1000sqft	22.99	1,001,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	12
Climate Zone	15			**Operational Year**	2023
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	1270.9	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot area derived from information provided in the project description and accounts for irrigation instilation, surface roughening and access road construction.

Construction Phase - Phase name and timing updated to match inforamtion provided in the project description.

Off-road Equipment - Equioment updated based off information provided in the project description.

Off-road Equipment - Equipment updated per information provided in the project description.

Off-road Equipment - Construction equipment updated per information provided by the project description. "Other construction equipment" modeled for use of a water truck.

On-road Fugitive Dust - AQ-AM-1 BMP: Use paved roads to access the construcion site wehn possible.

Road Dust - AQ-AM-1 BMP: Use paved roads to access the construcion site wehn possible.

Construction Off-road Equipment Mitigation -

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7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1458					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4518					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.8000e-004	3.0000e-005	2.9900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.4100e-003	6.4100e-003	2.0000e-005		6.8300e-003
Total	**0.5979**	**3.0000e-005**	**2.9900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**6.4100e-003**	**6.4100e-003**	**2.0000e-005**		**6.8300e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1458					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4518					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.8000e-004	3.0000e-005	2.9900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.4100e-003	6.4100e-003	2.0000e-005		6.8300e-003
Total	**0.5979**	**3.0000e-005**	**2.9900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**6.4100e-003**	**6.4100e-003**	**2.0000e-005**		**6.8300e-003**

7.0 Water Detail

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5979	3.0000e-005	2.9900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.4100e-003	6.4100e-003	2.0000e-005		6.8300e-003
Unmitigated	0.5979	3.0000e-005	2.9900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.4100e-003	6.4100e-003	2.0000e-005		6.8300e-003

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.40	9.50	11.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.519925	0.031155	0.160764	0.115847	0.015498	0.004819	0.018987	0.121625	0.003553	0.001235	0.005240	0.000729	0.000624

5.0 Energy Detail

Historical Energy Use: N

3.5 Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0630	0.0419	0.4867	6.1000e-004	12.0656	3.9000e-004	12.0660	1.2135	3.5000e-004	1.2138		60.4068	60.4068	4.7300e-003		60.5251
Total	**0.0630**	**0.0419**	**0.4867**	**6.1000e-004**	**12.0656**	**3.9000e-004**	**12.0660**	**1.2135**	**3.5000e-004**	**1.2138**		**60.4068**	**60.4068**	**4.7300e-003**		**60.5251**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

3.5 Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0630	0.0419	0.4867	6.1000e-004	12.0656	3.9000e-004	12.0660	1.2135	3.5000e-004	1.2138		60.4068	60.4068	4.7300e-003		60.5251
Total	**0.0630**	**0.0419**	**0.4867**	**6.1000e-004**	**12.0656**	**3.9000e-004**	**12.0660**	**1.2135**	**3.5000e-004**	**1.2138**		**60.4068**	**60.4068**	**4.7300e-003**		**60.5251**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.0454	0.0000	9.0454	3.6528	0.0000	3.6528			0.0000			0.0000
Off-Road	2.0612	22.5833	12.5857	0.0245		1.0555	1.0555		0.9710	0.9710	0.0000	2,371.7365	2,371.7365	0.7671		2,390.9132
Total	**2.0612**	**22.5833**	**12.5857**	**0.0245**	**9.0454**	**1.0555**	**10.1008**	**3.6528**	**0.9710**	**4.6239**	**0.0000**	**2,371.7365**	**2,371.7365**	**0.7671**		**2,390.9132**

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3.4 Development of shallow Groundwater Wells - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0315	0.0210	0.2434	3.1000e-004	6.0328	1.9000e-004	6.0330	0.6067	1.8000e-004	0.6069		30.2034	30.2034	2.3700e-003		30.2626
Total	**0.0315**	**0.0210**	**0.2434**	**3.1000e-004**	**6.0328**	**1.9000e-004**	**6.0330**	**0.6067**	**1.8000e-004**	**0.6069**		**30.2034**	**30.2034**	**2.3700e-003**		**30.2626**

3.5 Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.0454	0.0000	9.0454	3.6528	0.0000	3.6528			0.0000			0.0000
Off-Road	2.0612	22.5833	12.5857	0.0245		1.0555	1.0555		0.9710	0.9710		2,371.7365	2,371.7365	0.7671		2,390.9132
Total	**2.0612**	**22.5833**	**12.5857**	**0.0245**	**9.0454**	**1.0555**	**10.1008**	**3.6528**	**0.9710**	**4.6239**		**2,371.7365**	**2,371.7365**	**0.7671**		**2,390.9132**

3.4 Development of shallow Groundwater Wells - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0315	0.0210	0.2434	3.1000e-004	6.0328	1.9000e-004	6.0330	0.6067	1.8000e-004	0.6069		30.2034	30.2034	2.3700e-003		30.2626
Total	**0.0315**	**0.0210**	**0.2434**	**3.1000e-004**	**6.0328**	**1.9000e-004**	**6.0330**	**0.6067**	**1.8000e-004**	**0.6069**		**30.2034**	**30.2034**	**2.3700e-003**		**30.2626**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2929	21.8305	19.2965	0.0474		0.9982	0.9982		0.9318	0.9318	0.0000	4,571.4643	4,571.4643	1.3088		4,604.1842
Total	**2.2929**	**21.8305**	**19.2965**	**0.0474**		**0.9982**	**0.9982**		**0.9318**	**0.9318**	**0.0000**	**4,571.4643**	**4,571.4643**	**1.3088**		**4,604.1842**

EEC ORIGINAL PKG

3.3 Paving of Deep Water Pad - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0315	0.0210	0.2434	3.1000e-004	6.0328	1.9000e-004	6.0330	0.6067	1.8000e-004	0.6069		30.2034	30.2034	2.3700e-003		30.2626
Total	**0.0315**	**0.0210**	**0.2434**	**3.1000e-004**	**6.0328**	**1.9000e-004**	**6.0330**	**0.6067**	**1.8000e-004**	**0.6069**		**30.2034**	**30.2034**	**2.3700e-003**		**30.2626**

3.4 Development of shallow Groundwater Wells - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2929	21.8305	19.2965	0.0474		0.9982	0.9982		0.9318	0.9318		4,571.4643	4,571.4643	1.3088		4,604.1842
Total	**2.2929**	**21.8305**	**19.2965**	**0.0474**		**0.9982**	**0.9982**		**0.9318**	**0.9318**		**4,571.4643**	**4,571.4643**	**1.3088**		**4,604.1842**

3.3 Paving of Deep Water Pad - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0315	0.0210	0.2434	3.1000e-004	6.0328	1.9000e-004	6.0330	0.6067	1.8000e-004	0.6069		30.2034	30.2034	2.3700e-003		30.2626
Total	**0.0315**	**0.0210**	**0.2434**	**3.1000e-004**	**6.0328**	**1.9000e-004**	**6.0330**	**0.6067**	**1.8000e-004**	**0.6069**		**30.2034**	**30.2034**	**2.3700e-003**		**30.2626**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2803	13.4374	6.8951	0.0131		0.6516	0.6516		0.5995	0.5995	0.0000	1,272.6917	1,272.6917	0.4116		1,282.9820
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2803**	**13.4374**	**6.8951**	**0.0131**		**0.6516**	**0.6516**		**0.5995**	**0.5995**	**0.0000**	**1,272.6917**	**1,272.6917**	**0.4116**		**1,282.9820**

3.2 Development of Deep Water Well - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0315	0.0210	0.2434	3.1000e-004	6.0328	1.9000e-004	6.0330	0.6067	1.8000e-004	0.6069		30.2034	30.2034	2.3700e-003		30.2626
Total	**0.0315**	**0.0210**	**0.2434**	**3.1000e-004**	**6.0328**	**1.9000e-004**	**6.0330**	**0.6067**	**1.8000e-004**	**0.6069**		**30.2034**	**30.2034**	**2.3700e-003**		**30.2626**

3.3 Paving of Deep Water Pad - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2803	13.4374	6.8951	0.0131		0.6516	0.6516		0.5995	0.5995		1,272.6917	1,272.6917	0.4116		1,282.9820
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2803**	**13.4374**	**6.8951**	**0.0131**		**0.6516**	**0.6516**		**0.5995**	**0.5995**		**1,272.6917**	**1,272.6917**	**0.4116**		**1,282.9820**

3.2 Development of Deep Water Well - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0315	0.0210	0.2434	3.1000e-004	6.0328	1.9000e-004	6.0330	0.6067	1.8000e-004	0.6069		30.2034	30.2034	2.3700e-003		30.2626
Total	**0.0315**	**0.0210**	**0.2434**	**3.1000e-004**	**6.0328**	**1.9000e-004**	**6.0330**	**0.6067**	**1.8000e-004**	**0.6069**		**30.2034**	**30.2034**	**2.3700e-003**		**30.2626**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7636	17.0214	14.9113	0.0368		0.7778	0.7778		0.7256	0.7256	0.0000	3,555.6856	3,555.6856	1.0227		3,581.2531
Total	**1.7636**	**17.0214**	**14.9113**	**0.0368**		**0.7778**	**0.7778**		**0.7256**	**0.7256**	**0.0000**	**3,555.6856**	**3,555.6856**	**1.0227**		**3,581.2531**

EEC ORIGINAL PKG

Development of shallow Groundwater Wells	Bore/Drill Rigs	1	8.00	221	0.50
Development of shallow Groundwater Wells	Off-Highway Trucks	2	6.00	402	0.38
Development of shallow Groundwater Wells	Other Construction Equipment	1	6.00	172	0.42

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Development of Deep Water Well	6	4.00	0.00	0.00	10.20	11.90	5.00	LD_Mix	HDT_Mix	HHDT
Paving of Deep Water Pad	2	4.00	0.00	0.00	10.20	11.90	5.00	LD_Mix	HDT_Mix	HHDT
Development of shallow Groundwater	8	4.00	0.00	0.00	10.20	11.90	5.00	LD_Mix	HDT_Mix	HHDT
Scarifying, Instillation of Water Storage Tank	3	8.00	0.00	0.00	10.20	11.90	5.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Development of Deep Water Well - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7636	17.0214	14.9113	0.0368		0.7778	0.7778		0.7256	0.7256		3,555.6856	3,555.6856	1.0227		3,581.2531
Total	**1.7636**	**17.0214**	**14.9113**	**0.0368**		**0.7778**	**0.7778**		**0.7256**	**0.7256**		**3,555.6856**	**3,555.6856**	**1.0227**		**3,581.2531**

Development of shallow Groundwater Wells	Cranes	0	7.00	231	0.29
Development of shallow Groundwater Wells	Forklifts	1	8.00	89	0.20
Development of shallow Groundwater Wells	Generator Sets	1	8.00	84	0.74
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Pavers	0	8.00	130	0.42
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Rollers	0	8.00	80	0.38
Paving of Deep Water Pad	Paving Equipment	0	8.00	132	0.36
Paving of Deep Water Pad	Rubber Tired Dozers	0	8.00	247	0.40
Development of shallow Groundwater Wells	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving of Deep Water Pad	Graders	0	8.00	187	0.41
Paving of Deep Water Pad	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Paving Equipment	0	8.00	132	0.36
Development of Deep Water Well	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Development of Deep Water Well	Rubber Tired Dozers	0	8.00	247	0.40
Paving of Deep Water Pad	Scrapers	0	8.00	367	0.48
Development of shallow Groundwater Wells	Welders	0	8.00	46	0.45
Paving of Deep Water Pad	Rollers	0	8.00	80	0.38
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Rubber Tired Dozers	1	8.00	247	0.40
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Scrapers	0	8.00	367	0.48
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Development of Deep Water Well	Bore/Drill Rigs	1	8.00	221	0.50
Development of Deep Water Well	Off-Highway Trucks	1	8.00	402	0.38
Development of Deep Water Well	Forklifts	1	8.00	89	0.20
Development of Deep Water Well	Other Construction Equipment	1	6.00	172	0.42
Development of Deep Water Well	Generator Sets	1	6.00	84	0.74
Paving of Deep Water Pad	Rubber Tired Dozers	1	8.00	247	0.40

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Development of Deep Water Well	Trenching	5/1/2021	5/10/2021	5	6	
2	Paving of Deep Water Pad	Paving	5/11/2021	5/12/2021	5	2	
3	Development of shallow Groundwater Wells	Trenching	5/13/2021	5/20/2021	5	6	
4	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Grading	5/21/2021	7/8/2021	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 29.29

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Excavators	0	8.00	158	0.38
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Graders	1	8.00	187	0.41
Paving of Deep Water Pad	Pavers	1	8.00	130	0.42
Paving of Deep Water Pad	Excavators	0	8.00	158	0.38

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5979	3.0000e-005	2.9900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.4100e-003	6.4100e-003	2.0000e-005		6.8300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.5979**	**3.0000e-005**	**2.9900e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**		**6.4100e-003**	**6.4100e-003**	**2.0000e-005**	**0.0000**	**6.8300e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5979	3.0000e-005	2.9900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.4100e-003	6.4100e-003	2.0000e-005		6.8300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.5979**	**3.0000e-005**	**2.9900e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**		**6.4100e-003**	**6.4100e-003**	**2.0000e-005**	**0.0000**	**6.8300e-003**

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.3244	22.6252	19.5399	0.0477	21.1109	1.0559	22.1668	4.8663	0.9714	5.8377	0.0000	4,601.6677	4,601.6677	1.3112	0.0000	4,634.4468
Maximum	**2.3244**	**22.6252**	**19.5399**	**0.0477**	**21.1109**	**1.0559**	**22.1668**	**4.8663**	**0.9714**	**5.8377**	**0.0000**	**4,601.6677**	**4,601.6677**	**1.3112**	**0.0000**	**4,634.4468**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.3244	22.6252	19.5399	0.0477	21.1109	1.0559	22.1668	4.8663	0.9714	5.8377	0.0000	4,601.6677	4,601.6677	1.3112	0.0000	4,634.4468
Maximum	**2.3244**	**22.6252**	**19.5399**	**0.0477**	**21.1109**	**1.0559**	**22.1668**	**4.8663**	**0.9714**	**5.8377**	**0.0000**	**4,601.6677**	**4,601.6677**	**1.3112**	**0.0000**	**4,634.4468**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	50	90
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripNumber	8,172.00	0.00
tblTripsAndVMT	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblTripsAndVMT	WorkerTripNumber	15.00	4.00
tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblTripsAndVMT	WorkerTripNumber	20.00	4.00

2.0 Emissions Summary

EEC ORIGINAL PKG

tblOffRoadEquipment	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName		Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName		Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName		Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps

tblGrading	AcresOfGrading	17.50	87.50
tblGrading	MaterialExported	0.00	65,379.00
tblGrading	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

Project Characteristics -

Land Use - Lot acreage for groundwater well development, takin installation and scarifying is unknown at this time. For a conservative estimate half of the average of the irrigation area (58.57 acres/2=29.285 acres) was used in this model run as a conservative estimate.

Construction Phase - Phase type, timing and duration updated to reflect information found in the project description.

Off-road Equipment - Other construction equipmnet= compressor (ground)

Off-road Equipment - Equipmnet updated to match information in the project description.

Off-road Equipment - Equipment updated to match the Project description. Other construction equipment= ground compressor

Off-road Equipment - Equipment list updated to match the project description.

Grading - Cubic yards of material is calculated based on information provided for the excovation of groundwater wells.

Trips and VMT - Material will not be hauled offsite. It will be redistributed on the project site. Number of emplyess needed per pahse is specified in the project description- assuming 4 for the development of wells.

On-road Fugitive Dust - AQ-AM-1 BMP: Use paved roads to access the construcion site wehn possible.

Road Dust - See previous comment regarding AD-Am-1 BMP

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	10
tblConstructionPhase	NumDays	35.00	2.00
tblConstructionPhase	NumDays	45.00	35.00
tblConstructionPhase	PhaseEndDate	2/1/2023	5/20/2021
tblConstructionPhase	PhaseEndDate	5/26/2021	5/12/2021
tblConstructionPhase	PhaseEndDate	3/22/2023	7/8/2021
tblConstructionPhase	PhaseEndDate	3/24/2021	5/10/2021
tblConstructionPhase	PhaseStartDate	5/27/2021	5/13/2021
tblConstructionPhase	PhaseStartDate	3/25/2021	5/11/2021
tblConstructionPhase	PhaseStartDate	2/2/2023	5/21/2021
tblConstructionPhase	PhaseStartDate	2/25/2021	5/1/2021

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Clubhouse- Well Development, Solar Pump Instillation & Water Tank Instillation

Imperial County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	29.29	Acre	29.29	1,275,654.60	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	12
Climate Zone	15			**Operational Year**	2023
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	1270.9	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

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ATTACHMENT A

CalEEMod Output Files Criteria Air Pollutants & Greenhouse Gas Emissions

LIST OF ATTACHMENTS

Attachment A – CalEEMod Output Files Criteria Air Pollutants & Greenhouse Gas Emissions

ICAPCD. 2017. *Air Quality Handbook.*

____. 2010. *Final 2009 1997 8-Hour Ozone Modified Air Quality Management Plan.*

SCAQMD (South Coast Air Quality Management District). 2003. Air Quality Management Plan.

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USEPA. 2016a. Climate Change – Greenhouse Gas Emissions: Carbon Dioxide. http://www.epa.gov/climatechange/emissions/co2.html.

____. 2016b. Methane. https://www3.epa.gov/climatechange/ghgemissions/gases/ch4.html.

____. 2016c. Nitrous Oxide. https://www3.epa.gov/climatechange/ghgemissions/gases/n2o.html.

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CARB. 2020a. Air Quality Data Statistics. http://www.arb.ca.gov/adam/index.html.

____. 2020b. Air Quality and Land Use Handbook

____. 2020c. California Greenhouse Gas Emission Inventory 2020 Edition. https://ww3.arb.ca.gov/cc/inventory/data/data.htm

____. 2019. State and Federal Area Designation Maps. http://www.arb.ca.gov/desig/adm/adm.htm.

____. 2018. SB 375 Regional Greenhouse Gas Emissions Reduction Targets. https://ww3.arb.ca.gov/cc/sb375/finaltargets2018.pdf

____. 2017a. California's 2017 Climate Change Scoping Plan. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf.

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____. 2008. Climate Change Scoping Plan Appendices (Appendix F).

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Crockett, Alexander G. 2011. Addressing the Significance of Greenhouse Gas Emissions Under CEQA: California's Search for Regulatory Certainty in an Uncertain World.

DOC. 2000. *A General Location Guide for Ultramafic Rocks in California-Areas More Likely to Contain Naturally Occurring Asbestos.*

USEPA. 2020. General Conformity De Minimis Tables. https://www.epa.gov/general-conformity/de-minimis-tables.

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IPCC. 2014. Climate Change 2014 Synthesis Report: Approved Summary for Policymakers. http://www.ipcc.ch/.

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Operations

Operation of the Project would result in an increase in GHG emissions solely associated with motor vehicle trips. Long-term GHG emissions attributed to operations of the Project are identified in Table 3-3.

Table 3-3. Operational-Related Greenhouse Gas Emissions

Emission Source	CO_2e (Metric Tons/ Year)
Area Source	0
Energy	0
Mobile	1.50
Waste	0
Water	0
Total	**1.50**
CAPCOA's Potentially Significant Impact Threshold	*900*
Exceed CAPCOA's Significance Threshold?	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment C for Model Data Outputs.
Notes: Emission projections predominately based on CalEEMod model defaults for Imperial County. Operational emissions account for one vehicle trip per day. It is noted that this is a conservative estimate and many days will have no operational related vehicle trips.

As shown in Table 3-3, operational-generated emissions would not exceed the CAPCAO's potentially significant impact threshold of 900 metric tons of CO_2e annually.

Conflict with any Applicable Plan, Policy, or Regulation of an Agency Adopted for the Purpose of Reducing the Emissions of Greenhouse Gases

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 the CAPCOA's GHG significance thresholds, which were prepared with the purpose of complying with statewide GHG-reduction efforts. Additionally, once implementation of the Project is complete, with the exception of routine maintenance and monitoring activities that would be performed using a light-duty truck, it would not be a source of operational GHG emissions.

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.)

3.3.2 *Methodology*

GHG emissions-related impacts were assessed in accordance with methodologies recommended by the ICAPCD. Where GHG emission quantification was required, emissions were modeled using the CalEEMod, version 2016.3.2. 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 and information provided by the IID, such as construction phasing, timing and equipment.

3.3.3 *Impact Analysis*

Generation of GHG Emissions

Project Implementation

Implementation of the Project would generate GHG emissions from worker commute trips, haul trucks carrying supplies and materials to and from the Project site, and off-road construction equipment (e.g., excavators, graders). Table 3-2 illustrates the specific construction generated GHG emissions that would result from implementation of the Project. Once implementation is complete, the generation of these GHG emissions would cease.

Table 3-2. Implementation-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/ Year)
Implementation in 2021	118
CAPCOA's Potentially Significant Impact Threshold	*900*
Exceed CAPCOA's Significance Threshold?	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.

As shown in Table 3-2, Project would result in the generation of approximately 118 metric tons of CO_2e during Project implementation. Once complete, the generation of these GHG emissions would cease.

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context of CEQA's requirements for cumulative impact analysis (see CEQA Guidelines § 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 § 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 § 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 and/or other regulatory strategies to reduce GHG emissions.

The significance of the Project's GHG emissions is evaluated consistent with CEQA Guidelines § 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. The analysis will rely on the GHG threshold recommended by the California Air Pollution Control Officers Association (CAPCOA), which has provided guidance for determining the significance of GHG emissions generated from land use development projects. CAPCOA considers projects that generate more than 900 metric tons of GHG to be significant. This 900 metric tons per year threshold was developed to ensure at least 90 percent of new GHG emissions would be reviewed and assessed for mitigation, thereby contributing to the statewide GHG emissions reduction goals that had been established for the year 2020 promulgated under AB 32 and the post-2020 reduction goals promulgated under SB 32. Thus, both cumulatively and individually, projects that generate less than 900 metric tons CO_2e per year have a negligible contribution to overall emissions.

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, Public Resources Code 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

3.3 Greenhouse Gas Emissions Impact Assessment

3.3.1 *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 greenhouse gas 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 or

ICAPCD Thresholds

The Appendix G thresholds for GHG's 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 § 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

3.2 Regulatory Framework

3.2.1 *State*

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.

Assembly Bill 32 Climate Change Scoping Plan and Updates

In 2006, the California legislature passed Assembly Bill (AB) 32 (Health and Safety Code § 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.

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 § 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 Executive Order (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.

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.

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over the last 50 years, whereas the remaining 45 percent of human-caused CO_2 emissions remains stored in the atmosphere (IPCC 2013).

Table 3-1. Greenhouse Gases

Greenhouse Gas	Description
CO_2	Carbon dioxide 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.[1]
CH_4	Methane 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 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.[2]
N_2O	Nitrous oxide 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.[3]

Sources: [1]USEPA 2016a, [2] USEPA 2016b, [3] USEPA 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.

3.1.1 *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 2020b). 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.

3.0 GREENHOUSE GAS EMISSIONS

3.1 Greenhouse Gas Setting

Certain gases in the earth's atmosphere, classified as 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 CO_2, methane (CH_4), and 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 3-1 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

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Odors

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. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. 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. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an 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.

Project Implementation

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 site. However, these emissions are short-term in nature and will 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. Therefore, odors generated during Project implementation would not adversely affect a substantial number of people to odor emissions.

Project Operations

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 uses identified as being associated with odors.

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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 hotspots 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/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.

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 (BAAQMD), 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 and/or horizontal air does not mix—in order to generate a significant CO impact.

The proposed Project is anticipated to result in no more than one daily traffic trip. It is noted that this is a conservative estimate and many days will have no operational related vehicle trips. Thus, 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.

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. Based on the emission modeling conducted, the maximum onsite Project implementation-related daily emissions of exhaust $PM_{2.5}$, considered a surrogate for DPM, would be 1.85 pounds/day in the year 2021 (see Attachment A). $PM_{2.5}$ exhaust is considered a surrogate for DPM because more than 90 percent of DPM is less than 1 microgram in diameter and therefore is a subset of particulate matter under 2.5 microns in diameter (i.e., $PM_{2.5}$). Most $PM_{2.5}$ 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.

In summary, Project implementation 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.

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 and monitoring activities, which would be performed using a light-duty truck. Therefore, the Project would not be a substantial source of TACs. The Project will not result in a high carcinogenic or non-carcinogenic risk during operation.

Naturally Occurring Asbestos

Another potential air quality issue associated with construction-related activities is the airborne entrainment of asbestos due to the disturbance of naturally-occurring asbestos-containing soils. The proposed Project is not located within an area designated by the State of California as likely to contain naturally-occurring asbestos (Department of Conservation [DOC] 2000). As a result, construction-related activities would not be anticipated to result in increased exposure of sensitive land uses to asbestos.

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

As previously described, the Project is proposing the development of groundwater wells and associated feature to establish and sustain vegetation cover and waterless dust control measures on 128.71 acres of the of exposed Salton Sea playa to reduce air quality risks from emissive particles. 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. The proposed Project would be assisting and complying with the SSAQMP as it would be mitigating dust from the exposed playa thereby improving the air quality of the region as well as abiding by the ICAPCD rules and regulations. Therefore, the Project would not conflict with any applicable air quality management plans and would result in a beneficial impact to the region's air quality.

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 site are residences located directly adjacent to the southern and western Project site boundary.

Construction/ Implementation-Generated Air Contaminants

Implementation 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 implementation (e.g., development of wells, scarifying); 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 standard 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 2-6 and Table 2-8, 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 the Project would not involve construction activities that would result in O_3 precursor emissions (ROG or NO_x) in excess of the ICAPCD thresholds, the Project is not anticipated to 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 involve activities that would result in CO emissions in excess of the ICAPCD thresholds. Thus, the Project's CO emissions would not contribute to the health effects associated with this pollutant.

Table 2-9. Operational-Related Emissions (USEPA Conformity Determination Analysis)

Emission Source	Pollutant (tons per year)					
	VOC (ROG)	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Area	0.07	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.28	0.02
Total:	0.07	0.00	0.00	0.00	0.28	0.02
EPA Conformity Determination Thresholds (40 CFR 93.153)	*100*	*100*	*100*	*100*	*100*	*100*
Exceed *EPA Conformity Determination Thresholds?*	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.
Notes: Operational emissions account for one vehicle trip per day. It is noted that this is a conservative estimate and many days will have no operational related vehicle trips.

As indicated in Table 2-9, operational emissions would not exceed the USEPA Conformity Determination thresholds. Additionally, as previously discussed, once implemented the Project would represent a beneficial impact on air quality due to its implementation of dust control measures.

Conflict with an Applicable Air Quality Management Plan

As previously described, the Project region is classified as nonattainment for federal O_3 standard (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 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.

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, 2013 24-Hour $PM_{2.5}$ SIP, the 2009 1997 8-hour Ozone RACT SIP, the 2009 PM10 SIP and the 2008 Ozone Early Progress Plans. 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.

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Table 2-8. Operational-Related Emissions

Emission Source	Pollutant (pounds per day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Summer Emissions						
Area	0.63	0.00	0.01	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.01	0.03	0.00	1.58	0.15
Total:	**0.63**	**0.01**	**0.04**	**0.00**	**1.58**	**0.15**
ICAPCD Significance Threshold	*137*	*137*	*150*	*550*	*550*	*150*
Exceed ICAPCD Significance Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Winter Emissions						
Area	0.63	0.00	0.01	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.01	0.02	0.00	1.58	0.15
Total:	**0.63**	**0.01**	**0.03**	**0.00**	**1.58**	**0.15**
ICAPCD Significance Threshold	*137*	*137*	*150*	*550*	*550*	*150*
Exceed ICAPCD Significance Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.
Notes: Operational emissions account for one vehicle trip per day. It is noted that this is a conservative estimate and many days will have no operational related vehicle trips.

As shown in Table 2-8, the Project's emissions would not exceed any ICAPCD's thresholds for any criteria air pollutants during operation. Additionally, the purpose of the Project is the development of sufficient groundwater to establish and sustain vegetation cover that would be implemented as a dust control measures to reduce airborne coarse and fine particulate matter and mitigate dust emissions from the exposed playa. Thus, once implemented the Project would represent a beneficial impact to air quality.

USEPA Conformity Determination Thresholds

As previously stated, operational related emissions associated with the proposed Project were calculated using the CalEEMod computer program. Operational air pollution impacts were based on model defaults as well as information provided by the IID. Once Project implementation is complete the main operational emissions associated with the proposed Project would be routine maintenance and monitoring activities, which would be performed using a light-duty truck. Long-term operational emissions attributable to the Project are identified in Table 2-9 and compared to the appropriate Conformity Determination thresholds.

Table 2-7. Implementation-Related Emissions (USEPA Conformity Determination Analysis)

Construction Year	Pollutant (tons per year)					
	VOC (ROG)	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Implementation 2021	0.10	1.06	0.65	0.00	0.75	0.19
USEPA Conformity Determination Thresholds (40 CFR 93.153)	*100*	*100*	*100*	*100*	*100*	*100*
Exceed USEPA Conformity Determination Thresholds?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.
Notes: Emission reduction/credits for construction were applied based on the required implementation of Best Management Practices that must be implemented during Project construction, such as limiting vehicle speeds to 10 miles per hour on unpaved roads.

As shown in Table 2-7, emissions from implementation of the proposed Project do not exceed the USEPA Conformity Determination thresholds for the region.

Operational Criteria Air Quality Emissions

ICAPCD Significance Threshold

The Project would result in minimal long-term operational emissions of criteria air pollutants such as PM_{10}, $PM_{2.5}$, CO, and SO_2 as well as ozone precursors such as ROGs and NO_X. Once construction is complete the main operational emissions associated with the proposed Project would be routine maintenance and monitoring activities which would be performed using a light-duty truck. Long-term operational emissions attributable to the Project are identified in Table 2-8 and compared to the operational significance thresholds promulgated by the ICAPCD.

taking reasonable precautions to prevent the emissions of fugitive dust, such as stabilizing unpaved roads and bulk material that is being transported.

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 Attachment A for more information regarding the construction assumptions, including construction equipment and duration, used in this analysis.

Predicted maximum daily emissions associated with Project implementation are summarized in Table 2-6. 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 2-6. Project Implementation-Generated Emissions

Implementation Year	Pollutant (pounds per day)					
	ROG	NO_x	CO	SO_2	PM_{10}	$PM_{2.5}$
Implementation 2021	43.71	33.15	0.06	0.06	36.03	10.65
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 Attachment A for Model Data Outputs.
Notes: Pounds per day taken from the season with the highest output. Emission reduction/credits for construction were applied based on the required implementation of Best Management Practices that must be implemented during Project construction, such as limiting vehicle speeds to 10 miles per hour on unpaved roads.

As shown in Table 2-6, emissions generated during Project implementation would not exceed the ICAPCD's thresholds of significance. Therefore, criteria pollutant emissions generated during Project implementation 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.

USEPA Conformity Determination Thresholds

As previously described, the Project site is located in the Imperial County portion of the SSAB and is in nonattainment for the O_3 precursors, VOC (ROG) and NO_x, as well as PM_{10}. Emissions generated during Project implementation 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 Conformity Determination thresholds.

Table 2-5. 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
NO_x (O_3 precursor)	Nonattainment	Marginal	100
PM_{10}	Unclassified/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 2020

2.3.2 *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 site plans and the estimated traffic trip generation rates provided by the IID.

2.3.3 *Impact Analysis*

Project Construction/ Implementation-Generated Criteria Air Quality Emissions

ICAPCD Significance Threshold

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

The General Conformity process begins with an "applicability analysis," whereby it must be determined how and to what degree the Conformity Rules apply. According to USEPA's General Conformity Guidance: Questions and Answers (1994), before any approval is given for a Federal Action to go forward, the federal agency must apply the applicability requirements found at 40 CFR § 93.153 to the Federal Action and/or determine on a pollutant-by-pollutant basis, whether a determination of General Conformity is required. During the applicability analysis, the federal agency determines the following:

- Whether the action will occur in a nonattainment or maintenance area; _
- Whether one or more of the specific exemptions apply to the action; _
- Whether the federal agency has included the action on its list of presumed-to-conform actions; _
- Whether the total direct and indirect emissions are below or above the de minimis levels; and/or _
- Where a facility has an emissions budget approved by the State or Tribe as part of the SIP or TIP, the federal agency determines that the emissions from the proposed action are within the budget.

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 FHWA or FTA (40 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 2-5, the lead federal agency is required to make a conformity determination. As previously described, the proposed site is located in the Imperial County portion of the SSAB. Table 2-5 lists the attainment status for each criteria air pollutant and the De Minimis threshold based on the NAAQS designation and classification.

Table 2-4. 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

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.

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.

United States 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 (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 overall purpose of the General Conformity rule is to ensure that:

- Federal activities do not cause or contribute to new violations of NAAQS;
- Actions do not worsen existing violations of the NAAQS; and
- Attainment of the NAAQS is not delayed.

Salton Sea Air Quality Mitigation Program

As part of the 2003 QSA Water Transfer, the SSAQMP was developed to address air quality mitigation requirements that are associated with transferring up to 300,000 acre-feet of conserved water per year. The transfer of water reduces the volume of agricultural return flow to the Salton Sea, exposing playa and increasing the potential for dust emissions around the Salton Sea. Mitigation measures to address potential dust emissions include: 1) restricting access to exposed playa, 2) researching and monitoring the exposed playa, 3) creating or purchasing offsetting emission reduction credits and 4) implementation of direct emission reduction measures on the exposed playa. The SSAQMP's objective is to detect, locate, assess and identify options to mitigate dust from the exposed playa. In July 2016, The SSAQMP document was accepted by IID's Board of Directors to provide a comprehensive, science-based, adaptive approach to the air quality mitigation requirements. The Program includes steps to characterize emissions potential of the exposed playa as the Salton Sea recedes and provide options to proactively prevent significant dust emissions.

2.3 Air Quality Emissions Impact Assessment

2.3.1 *Thresholds of Significance*

The impact analysis provided below is based on the following California Environmental Quality Act (CEQA) Guidelines Appendix G thresholds of significance. The Project would result in a significant impact to air quality if it would do any of the following:

1) Conflict with or obstruct implementation of any applicable air quality plan.
2) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors).
3) Expose sensitive receptors to substantial pollutant concentrations.
4) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people).

ICAPCD Thresholds

The significance criteria established by the applicable air quality management or air pollution control district (ICAPCD) may be relied upon to make the above determinations. 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 2-4.

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To achieve and maintain ambient air quality standards, the ICAPCD has adopted various rules and regulations for the control of airborne pollutants. The ICAPCD Rules and Regulations that are applicable to the proposed project include, but are not limited to, ICAPCD Rule 801 requirements for construction activities. The purpose of this rule is to reduce the amount of PM_{10} entrained in the ambient air as a result of emissions generated from construction and other earthmoving activities by requiring actions to prevent, reduce, or mitigate PM_{10} emissions. In addition, the project is required to adopt best available control measures to minimize emissions from surface-disturbing activities to comply with ICAPCD Regulation VIII (Fugitive Dust Rules). These measures include the following (ICAPCD 2017):

- All disturbed areas, including bulk material storage which is not being actively utilized, shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by using water, chemical stabilizers, dust suppressants, tarps, or other suitable material such as vegetative ground cover.

- All on-site and off-site unpaved roads will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.

- All unpaved traffic areas of 1 acre or more with 75 or more average vehicle trips per day will be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emissions by paving, chemical stabilizers, dust suppressants, and/or watering.

- The transport of bulk materials shall be completely covered unless 6 inches of freeboard space from the top of the container is maintained with no spillage and loss of bulk material. In addition, the cargo compartment of all haul trucks is to be cleaned and/or washed at the delivery site after removal of bulk material.

- All track-out or carry-out will be cleaned at the end of each workday or immediately when mud or dirt extends a cumulative distance of 50 linear feet or more onto a paved road within an urban area.

- Bulk material handling or transfer shall be stabilized prior to handling or at points of transfer with application of sufficient water, chemical stabilizers, or by sheltering or enclosing the operation and transfer line.

- The construction of any new unpaved road is prohibited within any area with a population of 500 or more unless the road meets the definition of a temporary unpaved road. Any temporary unpaved road shall be effectively stabilized and visible emissions shall be limited to no greater than 20 percent opacity for dust emission by paving, chemical stabilizers, dust suppressants and/or watering.

In addition, there are other ICAPCD rules and regulations, not detailed here, which may apply to the proposed Project but are administrative or descriptive in nature. These include rules associated with fees, enforcement and penalty actions, and variance procedures.

with the CCAA, the $PM_{2.5}$ SIP satisfies the attainment demonstration requirement satisfying the provisions of the CCAA.

The ICAPCD is working cooperatively with counterparts from Mexico to implement emissions reductions strategies and projects for air quality improvements at the border. The two countries strive to achieve these goals through local input from states, County governments, and citizens. Within the Mexicali and Imperial Valley area, the Air Quality Task Force (AQTF) has been organized to address those issues unique to the border region known as the Mexicali/Imperial air shed. The AQTF membership includes representatives from Federal, State, and local governments from both sides of the border, as well as representatives from academia, environmental organizations, and the general public. This group was created to promote regional efforts to improve the air quality monitoring network, emissions inventories, and air pollution transport modeling development, as well as the creation of programs and strategies to improve air quality.

Tanner Air Toxics Act & Air Toxics "Hot Spots" Information and Assessment Act

CARB's Statewide comprehensive air toxics program was established in 1983 with Assembly Bill (AB) 1807, the Toxic Air Contaminant Identification and Control Act (Tanner Air Toxics Act of 1983). AB 1807 created California's program to reduce exposure to air toxics and sets forth a formal procedure for CARB to designate substances as TACs. Once a TAC is identified, CARB adopts an airborne toxics control measure (ATCM) for sources that emit designated TACs. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure to below that threshold. If there is no safe threshold, the measure must incorporate toxics best available control technology to minimize emissions.

CARB also administers the state's mobile source emissions control program and oversees air quality programs established by state statute, such as AB 2588, the Air Toxics "Hot Spots" Information and Assessment Act of 1987. Under AB 2588, TAC emissions from individual facilities are quantified and prioritized by the air quality management district or air pollution control district. High priority facilities are required to perform a health risk assessment (HRA) and, if specific thresholds are exceeded, required to communicate the results to the public in the form of notices and public meetings. In September 1992, the "Hot Spots" Act was amended by Senate Bill (SB) 1731, which required facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

2.2.3 *Local*

Imperial County Air Pollution Control District

The ICAPCD is the local air quality agency and shares responsibility with CARB for ensuring that state and federal ambient air quality standards are achieved and maintained in the SSAB. Furthermore, ICAPCD adopts and enforces controls on stationary sources of air pollutants through its permit and inspection programs and regulates agricultural burning. Other ICAPCD responsibilities include monitoring ambient air quality, preparing clean air plans, planning activities such as modeling and maintenance of the emission inventory, and responding to citizen air quality complaints.

2.2.2 *State*

California Clean Air Act

The California Clean Air Act (CCAA) allows the state to adopt ambient air quality standards and other regulations provided that they are at least as stringent as federal standards. CARB, a part of the California Environmental Protection Agency, is responsible for the coordination and administration of both federal and state air pollution control programs within California, including setting the CAAQS. CARB also conducts research, compiles emission inventories, develops suggested control measures, and provides oversight of local programs. CARB establishes emissions standards for motor vehicles sold in California, consumer products (such as hairspray, aerosol paints, and barbecue lighter fluid), and various types of commercial equipment. It also sets fuel specifications to further reduce vehicular emissions. CARB also has primary responsibility for the development of California's State Implementation Plan (SIP), for which it works closely with the federal government and the local air districts.

California State Implementation Plan

The CCAA (and its subsequent amendments) requires the state to prepare an air quality control plan referred to as the SIP. The SIP is a living document that is periodically modified to reflect the latest emissions inventories, plans, and rules and regulations of air basins as reported by the agencies with jurisdiction over them. The CAA Amendments dictate that states containing areas violating the NAAQS revise their SIPs to include extra control measures to reduce air pollution. The SIP includes strategies and control measures to attain the NAAQS by deadlines established by the CAA. The USEPA has the responsibility to review all SIPs to determine if they conform to the requirements of the CAA. State law makes CARB the lead agency for all purposes related to the SIP. Local air districts and other agencies prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register.

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.

For 8-Hour O_3, the ICAPCD adopted the 2017 8-hour Ozone State Implementation Plan in October 2018. The plan includes control measures which are an integral part of how the ICAPCD currently controls the ROG and NO_X emissions within the O_3 nonattainment areas. The overall strategy includes programs and control measures which represent the implementation of Reasonable Available Control Technology (40 CFR 51.912) and the assurance that stationary sources maintain a net decrease in emissions.

For PM_{10}, the ICAPCD adopted the PM_{10} State Implementation Plan in 2018, which maintained previously adopted fugitive dust control measures (Regulation VIII). The USEPA had previously approved Regulation VIII fugitive dust rules into the Imperial County portion of the California SIP in 2013.

For $PM_{2.5}$, the ICAPCD adopted the $PM_{2.5}$ SIP in April 2018. This SIP concluded that the majority of the $PM_{2.5}$ emissions resulted from transport in nearby Mexico. Specifically, the SIP demonstrates attainment of the 2006 $PM_{2.5}$ NAAQS "but for" transport of international emissions from Mexicali, Mexico. In accordance

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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).

2.1.6 *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 site are residences located directly adjacent to the southern and western Project site boundary in Salton City.

2.2 Regulatory Framework

2.2.1 *Federal*

Clean Air Act

The Clean Air Act (CAA) of 1970 and the CAA Amendments of 1971 required the USEPA to establish the NAAQS, with states retaining the option to adopt more stringent standards or to include other specific pollutants. On April 2, 2007, the Supreme Court found that carbon dioxide (CO_2) is an air pollutant covered by the CAA; however, no NAAQS have been established for CO_2.

These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed.

The USEPA has classified air basins (or portions thereof) as being in attainment, nonattainment, or unclassified for each criteria air pollutant, based on whether or not the NAAQS have been achieved. If an area is designated unclassified, it is because inadequate air quality data were available as a basis for a nonattainment or attainment designation. Table 2-3 lists the federal attainment status of the SSAB for the criteria pollutants.

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Table 2-2. Summary of Ambient Air Quality Data

Pollutant Standards	2017	2018	2019
O_3- Niland-English Road			
Max 1-hour concentration (ppm)	0.072	0.060	0.060
Max 8-hour concentration (ppm) (state/federal)	0.062 / 0.061	0.055 / 0.055	0.055 / 0.054
Number of days above 1-hour standard (state/federal)	0 / 0	0 / 0	0 / 0
Number of days above 8-hour standard (state/federal)	0 / 0	0 / 0	0 / 0
PM_{10}- Niland-English Road			
Max 24-hour concentration (μg/m^3) (state/federal)	235.7 / 345.8	333.8 / 331.5	156.3 / 155.7
Number of days above 24-hour standard (state/federal)	* / 4.0	* / 10.1	49.3 / 1.0
$PM_{2.5}$-Rubidoux - Brawley-Main Street			
Max 24-hour concentration (μg/m^3) (state/federal)	46.1 / 46.1	55.1 / 55.1	28.9 / 28.9
Number of days above federal 24-hour standard	9.0	13.1	2.1

Source: CARB 2020a
μg/m^3 = micrograms per cubic meter; ppm = parts per million
* = Insufficient data available

The 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 (CAAQS) are not to be exceeded during a three-year period. The attainment status for the portion of the SSAB encompassing the Project site is included in Table 2-3.

Table 2-3. 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
$PM_{2.5}$	Attainment	Unclassified/Attainment
CO	Attainment	Unclassified/Attainment
NO_2	Attainment	Unclassified/Attainment
SO_2	Attainment	Unclassified/Attainment

Source: CARB 2019

compounds (e.g., some petroleum distillate mixtures). TOG includes all organic compounds that can become airborne (through evaporation, sublimation, as aerosols, etc.), excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate.

Various subsets of TOG cause headaches, dizziness, upper respiratory tract irritation, nausea, and cancer. Vehicular traffic traveling on area roadways, such as North Marina Drive, are sources of TOG.

2.1.4 Asbestos

The term "asbestos" describes naturally occurring fibrous minerals found in certain types of rock formations. It is a mineral compound of silicon, oxygen, hydrogen, and various metal cations. When mined and processed, asbestos is typically separated into very thin fibers. When these fibers are present in the air, they are normally invisible to the naked eye. Once airborne, asbestos fibers can cause serious health problems. If inhaled, asbestos fibers can impair normal lung functions, and increase the risk of developing lung cancer, mesothelioma, or asbestosis.

Naturally-occurring asbestos, which was identified as a TAC in 1986 by CARB, is located in many parts of California and is commonly associated with ultramafic rock. The Project site is not located in an area of known or suspected naturally-occurring asbestos (DOC 2000).

2.1.5 Ambient Air Quality

Ambient air quality at the Project site can be inferred from ambient air quality measurements conducted at nearby air quality monitoring stations. CARB maintains more than 60 monitoring stations throughout California. O_3, PM_{10} and $PM_{2.5}$ are the pollutant species most potently affecting the Project region. As described in detail below, the Project 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). The Niland-English Road air quality monitoring station (7711 English Road, Niland), located approximately 24.13 miles southeast of the Project site, monitors ambient concentrations of O_3 and PM_{10}. The Brawley-Main Street air quality monitoring station (220 Main Street, Brawley), located approximately 34.10 miles southeast of the Project site, monitors ambient concentrations of $PM_{2.5}$, a subset of PM_{10}. Ambient emission concentrations will vary due to localized variations in emission sources and climate and should be considered "generally" representative of ambient concentrations in the Project area.

Table 2-2 summarizes the published data concerning O_3 and PM_{10} from the Niland-English Road monitoring station and published data concerning $PM_{2.5}$ from the Brawley-Main Street monitoring station for each year that the monitoring data is provided. O_3, PM_{10} and $PM_{2.5}$ are the pollutant species most potently affecting the Project region.

2.1.3 *Toxic Air Contaminants*

In addition to the criteria pollutants discussed above, toxic air contaminants (TACs) are another group of pollutants of concern. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For regulatory purposes, carcinogenic TACs are assumed to have no safe threshold below which health impacts would not occur, and cancer risk is expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

There are many different types of TACs, with varying degrees of toxicity. Sources of TACs include industrial processes such as petroleum refining and chrome plating operations, commercial operations such as gasoline stations and dry cleaners, and motor vehicle exhaust. Additionally, diesel engines emit a complex mixture of air pollutants composed of gaseous and solid material. The solid emissions in diesel exhaust are known as diesel particulate matter (DPM). In 1998, California identified DPM as a TAC based on its potential to cause cancer, premature death, and other health problems (e.g., asthma attacks and other respiratory symptoms). Those most vulnerable are children (whose lungs are still developing) and the elderly (who may have other serious health problems). Overall, diesel engine emissions are responsible for the majority of California's known cancer risk from outdoor air pollutants. Public exposure to TACs can result from emissions from normal operations, as well as from accidental releases of hazardous materials during upset conditions. The health effects of TACs include cancer, birth defects, neurological damage, and death.

Diesel Exhaust

Most recently, CARB identified DPM as a TAC. DPM differs from other TACs in that it is not a single substance but rather a complex mixture of hundreds of substances. Diesel exhaust is a complex mixture of particles and gases produced when an engine burns diesel fuel. DPM is a concern because it causes lung cancer; many compounds found in diesel exhaust are carcinogenic. DPM includes the particle-phase constituents in diesel exhaust. The chemical composition and particle sizes of DPM vary between different engine types (heavy-duty, light-duty), engine operating conditions (idle, accelerate, decelerate), fuel formulations (high/low sulfur fuel), and the year of the engine (USEPA 2002). Some short-term (acute) effects of diesel exhaust include eye, nose, throat, and lung irritation, and diesel exhaust can cause coughs, headaches, light-headedness, and nausea. DPM poses the greatest health risk among the TACs; due to their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung.

Total Organic Gases

Total organic gases (TOG) emissions are compounds of carbon, excluding carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, and ammonium carbonate. Specifically, TOG emissions include all organic gas compounds emitted to the atmosphere, including the low reactivity compounds (methane, ethane, various chlorinated fluorocarbons, acetone, perchloroethylene, volatile methyl siloxanes, etc.). TOG emissions also include low volatility or "low vapor pressure" organic

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influenza. Laboratory studies show that susceptible humans, such as asthmatics, who are exposed to high concentrations can suffer from lung irritation or possible lung damage. Precursors of NO_x, such as NO and NO_2, attribute to the formation of O_3 and $PM_{2.5}$. Epidemiological studies have also shown associations between NO_2 concentrations and daily mortality from respiratory and cardiovascular causes and with hospital admissions for respiratory conditions.

Ozone

O_3 is a secondary pollutant, meaning it is not directly emitted. It is formed when volatile organic compounds (VOCs) or ROGs and NO_x undergo photochemical reactions that occur only in the presence of sunlight. The primary source of ROG emissions is unburned hydrocarbons in motor vehicle and other internal combustion engine exhaust. NO_x forms as a result of the combustion process, most notably due to the operation of motor vehicles. Sunlight and hot weather cause ground-level O_3 to form. Ground-level O_3 is the primary constituent of smog. Because O_3 formation occurs over extended periods of time, both O_3 and its precursors are transported by wind and high O_3 concentrations can occur in areas well away from sources of its constituent pollutants.

People with lung disease, children, older adults, and people who are active can be affected when O_3 levels exceed ambient air quality standards. Numerous scientific studies have linked ground-level O_3 exposure to a variety of problems including lung irritation, difficult breathing, permanent lung damage to those with repeated exposure, and respiratory illnesses.

Particulate Matter

PM includes both aerosols and solid particulates of a wide range of sizes and composition. Of concern are those particles smaller than or equal to 10 microns in diameter size (PM_{10}) and small than or equal to 2.5 microns in diameter ($PM_{2.5}$). Smaller particulates are of greater concern because they can penetrate deeper into the lungs than larger particles. PM_{10} is generally emitted directly as a result of mechanical processes that crush or grind larger particles or form the resuspension of dust, typically through construction activities and vehicular travel. PM_{10} generally settles out of the atmosphere rapidly and is not readily transported over large distances. $PM_{2.5}$ is directly emitted in combustion exhaust and is formed in atmospheric reactions between various gaseous pollutants, including NO_x, sulfur oxides (SO_x) and VOCs. $PM_{2.5}$ can remain suspended in the atmosphere for days and/or weeks and can be transported long distances.

The principal health effects of airborne PM are on the respiratory system. Short-term exposure of high $PM_{2.5}$ and PM_{10} levels are associated with premature mortality and increased hospital admissions and emergency room visits. Long-term exposure is associated with premature mortality and chronic respiratory disease. According to the U.S. Environmental Protection Agency (USEPA), some people are much more sensitive than others to breathing PM_{10} and $PM_{2.5}$. People with influenza, chronic respiratory and cardiovascular diseases, and the elderly may suffer worse illnesses; people with bronchitis can expect aggravated symptoms; and children may experience decline in lung function due to breathing in PM_{10} and $PM_{2.5}$. Other groups considered sensitive include smokers and people who cannot breathe well through their noses. Exercising athletes are also considered sensitive because many breathe through their mouths.

Table 2-1. Criteria Air Pollutants- Summary of Common Sources and Effects

Pollutant	Major Manmade Sources	Human Health & Welfare Effects
CO	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, effecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
NO_2	A reddish-brown gas formed during fuel combustion for motor vehicles, energy utilities and industrial sources.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Causes brown discoloration of the atmosphere.
O_3	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrous oxides (N_2O) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, solvents, paints and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield.
PM_{10} & $PM_{2.5}$	Power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles and others.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
SO_2	A colorless, nonflammable gas formed when fuel containing sulfur is burned. Examples are refineries, cement manufacturing, and locomotives.	Respiratory irritant. Aggravates lung and heart problems. Can damage crops and natural vegetation. Impairs visibility.

Source: California Air Pollution Control Officers Association (CAPCOA 2013)

Carbon Monoxide

CO in the urban environment is associated primarily with the incomplete combustion of fossil fuels in motor vehicles. CO combines with hemoglobin in the bloodstream and reduces the amount of oxygen that can be circulated through the body. High CO concentrations can cause headaches, aggravate cardiovascular disease and impair central nervous system functions. CO concentrations can vary greatly over comparatively short distances. Relatively high concentrations of CO are typically found near crowded intersections and along heavy roadways with slow moving traffic. Even under the most severe meteorological and traffic conditions, high concentrations of CO are limited to locations within relatively short distances of the source. Overall CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program, which has mandated increasingly lower emission levels for vehicles manufactured since 1973. CO levels in the SSAB are in compliance with the state and federal one- and eight-hour standards.

Nitrogen Oxides

Nitrogen gas comprises about 80 percent of the air and is naturally occurring. At high temperatures and under certain conditions, nitrogen can combine with oxygen to form several different gaseous compounds collectively called nitric oxides (NO_x). Motor vehicle emissions are the main source of NO_x in urban areas. NO_x is very toxic to animals and humans because of its ability to form nitric acid with water in the eyes, lungs, mucus membrane, and skin. In animals, long-term exposure to NO_x increases susceptibility to respiratory infections, and lowering resistance to such diseases as pneumonia and intense solar heating in the Imperial Valley creates a more localized wind pattern, as air comes up from the southeast via the Gulf of California. During periods of strong solar heating and intense convection, turbulent motion creates good mixing and low levels of air pollution. However, even strong turbulent mixing is insufficient to overcome the limited air pollution controls on sources in the Mexicali, Mexico area. Imperial County is predominately agricultural land. This is a factor in the cumulative air quality of the SSAB. The agricultural production generates dust and small particulate matter through the use of agricultural equipment on unpaved roads, land preparation, and harvest practices. The Imperial County experiences unhealthful air quality from photochemical smog and from dust due to extensive surface disturbance and the very arid climate (ICAPCD 2010).

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).

2.1.2 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), coarse particulate matter (PM_{10}), and fine particulate matter ($PM_{2.5}$) 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. Health effects commonly associated with criteria pollutants are summarized in Table 2-1.

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2.0 AIR QUALITY

2.1 Air Quality 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 site, pursuant to the regulatory authority of the ICAPCD.

Ambient air quality is commonly characterized by climate conditions, the meteorological influences on air quality, and the quantity and type of pollutants released. The air basin is subject to a combination of topographical and climatic factors that reduce the potential for high levels of regional and local air pollutants. The following section describes the pertinent characteristics of the air basin and provides an overview of the physical conditions affecting pollutant dispersion in the Project area.

2.1.1 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.

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 inches 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).

Wind

Winds in the area are driven by a complex pattern of local, regional and global forces, but primarily reflect the temperature difference between the cool ocean to the west and the heated interior of the entire desert southwest. For much of the year, winds flow predominantly from the west to the east. In summer,

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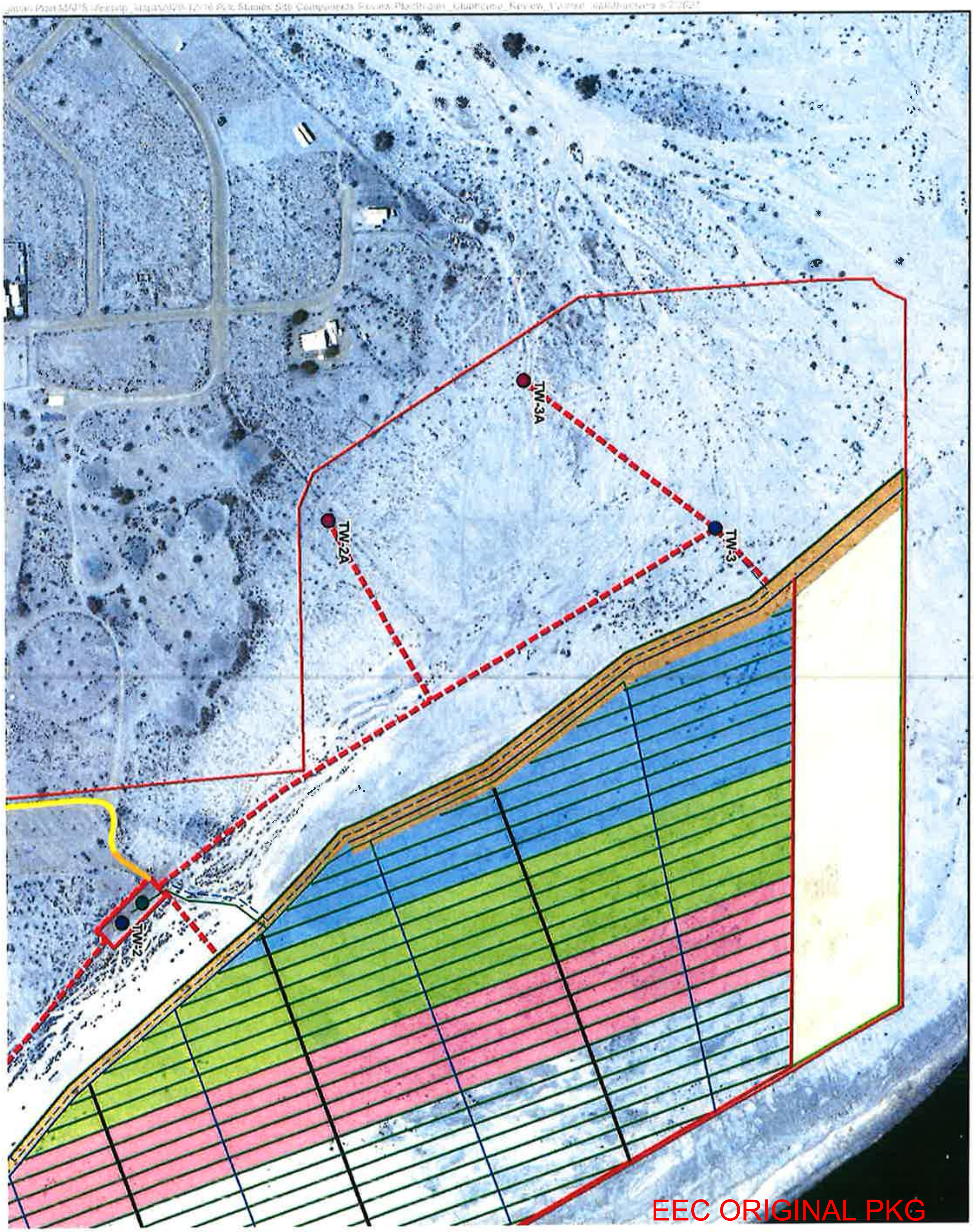

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- Development (drilling, testing and operations) of one deep groundwater water well (approximately 300 feet deep) and up to three shallow groundwater wells (approximately 100 feet deep);
- Installation and operations of solar-powered groundwater pumps;
- Placement and use of approximately six 5,000 gallon water storage tanks;
- Installation of conveyance pipelines from wells to storage tanks and from storage tanks to vegetation plots on the exposed playa;
- Establishment of 58.57 acres of vegetation within the approximately 73.15-acre plot study perimeter and associated the installation of a drip irrigation system;
- Implementation of waterless DCMs on approximately 13.69 acres of the approximately 73.15-acre plot study perimeter;
- Improvements to 3,800 linear feet of access road; and
- Ongoing operations and maintenance 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 approximately 58.57 acres and implementation of DCMs on the remaining 13.68 acres that would be implemented as part of the 2019/2020 PDCP.

Vegetation would be seeded or transplanted iodine bush (*Allenrolfea occidentalis*). Waterless DCMs will include placement of hay bales and sand fencing. Site preparation for vegetation establishment involves activities similar to surface roughening. For the purposes of this analysis, it is assumed that site preparation activities for vegetation establishment would be implemented throughout the entire plot study area to represent a "worst-case" ground disturbance scenario.

- 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.

In the PDCP, Planning Areas have been identified within the 7,000-acres for implementation of DCMs and are identified as follows:

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

This CEQA Addendum addresses implementation of a proposed dust control plot study in the Clubhouse Planning Area identified in the 2019/2020 PDCP under the SSAQMP (titled the Clubhouse Plot Study).

1.3 Clubhouse Plot Study Project Description

The Clubhouse Plot Study site comprises 128.64 acres that has been identified as a priority playa area to evaluate water supply options and vegetation establishment and maintenance requirements, as well as the efficacy of several waterless dust control measures.. The Clubhouse Plot Study site is located along the western 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 (Figure 1). As shown in Figure 1, the Clubhouse Plot Study would include:

b. *If feasible, supplying water to the Sea to re-wet emissive areas exposed by the [receding Sea].*

The EIR/EIS concludes that windblown dust from exposed shoreline caused by the Water Conservation and 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 Salton Sea Air Quality Mitigation Program (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.

1.2 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 dust control measures (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.

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 2019/2020 Proactive Dust Control Plan (PDCP) was prepared by IID as part of the SSAQMP to identify priority playa areas for dust control. The PDCP recommends dust mitigation projects on approximately 7,000 acres, including a series of plot studies and irrigation water supply development. 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;

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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 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 toxic air contaminant concentrations associated with [receding Sea levels] and to provide a basis for mitigation efforts.*
    f. *If incremental increases in toxic air contaminants (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 PM10 emission reduction credits.*
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*

EEC ORIGINAL PKG

1.0 INTRODUCTION

This report documents the results of an assessment of both air quality and greenhouse gas (GHG) emissions completed for the Clubhouse (Salton Sea Plot Studies) Project (Project) located near the northern extent of the Salton Sea in Imperial County, California. The Imperial Irrigation District (IID) is proposing the development of groundwater wells and associated features to establish and sustain vegetation cover and waterless dust control measures on 128.64 acres of the exposed Salton Sea playa to reduce air quality risks from emissive particles. The purpose of this assessment is to estimate Project-generated criteria air pollutants and GHG emissions attributable to the Project and to determine the level of impact the Project would have on the environment. This assessment was prepared using methodologies and assumptions recommended in the rules and regulations promulgated by the Imperial County Air Pollution Control District (ICAPCD) and thresholds set by the U.S. Environmental Protection Agency (USEPA). Regional and local existing conditions are presented, along with pertinent emissions standards and regulations.

1.1 Final EIR/EIS for the IID Water Conservation and Transfer Project and Habitat Conservation Plan

The Final Environmental Impact Report and Environmental Impact Statement (Final EIR/EIS or EIR/EIS) for the Imperial Irrigation District's (IID) Water Conservation and Transfer Project and Habitat Conservation Plan (HCP) was certified by IID (as CEQA Lead Agency) in June 2002. 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 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 Water Conservation and 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 Water Conservation and Transfer Project in the EIR/EIS.

LIST OF ACRONYMS AND ABBREVIATIONS

DPM	Diesel particulate matter
EO	Executive Order
GHG	Greenhouse gas
GWP	Global warming potential
ICAPCD	Imperial County Air Pollution Control District
IPCC	Intergovernmental Panel on Climate Change
N_2O	Nitrous oxide
NAAQS	National Ambient Air Quality Standards
NO_2	Nitrogen dioxide
NO_x	Nitric oxides
O_3	Ozone
PM	Particulate matter
PM_{10}	Coarse particulate matter
$PM_{2.5}$	Fine particulate matter
ppb	Parts per billion
Project	Clubhouse (Salton Sea Plot Studies) Project
ROGs	Reactive organic gases
SB	Senate Bill
SIP	State Implementation Plan
SO_2	Sulfur dioxide
SO_x	Sulfur oxides
SR	State Route
SRA	Source receptor area
SSAB	Salton Sea Air Basin
TACs	Toxic air contaminants
USEPA	U.S. Environmental Protection Agency
VOCs	Volatile organic compounds
VMT	Vehicle Miles Traveled

EEC ORIGINAL PKG

LIST OF TABLES

LIST OF FIGURES

LIST OF ATTACHMENTS

LIST OF ACRONYMS AND ABBREVIATIONS

°F	Degrees Fahrenheit
µg/m3	Micrograms per cubic meter; ppm = parts per million
1992 CO Plan	1992 Federal Attainment Plan for Carbon Monoxide
AB	Assembly Bill
AQMD	Air Quality Management District
CAA	Clean Air Act
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
Caltrans	California Department of Transportation
CAP	Climate Action Plan
CAPCOA	California Air Pollution Control Officers Association
CARB	California Air Resources Board
CCAA	California Clean Air Act
CCR	California Code of Regulations
CEQA	California Environmental Quality Act
CH_4	Methane
CO_2	Carbon dioxide
CO_2e	Carbon dioxide equivalent
County	Imperial County

CONTENTS

EEC ORIGINAL PKG

Air Quality and Greenhouse Gas Assessment

Clubhouse (Salton Sea Plot Studies) Project

Imperial County, California

Prepared For:

Imperial Irrigation District
333 East Barioni Boulevard
Imperial, California 92251

January 2021

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

EEC ORIGINAL PKG

ATTACHMENT A

Air Quality and Greenhouse Gas Assessment

EEC ORIGINAL PKG

LIST OF ATTACHMENTS

Attachment A – Air Quality and Greenhouse Gas Assessment

Attachment B – Biological Resources Assessment

Attachment C – Groundwater Resources Impact Assessment

Attachment D – Noise Impact Assessment

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Less than Significant. 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.

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☒	☐

Less than Significant. As noted above, with implementation of standard BMPs discussed in Section 2.5, the plot study would result in no new significant environmental impacts to humans, either directly or indirectly. 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. Therefore, impacts would be less than significant.

d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?	☐	☐	☐	☒

No Impact. The site is not within or near a SRA or lands classified as a very high FHSZ. In addition, the site is located away from populated areas and would not involve the construction of structures and would not expose people to risk associated with post-fire slope instability or drainage changes. Therefore, there would be no impacts.

3.21 Mandatory Findings of Significance

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

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☐	☒	☐

Less than Significant. With implementation of standard BMPs discussed in Section 2.5, implementation of the plot study would not substantially increase the severity of impacts to fish and wildlife beyond those impacts discussed in the EIR/EIS for the Transfer Project. Therefore, impacts would be less than significant.

Does the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) 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)?	☐	☐	☒	☐

The site is not located in a mapped Fire Hazard Severity Zone (FHSZ), State Responsibility Area (SRA), or Local Responsibility Area (LRA) (Office of the State Fire Marshall 2021).

3.20.2 Wildfire (XX) Environmental Checklist and Discussion

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒

No Impact. The site is located away from populated areas and not in an area identified in an adopted emergency response plan or 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.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒

No Impact. The site is not within or near a SRA or lands classified as a very high or high FHSZ. In addition, the site is located away from populated areas and due to the lack of fuel for a wildland fire, plot study activities would not exacerbate a risk of wildland fire.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?	☐	☐	☐	☒

No Impact. The site is located away from populated areas and due to the lack of fuel for a wildland fire, plot study activities would not exacerbate a risk of wildland fire.

If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐

Less than Significant Impact. Solid waste generated by construction workers would be collected and disposed of by the workers. 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.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

No Impact. Refer to the discussion under (d) above.

3.20 Wildfire

A complete discussion of the hazards, including wildfire hazard, impacts of the Project as originally proposed is included in QSA PEIR and in Section 3.13 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 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 Study Area is discussed below along with impacts from implementation of the plot study.

3.20.1 Existing Setting

Imperial County recently updated its Multi-Jurisdictional Hazard Mitigation Plan (Imperial County 2021b). A wildfire is an uncontrolled fire spreading through vegetative fuels, posing danger and destruction to property (Imperial County 2021b). Wildfires can occur in undeveloped areas and spread to urban areas where structures and other human development are more concentrated (wildland-urban interface fire) (Imperial County 2021b).

The plot study location is east of Salton City. The plot study site is vacant and zoned for Open Space/Recreation (S-1) with an Urban Area land use designation (Imperial County 1998, 2007, 2021a). The site is surrounded by residential development (single-family homes) in the R-1 zone to the west and south (Imperial County 1998, 2015), and BLM land to the north and east.

3.19.2 Utilities and Service Systems (XIX) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?	☐	☐	☒	☐

Less Than Significant Impact. The plot study is not anticipated to require utility connections or the use of service systems. Solar pumps would be utilized to complete the new water wells and for initial testing. 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. Therefore, there would be less than significant impacts.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☒	☐

Less Than Significant Impact. The plot study is not anticipated to require utility connections or the use of service systems. The construction contractor would be responsible for bringing sufficient potable water onsite for their workers. Given the small number of workers anticipated, water demand would be minimal. Therefore, there would be less than significant impacts.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Result in a determination by the wastewater treatment provider, which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☒

No Impact. Portable toilets would be utilized for construction workers. Therefore, there would be no impact.

Information Center revealed that five cultural resources investigations were previously conducted in or within 0.5 mile of the Project Area, with four of these overlapping the Project Area. Three historic-period cultural resources were previously recorded within 0.5 mile of the Project Area as a result of these investigations; however, no cultural resources have been previously identified within the Project Area. A search of the Sacred Lands File was completed by the California NAHC and resulted in a positive finding, meaning that Native American Sacred Lands have been recorded in the Project Area.

No cultural resources were recorded as a result of the field survey. 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 Proposed 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 cultural resources.

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 public services 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 Study Area is discussed below along with impacts from implementation of the plot study.

3.19.1 Existing Setting

The plot study location is east of Salton City, a census-designated place by the U.S. Census Bureau, within unincorporated Imperial County, and a population of 6,250 (U.S. Census Bureau 2019). The plot study site is vacant and zoned for Open Space/Recreation (S-1) with an Urban Area land use designation (Imperial County 1998, 2007, 2021a). The site is surrounded by residential development (single-family homes) in the R-1 zone to the west and south (Imperial County 1998, 2015), and BLM land to the north and east.

An Urban Areas land use designation, including the West Shores/Salton City Urban Area, are characterized by a full level of urban services, in particular public water and sewer systems and other public services such as schools, police, and fire protection, according to the County Land Use Element (Imperial County 2015).

Hunting focused on both small to medium-sized mammals, such as rodents and rabbits, and large mammals, such as pronghorn sheep, mountain sheep, and mule deer. Hunting was done using the throwing stick or the bow and arrow, though nets and traps were also used for small animals (Bean 1972).

Cahuilla buildings consisted of dome-shaped or rectangular houses, constructed of poles covered with brush and above-ground granaries (Bean 1978; Strong 1929). Other material culture included baskets, pottery, and grinding implements; stone tools, arrow shaft straighteners and bows; clothing (loincloths, blankets, rope, sandals, skirts, and diapers); and various ceremonial objects made from mineral, plant, and animal substances (Bean 1972).

As many as 10,000 Cahuilla may have existed at the time of European contact in the 18th century (Bean 1978). Cahuilla lived in the settlements of La Mesa, Toro, and Martinez on the Augustin and Toro Indian reservations circa 1900. As of 1974, approximately 900 people claimed Cahuilla ancestry (Bean 1978).

3.18.2 Tribal Cultural Resources (XVIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code Section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:				
i) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code Section 5020.1(k), or	☐	☐	☐	☒
ii) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American Tribe.	☐	☐	☐	☒

No Impact. ECORP conducted a cultural resources inventory for the proposed Clubhouse Plot Studies Project in 2020. The cultural resources inventory included a records search, literature review, and field survey. A records search of the California Historical Resources Information System at the South Coastal the deceased individual were burned to ensure that the spirit would not return for his or her possessions (Gifford 1931; Luomala 1978).

The Kumeyaay were geographically and linguistically divided into western and eastern Kumeyaay. The western and eastern Kumeyaay spoke two different dialects (Christenson 1990:64). The western Kumeyaay lived along the coast and in the valleys along the drainages west of the mountains. The eastern Kumeyaay lived in the canyons and desert east of the mountains. The western Kumeyaay spent the winter in residential bases in the lowland valleys and then broke into smaller cimul groups that moved gradually eastward toward the mountains, following ripening plants and occupying temporary residential bases along the way. Thus, each group occupied several different residential bases during the course of a year (Christenson 1990:292-293). The eastern Kumeyaay spent the winter in villages on the desert margin where water was available from springs at canyon mouths. They moved up the canyons toward the mountains during spring and summer. The eastern and western Kumeyaay met in the mountains in the fall where they gathered black oak acorns, traded, and held ceremonies (Christenson 1990:63). The large residential bases in the mountains appear archaeologically to be village sites (Gross and Sampson 1990).

The Kumeyaay population was estimated to be between 10,000 and 20,000 at the time of European contact, based on Spanish accounts and ethnographies (Gallegos 2002). Beginning in 1775, the semi-nomadic life of the Kumeyaay began to change as a result of contact with Euro-Americans, particularly from the influence of the Spanish missions. Through successive Spanish, Mexican, and Anglo-American control, the Kumeyaay were forced to adopt a sedentary lifestyle and accept Christianity (Luomala 1978).

3.18.1.2 Ethnohistory

The Project Area lies within traditional use areas claimed by both the Cahuilla and the Kumeyaay. These traditional territories are important to tribal members today, and ethnographic descriptions for both cultural groups may be found below.

Ethnographic accounts of Native Americans indicate that the Project Area lies within the Cahuilla ancestral territory. 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. They engaged in trade, marriage, shared rituals, and war with other groups of Native Americans whose territories they overlapped, primarily the Serrano and Gabrielino (Bean 1972, 1978; Kroeber 1925).

Traditional Cahuilla subsistence consisted of hunting, gathering, and fishing. Villages were often located near water sources, most commonly in canyons or near drainages on alluvial fans. Major villages were fully occupied during the winter, but during other seasons task groups made periodic forays to collect various plant foods, with larger groupings from several villages organizing for the annual acorn harvest (Bean and Saubel 1972). Bean and Saubel (1972) have recorded the use of several hundred species of plants used for food, building/artifact materials, and medicines. The major plant foods included acorns, pinyon nuts, and various seed-producing legumes. These were complemented by agave, wild fruits and berries, tubers, cactus bulbs, roots and greens, and seeds.

Patayan pattern consisted of a seasonal round among upland and lowland habitats. When Lake Cahuilla was present, seasonal residential bases and temporary camps were occupied on the western shore of Lake Cahuilla in order to obtain lacustrine resources including fish, shellfish, and waterfowl (Schaefer and Laylander 2007:253).

Obsidian from the Obsidian Butte source on the southeast margin of the Salton Sea was used for making flaked-stone tools throughout southern California during the Late Period. However, obsidian from Obsidian Butte could only be obtained when lake levels were low since it is at an elevation of 40 meters (130 feet) below sea level. It is possible that the Imperial Valley Yumans traded obsidian for food resources from other groups when lacustrine resources from Lake Cahuilla were not available. Exchange patterns are also indicated by the presence of numerous marine shell beads (made in the coastal Chumash area) in late pre-contact Takic-speaking Cahuilla sites, but not in Yuman-speaking areas (Schaefer and Laylander 2007:255).

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.

The primary source of Kumeyaay subsistence was vegetal food. Seasonal travel followed the ripening of plants from the lowlands to higher elevations of the mountain slopes. Acorns, grass and sage seeds, cactus fruits, wild plums, pinyon nuts, and agave stalks were the principal plant foods. Women sometimes transplanted wild onion and tobacco plants to convenient locations and sowed wild tobacco seeds. Deer, rabbits, small rodents, and birds provided meat. Village locations were selected for seasonal use and were occupied by exogamous, patrilineal clans or bands. Three or four clans might winter together, then disperse into smaller bands during the spring and summer (Luomala 1978).

Traditional pre-contact Kumeyaay were loosely organized into exogamous patrilineal groups termed sibs, clans, gens, and tribelets by ethnographers. The Kumeyaay term was cimul. The cimul used certain areas for hunting and gathering, but apparently did not control a bounded and defended territory, as did the Luiseño and Cahuilla. In addition, members of several different cimul usually lived in the same residential base, unlike the Luiseño, where a single party or clan controlled a village and its territory. Kumeyaay lived in residential bases during the winter and subsisted on stored resources. No permanent houses were built. Brush shelters were temporary and were not reused the next year. Ceremonies, including rites of passage and ceremonies to ensure an abundance of food, were held in the winter residential bases. The cimul leader directed the ceremonies and settled disputes (Christenson 1990:58, 62). One of the most important ceremonies was the mourning ceremony. Upon death, the Kumeyaay cremated the body of the deceased. Ashes were placed in a ceramic urn and buried or hidden in a cluster of rocks. The family customarily held a mourning ceremony one year after the death of a family member. During this ceremony, the clothes of between AD 1200 and 1680. The final desiccation is marked by 15 episodes of fish trap construction (along 15 successively lower shorelines) as the lake receded (Warren 1984:407).

The Colorado Desert area northeast of the Salton Trough, including the Chuckwalla Valley area, was probably used intermittently prior to AD 1200 by small groups of Yuman-speaking hunter-gatherers who had residential bases or villages along the Colorado River. Sites generated by this use of the desert would consist of small temporary camps and lithic scatters. Ancestors of the Numic-speaking Chemehuevi moved into the southeastern Mojave Desert and northeastern Colorado Desert (including Chuckwalla Valley) on the west side of the Colorado River about AD 1200 (Sutton et al. 2007:244). Their use of the desert area was more intensive because the Chemehuevi did not have access to the Colorado River Valley, which was still occupied by Yuman speakers. Temporary camps used by ancestors of the Chemehuevi should be larger than those dating prior to AD 1200, with a greater quantity and variety of artifacts. There should be differences between low- and medium-elevation camps used for general hunting and gathering and higher-elevation camps used for hunting big horn sheep and deer. Lithic scatters will also likely be larger and denser compared to earlier periods. Pottery is present in some of the temporary camps and consists of either locally made brown ware or buff ware that was obtained through trade with the Colorado River groups.

The southern part of the Salton Trough was occupied by ancestors of the Yuman-speaking Tipai, Kumeyaay, or Kamia (Schaefer and Laylander 2007: Figure 16.1). This area included the Imperial Valley, the Yuha Desert, and the mountains to the west and east. The lower Colorado River area was occupied by ancestors of the Yuman-speaking Quechan. Late Prehistoric archaeological sites in this area belong to the Patayan pattern characterized by use of the bow and arrow and ceramics. Patayan I began about 1,300 BP with the introduction of the bow and arrow, indicated archaeologically by the presence of small projectile points (arrow points) and by the appearance of ceramics along the Colorado River. Patayan ceramics first appeared about 1,200 BP on the east shore of Lake Cahuilla and were probably introduced by Yuman people from the Colorado River. Elsewhere, in the southern Salton Trough area, ceramics first appear about 1,000 BP at the beginning of Patayan II. Patayan I ceramics along the Colorado River include Black Mesa Buff and Colorado Beige. Later Patayan II (AD 1000 – 1700) and III (AD 1700 – 1850) ceramics include Tumco Buff and Colorado Buff. There is also a Salton brown ware that is transitional between the valley buff wares and the Tizon Brown ware of the Peninsular Ranges to the west (Schaefer and Laylander 2007:252).

The Colorado River Yumans practiced horticulture beginning in Patayan I. Domesticates including corn and squash probably came from the Hohokam area of Arizona or from northern Mexico. The Imperial Valley Yumans were practicing floodplain agriculture using small dams and ditches along the New and Alamo rivers at the time of European contact. Horticulture in the Imperial Valley probably began after the last recession of Lake Cahuilla during Patayan III using domesticates obtained from the Colorado River Yumans (Schaefer and Laylander 2007:253).

Along the lower Colorado River, the Patayan settlement-subsistence system consisted of horticulture, hunting, and gathering in riparian habitats. People lived in multi-seasonal residential bases along the river. They also occupied temporary camps for fishing, hunting, and gathering on the eastern shore of Lake Cahuilla when Lake Cahuilla was present in the Salton Trough. On the west side of the Salton Trough, the

Little archaeological material dating to the Early and Middle Holocene is known from the Salton Trough area of the Colorado Desert. The only indications of use of this area during this long period of time consist of large bifacial dart points found on relic lake beds of Lake Cahuilla and on desert pavement. These include projectile point types common in the Mojave Desert such as Lake Mojave, Pinto, and Elko (Schaefer and Laylander 2007:249). The sparse occupation during the Middle Holocene may be related to extremely arid climatic conditions and the lack of water in the Salton Trough (absence of Lake Cahuilla). The Salton Sea Naval Test Base study (Apple et al. 1997) has produced evidence for Archaic occupation on the west side of the Salton Trough. Pinto series and Elko series projectile points recovered during investigations at the Test Base yielded a date of 5,840 ±250 years BP (Apple et al 1997). These data suggest the desert area of southeastern California was not entirely abandoned during the Middle Holocene. While the population of the region was probably sparse, small bands of mobile people most likely moved among areas where water (at springs) and plant food resources were available.

A few temporary camps with living surfaces and hearths dating to the period 3,000 to 1,300 BP (Late Archaic Period) are located away from the lakebed in canyons and in the upper Coachella Valley above the maximum lake level. However, two temporary camps that contain fish and waterfowl bone in the Coachella Valley along the maximum Lake Cahuilla shoreline indicate there may have been a lake stand during this period (Schaefer and Laylander 2007:249).

Higher population and greater numbers of sites appear to correlate with the presence of Lake Cahuilla, which filled the Salton Trough when water flowed into the trough from the Colorado River. The lake dried when water ceased to flow from the river, markedly reducing the availability of resources. Occupation of the Salton Trough during the Late Period (1,300 BP to Contact) correlates with three cycles of inundation and desiccation in Lake Cahuilla that occurred between AD 1200 and 1680 (Schaefer and Laylander 2007). When the lake was present, lacustrine resources such as fish, shellfish, and waterfowl were available. Very few resources were available and human population was low when the lake was absent. Lake Cahuilla was much larger than the current Salton Sea. Whereas the current Salton Sea shoreline is about 70 meters (230 feet) below sea level, the maximum Lake Cahuilla shoreline was about sea level (Schaefer and Laylander 2007: Figure 16.1). To the northwest, in the Coachella Valley, the intermittent Whitewater River entered Lake Cahuilla near Point Happy between what are now Indian Wells and Indio. Several late pre-contact archaeological sites have been investigated along the ancient Lake Cahuilla shoreline in this area. To the south, the entire Imperial Valley between East Mesa and West Mesa was underwater when Lake Cahuilla was present.

During the Late Period, the northern part of the Salton Trough (northern Salton Sea area and the Coachella Valley) was occupied by ancestors of the Takic-speaking Cahuilla (Schaefer and Laylander 2007: Figure 16.1). They also occupied the adjacent Santa Rosa and San Jacinto mountains. Large multi-seasonal residential bases were occupied along the ancient shorelines in the Coachella Valley when Lake Cahuilla was present. These sites contain abundant fish bone, waterfowl bone, and shell from freshwater shellfish. The remains of animals and plants indicate use of both lowland and upland resources. Floral remains indicated use of these sites during all four seasons. Cottonwood and desert side-notched arrow points, along with buff ware ceramics and late pre-contact marine shell beads, indicate occupation during the Late Period (Warren 1984:407). These sites were likely occupied during the three Lake Cahuilla lake stands

No Impact. The plot study site is in an unpopulated area accessed via dirt access roads. Therefore, there would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in inadequate emergency access?	☐	☐	☒	☐

Less than Significant Impact. The site is located away from populated areas and not 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.

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 Section 3.8 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 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 Clubhouse Plot Study area is discussed below. Impacts on Tribal Cultural Resources from implementation of the plot study are discussed in a separate report incorporated by reference herein (ECORP 2021) and summarized below.

3.18.1 Environmental Setting

3.18.1.1 Regional Pre-Contact History

The archaeological history of southern California is remarkably complex, with a great deal of variation and the overlapping of specific technological and cultural traditions from the onset of documented human habitation in the terminal Pleistocene to the period of European contact in the Late Holocene. Today, archaeology and culture history are typically described according to geological epoch, with delineations in years Before Present (BP) between the Pleistocene (>10,000 BP), Early Holocene (10,000-6,500 BP), Middle Holocene (6,500 - 3,500 BP) and the Late Holocene (3,500 BP to present). This approach places human history squarely in the realm of greater ecology and geological history in a way that allows discussion of human activity through time without limitations imposed by provincial labels. In California, this distinct use of geological terminology is not entirely arbitrary, as elements of technological change and diversification in cultural practices are observable at the transition of temporal periods (Erlandson and Colten 1991). However, terminology that is generally accepted by California archaeologists and the California Office of Historic Preservation (OHP) is still helpful in describing ancient patterns of human activity. The predominant archaeological patterns through time in relation to behavioral traditions and temporal periods, and in specific reference to the Project Area, are discussed below.

3.17.1 Existing Setting

The plot study location is east of Salton City. Access to the plot study site is via SR-86, off North Marina Drive and then via local Salton City roadways Atlantic Boulevard, Caspian Avenue, Tahoe Avenue, Huron Avenue, and Crystal Lake Avenue (see Figure 2 in Attachment C for the access route).

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). This 67.8-mile route primarily provides travel for interregional, intra-regional and international trips (Imperial County 2008). SR-86 north of SR-78 is a major goods movement corridor serving the Los Angeles area and other California goods movement centers from the Imperial County region (Imperial County 2008). During the spring, truck traffic transporting agriculture goods constitutes a large percentage of travel on this route (Imperial County 2008).

3.17.2 Transportation (XVII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with a program, plan, ordinance, or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☒	☐

Less than Significant Impact. 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 plot study site. 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.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?	☐	☐	☒	☐

Less than Significant Impact. Refer to the discussion under (a) above.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒

3.16.1 Existing Setting

The plot study location is east of Salton City, a census-designated place by the U.S. Census Bureau, within unincorporated Imperial County, and a population of 6,250 (U.S. Census Bureau 2019). The plot study site is zoned for Open Space/Recreation (S-1) with an Urban Area land use designation (Imperial County 1998, 2007, 2021a). The site is surrounded by residential development (single-family homes) in the R-1 zone to the west and south (Imperial County 1998, 2015), and BLM land to the north and east.

3.16.2 Recreation (XVI) Materials Checklist

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☐	☒

No Impact. The plot study would not result in the increase in population in the area. Therefore, there would be no impact on existing recreational facilities in the area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment?	☐	☐	☒	☐

Less than Significant Impact. The plot study site is located in an Open Space/Recreation zone in Imperial County; however, the property is owned by IID. Per the requirements of the Transfer Project, off-road recreational vehicle use on the property is prohibited by IID to control dust. The plot study would increase the ability to enforce this condition. However, the plot study would not preclude or significantly impact public access to the Sea and other recreational uses in the area. Therefore, impacts would be less than significant.

3.17 Transportation

A complete discussion of the Transportation 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 Transfer 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 Study Area is discussed below along with impacts from implementation of the plot study.

An Urban Areas land use designation, including the West Shores/Salton City Urban Area, are characterized by a full level of urban services, in particular public water and sewer systems and other public services such as schools, police, and fire protection, according to the County Land Use Element (Imperial County 2015).

3.15.2 Public Services (XV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:	☐	☐	☐	☒
Fire Protection?	☐	☐	☐	☒
Police Protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other Public Facilities?	☐	☐	☐	☒

No Impact. 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 result in the need for additional public services in the area. Therefore, there would be no impact.

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 Transfer 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 Clubhouse Plot Study area is discussed below along with impacts from implementation of the plot study.

EEC ORIGINAL PKG

3.14.2 Population and Housing (XIV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?	☐	☐	☐	☒

No Impact. 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 result in the need for additional housing in the area. Therefore, there would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Displace substantial numbers of people or existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

No Impact. The plot study site would not displace housing. Construction workers are expected to commute from nearby areas; therefore, the plot study would not cause the need for additional housing in the area.

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 Clubhouse Plot Study area is discussed below along with impacts from implementation of the plot study.

3.15.1 Existing Setting

The plot study location is east of Salton City, a census-designated place by the U.S. Census Bureau, within unincorporated Imperial County, and a population of 6,250 (U.S. Census Bureau 2019). The plot study site is vacant and zoned for Open Space/Recreation (S-1) with an Urban Area land use designation (Imperial County 1998, 2007, 2021). The site is surrounded by residential development (single family homes) in the R-1 zone to the west and south (Imperial County 1998, 2015), and BLM land to the north and east.

Operational Groundborne Vibration

Project operations would not include the use of any stationary equipment that would result in excessive groundborne vibration levels.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?	☐	☐	☐	☒

No Impact. The Project site is located over 16 miles southwest of the Ocotillo Airport. The Proposed Project is not located within an airport land use plan or within two miles of a public airport or public use airport that is currently in operations. Implementation of the Proposed Project would not affect airport operations nor result in increased exposure of people working at the Project Site to aircraft 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 the QSA PEIR, Section 5.2 of the Draft EIR/EIS and Section 3.20 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 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 Study Area is discussed below along with impacts from implementation of the plot study.

3.14.1 Existing Setting

The plot study location is east of Salton City, a census-designated place by the U.S. Census Bureau, within unincorporated Imperial County, and a population of 6,250 (U.S. Census Bureau 2019). The plot study site is zoned for Open Space/Recreation (S-1) with an Urban Area land use designation (Imperial County 1998, 2007, 2021). The site is surrounded by residential development (single family homes) in the R-1 (low density residential) zone to the west and south (Imperial County 1998, 2015), and BLM land to the north and east.

Table 3.13-4. Representative Vibration Source Levels for Construction Equipment

Equipment Type	PPV at 25 Feet (inches per second)
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 (2020) recommended standard of 0.2 inch per second PPV with respect to the prevention of structural damage for older residential buildings is used as a threshold. 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 Site (FTA 2018). The nearest structures of concern to the construction site are the residences located directly adjacent to the Project Site boundary on Huron Avenue.

Based on the representative vibration levels presented for various construction equipment types in Table 3.13-4 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:

$$PPVequip = PPVref \times (25/D)^{1.5}$$

Table 3.13-5 presents the expected Project related vibration levels at a distance of 1,000 feet.

Table 3.13-5. Construction Vibration Levels at 1,000 Feet

Receiver PPV Levels (in/sec)[1]					Peak Vibration	Threshold	Exceed Threshold
Small Bulldozer	Jack-hammer	Loaded Trucks	Large Bulldozer, Caisson Drilling, and Hoe Ram	Vibratory Roller			
0.00001	0.00013	0.00029	0.00034	0.00081	**0.00081**	*0.2*	**No**

[1] Based on the Vibration Source Levels of Construction Equipment included on Table 3.13-2 (FTA 2018).

As shown, groundborne vibrations attenuate rapidly from the source due to geometric spreading and material damping. Geometric spreading occurs because the energy is radiated from the source and spreads over an increasingly large distance while material damping is a property of the friction loss which occurs during the passage of a vibration wave. As shown in Table 3.13-5, 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.

Cumulative Stationary Source Noise Impacts

Long-term stationary noise sources associated with the development at the Project, 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.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐

Less than Significant Impact.

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 Site 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 site and would not be concentrated at the point closest to sensitive receptors. Groundborne vibration levels associated with typical construction equipment are summarized in Table 3.13-4.

Table 3.13-4. Representative Vibration Source Levels for Construction Equipment

Equipment Type	PPV at 25 Feet (inches per second)
Large Bulldozer	0.089
Caisson Drilling	0.089
Loaded Trucks	0.076
Hoe Ram	0.089
Jackhammer	0.035

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 site 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.

Project Operational Noise

As previously described, noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, places of worship, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise sensitive and may warrant unique measures for protection from intruding noise. The nearest noise-sensitive land use consists of residences located directly adjacent to the southern and western Project site boundary, in Salton City.

Project Operational Offsite Traffic Noise

Project operation would result in minimal and infrequent additional traffic on adjacent roadways. As previously stated, the Project site is located in a rural part of Imperial County. The closest existing principal roadway to the site is SR-86 located over two miles distant. Average existing daily traffic volumes on SR-86 ranges from 9,400 to 36,000 vehicles per day and primarily provides travel for interregional, intra-regional and international trips (Imperial County 2008). Based off assumptions and information provided by the IID, the Proposed Project is anticipated to result in no more than one daily vehicle trip per day. It is noted that this is a conservative estimate and many days would have no operational related vehicle trips. According to the Caltrans Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013), doubling of traffic on a roadway would result in an increase of three dB (a barely perceptible increase). The Projects contribution of one trip over several roadways would not result in a doubling of traffic on any single facility, thus the Project's contribution to existing traffic noise would not be perceptible.

Project Operations-Onsite Noise Sources

The Project is proposing the development of groundwater wells and associated features to establish and sustain vegetation cover and waterless dust control measures on the exposed Salton Sea playa. The main operational noise associated with the Project would be the infrequent vehicle trips, performed using a light-duty truck, for ongoing operations and maintenance. Once implementation of the Project is complete it would not be a substantial source of mobile noise sources or a source of stationary noise.

noise, from a single piece of equipment or a combination of equipment, shall not exceed 75 dBA L_{eq} when averaged over an eight-hour period and measured at the nearest sensitive receptor.

The anticipated short-term implementation related noise levels generated for the necessary construction equipment are presented in Table 3.13-3. Consistent with FTA recommendations for calculating construction noise, construction noise was measured from the center of the Project Site (FTA 2018).

Table 3.13-3. Construction Average (dBA) Noise Levels at Nearest Receptor

Equipment	Estimated Exterior Construction Noise Level @ 1,000 feet	Construction Noise Standards (dBA L_{eq})	Exceeds Standard at Nearest Sensitive Receptor?
Project Implementation			
Graders (4)	55.0 (each)	75	No
Pavers (1)	48.2	75	No
Forklifts (2)	53.4 (each)	75	No
Generator Sets (2)	51.6 (each)	75	No
Tractors/Loaders/Backhoes (10)	54.0 (each)	75	No
Rubber Tired Dozers (3)	51.7 (each)	75	No
Bore/Drill Rigs (2)	46.1 (each)	75	No
Off-Highway Trucks (3)	44.3 (each)	75	No
Trenchers	51.3	75	No
Water Truck	59.1	75	No
Ground Compactor (2)	50.2 (each)	75	No
Combined Project Implementation Equipment	**68.0**	75	No

Source: Construction noise levels were calculated by ECORP Consulting, Inc. using the FHWA Roadway Noise Construction Model (FHWA 2006). Refer to Attachment A for Model Data Outputs.

Note: Construction equipment used during construction derived from information provided by the IID and CalEEMod 2016.3.2. CalEEMod is designed to calculate air pollutant emissions from construction activity and contains default construction equipment and usage parameters for typical construction projects based on several construction surveys conducted in order to identify such parameters. The distance to the nearest sensitive receptor was calculated from the center of the Project site (approximately 1,000 feet).

As shown in Table 3.13-3, no individual or cumulative pieces of construction equipment would exceed the 75 dBA County construction noise standard during Project implementation at the nearby noise-sensitive receptors. It is hoted that construction noise was modeled on a worst-case basis. It is very unlikely that all pieces of constriction equipment would be operating at the same time for the various phases of Project implementation.

and is located over 16 miles to the southwest. Thus, the ambient noise environment of the Project Area is not heavily influenced by aircraft noise.

3.13.2 Noise (XIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☐	☒	☐

Less than Significant Impact. This analysis of the existing and future noise environments is based on noise prediction modeling. In order to estimate the worst-case construction noise levels that may occur at the nearest noise-sensitive receptors in the Project vicinity, predicted construction noise levels are calculated utilizing the FHWA's Roadway Construction Model (2006). Stationary noise sources are addressed qualitatively. Groundborne vibration levels associated with construction-related activities were evaluated utilizing typical groundborne vibration levels associated with construction equipment based on the California Department of Transportation (Caltrans) guidelines set forth above. Potential groundborne vibration impacts related to structural damage and human annoyance are evaluated, taking into account the distance from construction activities to nearby land uses.

3.13.2.1 Impact Analysis

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., grading, drilling, paving). Noise generated by construction equipment, including earthmovers, material handlers, 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 receptors in the vicinity of the construction site.

Nearby noise-sensitive land uses consist of residences located directly adjacent to the southern and western Project site boundary. As previously described, the General Plan Noise Element limits construction between 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 construction operations are permitted on Sundays or holidays. Additionally, construction

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
0.4–0.6	98–104	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Architectural damage and possibly minor structural damage

Source: Caltrans 2020

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.

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.

As stated previously, the Project is proposing the development of groundwater wells and associated features to establish and sustain vegetation cover and waterless dust control measures on 128.64 acres of the exposed Salton Sea playa with the goal of reducing air quality risks from emissive particles. The nearest noise-sensitive receptors to the Project site are residences located directly adjacent to the southern and western Project site boundary in Salton City.

3.13.1.6 Existing Ambient Noise Environment

Imperial County is impacted by various noise sources. It is subject to typical urban noise such as noise generated by traffic, heavy machinery, and day-to-day outdoor activities as well as noise generated from the various land uses (i.e., residential, commercial, agricultural, institutional, and recreational activities) throughout Imperial County that generate stationary source noise. Mobile sources of noise, especially cars and trucks, are the most common and continuous source of noise in Imperial County. The Project site is located in a rural part of Imperial County, adjacent to the Salton Sea, and is located more than two miles from any existing principal roadway, the closest being SR-86 approximately 2.5 miles to the west.

The Project site is located outside of any airport land use plan. Furthermore, the Project site is located beyond two miles from any airport. The Ocotillo Airport is the closest operating airport to the Project site

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.

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.

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.

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	Recommended upper level to which ruins and ancient monuments should be subjected
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.2	94	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings

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 one percent, 10 percent, 50 percent, and 90 percent 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.

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.

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).

referred to as cylindrical spreading. Sound levels attenuate at a rate of approximately three dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (FHWA 2011). 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 dB 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 L_{eq} is a measure of ambient noise, while the Community Noise Equivalent Level (CNEL) is a measurement of community noise. 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 one pascal is the pressure resulting from a force of one newton exerted over an area of one 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.

No Impact. The Project Area is not within any mapped Renewable Energy/Geothermal and Geothermal Overlay Districts (Imperial County 2021a) and there are no known mineral resources in the Project Area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?	☐	☐	☐	☒

No Impact. Please refer to the discussion in (a) above.

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 Transfer 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 Study Area is discussed below. Noise impacts from implementation of the plot study are discussed in a report contained in Attachment D and summarized below.

3.13.1 Environmental Setting

3.13.1.1 Fundamentals of Noise and Environmental Sound

The decibel (dB) scale is logarithmic, not linear; 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. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound. 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). For example, a 65-dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by three dB). Under the decibel scale, three sources of equal loudness together would produce an increase of five dB.

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 six dB for each doubling of distance from a stationary or point source. Sound from a line source, such as a highway, propagates outward in a cylindrical pattern, often reducing the emissivity of the Salton Sea playa in the area and is in alignment with the State of California's SSMP. Therefore, impacts would be less than significant.

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 Clubhouse Plot Study area is discussed below along with impacts from implementation of the plot study.

3.12.1 Environmental Setting

Imperial County, including areas surrounding the Salton Sea, has a wealth of mineral resources including gypsum, pumice and claystone, sand and gravel, and other industrial materials such as kyanite, other mineral fillers (limestone, sericite mica, tuff), salt, potash, and calcium chloride (Imperial County 2015). Most of the natural and mineral resources of Imperial County are still being developed. Gold and manganese deposits in the eastern portion of Imperial County contain sizable reserves (Imperial County 2015).

Imperial County also has large reserves of geothermal fluids. Geothermal energy is the natural heat of the earth that is brought to the surface by wells. These very hot fluids are then used to produce heat or electricity. It has been estimated that Imperial County may have more geothermal energy than any other area in the U.S. (Imperial County 2015). Some of the geothermal brines are also rich in potash among other minerals, which offer additional incentives for mineral and geothermal development. The potential products of these fluids for electric power, fresh water, and minerals may provide the Imperial Valley with new industries. Low cost power sources could provide an added incentive for new industrial development, thus enhancing the value of Imperial County's minerals. The County's Renewable Energy and Transmission Element (2015) contains more information on geothermal resources.

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 any mapped overlay districts (Imperial County 2021a).

3.12.2 Mineral Resources (XII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?	☐	☐	☐	☒

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

3.11.1 Environmental Setting

The plot study location is east of Salton City, a census-designated place by the U.S. Census Bureau, within unincorporated Imperial County, with a population of 6,250 (U.S. Census Bureau 2019). The plot study site is zoned for Open Space/Recreation (S-1) with an Urban Area land use designation (Imperial County 1998, 2007, 2021). The site is surrounded by residential development (single family homes) in the R-1 (low density residential) zone to the west and south (Imperial County 1998, 2015), and BLM land to the north and east, located adjacent to the Project site.

Imperial County has a number of policies and development standards established in its General Plan and ordinances protecting aesthetics, agricultural resources, air quality, biological resources, cultural resources, paleontological resources, water resources, and recreational resources; and protecting the population from geologic, flood, wildfire and traffic hazards, hazardous materials, noise, and lack of utilities and services, as discussed in the other sections of this document.

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

3.11.2 Land Use and Planning (XI) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Physically divide an established community?	☐	☐	☐	☒

No Impact. The plot study site is not located in a populated area and therefore would not physically divide an established community.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☒	☐

Less than Significant. As noted above and discussed in the other sections of this document, with implementation of standard best management practices discussed in Section 2.0, the plot study would result in no new significant environmental impacts and also would not conflict with any applicable land use plan, policy, or regulation. The plot study is expected to result in a net benefit to air quality by

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☒	☐

Less than Significant Impact. Please refer to the discussion in (c) above.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☒	☐

Less than Significant Impact. Please refer to the discussion in (a), (b), and (c) above. There is no established Groundwater Management Plan in the area, however, the basin is not listed as being in critical overdraft. The Project would be consistent with the County Groundwater Management Ordinance (Title 9, Division 22 of the County Code). If the test wells prove successful, IID will seek a CUP from Imperial County to put the wells on production and extract groundwater from the wells for irrigation of vegetation. The purpose for the water would be for non-potable use of the water for irrigation of vegetation for dust control only. Therefore, the Project will comply with all provisions of the County's Groundwater Management Ordinance including the following limitations below:

> *E. Limitations*
>
> *In no event shall the Imperial Irrigation District be allowed to extract groundwater under subsection 92202.01(D) to replace water sold, transferred or lost from the Imperial Irrigation District's allocations of Colorado River water by its own actions or with its consent or acquiescence. In no case shall the Imperial Irrigation District be allowed to extract groundwater under this subsection 92202.01(D) if such extraction places the affected basin(s) into an overdraft other than as provided for in paragraph (d)(1) above. In no event shall the Imperial Irrigation District be allowed to extract groundwater under this provision for use outside of the County either by its own transfer or by agreement by the Imperial Irrigation District with another person, district, City, County, State or Company.*

Therefore, impacts would be less than significant.

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.

Within the IID property boundary, drawdown of groundwater levels could have localized effects on existing ALOC and SUNI near, but not within, the proposed irrigated areas within the plot study. The maximum rooting depth of ALOC is approximately 12 feet, based on observations at Salton Sea, and the maximum rooting depth of SUNI is approximately four to five feet (PlanTierra and Formation 2020). These plant species are expected to be partially dependent upon groundwater in layer 1 and are already undergoing a gradual decline in groundwater levels as the Salton Sea recedes. However, the rate of additional drawdown predicted from the plot study would occur slowly over time as well. As a result, the incremental drawdown associated with the plot study is not anticipated to result in a considerable contribution to cumulative impacts on these species. In addition, the number of ALOC and SUNI individuals on the property but not irrigated are expected to be small. Therefore, overall, the plot study would not be expected to significantly impact the existing vegetation community by gradual localized effects on groundwater levels.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner that would:				
i) result in substantial erosion or siltation on- or off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite;	☐	☐	☒	☐
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☒	☐

Less than Significant Impact. Other than a small concrete pad at the deep well location, no permanent structures would be installed for the plot study. Access improvements could result in additional compaction in these areas; however, creation of furrows for vegetation would result in a net increase in infiltration of storm water in the Project Area. Therefore, the plot study is not expected to result in significant impacts on drainage in the area.

overestimates the level of hydraulic connection between the pumped aquifers and the overlying water table aquifer and the amount of drawdown that would be induced by pumping;

- Layer 3 represents the shallow groundwater producing zone between about 50 and 100 feet bgs;
- Layer 4 represents about 50 feet of lower permeability lacustrine sediments identified between the shallow and the deeper groundwater producing zones that were identified in most well completion logs in the area (Formation 2021, Attachment C); and
- Layer 5 represents the deeper groundwater producing zone.

The following additional assumptions are incorporated into the model resulting in a conservative estimate of impacts of the plot study on groundwater:

- The pumped aquifers are homogeneous. This is a common simplifying assumption.
- The simulated aquifers are uniform in thickness. This is a common simplifying assumption.
- The model receives no recharge, and all flow from the pumping wells comes from aquifer storage. This simplifying assumption tends to produce a conservative result that over-predicts drawdown.
- The well pumping rates in the upper and lower producing zones 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.

Model results indicate that drawdown would be localized around each well where predicted drawdown diminishes with distance from each well. Operation of the shallow wells would have the greatest impacts on layers 1 and 3, while operation of the deep well would have the greatest impact on layer 5 (see Formation 2021, Attachment C for more detailed results). Over a 20-year period, drawdown of the groundwater table by 1.1 feet, 1.3 feet, and 2.5 feet within layers 1, 3, and 5 respectively, is predicted at the IID parcel boundary under a worst-case scenario. Model results are expected to be overestimates of actual impacts given the use of multiple conservative assumptions. Beyond the property boundary, impacts on the groundwater table in all three layers are reduced to inches and then to zero impact as shown in Figures 8 and 9 of the Groundwater Resources Impact Assessment Report contained in Attachment C (Formation 2021). Modeling indicates that about 60 percent of this drawdown would occur within the first 10 years of well operation, with the remaining 40 percent occurring between years 11 and 20.

A drawdown of one foot would generally not be distinguishable from normal seasonal groundwater level fluctuations measured in nearby shallow piezometers (Formation 2021, Attachment C). In addition, all existing wells in the region are well outside the zone of influence of the Project and would not be affected by the plot study. Therefore, the plot study is not expected to result in interference with water wells in the area.

Model results also indicate that potential drawdown in layer 1 would only be on the order of inches in areas mapped as GDEs using the NCCAG dataset (Formation 2021, Attachment C). Therefore, the plot study is not expected to significantly affect mapped GDEs.

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 @ 20% cover)	19,300	21.6	13.4
Years 2 through 4 (1.8 feet/year for planted area @ 20% cover)	19,300	21.6	13.4
Long Term (10 inches/year for planted area @ 20% cover)	8,900	10	6.2
Groundwater Supply to Meet Irrigation Water Demand			
Shallow Zone Groundwater Pumping Capacity	16,200 (5,400 per well)	18 (6 per well)	11.25 (3.75 per well)
Deep Zone Groundwater Pumping Capacity	10,800	12	7.5
Total Anticipated Groundwater Supply Pumping Capacity	**27,000**	**30**	**18.75**

Source: Formation 2021 (see Attachment C)
Note: Surplus groundwater supply pumping capacity would be used to irrigate existing ALOC in the Study Area plot and surrounding area, 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 (Formation 2021, Attachment C). The methods and results of the groundwater modeling performed for the plot study are presented in the Groundwater Impact Assessment report contained in Attachment C (Formation 2021).

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 2021, Attachment C):

> Layer 1 represents a relatively thin veneer (approximately 10 feet) of sediments containing unconfined groundwater in potential communication with GDEs. It is possible that groundwater in this layer is perched or is too deep to be in communication with the underlying pumped aquifers, but for the purposes of this analysis, it is assumed the groundwater table is shallow enough to be connected to GDEs (i.e., less than about 12 feet bgs);
>
> Layer 2 is used to simulate a continuous lower permeability layer separating the overlying water table zone from underlying pumped shallow and deeper zone aquifers. The available data suggest this layer may range between 10 to 60 feet thick (Waters 1983); however, it was conservatively assumed that this layer is uniformly 10 feet thick. This is a conservative assumption that likely

poor for domestic or irrigation purposes due to concentrations of fluoride, boron, and TDS (Formation 2021, Attachment C). The wells would be completed with sanitary seals that would prevent the vertical migration of shallow saline groundwater through the well bores. The groundwater-producing zones are separated from each other and from the uppermost groundwater-bearing zone and the Salton Sea by laterally extensive lacustrine aquitards that would impede vertical migration of groundwater of different salinities. In addition, there is no groundwater contamination from hazardous waste sites near the Project Area (Formation 2021, Attachment C). Therefore, groundwater extraction associated with the plot study is not expected to result in a considerable contribution to cumulative impacts on groundwater quality in the area.

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 increase adverse impacts on water quality associated with storm water runoff. In addition, an NPDES Permit for Stormwater Discharges from Construction Activities will be obtained for the plot study. Implementation of a SWPPP will be required through this process, which would ensure that storm water runoff from the Project Site would not adversely impact the beneficial uses of the Salton Sea. Therefore, the plot study is not anticipated to result in significant impacts on storm water quality from the Project Site.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐

Less than Significant Impact. The average annual groundwater irrigation demand for the establishment of new vegetation in the Project Area is summarized in Table 3.10-1. The calculated demand assumes that ALOC is planted in hedgerows that provide approximately 20-percent ground cover; however, the actual planting rate may be as low as 10 percent.

Groundwater extraction would be performed with solar-powered pumps, and irrigation water would only be applied during daylight hours; however, the pumping rates summarized below are presented as daily average rates. The total daily discharge over a 24-hour period for the shallow groundwater wells is equivalent to pumping at 10 gpm for nine hours (maximum instantaneous pumping rate); whereas the total daily discharge over a 24-hour period for the deep groundwater well is equivalent to an instantaneous maximum pumping rate of 20 gpm for nine hours. The resulting projected water demand from the shallow wells would be six AFY per well and 12 AFY for the deep well for a total of 30 AFY.

ancient shoreline to approximately 50 feet or more near the current shore of the Salton Sea (Waters 1983). The unconfined hydrostratigraphic zone underlying the Lake Cahuilla sediments between approximately 50 and 100 feet bgs (depending on location) is the primary target of the proposed shallow test wells. Based on historical DWR well completion records, lower permeability sediments are present between approximately 100 and 150 feet bgs (Formation 2021, Attachment C) and likely represent older lacustrine sediments. Semi-confined to confined sandy groundwater bearing sediments were encountered at various intervals between approximately 150 and 350 feet bgs. This hydrostratigraphic zone is the target for the proposed deep test well.

3.10.1.2 Groundwater Quality

Generally, the groundwater the basin is characterized as predominantly sodium-chloride type water, and the quality is considered marginal to poor for domestic or irrigation purposes due to concentrations of fluoride, boron, and total dissolved solids (TDS) (Formation 2021, Attachment C).

3.10.1.3 Groundwater Dependent Ecosystems

Potential groundwater dependent ecosystems (GDEs) in the West Salton Sea Groundwater Basin were identified in the Natural Communities Commonly Associated with Groundwater (NCCAG) dataset of potential GDEs, developed for the DWR by The Nature Conservancy (TNC) in cooperation with the CDFW, and downloaded from the GDE Pulse website (TNC 2021). These potential GDEs are shown in the Groundwater Impact Assessment Report (Formation 2021, Attachment C). In addition, a study regarding the establishment of salt-tolerant vegetation on the Salton Sea playa in the Tule Wash and Naval Test Station sites (on the west side of the Salton Sea) was conducted in 2019 by PlanTierra and Formation (2020). Field observations indicated that naturally propagating ALOC and SUNI occurred on the playa below elevations of 194 and -213 feet below sea level, respectively. These plants were determined to likely be at least partially dependent on groundwater. As such, it is assumed that ALOC and SUNI may occur on the playa below these elevations near the Clubhouse Study Area and may be at least partially groundwater dependent. The maximum rooting depth of ALOC is approximately 12 feet, based on observations at Salton Sea, and the maximum rooting depth of SUNI is approximately four to five feet (PlanTierra and Formation 2020). Both ALOC and SUNI can adjust to gradual groundwater level changes of less than about one foot per year within these maximum ranges.

3.10.2 Hydrology and Water Quality (X) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐

Less than Significant Impact. The groundwater found in the West Salton Sea groundwater basin is characterized as predominantly sodium-chloride type water, and the quality is considered marginal to shores of the Salton Sea. Surface water generally flows from west to east, where it discharges into the Salton Sea, which is a terminal or closed basin with no outlets. Ephemeral drainages, mapped as Palm Coral Wash by Imperial County according to their zoning map, occur in the northwest corner of the Project Area (but are not considered jurisdictional resources [see Section 3.4, Biological Resources]); there are no perennial streams in the basin (Formation 2021, Attachment C).

According to the California Department of Water Resources (DWR 2004), recharge to the West Salton Sea groundwater basin is primarily due to infiltration of runoff through coarse-grained deposits occurring at the base of the Santa Rosa Mountains, and groundwater generally flows to the east and discharges to the Salton Sea. Fine-grained lacustrine deposits associated with paleo Lake Cahuilla may limit the downward and eastward movement of groundwater in the east and southeast portions of the basin. The available data suggest lacustrine deposits associated with Lake Cahuilla are about 10 feet thick near the ancient Lake Cahuilla shoreline and may thicken to approximately 60 feet near the modern Salton Sea shoreline (Waters 1983).

According to DWR (2004), information on the groundwater budget is not available. The California Statewide Groundwater Elevation Monitoring program designates the basin as a very low priority (DWR 2019). The basin is not listed as being in critical overdraft (DWR 2016).

Groundwater resources in the West Salton Sea Groundwater Basin are very sparsely developed. Although historical well completion records are available for 11 domestic wells in the vicinity of the Study Area, none of these wells are currently believed to be operating (Formation 2021, Attachment C). These wells were installed between 1957 and 1960 and are assumed to be abandoned or destroyed because the community of Salton City surrounding the Project Area is served by treated surface water supplied by the Coachella Valley Water District. No evidence of current groundwater use has been observed in the area within about one mile of the Project Area. According to the *Groundwater Exchange* website (Formation 2021, Attachment C), the West Salton Sea Groundwater Basin in total has approximately 14 wells, of which none are currently operated as water supply wells.

Groundwater level hydrographs are not available for any wells in shallow or deep supply zone the vicinity of the Clubhouse area. Three shallow piezometers were installed on the playa by IID at Salton Wash in 2015 and used to monitor water table elevations from January 2016 to November 2018 (Formation 2021, Attachment C). Groundwater level monitoring data for these piezometer locations indicate that groundwater levels dropped by approximately 1.1 to 2.7 feet during the monitoring period. These data suggest that groundwater levels in the uppermost groundwater-bearing zone beneath the playa are declining as water levels in the Salton Sea drop and further declines may be expected in the future.

In May 2020, a soil boring was drilled and geophysically logged at the Study Area to investigate groundwater conditions in the shallow groundwater system to a depth of about 100 feet bgs (Formation 2021, Attachment C). Groundwater was encountered at a depth of approximately 20 feet bgs. The boring encountered sand in the upper 20 feet, underlain predominantly by clay to the total depth of about 100 feet, with a clean sand stratum between approximately 50 and 60 feet bgs. This is consistent with the presence of alluvial and aeolian sediments at the surface, underlain by lacustrine sediments associated with paleo Lake Cahuilla, which have been observed to deepen from approximately 10 feet thick near the

EEC ORIGINAL PKG

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

No Impact. The site is located away from populated areas and due to the lack of fuel for a wildland fire, plot study activities would not exacerbate a risk of wildland fire.

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 Clubhouse Plot Study area is discussed below. Impacts on groundwater from implementation of the plot study are discussed in a Groundwater Impact Assessment Report prepared by Formation (2021) contained in Attachment C and summarized below. Other impacts on hydrology and water quality are also discussed below.

3.10.1 Environmental Setting

3.10.1.1 Site Hydrology and Groundwater

Review of well completion records for a few existing wells near the Clubhouse Study Area indicates that the subsurface sediments are composed primarily of fine-grained lacustrine and distal alluvial fan sediments, with some thin sand and gravel layers in the upper 300 to 500 feet of sediments (Formation 2021, Attachment C). At some of these wells, artesian conditions were encountered. Similar conditions were observed in the upper 100 feet of soil investigated as part of a pilot soil boring drilled in May 2020 (Formation 2021, Attachment C). The purpose of the four water supply test wells is to investigate the groundwater conditions in the Clubhouse Study Area and provide an irrigation water supply. For the purposes of this study, groundwater resources have been subdivided into a shallow zone in the upper 100 feet of sediment bgs, and a deep zone, comprising sediments between 150 and 300 feet bgs (Formation 2021, Attachment C).

The Clubhouse Pilot Study area is located in the West Salton Sea Groundwater Basin which is bounded by the Coachella Valley Groundwater Basin and non-water-bearing rocks of the Santa Rosa Mountains to the north and northwest, by the Ocotillo-Clark Valley Groundwater Basin to the south and southwest, and by the Salton Sea to the east (Formation 2021, Attachment C).

The topography of the basin is sloped to the east. The highest elevations are along the mountain front of the Santa Rosa mountains to the west and the lowest elevations are along the playa on the western

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒

No Impact. No existing or proposed schools are located within one-quarter mile of the Project Area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	☐	☐	☐	☒

No Impact. The plot study site is not included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5. There would be no impact.

	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☐	☐	☒

No Impact. The plot study site is not located within an airport land use plan or within two miles of an airport.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒

No Impact. 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 Hazards and Hazardous Materials

A complete discussion of the hazards and hazardous materials impacts of the Project as originally proposed is included in QSA Programmatic EIR (PEIR) and in Section 3.13 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 hazards and hazardous materials identified in the EIR/EIS. The overall impacts to hazards and hazardous materials would be similar to those described in the EIR/EIS.

The environmental setting for the Clubhouse Plot Study area is discussed below along with impacts from implementation of the plot study.

3.9.1 Environmental Setting

The Groundwater Resources Impact Assessment report prepared for the plot study (see Attachment C), shows the plot study site relative to reported nearby contamination sites. The nearest sites are located well over one mile from the Project Area.

3.9.2 Hazards and Hazardous Materials (IX) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☒	☐

Less than Significant Impact. 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.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☐	☒	☐

Less than Significant Impact. Refer to the discussion under (a) above.

Operations

Operation of the Project would result in an increase in GHG emissions solely associated with motor vehicle trips. Long-term GHG emissions attributed to operations of the Project are identified in Table 3.8-3.

Table 3.8-3. Operational-Related Greenhouse Gas Emissions

Emission Source	CO_2e (Metric Tons/ Year)
Area Source	0
Energy	0
Mobile	1.50
Waste	0
Water	0
Total	**1.50**
CAPCOA's Potentially Significant Impact Threshold	*900*
Exceed CAPCOA's Significance Threshold?	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment C for Model Data Outputs.

Note: Emission projections predominately based on CalEEMod model defaults for Imperial County. Operational emissions account for one vehicle trip per day. It is noted that this is a conservative estimate and many days would have no operational related vehicle trips.

As shown in Table 3.8-3, operational-generated emissions would not exceed the CAPCAO's potentially significant impact threshold of 900 metric tons of CO_2e annually.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☒	☐

Less than Significant. 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 the CAPCOA's GHG significance thresholds, which were prepared with the purpose of complying with statewide GHG-reduction efforts. Additionally, once implementation of the Project is complete, with the exception of routine maintenance and monitoring activities that would be performed using a light-duty truck, it would not be a source of operational GHG emissions.

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.)

3.8.3.2 Methodology

GHG emissions-related impacts were assessed in accordance with methodologies recommended by the ICAPCD. Where GHG emission quantification was required, emissions were modeled using the CalEEMod, version 2016.3.2. 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 and information provided by the IID, such as construction phasing, timing, and equipment.

3.8.3.3 Impact Analysis

Generation of GHG Emissions

Project Implementation

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

Table 3.8-2. Implementation-Related Greenhouse Gas Emissions

Emissions Source	CO_2e (Metric Tons/ Year)
Implementation in 2021	118
CAPCOA's Potentially Significant Impact Threshold	*900*
Exceed CAPCOA's Significance Threshold?	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.

As shown in Table 3.8-2, Project would result in the generation of approximately 118 metric tons of CO_2e during Project implementation. Once complete, the generation of these GHG emissions would cease.

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 § 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 § 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 § 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 § 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. The analysis will rely on the GHG threshold recommended by the California Air Pollution Control Officers Association (CAPCOA), which has provided guidance for determining the significance of GHG emissions generated from land use development projects. CAPCOA considers projects that generate more than 900 metric tons of GHG to be significant. This 900 metric tons per year threshold was developed to ensure at least 90 percent of new GHG emissions would be reviewed and assessed for mitigation, thereby contributing to the statewide GHG emissions reduction goals that had been established for the year 2020 promulgated under AB 32 and the post-2020 reduction goals promulgated under SB 32. Thus, both cumulatively and individually, projects that generate less than 900 metric tons CO_2e per year have a negligible contribution to overall emissions.

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

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 Greenhouse Gas Emissions (VIII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐

Less than Significant.

3.8.3.1 Imperial County Air Pollution Control District Thresholds

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 § 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 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 § 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 § 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.

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.[1]
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 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.[2]
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.[3]

Sources: [1]USEPA 2016a, [2] USEPA 2016b, [3] USEPA 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 2020b). 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

3.8.1 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

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?	☐	☐	☐	☒

No Impact. No habitable structures would be constructed under the plot study and the Project would be completed completely within IID property in an unpopulated area. Therefore, there would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒

No Impact. No habitable structures would be constructed under the plot study and the Project would be completed completely within IID property in an unpopulated area. Therefore, there would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☒	☐

Less than Significant Impact. As discussed in the Groundwater Resources Impact Assessment report (Formation 2021, Attachment C), the plot study is located in the footprint of Paleo Lake Cahuilla. While no paleontological records are recorded in the Project Area, there is potential to inadvertently discover paleontological resources during ground disturbing activities associated with the plot study. A BMP is incorporated into the Project description (see Section 2.5), however, to halt construction and properly manage any paleontological resources if inadvertently discovered during implementation of the plot study. Therefore, impacts would be less than significant.

3.8 Greenhouse Gas Emissions

The environmental setting for the Study Area is discussed below. Greenhouse gas emissions are discussed and evaluated for implementation of the plot study in a report contained in Attachment A and summarized below.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☒	☐

Less than Significant Impact. 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 Site would not result in soil erosion. In addition, the goal of the plot study would be to reduce wind erosion of the site. Therefore, there would be less than significant impacts.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) 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?	☐	☐	☐	☒

No Impact. 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 (Formation 2021, Attachment C). In general, most subsidence occurs when an aquifer is initially depressurized, but 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.

No subsidence has been reported in the vicinity of the Project Area (UNAVCO 2021). The proposed test wells would extract a relatively limited amount of water from the confined to semi-confined aquifer systems. The predicted maximum drawdown near the Project boundary is predicted to be limited to less than about 2.5 feet, and drawdown exceeding five feet would be limited to a relatively small area within a maximum distance of approximately 35 feet of the proposed wells and on the IID property (Formation 2021, Attachment C). Drawdown less than five feet is unlikely to result in measurable subsidence that would affect surface drainage or infrastructure. Given the limited amount of drawdown predicted to be associated with operation of proposed test wells, and the lack of reported subsidence near the plot study, no impacts are expected. In addition, no habitable structures are proposed for the Project.

3.7.1.3 Regional Seismicity

The Imperial Valley is a broad, flat, alluviated area that lies partly below sea level, cut off from the Gulf of California to the south by the Colorado River Delta. According to the County's Seismic and Public Safety Element, the valley, also known as the Salton Trough, is one of the most tectonically active regions in the U.S. The eastern boundary is formed by branches of the San Andreas fault and the western boundary is formed by the San Jacinto-Coyote Creek and the Elsinore-Laguna Salada faults. Consequently, the valley is subject to potentially destructive and devastating earthquakes.

3.7.1.4 Paleontological Resources

A paleontological records search was conducted of the University of California Museum of Paleontology (UCMP) online database (UCMP 2021) for the Project Area. Paleontological resource records exist in the south end of the Salton Sea; however, there are no records in the plot study location.

3.7.2 Geology and Soils (VII) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Directly or indirectly cause substantial adverse effects, including the risk of loss, injury, or death involving:	☐	☐	☐	☒
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.	☐	☐	☐	☒
ii) Strong seismic ground shaking?	☐	☐	☐	☒
iii) Seismic-related ground failure, including liquefaction?	☐	☐	☐	☒
iv) Landslides?	☐	☐	☐	☒

No Impact. No habitable structures would be constructed under the plot study and the Project would be completed completely within IID property in an unpopulated area. Therefore, there would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☒	☐

Less than Significant Impact. As discussed above, the plot study would have a nominal effect on local and regional energy supplies. Therefore, impacts would be less than significant.

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 Clubhouse Plot Study area is discussed below along with impacts from implementation of the plot study.

3.7.1 Environmental Setting

3.7.1.1 Environmental Setting

Elevations of the Project Area range from 220 to 230 feet below mean sea level. The Project Area is located on and adjacent to an alluvial fan near the southern end of the Santa Rosa Mountains. It is located 2.67 miles northeast of SR-86, 40 miles northwest of the city of El Centro, and approximately 200 feet west of the existing Salton Sea shoreline.

3.7.1.2 Geology and Soils

Surface sediments within the Project Area consist of terminal Pleistocene-early Holocene Quaternary lake deposits (Ql) and alluvium and Holocene alluvium (Qal) (Jennings 1967). Soils within the Study 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 2021).

Review of well completion records for a few existing wells near the Project Area indicates that the subsurface sediments are composed primarily of fine-grained lacustrine and distal alluvial fan sediments, with some thin sand and gravel layers in the upper 300 to 500 feet of sediments (Formation Environmental, Inc. [Formation] 2021, Attachment C).

The nearest reported subsidence monitoring station to the Study Area is the SLMS SCGN CS1999 GPS monitoring station operated by UNAVCO and located approximately one mile southwest of the Study Area (UNAVCO 2021). No subsidence has been reported at this station since recording began in 1999.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒

No Impact. Please refer to the discussion in (a).

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☐	☒

No Impact. Please refer to the discussion in (a).

3.6 Energy

The potential direct and indirect environmental impacts associated with energy consumption are evaluated including the depletion of nonrenewable resources (oil, natural gas, coal, etc.) and emissions of pollutants.

3.6.1 Environmental Setting

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.

3.6.2 Energy (VI) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐

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

The vertical Project Area 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. The current study assumes the above-surface vertical Project Area is up to 10 feet.

3.5.1.1 Environmental Setting

Elevations of the Project Area range from 220 to 230 feet below mean sea level. The Project Area is located on and adjacent to an alluvial fan near the southern end of the Santa Rosa Mountains. It is located 2.67 miles northeast of State Route 86 (SR-86), 40 miles northwest of the city of El Centro, and approximately 200 feet west of the existing Salton Sea shoreline.

3.5.1.2 Geology and Soils

Surface sediments within the Project Area consist of terminal Pleistocene-early Holocene Quaternary lake deposits (Ql) and alluvium and Holocene alluvium (Qal) (Jennings 1967). Holocene alluvial sediments are considered to hold potential for subsurface cultural resources because they were deposited concurrently with human occupation of the region. The U.S. Department of Agriculture NRCS soil survey did not have any digital data on soils within the Project Area (NRCS 2021).

3.5.2 Cultural Resources (V) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to §15064.5?	☐	☐	☐	☒

No Impact. ECORP conducted a cultural resources inventory for the proposed Clubhouse Plot Studies Project in Imperial County, California in 2020. The cultural resources inventory included a records search, literature review, and field survey. A records search of the California Historical Resources Information System at the South Coastal Information Center revealed that five cultural resources investigations were previously conducted in or within 0.5 mile of the Project Area, with four of these overlapping the Project Area. Three historic-period cultural resources were previously recorded within 0.5 mile of the Project Area as a result of these investigations; however, no cultural resources have been previously identified within the Project Area. A search of the Sacred Lands File was completed by the California NAHC and resulted in a positive finding, meaning that Native American Sacred Lands have been recorded in the Project Area.

No cultural resources were recorded as a result of the field survey. 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 National Historic Preservation Act (NHPA), present within the Proposed 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 cultural resources.

No Impact. No habitat conservation plans, natural community conservation plans, or other habitat conservation plans have been adopted for biological resources that would be affected by the plot study.

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. As discussed below, the changes to the Transfer Project would result in no new impacts or a substantial increase in the severity of the impacts to cultural resources identified in the EIR/EIS. The overall impacts to cultural resources would be similar to those described in the EIR/EIS.

The environmental setting for the Clubhouse Plot Study 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 2021) and summarized below.

3.5.1 Environmental Setting

The Project Area consists of 128.64 acres of property located in the northern half of Section 5 of Township 10 East, Range 10 South, San Bernardino Base and Meridian, as depicted on the 1998 Truckhaven, California, USGS 7.5-minute topographic quadrangle map (Figure 1-1). It is also known as APN 008-010-006. It is located north of the intersection of Huron and Crystal Lake avenues in Salton City.

The Area of Potential Effects (APE), or Project Area, 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 CEQA, the term Project Area is used rather than APE. For the purpose of this document, the terms Project Area and APE are interchangeable.

The horizontal APE consists of all areas where activities associated with a project are proposed and in the case of the current Project, equals the Project Area subject to environmental review. This includes areas proposed for construction, vegetation removal, grading, trenching, stockpiling, staging, paving, and other elements described in the official Project description. The horizontal APE is shown on Figure 1-1 and also represents the survey coverage area. The APE is 128.64 acres in area, measuring approximately 0.55 mile in length by 0.51 mile in width.

The vertical APE is described as the maximum depth below the surface to which excavations for Project foundations and facilities would extend. Therefore, the vertical APE includes all subsurface areas where archaeological deposits could be affected. The subsurface vertical APE varies across the Project, depending on the depth of the drilling, grading, or trenching for installation of facilities. Groundwater well development and groundwater pumps would extend as deep as 300 to 400 feet below surface, and other Project elements would incur ground disturbance to lesser depths. Therefore, review of geologic and soils maps was necessary to determine the potential for buried archaeological sites that cannot be seen on the surface.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?	☐	☐	☐	☒

No Impact. Refer to the discussion under (b) above.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?	☐	☐	☐	☒

No Impact. Implementation of the plot study would not preclude movement or migration of wildlife species across the site or in the area.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☒	☐

Less than Significant Impact. No conflicts with local policies or ordinances protecting biological resources were identified in the EIR/EIS, and as discussed above, the Proposed Project changes would not significantly affect biological resources. Thus, with the implementation of mitigation measures identified in the EIR/EIS and BMPs discussed in this Addendum, no conflicts would occur.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☐	☒

disturbance. Implementation of the BMP to protect plants described in Section 2.5 would avoid or minimize potential impacts to special-status plants considered endangered, threatened, and rare under CEQA (Section 15380 of the CEQA Guidelines).

3.4.2.2 Impacts to Special Status Reptiles

The Study Area provides marginal habitat for flat-tailed horned lizard. Ground-disturbing activities (e.g., grading, well drilling) have potential to adversely impact this species if individuals are present during ground disturbance. Implementation of the BMP to protect flat-tailed horned lizards described in Section 2.5 would avoid or minimize potential impacts to flat-tailed horned lizard.

3.4.2.3 Impacts to Special Status Birds

The Study Area provides suitable nesting and foraging habitat for special-status birds and birds protected by the federal Migratory Bird Treaty Act (MBTA) and Fish and Game Code Nesting or foraging birds have potential to be adversely impacted by Project activities if present within and adjacent to the Study Area during implementation of the Project. Implementation of the BMP to protect nesting birds described in Section 2.5 would avoid or minimize potential impacts to special-status birds and birds protected by the MBTA and Fish and Game Code.

3.4.2.4 Impacts to Special Status Mammals

The Study Area provides marginal habitat for Palm Springs pocket mouse. Ground-disturbing activities (e.g., grading, well drilling) have potential to adversely impact this species if individuals are present during ground disturbance. Implementation of the BMP to protect Palm Springs pocket mouse described in Section 2.5 would avoid and minimize potential impacts to the species.

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) 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 California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☐	☒

No Impact. Per the USACE-issued AJD, there are no aquatic resources within the Study Area (USACE 2021b). The Project would have no impact on aquatic resources, including Waters of the U.S. and State.

cactus (Sheppard 2020). LeConte's thrasher prefer to nest in thick, dense, thorny desert shrubs or cholla cactus (Sheppard 2020). Breeding occurs during February through June. There are two historic CNDDB records (from 1934 and 1933) located approximately 4.8 and 9.4 miles from the Study Area, respectively. Marginally suitable habitat occurs within the sandy and sparsely vegetated areas of playa onsite. Le Conte's thrasher has low potential to occur onsite.

Mammals

Four special-status mammal species were identified as having the potential to occur within Study Area based on the literature review (Table 1 of Attachment B). Upon further analysis and after the reconnaissance site visit, three species were determined to not have potential to occur within the Study Area due to the absence of suitable habitat. No further discussion of these species is provided in this analysis. A brief description of the remaining species is provided below.

Palm Springs Pocket Mouse

Palm Springs pocket mouse (*Perognathus longimembris bangsi*) is not listed pursuant to either the federal or California ESAs, but is a CDFW SSC. This species is associated with flat or gently sloping habitats of loose or sandy soils, with relatively sparse vegetation. There are two CNDDB records from 2015 located approximately 7.2 and 8.7 miles from the Study Area. Marginally suitable habitat occurs within the open, and sparsely vegetated areas of playa onsite. Palm Springs pocket mouse has low potential to occur onsite.

3.4.1.9 Critical Habitat

The Study Area does not coincide with designated Critical Habitat for any federally listed species (USFWS 2021).

3.4.2 Biological Resources (IV) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) 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 Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐

Less than Significant Impact.

3.4.2.1 Impacts to Special Status Plants

The Study Area provides habitat for special-status plants. Ground-disturbing activities (e.g., grading, well drilling) have potential to adversely impact special-status plants if present in areas planned for ground hummingbirds are found in southwestern U.S. In California, Costa's hummingbirds breed in coastal sage scrub and chaparral as far north as Santa Barbara County and irregularly in Monterey County; along the western edge of the San Joaquin Valley as far north as Stanislaus County; and in the eastern Sierra Nevada from Inyo County southward (Baltosser and Scott 2020). Breeding habitat includes Sonoran desert scrub, Mojave Desert scrub, California chaparral, California coastal scrub, and Cape deciduous forests (Baja California) (Baltosser and Scott 2020). Nesting occurs during January through June. There are no CNDDB records within 10 miles of the Study Area; however, marginal nesting habitat occurs onsite in the iodine scrub. Costa's hummingbird has low potential to occur onsite.

Western Snowy Plover

Two distinct populations of western snowy plover occur in California. Along the Pacific Coast, snowy plovers breed from southern Washington to Baja Sur, Mexico south to coastal Ecuador and Chile (Page et al. 2020). In California, inland breeding occurs locally in the San Joaquin Valley, the Salton Sea, and eastern California (Shuford and Gardali 2008). The interior population, which includes snowy plovers at the Salton Sea, resides in California and is a year-round resident at the Salton Sea. Western snowy plovers at the Salton Sea are a California SSC and a USFWS BCC (CDFW 2019). 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 (Page et al. 2020). Breeding/nesting occurs from March through September. There is one CNDDB record from 1999 located within the Study Area. Suitable nesting habitat occurs within open areas of sandy playa onsite. Western snowy plover has moderate potential to occur onsite.

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is not listed pursuant to either the California or federal ESAs; however, it is designated as a BCC by the USFWS and an SSC by the CDFW. Burrowing owls inhabit dry open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. They can also inhabit developed areas such as golf courses, cemeteries, roadsides within cities, airports, vacant lots in residential areas, school campuses, and fairgrounds (Poulin et al. 2020). This species typically uses burrows created by fossorial mammals, most notably the California ground squirrel (*Otospermophilus beecheyi*) but may also use man-made structures such as concrete culverts or pipes; concrete, asphalt, or wood debris piles; or openings beneath concrete or asphalt pavement (CDFG 2012). The breeding season typically occurs between February 1 and August 31 (California Burrowing Owl Consortium 1993; CDFG 2012). There are two CNDDB records occurring in 2006 and 2008 approximately four miles from the Study Area. Marginally suitable habitat within open areas onsite; however, no suitable burrows were observed during the site reconnaissance survey. Burrowing owl has low potential to occur onsite.

Le Conte's Thrasher

The LeConte's thrasher (*Toxostoma lecontei*) is not listed and protected under either the federal or California ESAs; however, it is considered a species of conservation concern by the USFWS and a SSC according to the CDFW. In California, this species is found in the San Joaquin Valley and Mojave and Colorado deserts of southern California (Sheppard 2020). They are found in sparsely vegetated desert flats, dunes, alluvial fans, or gently rolling hills having high proportion of saltbush or shadscale or cholla

Flat-Tailed Horned Lizard

The flat-tailed horned lizard (*Phrynosoma mcallii*) is a candidate for listing as endangered under the California ESA and is designated as a Species of Special Concern (SSC) by CDFW. This species is most commonly found on sandy flats and valleys within desert scrub habitat with little or no windblown sand. The flat-tailed horned lizard requires fine sand for cover as it burrows just beneath the surface to avoid extreme temperatures. They also use mammal burrows to seek refuge (Stebbins 2003). There are 40 CNDDB occurrences of flat-tailed horned lizard within 10 miles of the Study Area (CDFW 2021). The iodine scrub provides marginal habitat for this species. Flat-tailed horned lizard has low potential to occur onsite.

Birds

Nineteen special-status bird species were identified as having the potential to occur within the Study Area based on the literature review (Table 1 of Attachment B). Upon further analysis and after the reconnaissance site visit, all but six species were determined to not occur within the Study Area due to the absence of suitable habitat. No further discussion of these species is provided in this analysis. Brief descriptions of the remaining six species that have the potential to occur within the Study Area are presented below.

Black Skimmer

The black skimmer (*Rynchops niger*) is not listed pursuant to either the federal or California ESAs; however, it is designated as a bird of conservation concern (BCC) by the USFWS and a SSC by the CDFW. In California, black skimmers breed inland at the Salton Sea and coastal San Diego and Orange counties (Gochfeld et al. 2020). They prefer to nest on open sandy areas or sparsely vegetated gravel or shell bars or broad mats of sea wrack on salt marsh (Gochfeld et al. 2020). Nesting occurs during May through September. There are no CNDDB records within 10 miles of the Study Area; however, the open playa may provide suitable nesting habitat onsite. Black skimmer has moderate potential to occur onsite.

Gull-Billed Tern

The gull-billed tern (*Gelochelidon nilotica*) is not listed pursuant to either the California or federal ESAs; however, it is designated as a BCC by the USFWS and a SSC by the CDFW. In western North America, their breeding range includes the southernmost portion of California along the coast into western Mexico. In California, breeding colonies are restricted to San Diego Bay and the Salton Sea (Unitt 2004 and Molina and Erwin 2006 in Molina et al. 2020). The Salton Sea population nests on eroded earthen levees and gravel and barnacle islets or on constructed islets in shallow, brackish impoundments (Molina et al. 2020). Other gull-billed tern colonies are found on sparsely vegetated exposed mudflats, shell bars, or dredged spoil islands in impoundments (Molina et al. 2020). Nesting occurs from late April through July. There are no CNDDB records within 10 miles of the Study Area; however, suitable nesting habitat occurs onsite in the open areas of the playa. Gull-billed tern has moderate potential to occur onsite.

Costa's Hummingbird

The Costa's hummingbird (*Calypte costae*) is not listed and protected under either federal or California ESAs; however, it is considered a species of conservation concern according to the USFWS. Costa's

3.4.1.8 *Special Status Species*

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 Study Area was generated. Only special-status species as defined in Section 2.4 were included in this analysis. Each of these species' potential to occur within the Study Area was assessed based on the following criteria:

- **Present** - Species was observed during the site visit or is known to occur within the Study Area based on documented occurrences within the CNDDB or other literature.
- **Potential to Occur** - Habitat (including soils and elevation requirements) for the species occurs within the Study Area.
- **Low Potential to Occur** - Marginal or limited amounts of habitat occurs and/or the species is not known to occur within the vicinity of the Study Area based on CNDDB records and other available documentation.
- **Absent** - No suitable habitat (including soils and elevation requirements) present at the Study Area and/or the species is not known to occur within the vicinity of the Study Area based on CNDDB records and other documentation.

Plants

Twenty-one special-status plant species were identified historically in the vicinity of the Study Areas based on the literature review (Table 1 of Attachment B). Upon further analysis, and after the reconnaissance site visit and the focused plant survey effort on March 15, 2021, all but one species was determined to not occur within the Study Area. A discussion of this species is provided below.

Abrams' Spurge

Abrams' spurge (*Euphorbia abramsiana*) is not listed pursuant to either the federal or California Endangered Species Acts (ESAs), but is a California Rare Plant Rank (CRPR) 2B.2 plant species. This species is known to occur at elevations between -5 and 1,310 meters (16 and 4,298 feet) and blooms between September and November. Abrams' spurge is known to occur in creosote scrub habitat within sandy flats, including playas, fields, disturbed areas, and washes. There are no CNDDB records within 10 miles of the Study Area. The sandy playa onsite provides marginally suitable habitat for the species. This species was not observed during special-status plant surveys conducted on March 15, 2021, but this initial survey was outside the bloom period. Abrams' spurge has low potential to occur onsite.

Reptiles

Two special-status reptile species were identified as having the potential to occur within Study Area based on the literature review (Table 1 of Attachment B). Upon further analysis and after the reconnaissance site visit, one species was determined to not have potential to occur within the Study Area due to the absence of suitable habitat. No further discussion of this species is provided in this analysis. A brief description of the remaining species is provided below.

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3.4.1.7 Habitat and Land Cover Types

The Study Area is characterized by three coarse habitat types. These are salt pan, iodine bush scrub, and disturbed. Descriptions of the habitat and land cover types present within the Study Area are provided below.

Salt Pan

This habitat type is found within those portions of the Study Area that were, until fairly recently (2004-2014), inundated by the Salton Sea. Salt pan areas typically support little to no vegetation and are characterized by a salt crust at the soil surface. Barnacle tests, relict from past inundation, commonly litter the surface of salt pan areas of the Salton Sea. Salt pans provide very little habitat value for plant or animal species due to highly saline (and alkaline) soils. Birds will on occasion establish ground nests within salt pan habitats.

Iodine Bush Scrub

Iodine bush scrub occupies the portion of the Study Area east of the mapped salt pan. This habitat type is characterized by scattered to moderately abundant ALOC, a halophyte, within those portions of the Study Area not historically inundated by the Salton Sea. Iodine bush also occupy older salt pan areas where barnacle bars have accumulated in drift lines, forming higher elevation substrates for vegetation to recruit and persist. The linear signatures of vegetation evident in Figure 3 of Attachment B are due to iodine bush presence along these barnacle bars. High soil salinities within iodine bush scrub habitat is still a limiting factor for plant recruitment, persistence, and condition, though not as significant of a stressor as within salt pan areas. Iodine bush scrub may provide habitat for several species of small mammals, reptiles, and nesting birds. Water stressed iodine bush (as evidenced by the presence of brown, dry leaves) was observed throughout the Study Area, presumably reflecting the increasing depth to perched fresh groundwater as the Salton Sea surface elevation declines over time.

Disturbed/Developed

It appears that a small area near the southwestern aspect of the Study Area was historically developed as a recreational vehicle parking lot. The formal status of this facility is uncertain, but cars, trucks, and trailers do continue to use the parking slips. The disturbed area has been graded and has been surfaced with crushed gravel in places. Continual use has generally excluded the reestablishment of vegetation, though scattered iodine bush and salt bush (*Atriplex* spp.) are present in this area. This area provides very little to no habitat value for plants or wildlife.

Aquatic Resources

An aquatic resources delineation was conducted for the Study Area and an AJD issued by the USACE (see Attachment B). There are no aquatic resources mapped within the Study Area.

total site coverage. Special attention was given to identifying those portions of the Study 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; and

Representative Study Area photographs.

3.4.1.3 Aquatic Resources Delineation Site Survey

An aquatic resources delineation of the Study Area was completed on October 6, 2020 and January 29, 2021 by ECORP biologists. The delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation* Manual: *Arid West Region* (Arid West Region Supplement) (U.S. Army Corps of Engineers [USACE] 2008). The USACE issued an Approved Jurisdictional Determination (AJD) for the Study Area on April 21, 2021 (Attachment B).

3.4.1.4 Special-Status Plant Survey

An early season special-status plant survey was conducted by ECORP botanists for the Study Area on March 15, 2021. A follow up late season survey is planned for September 2021.

3.4.1.5 Site Characteristics and Topography

The Study 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 five to 10 years as a result of seawater evaporation and decreased agricultural inflows. Slopes on the playa within the Study Area are very flat, ranging from 0.1 percent (one inch of vertical drop over 100 feet of horizontal distance) to 0.01 percent (one inch per 1,000 feet). Exposed elevations within the Study Area range from approximately -230 feet below sea level (bsl) to approximately -225 feet bsl (North American Vertical Datum 1988).

3.4.1.6 Soils

Soils within the Study Area have not been mapped by the NRCS because this area was inundated by the Salton Sea until very recently (NRCS 2021).

The environmental setting for the Clubhouse Plot Study area is discussed below. Impacts on biological resources from implementation of the plot study are discussed in the biological resources report contained in Attachment B and summarized below.

3.4.1 Environmental Setting

3.4.1.1 Literature Review

The following resources were reviewed to determine the special-status species that have been documented within or near the Study Area. Results of the species searches are included in the Biological Resources Assessment Report in Attachment B.

- California Department of Fish and Wildlife (CDFW) California Natural Diversity Data Base (CNDDB) data for the "Truckhaven, California" 7.5-minute quadrangles as well as the nine surrounding USGS quadrangles (CDFW 2020);
- U.S. Fish and Wildlife Service (USFWS) Information, Planning, and Consultation System Resource Report List for the Study Area (USFWS 2020a);
- CNPS electronic Inventory of Rare and Endangered Plants of California was queried for the "Truckhaven, California" 7.5-minute quadrangles and the nine surrounding quadrangles (CNPS 2020).

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

- The Status of Rare, Threatened, and Endangered Plants and Animals of California 2000-2004 (California Department of Fish and Game [CDFG] 2005);
- California Bird Species of Special Concern (Shuford and Gardali 2008);
- Amphibian and Reptile Species of Special Concern in California (Thompson, Wright, and Shaffer 2016);
- Mammalian Species of Special Concern in California (Williams 1986);
- California's Wildlife, Volumes I-III (Zeiner et al. 1988, 1990a, 1990b);
- A Guide to Wildlife Habitats of California (Mayer and Laudenslayer Jr., eds. 1988);
- USFWS Online Critical Habitat Mapper (USFWS 2021); and
- NRCS Web Soil Survey (NRCS 2021).

3.4.1.2 Reconnaissance Site Survey

ECORP Biologists Jeff Tupen, Daniel Wong, and Christina Congedo conducted the site reconnaissance visit on October 6, 2020. The Study Area was systematically surveyed on foot using an ESO Arrow Global Positioning System (GPS) unit with sub-meter accuracy, topographic maps, and aerial imagery to ensure 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. For instance, if a person describes an odor as flowery or sweet, then the person is describing the quality of the odor. Intensity refers to the strength of the odor. For example, a person may use the word "strong" to describe the intensity of an 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.

3.3.2.5 Project Implementation

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 site. 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. Therefore, odors generated during Project implementation would not adversely affect a substantial number of people to odor emissions.

Project Operations

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 uses identified as being associated with odors.

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. As discussed below, the changes to the Proposed Project would result in no new impacts or significant changes to the severity of the impacts to biological resources identified in the EIR/EIS. The overall impacts to biological resources would be similar to those described in the EIR/EIS.

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 is anticipated to result in no more than one daily traffic trip. It is noted that this is a conservative estimate and many days would have no operational related vehicle trips. Thus, 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.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard?	☐	☐	☒	☐

Less than Significant Impact. Refer to the discussion under (a) above.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☒	☐

Less than Significant Impact. Refer to the discussion under (a) above.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?	☐	☐	☒	☐

No Impact. 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. Some individuals have the ability to smell minute quantities of specific substances; others may not have the same sensitivity but may have sensitivities to odors of other substances. In addition, people may have different reactions to the same odor; in fact, an odor that is offensive to one person (e.g., from a fast-food restaurant) may be perfectly acceptable to another. It is also important to note that an unfamiliar odor is more easily detected and is

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.

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 nine 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

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. 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 Toxic Air Contaminant (TAC) of concern. Based on the emission modeling conducted, the maximum onsite Project implementation-related daily emissions of exhaust $PM_{2.5}$, considered a surrogate for DPM, would be 1.85 pounds/day in the year 2021 (see Attachment A). $PM_{2.5}$ exhaust is considered a surrogate for DPM because more than 90 percent of DPM is less than 1 microgram in diameter and therefore is a subset of particulate matter under 2.5 microns in diameter (i.e., $PM_{2.5}$). Most $PM_{2.5}$ derives from combustion, such as use of gasoline and diesel fuels by motor vehicles. As with O_3 and NO_x, 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.

In summary, Project implementation 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.

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 and monitoring activities, which would be performed using a light-duty truck. 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.

Naturally Occurring Asbestos

Another potential air quality issue associated with construction-related activities is the airborne entrainment of asbestos due to the disturbance of naturally-occurring asbestos-containing soils. The Proposed Project is not located within an area designated by the State of California as likely to contain naturally-occurring asbestos (DOC 2000). As a result, construction-related activities would not be anticipated to result in increased exposure of sensitive land uses to asbestos.

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.

As previously described, the Project is proposing the development of groundwater wells and associated feature to establish and sustain vegetation cover and waterless dust control measures on 128.64 acres of the of exposed Salton Sea playa to reduce air quality risks from emissive particles. 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. The Proposed Project would be assisting and complying with the SSAQMP as it would be mitigating dust from the exposed playa thereby improving the air quality of the region as well as abiding by the ICAPCD rules and regulations. Therefore, the Project would not conflict with any applicable air quality management plans and would result in a beneficial impact to the region's air quality.

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 site are residences located directly adjacent to the southern and western Project site boundary.

Construction/Implementation-Generated Air Contaminants

Implementation 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 implementation (e.g., development of wells, scarifying); 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 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 and Table 3.3-5, 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 is not anticipated to substantially contribute to regional O_3 concentrations and the associated health impacts.

Table 3.3-7. Operational-Related Emissions (USEPA Conformity Determination Analysis)

Emission Source	**Pollutant (tons per year)**					
	VOC (ROG)	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Area	0.07	0.00	0.00	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.00	0.00	0.00	0.28	0.02
Total:	0.07	0.00	0.00	0.00	0.28	0.02
EPA Conformity Determination Thresholds (40 CFR 93.153)	*100*	*100*	*100*	*100*	*100*	*100*
Exceed *USEPA Conformity Determination Thresholds*?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.
Notes: Operational emissions account for one vehicle trip per day. It is noted that this is a conservative estimate and many days would have no operational related vehicle trips.

As indicated in Table 3.3-7, operational emissions would not exceed the USEPA Conformity Determination thresholds. Additionally, as previously discussed, once implemented the Project would represent a beneficial impact on air quality due to its implementation of dust control measures.

Conflict with an Applicable Air Quality Management Plan

As previously described, the Project region is classified as nonattainment for federal O_3 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 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.

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, 2013 24-Hour $PM_{2.5}$ SIP, the 2009 1997 8-hour Ozone Reasonably Achievable Control Technology SIP, the 2009 PM10 SIP and the 2008 Ozone Early Progress Plans. 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

Table 3.3-6. Operational-Related Emissions

Emission Source	**Pollutant (pounds per day)**					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Exceed ICAPCD Significance Threshold?	**No**	**No**	**No**	**No**	**No**	**No**
Winter Emissions						
Area	0.63	0.00	0.01	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.01	0.02	0.00	1.58	0.15
Total:	**0.63**	**0.01**	**0.03**	**0.00**	**1.58**	**0.15**
ICAPCD Significance Threshold	*137*	*137*	*150*	*550*	*550*	*150*
Exceed ICAPCD Significance Threshold?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.
Notes: Operational emissions account for one vehicle trip per day. It is noted that this is a conservative estimate and many days would have no operational related vehicle trips.

As shown in Table 3.3-6, the Project's emissions would not exceed any ICAPCD's thresholds for any criteria air pollutants during operation. Additionally, the purpose of the Project is the development of sufficient groundwater to establish and sustain vegetation cover that would be implemented as a dust control measures to reduce airborne coarse and fine particulate matter and mitigate dust emissions from the exposed playa. Thus, once implemented the Project would represent a beneficial impact to air quality.

USEPA Conformity Determination Thresholds

As previously stated, operational related emissions associated with the Proposed Project were calculated using the CalEEMod computer program. Operational air pollution impacts were based on model defaults as well as information provided by the IID. Once Project implementation is complete the main operational emissions associated with the Proposed Project would be routine maintenance and monitoring activities, which would be performed using a light-duty truck. Long-term operational emissions attributable to the Project are identified in Table 3.3-7 and compared to the appropriate Conformity Determination thresholds.

Table 3.3-5. Implementation-Related Emissions (USEPA Conformity Determination Analysis)

Construction Year	Pollutant (Tons per year)					
	VOC (ROG)	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Implementation 2021	0.10	1.06	0.65	0.00	0.75	0.19
USEPA Conformity Determination Thresholds (40 CFR 93.153)	*100*	*100*	*100*	*100*	*100*	*100*
Exceed USEPA Conformity Determination Thresholds?	**No**	**No**	**No**	**No**	**No**	**No**

Source: CalEEMod version 2016.3.2. Refer to Attachment A for Model Data Outputs.
Notes: Emission reduction/credits for construction were applied based on the required implementation of Best Management Practices that must be implemented during Project construction, such as limiting vehicle speeds to 10 miles per hour on unpaved roads.

3.3.2.4 Operational Criteria Air Quality Emissions

ICAPCD Significance Threshold

The Project would result in minimal long-term operational emissions of criteria air pollutants such as PM_{10}, $PM_{2.5}$, CO, and SO_2 as well as ozone precursors such as ROGs and NO_X. Once construction is complete the main operational emissions associated with the Proposed Project would be routine maintenance and monitoring activities which would be performed using a light-duty truck. Long-term operational emissions attributable to the Project are identified in Table 3.3-6 and compared to the operational significance thresholds promulgated by the ICAPCD.

Table 3.3-6. Operational-Related Emissions

Emission Source	Pollutant (pounds per day)					
	ROG	NO_X	CO	SO_2	PM_{10}	$PM_{2.5}$
Summer Emissions						
Area	0.63	0.00	0.01	0.00	0.00	0.00
Energy	0.00	0.00	0.00	0.00	0.00	0.00
Mobile	0.00	0.01	0.03	0.00	1.58	0.15
Total:	**0.63**	**0.01**	**0.04**	**0.00**	**1.58**	**0.15**
ICAPCD Significance Threshold	*137*	*137*	*150*	*550*	*550*	*150*

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taking reasonable precautions to prevent the emissions of fugitive dust, such as stabilizing unpaved roads and bulk material that is being transported.

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 Attachment A for more information regarding the construction assumptions, including construction equipment and duration, used in this analysis.

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 Implementation-Generated Emissions

Implementation Year	**Pollutant (pounds per day)**					
	ROG	**NO_X**	**CO**	**SO_2**	**PM_{10}**	**$PM_{2.5}$**
Implementation 2021	43.71	33.15	0.06	0.06	36.03	10.65
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 Attachment A for Model Data Outputs.
Note: Pounds per day taken from the season with the highest output. Emission reduction/credits for construction were applied based on the required implementation of Best Management Practices that must be implemented during Project construction, such as limiting vehicle speeds to 10 miles per hour on unpaved roads.

As shown in Table 3.3-4, emissions generated during Project implementation would not exceed the ICAPCD's thresholds of significance. Therefore, criteria pollutant emissions generated during Project implementation 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.

USEPA Conformity Determination Thresholds

As previously described, the Project site is located in the Imperial County portion of the SSAB and is in nonattainment for the O_3 precursors, Volatile Organic Compounds (VOC) (i.e., ROG) and NO_x, as well as PM_{10}. Emissions generated during Project implementation 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 Conformity Determination thresholds. As shown in Table 3.3-5, emissions from implementation of the Proposed Project do not exceed the USEPA Conformity Determination thresholds for the region.

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
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 2020

3.3.2.2 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 site plans and the estimated traffic trip generation rates provided by the IID.

3.3.2.3 Project Construction/ Implementation-Generated Criteria Air Quality Emissions

ICAPCD Significance Threshold

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

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 overall purpose of the General Conformity rule is to ensure that:

Federal activities do not cause or contribute to new violations of NAAQS;

Actions do not worsen existing violations of the NAAQS; and

Attainment of the NAAQS is not delayed.

The General Conformity process begins with an applicability analysis, whereby it must be determined how and to what degree the Conformity Rules apply. According to USEPA's General Conformity Guidance: Questions and Answers (1994), before any approval is given for a Federal Action to go forward, the federal agency must apply the applicability requirements found at 40 CFR § 93.153 to the Federal Action or determine on a pollutant-by-pollutant basis, whether a determination of General Conformity is required. During the applicability analysis, the federal agency determines the following:

Whether the action will occur in a nonattainment or maintenance area;

Whether one or more of the specific exemptions apply to the action;

Whether the federal agency has included the action on its list of presumed-to-conform actions;

Whether the total direct and indirect emissions are below or above the de minimis levels; or

Where a facility has an emissions budget approved by the State or Tribe as part of the State Implementation Plan (SIP) or Tribal Implementation Plan, the federal agency determines that the emissions from the proposed action are within the budget.

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 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 proposed site 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.

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Less than Significant Impact. The significance criteria established by the applicable air quality management or air pollution control district (ICAPCD) may be relied upon to make the above determinations. 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.

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.

3.3.2.1 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.

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
$PM_{2.5}$	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 site are residences located directly adjacent to the southern and western Project site boundary in Salton City.

3.3.2 Air Quality (III) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☒	☐

3.3.1.3 Wind

Winds in the area are driven by a complex pattern of local, regional and global forces, but primarily reflect the temperature difference between the cool ocean to the west and the heated interior of the entire desert southwest. For much of the year, winds flow predominantly from the west to the east. In summer, intense solar heating in the Imperial Valley creates a more localized wind pattern, as air comes up from the southeast via the Gulf of California. During periods of strong solar heating and intense convection, turbulent motion creates good mixing and low levels of air pollution. However, even strong turbulent mixing is insufficient to overcome the limited air pollution controls on sources in the Mexicali, Mexico area. Imperial County is predominately agricultural land. This is a factor in the cumulative air quality of the SSAB.

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 fine particulate matter ($PM_{2.5}$) 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 (NOx) 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 site is included in Table 3.3-1.

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 the Air Quality Master Responses and in Section 4, Errata. As discussed below, the changes to the Transfer Project would result in no new significant impacts or substantial increase in the severity of the air quality impacts identified in the EIR/EIS. The overall impacts to air quality would be similar to those described in the EIR/EIS.

The environmental setting for the Clubhouse Plot Study area is discussed below. Emissions of criteria pollutants are discussed and evaluated for implementation of the plot study in a report contained in Attachment A and summarized below.

3.3.1 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 site, 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.

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).

No Impact. There are no agricultural resources on the plot study site. Therefore, there would be no impacts.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒

No Impact. The plot study site is not zoned for agriculture and there are no Williamson Act contracts on the site. Therefore, there would be no impact.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?	☐	☐	☐	☒

No Impact. No forest land is present.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒

No Impact. No forest land is present.

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
e) Involve other changes in the existing environment, which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☒

No Impact. No agriculture or forestry resources are on the site, therefore, there would be no impacts.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
d) Would the project create a new source of substantial light or glare, which would adversely affect day or nighttime views in the area?	☐	☐	☒	☐

Less than Significant Impact. 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.

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 Clubhouse Plot Study area is discussed below along with impacts from implementation of the plot study.

3.2.1 Environmental Setting

Soils within the Study 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 2021). There is no mapped Prime Farmland, Unique Farmland, or Farmland of Statewide Importance on the plot study site under the State's Farmland Mapping and Monitoring Program (Department of Conservation [DOC] 2021). The site is zoned for Open Space/Recreation (S-1) with an Urban Area land use designation by Imperial County, and the site is not under a Williamson Act contract (Imperial County 1998, 2007, 2021a). Therefore, there are no agriculture resources on the site. No forestry resources are present either.

3.2.2 Agriculture and Forestry Resources (II) Environmental Checklist and Discussion

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporated	Less than Significant Impact	No Impact
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?	☐	☐	☐	☒

3.1.2 Aesthetics (I) Environmental Checklist and Discussion

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
a) have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐

Less than Significant Impact. Proposed water tanks, hay bales, and sand fencing for the Project may be visible to Salton City 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. Impacts would be less than significant.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒

No Impact. There are no state scenic highways in the vicinity of the Project area. The County has not identified this area as having scenic resources (Imperial County 2016). Therefore, no impact would occur.

Except as provided in Public Resources Code Section 21099, would the Project:	Potentially Significant Impact	Less than Significant with Mitigation Incorporated	Less than Significant Impact	No Impact
c) In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from publicly accessible vantage point). If the project is in an urbanized area, would the project conflict with applicable zoning and other regulations governing scenic quality?	☐	☐	☒	☐

Less than Significant Impact. Proposed water tanks, hay bales, and sand fencing for the Project may be visible to Salton City residents and visitors on public roadways immediately adjacent to the Project Area. 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. Therefore, impacts would be less than significant.

3.0 ENVIRONMENTAL CHECKLIST AND DISCUSSION

This Addendum addresses whether implementation of the Clubhouse Pilot Study 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 and b). No environmental impacts in the Initial Study and Environmental Checklist Form were judged to be *potentially significant* or *less than significant with mitigation incorporated*. 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

A complete discussion of the aesthetic impacts of the Transfer Project as originally proposed is included in Section 3.11 of the Draft EIR/EIS (and incorporated into the Final EIR/EIS). As discussed below, the changes to the Transfer Project would result in no new significant impacts or a substantial increase in the severity of the aesthetic impacts identified in the EIR/EIS. The overall impacts to aesthetic resources would be similar to those described in the EIR/EIS.

The environmental setting for the Clubhouse Plot Study area is discussed below along with impacts from implementation of the plot study.

3.1.1 Environmental Setting

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 Bureau of Land Management's (BLM's) Visual Resource Inventory (VRI) process and are shown in the County's Conservation and Open Space Element (Imperial County 2016). 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 (Imperial County 2016). There are no scenic highways in the vicinity of the plot study (Imperial County 2016).

Well Construction Permit from Imperial County Planning and Development Services Department to drill the new deep and shallow 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 to put the new deep well and shallow wells into production as a groundwater extraction facility (pursuant to the Imperial County Groundwater Management Ordinance [Title 9, Division 22 of the County Code]).

In addition, Reclamation is providing funding for the deep well and therefore must conduct Section 106 consultation with the State Historic Preservation Office for the 0.32-acre portion of the Clubhouse Plot Study involving the deep well, in addition to consultation with any Native American tribes requesting consultation on installation of the deep well.

The Plot Study is expected to be exempt from a grading permit from Imperial County in accordance with Title 9, Division 10, Building & Grading Regulations, of the County Code which stipulates that the following activities are exempt from grading permits:

1. *Grading in an isolated, self-contained area, provided there is no danger to the public, and that such grading will not adversely affect adjoining properties.*

4. *Construction of irrigation and drainage appurtenances.*

the CEQA Guidelines, or a Historic Property, as defined in 36 Code of Federal Regulations (CFR) 60.4. 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 (AB 2641). The archaeologist shall notify the Imperial County Coroner (per § 7050.5 of the Health and Safety Code). The provisions of § 7050.5 of the California Health and Safety Code, § 5097.98 of the California Public Resources Code (PRC), and Assembly Bill (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 (§ 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 (§ 5097.94 of the PRC). The landowner must rebury the remains where they will not be further disturbed if no agreement is reached (§ 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.

2.5.7 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.

2.6 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, boring waste discharge, monitoring well purge water discharge during drilling and testing of groundwater wells and water line and water storage tank flushing and testing discharges during operation and maintenance);

2.5.3 Flat-Tailed Horned Lizard

Conduct a pre-construction flat-tailed horned lizard survey for all areas planned for ground disturbance within 48 hours prior to construction activities. Any flat-tailed horned lizard individuals discovered in the Project work area immediately prior to or during Project activities will be allowed to move out of the work area of their own volition. If this is not feasible, they will be captured by a qualified wildlife biologist and relocated out of harm's way to the nearest suitable habitat at least 100 feet from the Project work area where they were found.

2.5.4 Nesting Birds

Complete all Project activities during the non-nesting season to avoid impacts to nesting birds. The non-nesting season for birds that could potentially establish ground nests at the Salton Sea is November 1 through February 28. If it is not feasible to comply with avoiding the nesting season, a qualified biologist will survey all areas to be disturbed within 14 days in advance of the start of ground-disturbing activities. Active bird nests identified during the survey effort will 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.

2.5.5 Palm Springs Pocket Mouse

Conduct a pre-construction Palm Springs pocket mouse survey for all areas planned for ground disturbance within 48 hours prior to construction activities. Any Palm Springs pocket mouse individuals discovered in the Project work area immediately prior to or during Project activities will be allowed to move out of the work area of their own volition. If this is not feasible, they will be captured by a qualified wildlife biologist and relocated out of harm's way to the nearest suitable habitat at least 100 feet from the Project work area where they were found.

2.5.6 Cultural Resources Post-Review Discovery Procedures

All work will halt within a 100-foot radius of the discovery if subsurface deposits believed to be cultural or human in origin are discovered during construction. A qualified professional archaeologist, meeting the Secretary of the Interior's Professional Qualification Standards for prehistoric and historic archaeology, will be retained to evaluate the significance of the find, and will 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:

> Work may resume immediately and no agency notifications are required if the professional archaeologist determines that the find does not represent a cultural resource.
>
> If the professional archaeologist determines that the find does represent a cultural resource from any time period or cultural affiliation, they 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

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 Plants

Preconstruction floristic surveys will be conducted for any areas of proposed ground disturbance (i.e., grading or earth work) in the Study Area with the potential to support Abram's spurge. The area of ground disturbance and a 25-foot buffer would be surveyed by a qualified botanist during the appropriate blooming period prior to the start of Project activity. If no special status plants are found during the preconstruction surveys, no further measures are necessary. If surveys identify any special-status plants with a California Native Plant Society (CNPS) California Rare Plant Rank (CRPR) of 1 or 2, plants will be identified with flagging and avoided with a 25-foot no-disturbance buffer during Project activities.

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	6.70	5.00	8.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.519925	0.031155	0.160764	0.115847	0.015498	0.004819	0.018987	0.121625	0.003553	0.001235	0.005240	0.000729	0.000624

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4787	9.3000e-004	0.1022	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2192	0.2192	5.7000e-004		0.2336
Unmitigated	0.4787	9.3000e-004	0.1022	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2192	0.2192	5.7000e-004		0.2336

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3547					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.4700e-003	9.3000e-004	0.1022	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2192	0.2192	5.7000e-004		0.2336
Total	**0.4787**	**9.3000e-004**	**0.1022**	**1.0000e-005**		**3.6000e-004**	**3.6000e-004**		**3.6000e-004**	**3.6000e-004**		**0.2192**	**0.2192**	**5.7000e-004**		**0.2336**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3547					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.4700e-003	9.3000e-004	0.1022	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2192	0.2192	5.7000e-004		0.2336
Total	**0.4787**	**9.3000e-004**	**0.1022**	**1.0000e-005**		**3.6000e-004**	**3.6000e-004**		**3.6000e-004**	**3.6000e-004**		**0.2192**	**0.2192**	**5.7000e-004**		**0.2336**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

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Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EEC ORIGINAL PKG

Clubhouse Operations

Imperial County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	128.71	Acre	128.71	5,606,607.60	0
Unrefrigerated Warehouse-No Rail	0.10	1000sqft	0.00	100.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	12
Climate Zone	15			**Operational Year**	2023
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	1270.9	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Industrial warehouse is modeled to generate trips to the project site. It is noted that no structures are resulting from project Operations.

Construction Phase - Model run done for project Operations.

Off-road Equipment - Model run done for project Operations.

Trips and VMT - Model run done for project Operations.

Road Dust - Roads surrounding the site are paved.

Energy Use - Project will not result in the development of any structures.

Water And Wastewater - Project will not result in the development of any structures

Solid Waste - Project will not result in the development of any structures

Vehicle Trips - Assuming one vehicle trip per day per information provided by the project description.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	220.00	0.00
tblConstructionPhase	PhaseEndDate	1/7/2037	3/5/2036
tblEnergyUse	LightingElect	1.17	0.00
tblEnergyUse	NT24E	0.82	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	0.37	0.00
tblEnergyUse	T24NG	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblRoadDust	RoadPercentPave	50	70
tblSolidWaste	SolidWasteGenerationRate	0.09	0.00
tblTripsAndVMT	WorkerTripNumber	471.00	0.00
tblVehicleTrips	ST_TR	1.68	10.00
tblVehicleTrips	SU_TR	1.68	10.00
tblVehicleTrips	WD_TR	1.68	10.00
tblWater	AerobicPercent	87.46	0.00

tblWater	AerobicPercent	87.46	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	23,125.00	0.00
tblWater	SepticTankPercent	10.33	100.00
tblWater	SepticTankPercent	10.33	100.00

2.0 Emissions Summary

EEC ORIGINAL PKG

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2036	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2036	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.6304	1.2000e-004	0.0132	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0282	0.0282	7.0000e-005		0.0300
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	3.1600e-003	0.0172	0.0362	9.0000e-005	1.5876	4.0000e-005	1.5877	0.1588	4.0000e-005	0.1589		9.6043	9.6043	6.0000e-004		9.6193
Total	**0.6335**	**0.0173**	**0.0494**	**9.0000e-005**	**1.5876**	**9.0000e-005**	**1.5877**	**0.1588**	**9.0000e-005**	**0.1589**		**9.6325**	**9.6325**	**6.7000e-004**	**0.0000**	**9.6494**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.6304	1.2000e-004	0.0132	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0282	0.0282	7.0000e-005		0.0300
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	3.1600e-003	0.0172	0.0362	9.0000e-005	1.5876	4.0000e-005	1.5877	0.1588	4.0000e-005	0.1589		9.6043	9.6043	6.0000e-004		9.6193
Total	**0.6335**	**0.0173**	**0.0494**	**9.0000e-005**	**1.5876**	**9.0000e-005**	**1.5877**	**0.1588**	**9.0000e-005**	**0.1589**		**9.6325**	**9.6325**	**6.7000e-004**	**0.0000**	**9.6494**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	3/6/2036	3/5/2036	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 128.71

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 150; Non-Residential Outdoor: 50; Striped Parking Area: 336,396 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	7.30	8.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

EEC ORIGINAL PKG

3.2 Architectural Coating - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Architectural Coating - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.1600e-003	0.0172	0.0362	9.0000e-005	1.5876	4.0000e-005	1.5877	0.1588	4.0000e-005	0.1589		9.6043	9.6043	6.0000e-004		9.6193
Unmitigated	3.1600e-003	0.0172	0.0362	9.0000e-005	1.5876	4.0000e-005	1.5877	0.1588	4.0000e-005	0.1589		9.6043	9.6043	6.0000e-004		9.6193

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	1.00	1.00	1.00	2,581	2,581
Total	1.00	1.00	1.00	2,581	2,581

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	6.70	5.00	8.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	6.70	5.00	8.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

EEC ORIGINAL PKG

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.519925	0.031155	0.160764	0.115847	0.015498	0.004819	0.018987	0.121625	0.003553	0.001235	0.005240	0.000729	0.000624
Unrefrigerated Warehouse-No Rail	0.519925	0.031155	0.160764	0.115847	0.015498	0.004819	0.018987	0.121625	0.003553	0.001235	0.005240	0.000729	0.000624

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.6304	1.2000e-004	0.0132	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0282	0.0282	7.0000e-005		0.0300
Unmitigated	2.6304	1.2000e-004	0.0132	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0282	0.0282	7.0000e-005		0.0300

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6412					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.9880					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2200e-003	1.2000e-004	0.0132	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0282	0.0282	7.0000e-005		0.0300
Total	**2.6304**	**1.2000e-004**	**0.0132**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0282**	**0.0282**	**7.0000e-005**		**0.0300**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6412					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.9880					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2200e-003	1.2000e-004	0.0132	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0282	0.0282	7.0000e-005		0.0300
Total	**2.6304**	**1.2000e-004**	**0.0132**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0282**	**0.0282**	**7.0000e-005**		**0.0300**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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Clubhouse- Well Development, Solar Pump Instillation & Water Tank Instillation

Imperial County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	29.29	Acre	29.29	1,275,654.60	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	12
Climate Zone	15			**Operational Year**	2023
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	1270.9	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

EEC ORIGINAL PKG

Project Characteristics -

Land Use - Lot acreage for groundwater well development, takin installation and scarifying is unknown at this time. For a conservative estimate half of the average of the irrigation area (58.57 acres/2=29.285 acres) was used in this model run as a conservative estimate.

Construction Phase - Phase type, timing and duration updated to reflect information found in the project description.

Off-road Equipment - Other construction equipmnet= compressor (ground)

Off-road Equipment - Equipmnet updated to match information in the project description.

Off-road Equipment - Equipment updated to match the Project description. Other construction equipment= ground compressor

Off-road Equipment - Equipment list updated to match the project description.

Grading - Cubic yards of material is calculated based on information provided for the excovation of groundwater wells.

Trips and VMT - Material will not be hauled offsite. It will be redistributed on the project site. Number of emplyess needed per pahse is specified in the project description- assuming 4 for the development of wells.

On-road Fugitive Dust - AQ-AM-1 BMP: Use paved roads to access the construcion site wehn possible.

Road Dust - See previous comment regarding AD-Am-1 BMP

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	10
tblConstructionPhase	NumDays	35.00	2.00
tblConstructionPhase	NumDays	45.00	35.00
tblConstructionPhase	PhaseEndDate	2/1/2023	5/20/2021
tblConstructionPhase	PhaseEndDate	5/26/2021	5/12/2021
tblConstructionPhase	PhaseEndDate	3/22/2023	7/8/2021
tblConstructionPhase	PhaseEndDate	3/24/2021	5/10/2021
tblConstructionPhase	PhaseStartDate	5/27/2021	5/13/2021
tblConstructionPhase	PhaseStartDate	3/25/2021	5/11/2021
tblConstructionPhase	PhaseStartDate	2/2/2023	5/21/2021
tblConstructionPhase	PhaseStartDate	2/25/2021	5/1/2021

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tblGrading	AcresOfGrading	17.50	87.50
tblGrading	MaterialExported	0.00	65,379.00
tblGrading	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

tblOffRoadEquipment	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName		Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName		Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName		Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps

EEC ORIGINAL PKG

tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	50	90
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripNumber	8,172.00	0.00
tblTripsAndVMT	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblTripsAndVMT	WorkerTripNumber	15.00	4.00
tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblTripsAndVMT	WorkerTripNumber	20.00	4.00

2.0 Emissions Summary

EEC ORIGINAL PKG

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.3193	22.6273	19.4738	0.0476	21.1109	1.0559	22.1668	4.8663	0.9714	5.8377	0.0000	4,596.7572	4,596.7572	1.3107	0.0000	4,629.5240
Maximum	**2.3193**	**22.6273**	**19.4738**	**0.0476**	**21.1109**	**1.0559**	**22.1668**	**4.8663**	**0.9714**	**5.8377**	**0.0000**	**4,596.7572**	**4,596.7572**	**1.3107**	**0.0000**	**4,629.5240**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	2.3193	22.6273	19.4738	0.0476	21.1109	1.0559	22.1668	4.8663	0.9714	5.8377	0.0000	4,596.7572	4,596.7572	1.3107	0.0000	4,629.5240
Maximum	**2.3193**	**22.6273**	**19.4738**	**0.0476**	**21.1109**	**1.0559**	**22.1668**	**4.8663**	**0.9714**	**5.8377**	**0.0000**	**4,596.7572**	**4,596.7572**	**1.3107**	**0.0000**	**4,629.5240**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

EEC ORIGINAL PKG

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5979	3.0000e-005	2.9900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.4100e-003	6.4100e-003	2.0000e-005		6.8300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.5979**	**3.0000e-005**	**2.9900e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**		**6.4100e-003**	**6.4100e-003**	**2.0000e-005**	**0.0000**	**6.8300e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.5979	3.0000e-005	2.9900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.4100e-003	6.4100e-003	2.0000e-005		6.8300e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.5979**	**3.0000e-005**	**2.9900e-003**	**0.0000**	**0.0000**	**1.0000e-005**	**1.0000e-005**	**0.0000**	**1.0000e-005**	**1.0000e-005**		**6.4100e-003**	**6.4100e-003**	**2.0000e-005**	**0.0000**	**6.8300e-003**

EEC ORIGINAL PKG

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Development of Deep Water Well	Trenching	5/1/2021	5/10/2021	5	6	
2	Paving of Deep Water Pad	Paving	5/11/2021	5/12/2021	5	2	
3	Development of shallow Groundwater Wells	Trenching	5/13/2021	5/20/2021	5	6	
4	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Grading	5/21/2021	7/8/2021	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 29.29

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Excavators	0	8.00	158	0.38
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Graders	1	8.00	187	0.41
Paving of Deep Water Pad	Pavers	1	8.00	130	0.42
Paving of Deep Water Pad	Excavators	0	8.00	158	0.38

EEC ORIGINAL PKG

Development of shallow Groundwater Wells	Cranes	0	7.00	231	0.29
Development of shallow Groundwater Wells	Forklifts	1	8.00	89	0.20
Development of shallow Groundwater Wells	Generator Sets	1	8.00	84	0.74
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Pavers	0	8.00	130	0.42
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Rollers	0	8.00	80	0.38
Paving of Deep Water Pad	Paving Equipment	0	8.00	132	0.36
Paving of Deep Water Pad	Rubber Tired Dozers	0	8.00	247	0.40
Development of shallow Groundwater Wells	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving of Deep Water Pad	Graders	0	8.00	187	0.41
Paving of Deep Water Pad	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Paving Equipment	0	8.00	132	0.36
Development of Deep Water Well	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Development of Deep Water Well	Rubber Tired Dozers	0	8.00	247	0.40
Paving of Deep Water Pad	Scrapers	0	8.00	367	0.48
Development of shallow Groundwater Wells	Welders	0	8.00	46	0.45
Paving of Deep Water Pad	Rollers	0	8.00	80	0.38
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Rubber Tired Dozers	1	8.00	247	0.40
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Scrapers	0	8.00	367	0.48
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Development of Deep Water Well	Bore/Drill Rigs	1	8.00	221	0.50
Development of Deep Water Well	Off-Highway Trucks	1	8.00	402	0.38
Development of Deep Water Well	Forklifts	1	8.00	89	0.20
Development of Deep Water Well	Other Construction Equipment	1	6.00	172	0.42
Development of Deep Water Well	Generator Sets	1	6.00	84	0.74
Paving of Deep Water Pad	Rubber Tired Dozers	1	8.00	247	0.40

Development of shallow Groundwater Wells	Bore/Drill Rigs	1	8.00	221	0.50
Development of shallow Groundwater Wells	Off-Highway Trucks	2	6.00	402	0.38
Development of shallow Groundwater Wells	Other Construction Equipment	1	6.00	172	0.42

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Development of Deep Water Well	6	4.00	0.00	0.00	10.20	11.90	5.00	LD_Mix	HDT_Mix	HHDT
Paving of Deep Water Pad	2	4.00	0.00	0.00	10.20	11.90	5.00	LD_Mix	HDT_Mix	HHDT
Development of shallow Groundwater	8	4.00	0.00	0.00	10.20	11.90	5.00	LD_Mix	HDT_Mix	HHDT
Scarifying, Instillation of Water Storage Tank	3	8.00	0.00	0.00	10.20	11.90	5.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Development of Deep Water Well - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7636	17.0214	14.9113	0.0368		0.7778	0.7778		0.7256	0.7256		3,555.6856	3,555.6856	1.0227		3,581.2531
Total	**1.7636**	**17.0214**	**14.9113**	**0.0368**		**0.7778**	**0.7778**		**0.7256**	**0.7256**		**3,555.6856**	**3,555.6856**	**1.0227**		**3,581.2531**

3.2 Development of Deep Water Well - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0264	0.0220	0.1773	2.6000e-004	6.0328	1.9000e-004	6.0330	0.6067	1.8000e-004	0.6069		25.2929	25.2929	1.8800e-003		25.3398
Total	**0.0264**	**0.0220**	**0.1773**	**2.6000e-004**	**6.0328**	**1.9000e-004**	**6.0330**	**0.6067**	**1.8000e-004**	**0.6069**		**25.2929**	**25.2929**	**1.8800e-003**		**25.3398**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7636	17.0214	14.9113	0.0368		0.7778	0.7778		0.7256	0.7256	0.0000	3,555.685 6	3,555.685 6	1.0227		3,581.253 1
Total	**1.7636**	**17.0214**	**14.9113**	**0.0368**		**0.7778**	**0.7778**		**0.7256**	**0.7256**	**0.0000**	**3,555.685 6**	**3,555.685 6**	**1.0227**		**3,581.253 1**

3.2 Development of Deep Water Well - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0264	0.0220	0.1773	2.6000e-004	6.0328	1.9000e-004	6.0330	0.6067	1.8000e-004	0.6069		25.2929	25.2929	1.8800e-003		25.3398
Total	**0.0264**	**0.0220**	**0.1773**	**2.6000e-004**	**6.0328**	**1.9000e-004**	**6.0330**	**0.6067**	**1.8000e-004**	**0.6069**		**25.2929**	**25.2929**	**1.8800e-003**		**25.3398**

3.3 Paving of Deep Water Pad - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2803	13.4374	6.8951	0.0131		0.6516	0.6516		0.5995	0.5995		1,272.6917	1,272.6917	0.4116		1,282.9820
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2803**	**13.4374**	**6.8951**	**0.0131**		**0.6516**	**0.6516**		**0.5995**	**0.5995**		**1,272.6917**	**1,272.6917**	**0.4116**		**1,282.9820**

3.3 Paving of Deep Water Pad - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0264	0.0220	0.1773	2.6000e-004	6.0328	1.9000e-004	6.0330	0.6067	1.8000e-004	0.6069		25.2929	25.2929	1.8800e-003		25.3398
Total	**0.0264**	**0.0220**	**0.1773**	**2.6000e-004**	**6.0328**	**1.9000e-004**	**6.0330**	**0.6067**	**1.8000e-004**	**0.6069**		**25.2929**	**25.2929**	**1.8800e-003**		**25.3398**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.2803	13.4374	6.8951	0.0131		0.6516	0.6516		0.5995	0.5995	0.0000	1,272.6917	1,272.6917	0.4116		1,282.9820
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.2803**	**13.4374**	**6.8951**	**0.0131**		**0.6516**	**0.6516**		**0.5995**	**0.5995**	**0.0000**	**1,272.6917**	**1,272.6917**	**0.4116**		**1,282.9820**

3.3 Paving of Deep Water Pad - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0264	0.0220	0.1773	2.6000e-004	6.0328	1.9000e-004	6.0330	0.6067	1.8000e-004	0.6069		25.2929	25.2929	1.8800e-003		25.3398
Total	**0.0264**	**0.0220**	**0.1773**	**2.6000e-004**	**6.0328**	**1.9000e-004**	**6.0330**	**0.6067**	**1.8000e-004**	**0.6069**		**25.2929**	**25.2929**	**1.8800e-003**		**25.3398**

3.4 Development of shallow Groundwater Wells - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Off-Road	2.2929	21.8305	19.2965	0.0474		0.9982	0.9982		0.9318	0.9318		4,571.4643	4,571.4643	1.3088		4,604.1842
Total	**2.2929**	**21.8305**	**19.2965**	**0.0474**		**0.9982**	**0.9982**		**0.9318**	**0.9318**		**4,571.4643**	**4,571.4643**	**1.3088**		**4,604.1842**

3.4 Development of shallow Groundwater Wells - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0264	0.0220	0.1773	2.6000e-004	6.0328	1.9000e-004	6.0330	0.6067	1.8000e-004	0.6069		25.2929	25.2929	1.8800e-003		25.3398
Total	**0.0264**	**0.0220**	**0.1773**	**2.6000e-004**	**6.0328**	**1.9000e-004**	**6.0330**	**0.6067**	**1.8000e-004**	**0.6069**		**25.2929**	**25.2929**	**1.8800e-003**		**25.3398**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	2.2929	21.8305	19.2965	0.0474		0.9982	0.9982		0.9318	0.9318	0.0000	4,571.4643	4,571.4643	1.3088		4,604.1842
Total	**2.2929**	**21.8305**	**19.2965**	**0.0474**		**0.9982**	**0.9982**		**0.9318**	**0.9318**	**0.0000**	**4,571.4643**	**4,571.4643**	**1.3088**		**4,604.1842**

3.4 Development of shallow Groundwater Wells - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0264	0.0220	0.1773	2.6000e-004	6.0328	1.9000e-004	6.0330	0.6067	1.8000e-004	0.6069		25.2929	25.2929	1.8800e-003		25.3398
Total	**0.0264**	**0.0220**	**0.1773**	**2.6000e-004**	**6.0328**	**1.9000e-004**	**6.0330**	**0.6067**	**1.8000e-004**	**0.6069**		**25.2929**	**25.2929**	**1.8800e-003**		**25.3398**

3.5 Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.0454	0.0000	9.0454	3.6528	0.0000	3.6528			0.0000			0.0000
Off-Road	2.0612	22.5833	12.5857	0.0245		1.0555	1.0555		0.9710	0.9710		2,371.7365	2,371.7365	0.7671		2,390.9132
Total	**2.0612**	**22.5833**	**12.5857**	**0.0245**	**9.0454**	**1.0555**	**10.1008**	**3.6528**	**0.9710**	**4.6239**		**2,371.7365**	**2,371.7365**	**0.7671**		**2,390.9132**

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3.5 Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0528	0.0440	0.3546	5.1000e-004	12.0656	3.9000e-004	12.0660	1.2135	3.5000e-004	1.2138		50.5858	50.5858	3.7500e-003		50.6796
Total	**0.0528**	**0.0440**	**0.3546**	**5.1000e-004**	**12.0656**	**3.9000e-004**	**12.0660**	**1.2135**	**3.5000e-004**	**1.2138**		**50.5858**	**50.5858**	**3.7500e-003**		**50.6796**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.0454	0.0000	9.0454	3.6528	0.0000	3.6528			0.0000			0.0000
Off-Road	2.0612	22.5833	12.5857	0.0245		1.0555	1.0555		0.9710	0.9710	0.0000	2,371.7365	2,371.7365	0.7671		2,390.9132
Total	**2.0612**	**22.5833**	**12.5857**	**0.0245**	**9.0454**	**1.0555**	**10.1008**	**3.6528**	**0.9710**	**4.6239**	**0.0000**	**2,371.7365**	**2,371.7365**	**0.7671**		**2,390.9132**

EEC ORIGINAL PKG

3.5 Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0528	0.0440	0.3546	5.1000e-004	12.0656	3.9000e-004	12.0660	1.2135	3.5000e-004	1.2138		50.5858	50.5858	3.7500e-003		50.6796
Total	**0.0528**	**0.0440**	**0.3546**	**5.1000e-004**	**12.0656**	**3.9000e-004**	**12.0660**	**1.2135**	**3.5000e-004**	**1.2138**		**50.5858**	**50.5858**	**3.7500e-003**		**50.6796**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.40	9.50	11.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.519925	0.031155	0.160764	0.115847	0.015498	0.004819	0.018987	0.121625	0.003553	0.001235	0.005240	0.000729	0.000624

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.5979	3.0000e-005	2.9900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.4100e-003	6.4100e-003	2.0000e-005		6.8300e-003
Unmitigated	0.5979	3.0000e-005	2.9900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.4100e-003	6.4100e-003	2.0000e-005		6.8300e-003

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6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1458					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4518					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.8000e-004	3.0000e-005	2.9900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.4100e-003	6.4100e-003	2.0000e-005		6.8300e-003
Total	**0.5979**	**3.0000e-005**	**2.9900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**6.4100e-003**	**6.4100e-003**	**2.0000e-005**		**6.8300e-003**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1458					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.4518					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	2.8000e-004	3.0000e-005	2.9900e-003	0.0000		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005		6.4100e-003	6.4100e-003	2.0000e-005		6.8300e-003
Total	**0.5979**	**3.0000e-005**	**2.9900e-003**	**0.0000**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**6.4100e-003**	**6.4100e-003**	**2.0000e-005**		**6.8300e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EEC ORIGINAL PKG

Clubhouse- Vegetation Plots, Surface Roughening & Acess Roads

Imperial County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	1,001.50	1000sqft	22.99	1,001,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	12
Climate Zone	15			**Operational Year**	2023
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	1270.9	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot area derived from information provided in the project description and accounts for irrigation instilation, surface roughening and access road construction.

Construction Phase - Phase name and timing updated to match inforamtion provided in the project description.

Off-road Equipment - Equioment updated based off information provided in the project description.

Off-road Equipment - Equipment updated per information provided in the project description.

Off-road Equipment - Construction equipment updated per information provided by the project description. "Other construction equipment" modeled for use of a water truck.

On-road Fugitive Dust - AQ-AM-1 BMP: Use paved roads to access the construcion site wehn possible.

Road Dust - AQ-AM-1 BMP: Use paved roads to access the construcion site wehn possible.

Construction Off-road Equipment Mitigation -

EEC ORIGINAL PKG

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	10
tblConstructionPhase	NumDays	35.00	20.00
tblConstructionPhase	NumDays	35.00	15.00
tblConstructionPhase	PhaseEndDate	11/9/2022	4/30/2021
tblConstructionPhase	PhaseEndDate	4/14/2021	4/2/2021
tblConstructionPhase	PhaseEndDate	2/24/2021	3/12/2021
tblConstructionPhase	PhaseStartDate	10/13/2022	4/3/2021
tblConstructionPhase	PhaseStartDate	2/25/2021	3/13/2021
tblConstructionPhase	PhaseStartDate	2/11/2021	2/1/2021
tblGrading	AcresOfGrading	0.00	87.50
tblGrading	AcresOfGrading	10.00	50.00
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	VendorPercentPave	50.00	90.00
tblOnRoadDust	VendorPercentPave	50.00	90.00
tblOnRoadDust	VendorPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	50	90
tblTripsAndVMT	VendorTripLength	11.90	8.90
tblTripsAndVMT	VendorTripLength	11.90	8.90
tblTripsAndVMT	VendorTripLength	11.90	8.90
tblTripsAndVMT	WorkerTripLength	10.20	7.30
tblTripsAndVMT	WorkerTripLength	10.20	7.30
tblTripsAndVMT	WorkerTripLength	10.20	7.30
tblVehicleTrips	CC_TL	9.50	5.00
tblVehicleTrips	CNW_TL	11.90	8.90
tblVehicleTrips	CW_TL	16.40	6.70

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.9276	21.0905	13.4496	0.0266	17.3085	0.9664	18.1706	4.4650	0.8891	5.2581	0.0000	2,579.3335	2,579.3335	0.8173	0.0000	2,599.7661
Maximum	**1.9276**	**21.0905**	**13.4496**	**0.0266**	**17.3085**	**0.9664**	**18.1706**	**4.4650**	**0.8891**	**5.2581**	**0.0000**	**2,579.3335**	**2,579.3335**	**0.8173**	**0.0000**	**2,599.7661**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	1.9276	21.0905	13.4496	0.0266	13.0099	0.9664	13.8719	4.0351	0.8891	4.8282	0.0000	2,579.3335	2,579.3335	0.8173	0.0000	2,599.7661
Maximum	**1.9276**	**21.0905**	**13.4496**	**0.0266**	**13.0099**	**0.9664**	**13.8719**	**4.0351**	**0.8891**	**4.8282**	**0.0000**	**2,579.3335**	**2,579.3335**	**0.8173**	**0.0000**	**2,599.7661**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**24.84**	**0.00**	**23.66**	**9.63**	**0.00**	**8.18**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

EEC ORIGINAL PKG

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.4787	9.3000e-004	0.1022	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2192	0.2192	5.7000e-004		0.2336
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.4787**	**9.3000e-004**	**0.1022**	**1.0000e-005**	**0.0000**	**3.6000e-004**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**3.6000e-004**		**0.2192**	**0.2192**	**5.7000e-004**	**0.0000**	**0.2336**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.4787	9.3000e-004	0.1022	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2192	0.2192	5.7000e-004		0.2336
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Total	**0.4787**	**9.3000e-004**	**0.1022**	**1.0000e-005**	**0.0000**	**3.6000e-004**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**3.6000e-004**		**0.2192**	**0.2192**	**5.7000e-004**	**0.0000**	**0.2336**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Vegetation Plot- Conveyance line & Irrigation Instillation	Trenching	2/1/2021	3/12/2021	5	30	
2	Surface Roughening	Grading	3/13/2021	4/2/2021	5	15	
3	Access Road Development	Grading	4/3/2021	4/30/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 22.99

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

EEC ORIGINAL PKG

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Access Road Development	Air Compressors	0	6.00	78	0.48
Access Road Development	Excavators	0	8.00	158	0.38
Access Road Development	Graders	1	8.00	187	0.41
Surface Roughening	Excavators	0	8.00	158	0.38
Access Road Development	Rubber Tired Dozers	1	8.00	247	0.40
Access Road Development	Scrapers	0	8.00	367	0.48
Access Road Development	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Vegetation Plot- Conveyance line & Irrigation Instillation	Graders	2	8.00	187	0.41
Vegetation Plot- Conveyance line & Irrigation Instillation	Trenchers	1	8.00	78	0.50
Access Road Development	Other Construction Equipment	1	5.00	172	0.42
Surface Roughening	Rubber Tired Dozers	0	8.00	247	0.40
Surface Roughening	Graders	0	8.00	187	0.41
Surface Roughening	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Vegetation Plot- Conveyance line & Irrigation Instillation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Vegetation Plot- Conveyance line & Irrigation Instillation	Rubber Tired Dozers	0	8.00	247	0.40
Surface Roughening	Scrapers	0	8.00	367	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Vegetation Plot- Conveyance line & Irri	6	15.00	0.00	0.00	7.30	8.90	20.00	LD_Mix	HDT_Mix	HHDT
Surface Roughening	2	5.00	0.00	0.00	7.30	8.90	20.00	LD_Mix	HDT_Mix	HHDT
Access Road Development	3	8.00	0.00	0.00	7.30	8.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Reduce Vehicle Speed on Unpaved Roads

3.2 Vegetation Plot- Conveyance line & Irrigation Instillation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8493	21.0286	12.9232	0.0259		0.9658	0.9658		0.8885	0.8885		2,510.5564	2,510.5564	0.8120		2,530.8555
Total	**1.8493**	**21.0286**	**12.9232**	**0.0259**		**0.9658**	**0.9658**		**0.8885**	**0.8885**		**2,510.5564**	**2,510.5564**	**0.8120**		**2,530.8555**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0784	0.0619	0.5264	7.0000e-004	16.1910	5.5000e-004	16.1915	1.6284	5.0000e-004	1.6289		68.7771	68.7771	5.3400e-003		68.9106
Total	**0.0784**	**0.0619**	**0.5264**	**7.0000e-004**	**16.1910**	**5.5000e-004**	**16.1915**	**1.6284**	**5.0000e-004**	**1.6289**		**68.7771**	**68.7771**	**5.3400e-003**		**68.9106**

3.2 Vegetation Plot- Conveyance line & Irrigation Instillation - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.8493	21.0286	12.9232	0.0259		0.9658	0.9658		0.8885	0.8885	0.0000	2,510.5564	2,510.5564	0.8120		2,530.8555
Total	**1.8493**	**21.0286**	**12.9232**	**0.0259**		**0.9658**	**0.9658**		**0.8885**	**0.8885**	**0.0000**	**2,510.5564**	**2,510.5564**	**0.8120**		**2,530.8555**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0784	0.0619	0.5264	7.0000e-004	8.1310	5.5000e-004	8.1315	0.8224	5.0000e-004	0.8229		68.7771	68.7771	5.3400e-003		68.9106
Total	**0.0784**	**0.0619**	**0.5264**	**7.0000e-004**	**8.1310**	**5.5000e-004**	**8.1315**	**0.8224**	**5.0000e-004**	**0.8229**		**68.7771**	**68.7771**	**5.3400e-003**		**68.9106**

3.3 Surface Roughening - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1863	0.0000	6.1863	0.6680	0.0000	0.6680			0.0000			0.0000
Off-Road	0.3746	3.7916	4.5205	6.2100e-003		0.2236	0.2236		0.2057	0.2057		601.8002	601.8002	0.1946		606.6660
Total	**0.3746**	**3.7916**	**4.5205**	**6.2100e-003**	**6.1863**	**0.2236**	**6.4098**	**0.6680**	**0.2057**	**0.8736**		**601.8002**	**601.8002**	**0.1946**		**606.6660**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0261	0.0206	0.1755	2.3000e-004	5.3970	1.8000e-004	5.3972	0.5428	1.7000e-004	0.5430		22.9257	22.9257	1.7800e-003		22.9702
Total	**0.0261**	**0.0206**	**0.1755**	**2.3000e-004**	**5.3970**	**1.8000e-004**	**5.3972**	**0.5428**	**1.7000e-004**	**0.5430**		**22.9257**	**22.9257**	**1.7800e-003**		**22.9702**

3.3 Surface Roughening - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.1863	0.0000	6.1863	0.6680	0.0000	0.6680			0.0000			0.0000
Off-Road	0.3746	3.7916	4.5205	6.2100e-003		0.2236	0.2236		0.2057	0.2057	0.0000	601.8002	601.8002	0.1946		606.6660
Total	**0.3746**	**3.7916**	**4.5205**	**6.2100e-003**	**6.1863**	**0.2236**	**6.4098**	**0.6680**	**0.2057**	**0.8736**	**0.0000**	**601.8002**	**601.8002**	**0.1946**		**606.6660**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0261	0.0206	0.1755	2.3000e-004	2.7103	1.8000e-004	2.7105	0.2741	1.7000e-004	0.2743		22.9257	22.9257	1.7800e-003		22.9702
Total	**0.0261**	**0.0206**	**0.1755**	**2.3000e-004**	**2.7103**	**1.8000e-004**	**2.7105**	**0.2741**	**1.7000e-004**	**0.2743**		**22.9257**	**22.9257**	**1.7800e-003**		**22.9702**

3.4 Access Road Development - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	1.7589	19.6040	8.3117	0.0190		0.8618	0.8618		0.7928	0.7928		1,839.0171	1,839.0171	0.5948		1,853.8864
Total	**1.7589**	**19.6040**	**8.3117**	**0.0190**	**8.6733**	**0.8618**	**9.5351**	**3.5965**	**0.7928**	**4.3893**		**1,839.0171**	**1,839.0171**	**0.5948**		**1,853.8864**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0418	0.0330	0.2807	3.7000e-004	8.6352	2.9000e-004	8.6355	0.8685	2.7000e-004	0.8688		36.6811	36.6811	2.8500e-003		36.7523
Total	**0.0418**	**0.0330**	**0.2807**	**3.7000e-004**	**8.6352**	**2.9000e-004**	**8.6355**	**0.8685**	**2.7000e-004**	**0.8688**		**36.6811**	**36.6811**	**2.8500e-003**		**36.7523**

EEC ORIGINAL PKG

3.4 Access Road Development - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.6733	0.0000	8.6733	3.5965	0.0000	3.5965			0.0000			0.0000
Off-Road	1.7589	19.6040	8.3117	0.0190		0.8618	0.8618		0.7928	0.7928	0.0000	1,839.0171	1,839.0171	0.5948		1,853.8864
Total	**1.7589**	**19.6040**	**8.3117**	**0.0190**	**8.6733**	**0.8618**	**9.5351**	**3.5965**	**0.7928**	**4.3893**	**0.0000**	**1,839.0171**	**1,839.0171**	**0.5948**		**1,853.8864**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0418	0.0330	0.2807	3.7000e-004	4.3365	2.9000e-004	4.3368	0.4386	2.7000e-004	0.4389		36.6811	36.6811	2.8500e-003		36.7523
Total	**0.0418**	**0.0330**	**0.2807**	**3.7000e-004**	**4.3365**	**2.9000e-004**	**4.3368**	**0.4386**	**2.7000e-004**	**0.4389**		**36.6811**	**36.6811**	**2.8500e-003**		**36.7523**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	6.70	5.00	8.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.519925	0.031155	0.160764	0.115847	0.015498	0.004819	0.018987	0.121625	0.003553	0.001235	0.005240	0.000729	0.000624

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.4787	9.3000e-004	0.1022	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2192	0.2192	5.7000e-004		0.2336
Unmitigated	0.4787	9.3000e-004	0.1022	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2192	0.2192	5.7000e-004		0.2336

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3547					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.4700e-003	9.3000e-004	0.1022	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2192	0.2192	5.7000e-004		0.2336
Total	**0.4787**	**9.3000e-004**	**0.1022**	**1.0000e-005**		**3.6000e-004**	**3.6000e-004**		**3.6000e-004**	**3.6000e-004**		**0.2192**	**0.2192**	**5.7000e-004**		**0.2336**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.1145					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.3547					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	9.4700e-003	9.3000e-004	0.1022	1.0000e-005		3.6000e-004	3.6000e-004		3.6000e-004	3.6000e-004		0.2192	0.2192	5.7000e-004		0.2336
Total	**0.4787**	**9.3000e-004**	**0.1022**	**1.0000e-005**		**3.6000e-004**	**3.6000e-004**		**3.6000e-004**	**3.6000e-004**		**0.2192**	**0.2192**	**5.7000e-004**		**0.2336**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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Clubhouse Operations

Imperial County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	128.71	Acre	128.71	5,606,607.60	0
Unrefrigerated Warehouse-No Rail	0.10	1000sqft	0.00	100.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	12
Climate Zone	15			**Operational Year**	2023
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	1270.9	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics -

Land Use - Industrial warehouse is modeled to generate trips to the project site. It is noted that no structures are resulting from project

. Construction Phase - Model run done for project Operations.

Off-road Equipment - Model run done for project Operations.

Trips and VMT - Model run done for project

.

Road Dust - Roads surrounding the site are paved.

Energy Use - Project will not result in the development of any structures.

Water And Wastewater - Project will not result in the development of any structures

Solid Waste - Project will not result in the development of any structures

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	220.00	0.00
tblConstructionPhase	PhaseEndDate	1/7/2037	3/5/2036
tblEnergyUse	LightingElect	1.17	0.00
tblEnergyUse	NT24E	0.82	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	0.37	0.00
tblEnergyUse	T24NG	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblRoadDust	RoadPercentPave	50	70
tblSolidWaste	SolidWasteGenerationRate	0.09	0.00
tblTripsAndVMT	WorkerTripNumber	471.00	0.00
tblVehicleTrips	ST_TR	1.68	10.00
tblVehicleTrips	SU_TR	1.68	10.00
tblVehicleTrips	WD_TR	1.68	10.00
tblWater	AerobicPercent	87.46	0.00

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tblWater	AerobicPercent	87.46	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	Imperial County, Winter 1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	23,125.00	0.00
tblWater	SepticTankPercent	10.33	100.00
tblWater	SepticTankPercent	10.33	100.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

Imperial County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2036	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2036	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

Imperial County, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.6304	1.2000e-004	0.0132	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0282	0.0282	7.0000e-005		0.0300
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.3900e-003	0.0172	0.0287	8.0000e-005	1.5876	4.0000e-005	1.5877	0.1588	4.0000e-005	0.1589		8.6377	8.6377	5.8000e-004		8.6521
Total	**0.6328**	**0.0173**	**0.0419**	**8.0000e-005**	**1.5876**	**9.0000e-005**	**1.5877**	**0.1588**	**9.0000e-005**	**0.1589**		**8.6659**	**8.6659**	**6.5000e-004**	**0.0000**	**8.6822**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.6304	1.2000e-004	0.0132	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0282	0.0282	7.0000e-005		0.0300
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	2.3900e-003	0.0172	0.0287	8.0000e-005	1.5876	4.0000e-005	1.5877	0.1588	4.0000e-005	0.1589		8.6377	8.6377	5.8000e-004		8.6521
Total	**0.6328**	**0.0173**	**0.0419**	**8.0000e-005**	**1.5876**	**9.0000e-005**	**1.5877**	**0.1588**	**9.0000e-005**	**0.1589**		**8.6659**	**8.6659**	**6.5000e-004**	**0.0000**	**8.6822**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	3/6/2036	3/5/2036	5	0	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 128.71

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 150; Non-Residential Outdoor: 50; Striped Parking Area: 336,396 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	7.30	8.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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3.2 Architectural Coating - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						lb/day							lb/day			
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

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4.1 Mitigation Measures Mobile

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	lb/day										lb/day					
Mitigated	2.3900e-003	0.0172	0.0287	8.0000e-005	1.5876	4.0000e-005	1.5877	0.1588	4.0000e-005	0.1589		8.6377	8.6377	5.8000e-004		8.6521
Unmitigated	2.3900e-003	0.0172	0.0287	8.0000e-005	1.5876	4.0000e-005	1.5877	0.1588	4.0000e-005	0.1589		8.6377	8.6377	5.8000e-004		8.6521

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	1.00	1.00	1.00	2,581	2,581
Total	1.00	1.00	1.00	2,581	2,581

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	6.70	5.00	8.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	6.70	5.00	8.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.519925	0.031155	0.160764	0.115847	0.015498	0.004819	0.018987	0.121625	0.003553	0.001235	0.005240	0.000729	0.000624
Unrefrigerated Warehouse-No Rail	0.519925	0.031155	0.160764	0.115847	0.015498	0.004819	0.018987	0.121625	0.003553	0.001235	0.005240	0.000729	0.000624

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.6304	1.2000e-004	0.0132	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0282	0.0282	7.0000e-005		0.0300
Unmitigated	2.6304	1.2000e-004	0.0132	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0282	0.0282	7.0000e-005		0.0300

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6412					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.9880					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2200e-003	1.2000e-004	0.0132	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0282	0.0282	7.0000e-005		0.0300
Total	**2.6304**	**1.2000e-004**	**0.0132**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0282**	**0.0282**	**7.0000e-005**		**0.0300**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.6412					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	1.9880					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.2200e-003	1.2000e-004	0.0132	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005		0.0282	0.0282	7.0000e-005		0.0300
Total	**2.6304**	**1.2000e-004**	**0.0132**	**0.0000**		**5.0000e-005**	**5.0000e-005**		**5.0000e-005**	**5.0000e-005**		**0.0282**	**0.0282**	**7.0000e-005**		**0.0300**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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Clubhouse- Vegetation Plots, Surface Roughening & Acess Roads

Imperial County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	1,001.50	1000sqft	22.99	1,001,500.00	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	12
Climate Zone	15			**Operational Year**	2023
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	1270.9	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

Project Characteristics -

Land Use - Lot area derived from information provided in the project description and accounts for irrigation instilation, surface roughening and access road construction.

Construction Phase - Phase name and timing updated to match inforamtion provided in the project description.

Off-road Equipment - Equioment updated based off information provided in the project description.

Off-road Equipment - Equipment updated per information provided in the project description.

Off-road Equipment - Construction equipment updated per information provided by the project description. "Other construction equipment" modeled for use of a water truck.

On-road Fugitive Dust - AQ-AM-1 BMP: Use paved roads to access the construcion site wehn possible.

Road Dust - AQ-AM-1 BMP: Use paved roads to access the construcion site wehn possible.

Construction Off-road Equipment Mitigation -

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Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	10
tblConstructionPhase	NumDays	35.00	20.00
tblConstructionPhase	NumDays	35.00	15.00
tblConstructionPhase	PhaseEndDate	11/9/2022	4/30/2021
tblConstructionPhase	PhaseEndDate	4/14/2021	4/2/2021
tblConstructionPhase	PhaseEndDate	2/24/2021	3/12/2021
tblConstructionPhase	PhaseStartDate	10/13/2022	4/3/2021
tblConstructionPhase	PhaseStartDate	2/25/2021	3/13/2021
tblConstructionPhase	PhaseStartDate	2/11/2021	2/1/2021
tblGrading	AcresOfGrading	0.00	87.50
tblGrading	AcresOfGrading	10.00	50.00
tblOffRoadEquipment	LoadFactor	0.41	0.41
tblOffRoadEquipment	LoadFactor	0.50	0.50
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	OffRoadEquipmentType		Graders
tblOffRoadEquipment	OffRoadEquipmentType		Trenchers
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00

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tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	VendorPercentPave	50.00	90.00
tblOnRoadDust	VendorPercentPave	50.00	90.00
tblOnRoadDust	VendorPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	50	90
tblTripsAndVMT	VendorTripLength	11.90	8.90
tblTripsAndVMT	VendorTripLength	11.90	8.90
tblTripsAndVMT	VendorTripLength	11.90	8.90
tblTripsAndVMT	WorkerTripLength	10.20	7.30
tblTripsAndVMT	WorkerTripLength	10.20	7.30
tblTripsAndVMT	WorkerTripLength	10.20	7.30
tblVehicleTrips	CC_TL	9.50	5.00
tblVehicleTrips	CNW_TL	11.90	8.90
tblVehicleTrips	CW_TL	16.40	6.70

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0500	0.5413	0.3239	6.4000e-004	0.4907	0.0248	0.5155	0.0770	0.0228	0.0998	0.0000	56.4783	56.4783	0.0179	0.0000	56.9255
Maximum	**0.0500**	**0.5413**	**0.3239**	**6.4000e-004**	**0.4907**	**0.0248**	**0.5155**	**0.0770**	**0.0228**	**0.0998**	**0.0000**	**56.4783**	**56.4783**	**0.0179**	**0.0000**	**56.9255**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0500	0.5413	0.3239	6.4000e-004	0.3127	0.0248	0.3375	0.0592	0.0228	0.0820	0.0000	56.4782	56.4782	0.0179	0.0000	56.9254
Maximum	**0.0500**	**0.5413**	**0.3239**	**6.4000e-004**	**0.3127**	**0.0248**	**0.3375**	**0.0592**	**0.0228**	**0.0820**	**0.0000**	**56.4782**	**56.4782**	**0.0179**	**0.0000**	**56.9254**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**36.27**	**0.00**	**34.53**	**23.13**	**0.00**	**17.84**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	1-14-2021	4-13-2021	0.4447	0.4447
2	4-14-2021	7-13-2021	0.1302	0.1302
		Highest	0.4447	0.4447

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0865	8.0000e-005	9.2000e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0179	0.0179	5.0000e-005	0.0000	0.0191
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0865**	**8.0000e-005**	**9.2000e-003**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0179**	**0.0179**	**5.0000e-005**	**0.0000**	**0.0191**

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2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0865	8.0000e-005	9.2000e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0179	0.0179	5.0000e-005	0.0000	0.0191
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0865**	**8.0000e-005**	**9.2000e-003**	**0.0000**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0179**	**0.0179**	**5.0000e-005**	**0.0000**	**0.0191**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Vegetation Plot- Conveyance line & Irrigation Instillation	Trenching	2/1/2021	3/12/2021	5	30	
2	Surface Roughening	Grading	3/13/2021	4/2/2021	5	15	
3	Access Road Development	Grading	4/3/2021	4/30/2021	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 22.99

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

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Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Access Road Development	Air Compressors	0	6.00	78	0.48
Access Road Development	Excavators	0	8.00	158	0.38
Access Road Development	Graders	1	8.00	187	0.41
Surface Roughening	Excavators	0	8.00	158	0.38
Access Road Development	Rubber Tired Dozers	1	8.00	247	0.40
Access Road Development	Scrapers	0	8.00	367	0.48
Access Road Development	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Vegetation Plot- Conveyance line & Irrigation Instillation	Graders	2	8.00	187	0.41
Vegetation Plot- Conveyance line & Irrigation Instillation	Trenchers	1	8.00	78	0.50
Access Road Development	Other Construction Equipment	1	5.00	172	0.42
Surface Roughening	Rubber Tired Dozers	0	8.00	247	0.40
Surface Roughening	Graders	0	8.00	187	0.41
Surface Roughening	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Vegetation Plot- Conveyance line & Irrigation Instillation	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Vegetation Plot- Conveyance line & Irrigation Instillation	Rubber Tired Dozers	0	8.00	247	0.40
Surface Roughening	Scrapers	0	8.00	367	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Vegetation Plot- Conveyance line & Irri	6	15.00	0.00	0.00	7.30	8.90	20.00	LD_Mix	HDT_Mix	HHDT
Surface Roughening	2	5.00	0.00	0.00	7.30	8.90	20.00	LD_Mix	HDT_Mix	HHDT
Access Road Development	3	8.00	0.00	0.00	7.30	8.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

EEC ORIGINAL PKG

Reduce Vehicle Speed on Unpaved Roads

3.2 Vegetation Plot- Conveyance line & Irrigation Instillation - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0277	0.3154	0.1939	3.9000e-004		0.0145	0.0145		0.0133	0.0133	0.0000	34.1631	34.1631	0.0111	0.0000	34.4393
Total	**0.0277**	**0.3154**	**0.1939**	**3.9000e-004**		**0.0145**	**0.0145**		**0.0133**	**0.0133**	**0.0000**	**34.1631**	**34.1631**	**0.0111**	**0.0000**	**34.4393**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	9.1000e-004	8.5400e-003	1.0000e-005	0.2349	1.0000e-005	0.2349	0.0236	1.0000e-005	0.0236	0.0000	1.0099	1.0099	8.0000e-005	0.0000	1.0119
Total	**1.2200e-003**	**9.1000e-004**	**8.5400e-003**	**1.0000e-005**	**0.2349**	**1.0000e-005**	**0.2349**	**0.0236**	**1.0000e-005**	**0.0236**	**0.0000**	**1.0099**	**1.0099**	**8.0000e-005**	**0.0000**	**1.0119**

3.2 Vegetation Plot- Conveyance line & Irrigation Instillation - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0277	0.3154	0.1939	3.9000e-004		0.0145	0.0145		0.0133	0.0133	0.0000	34.1630	34.1630	0.0111	0.0000	34.4393
Total	**0.0277**	**0.3154**	**0.1939**	**3.9000e-004**		**0.0145**	**0.0145**		**0.0133**	**0.0133**	**0.0000**	**34.1630**	**34.1630**	**0.0111**	**0.0000**	**34.4393**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2200e-003	9.1000e-004	8.5400e-003	1.0000e-005	0.1180	1.0000e-005	0.1180	0.0119	1.0000e-005	0.0120	0.0000	1.0099	1.0099	8.0000e-005	0.0000	1.0119
Total	**1.2200e-003**	**9.1000e-004**	**8.5400e-003**	**1.0000e-005**	**0.1180**	**1.0000e-005**	**0.1180**	**0.0119**	**1.0000e-005**	**0.0120**	**0.0000**	**1.0099**	**1.0099**	**8.0000e-005**	**0.0000**	**1.0119**

3.3 Surface Roughening - 2021

Unmitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					0.0464	0.0000	0.0464	5.0100e-003	0.0000	5.0100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8100e-003	0.0284	0.0339	5.0000e-005		1.6800e-003	1.6800e-003		1.5400e-003	1.5400e-003	0.0000	4.0946	4.0946	1.3200e-003	0.0000	4.1277
Total	**2.8100e-003**	**0.0284**	**0.0339**	**5.0000e-005**	**0.0464**	**1.6800e-003**	**0.0481**	**5.0100e-003**	**1.5400e-003**	**6.5500e-003**	**0.0000**	**4.0946**	**4.0946**	**1.3200e-003**	**0.0000**	**4.1277**

Unmitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.5000e-004	1.4200e-003	0.0000	0.0392	0.0000	0.0392	3.9400e-003	0.0000	3.9400e-003	0.0000	0.1683	0.1683	1.0000e-005	0.0000	0.1687
Total	**2.0000e-004**	**1.5000e-004**	**1.4200e-003**	**0.0000**	**0.0392**	**0.0000**	**0.0392**	**3.9400e-003**	**0.0000**	**3.9400e-003**	**0.0000**	**0.1683**	**0.1683**	**1.0000e-005**	**0.0000**	**0.1687**

3.3 Surface Roughening - 2021

Mitigated Construction On-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Fugitive Dust					0.0464	0.0000	0.0464	5.0100e-003	0.0000	5.0100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8100e-003	0.0284	0.0339	5.0000e-005		1.6800e-003	1.6800e-003		1.5400e-003	1.5400e-003	0.0000	4.0946	4.0946	1.3200e-003	0.0000	4.1277
Total	**2.8100e-003**	**0.0284**	**0.0339**	**5.0000e-005**	**0.0464**	**1.6800e-003**	**0.0481**	**5.0100e-003**	**1.5400e-003**	**6.5500e-003**	**0.0000**	**4.0946**	**4.0946**	**1.3200e-003**	**0.0000**	**4.1277**

Mitigated Construction Off-Site

Category	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-004	1.5000e-004	1.4200e-003	0.0000	0.0197	0.0000	0.0197	1.9900e-003	0.0000	1.9900e-003	0.0000	0.1683	0.1683	1.0000e-005	0.0000	0.1687
Total	**2.0000e-004**	**1.5000e-004**	**1.4200e-003**	**0.0000**	**0.0197**	**0.0000**	**0.0197**	**1.9900e-003**	**0.0000**	**1.9900e-003**	**0.0000**	**0.1683**	**0.1683**	**1.0000e-005**	**0.0000**	**0.1687**

3.4 Access Road Development - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0867	0.0000	0.0867	0.0360	0.0000	0.0360	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0176	0.1960	0.0831	1.9000e-004		8.6200e-003	8.6200e-003		7.9300e-003	7.9300e-003	0.0000	16.6833	16.6833	5.4000e-003	0.0000	16.8182
Total	**0.0176**	**0.1960**	**0.0831**	**1.9000e-004**	**0.0867**	**8.6200e-003**	**0.0954**	**0.0360**	**7.9300e-003**	**0.0439**	**0.0000**	**16.6833**	**16.6833**	**5.4000e-003**	**0.0000**	**16.8182**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.2000e-004	3.0400e-003	0.0000	0.0835	0.0000	0.0835	8.4000e-003	0.0000	8.4000e-003	0.0000	0.3591	0.3591	3.0000e-005	0.0000	0.3598
Total	**4.3000e-004**	**3.2000e-004**	**3.0400e-003**	**0.0000**	**0.0835**	**0.0000**	**0.0835**	**8.4000e-003**	**0.0000**	**8.4000e-003**	**0.0000**	**0.3591**	**0.3591**	**3.0000e-005**	**0.0000**	**0.3598**

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3.4 Access Road Development - 2021

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0867	0.0000	0.0867	0.0360	0.0000	0.0360	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0176	0.1960	0.0831	1.9000e-004		8.6200e-003	8.6200e-003		7.9300e-003	7.9300e-003	0.0000	16.6833	16.6833	5.4000e-003	0.0000	16.8182
Total	**0.0176**	**0.1960**	**0.0831**	**1.9000e-004**	**0.0867**	**8.6200e-003**	**0.0954**	**0.0360**	**7.9300e-003**	**0.0439**	**0.0000**	**16.6833**	**16.6833**	**5.4000e-003**	**0.0000**	**16.8182**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.2000e-004	3.0400e-003	0.0000	0.0420	0.0000	0.0420	4.2400e-003	0.0000	4.2500e-003	0.0000	0.3591	0.3591	3.0000e-005	0.0000	0.3598
Total	**4.3000e-004**	**3.2000e-004**	**3.0400e-003**	**0.0000**	**0.0420**	**0.0000**	**0.0420**	**4.2400e-003**	**0.0000**	**4.2500e-003**	**0.0000**	**0.3591**	**0.3591**	**3.0000e-005**	**0.0000**	**0.3598**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	6.70	5.00	8.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.519925	0.031155	0.160764	0.115847	0.015498	0.004819	0.018987	0.121625	0.003553	0.001235	0.005240	0.000729	0.000624

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5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category						tons/yr								MT/yr		
Mitigated	0.0865	8.0000e-005	9.2000e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0179	0.0179	5.0000e-005	0.0000	0.0191
Unmitigated	0.0865	8.0000e-005	9.2000e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0179	0.0179	5.0000e-005	0.0000	0.0191

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory						tons/yr								MT/yr		
Architectural Coating	0.0209					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0647					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.5000e-004	8.0000e-005	9.2000e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0179	0.0179	5.0000e-005	0.0000	0.0191
Total	**0.0865**	**8.0000e-005**	**9.2000e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0179**	**0.0179**	**5.0000e-005**	**0.0000**	**0.0191**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0209					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0647					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	8.5000e-004	8.0000e-005	9.2000e-003	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.0179	0.0179	5.0000e-005	0.0000	0.0191
Total	**0.0865**	**8.0000e-005**	**9.2000e-003**	**0.0000**		**3.0000e-005**	**3.0000e-005**		**3.0000e-005**	**3.0000e-005**	**0.0000**	**0.0179**	**0.0179**	**5.0000e-005**	**0.0000**	**0.0191**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

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Clubhouse- Well Development, Solar Pump Instillation & Water Tank Instillation

Imperial County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	29.29	Acre	29.29	1,275,654.60	0

1.2 Other Project Characteristics

Urbanization	Rural	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	12
Climate Zone	15			**Operational Year**	2023
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	1270.9	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

EEC ORIGINAL PKG

Project Characteristics -

Land Use - Lot acreage for groundwater well development, takin installation and scarifying is unknown at this time. For a conservative estimate half of the average of the irrigation area (58.57 acres/2=29.285 acres) was used in this model run as a conservative estimate

Construction Phase - Phase type, timing and duration updated to reflect information found in the project description.

Off-road Equipment - Other construction equipmnet= compressor (ground)

Off-road Equipment - Equipmnet updated to match information in the project description.

Off-road Equipment - Equipment updated to match the Project description. Other construction equipment= ground compressor

Off-road Equipment - Equipment list updated to match the project description.

Grading - Cubic yards of material is calculated based on information provided for the excovation of groundwater wells.

Trips and VMT - Material will not be hauled offsite. It will be redistributed on the project site. Number of emplyess needed per pahse is specified in the project description- assuming 4 for the development of wells.

On-road Fugitive Dust - AQ-AM-1 BMP: Use paved roads to access the construcion site wehn possible.

Road Dust - See previous comment regarding AD-Am-1 BMP

Construction Off-road Equipment Mitigation -

Table Name	Column Name	Default Value	New Value
tblConstDustMitigation	WaterUnpavedRoadMoistureContent	0	0.5
tblConstDustMitigation	WaterUnpavedRoadVehicleSpeed	0	10
tblConstructionPhase	NumDays	35.00	2.00
tblConstructionPhase	NumDays	45.00	35.00
tblConstructionPhase	PhaseEndDate	2/1/2023	5/20/2021
tblConstructionPhase	PhaseEndDate	5/26/2021	5/12/2021
tblConstructionPhase	PhaseEndDate	3/22/2023	7/8/2021
tblConstructionPhase	PhaseEndDate	3/24/2021	5/10/2021
tblConstructionPhase	PhaseStartDate	5/27/2021	5/13/2021
tblConstructionPhase	PhaseStartDate	3/25/2021	5/11/2021
tblConstructionPhase	PhaseStartDate	2/2/2023	5/21/2021
tblConstructionPhase	PhaseStartDate	2/25/2021	5/1/2021

EEC ORIGINAL PKG

tblGrading	AcresOfGrading	17.50	87.50
tblGrading	MaterialExported	0.00	65,379.00
tblGrading	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	LoadFactor	0.40	0.40
tblOffRoadEquipment	LoadFactor	0.42	0.42
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Forklifts
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentType		Generator Sets
tblOffRoadEquipment	OffRoadEquipmentType		Rubber Tired Dozers
tblOffRoadEquipment	OffRoadEquipmentType		Bore/Drill Rigs
tblOffRoadEquipment	OffRoadEquipmentType		Off-Highway Trucks
tblOffRoadEquipment	OffRoadEquipmentType		Other Construction Equipment
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	3.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00

tblOffRoadEquipment	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName		Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName		Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName		Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOffRoadEquipment	PhaseName		Development of Deep Water Well
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	HaulingPercentPave	50.00	90.00
tblOnRoadDust	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps

tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	VendorPercentPave	50.00	100.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblOnRoadDust	WorkerPercentPave	50.00	90.00
tblProjectCharacteristics	UrbanizationLevel	Urban	Rural
tblRoadDust	RoadPercentPave	50	90
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripLength	20.00	5.00
tblTripsAndVMT	HaulingTripNumber	8,172.00	0.00
tblTripsAndVMT	PhaseName	Scarifying & Instillation of Water Storage Tanks	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps
tblTripsAndVMT	WorkerTripNumber	15.00	4.00
tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblTripsAndVMT	WorkerTripNumber	20.00	4.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0507	0.5261	0.3380	7.1000e-004	0.4034	0.0245	0.4278	0.0886	0.0226	0.1112	0.0000	61.9667	61.9667	0.0190	0.0000	62.4411
Maximum	**0.0507**	**0.5261**	**0.3380**	**7.1000e-004**	**0.4034**	**0.0245**	**0.4278**	**0.0886**	**0.0226**	**0.1112**	**0.0000**	**61.9667**	**61.9667**	**0.0190**	**0.0000**	**62.4411**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0507	0.5261	0.3380	7.1000e-004	0.4034	0.0245	0.4278	0.0886	0.0226	0.1112	0.0000	61.9667	61.9667	0.0190	0.0000	62.4410
Maximum	**0.0507**	**0.5261**	**0.3380**	**7.1000e-004**	**0.4034**	**0.0245**	**0.4278**	**0.0886**	**0.0226**	**0.1112**	**0.0000**	**61.9667**	**61.9667**	**0.0190**	**0.0000**	**62.4410**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
2	4-14-2021	7-13-2021	0.5800	0.5800
		Highest	0.5800	0.5800

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1091	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.2000e-004	5.2000e-004	0.0000	0.0000	5.6000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1091**	**0.0000**	**2.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**5.2000e-004**	**5.2000e-004**	**0.0000**	**0.0000**	**5.6000e-004**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.1091	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.2000e-004	5.2000e-004	0.0000	0.0000	5.6000e-004
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1091**	**0.0000**	**2.7000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**5.2000e-004**	**5.2000e-004**	**0.0000**	**0.0000**	**5.6000e-004**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Development of Deep Water Well	Trenching	5/1/2021	5/10/2021	5	6	
2	Paving of Deep Water Pad	Paving	5/11/2021	5/12/2021	5	2	
3	Development of shallow Groundwater Wells	Trenching	5/13/2021	5/20/2021	5	6	
4	Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Grading	5/21/2021	7/8/2021	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 29.29

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Excavators	0	8.00	158	0.38
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Graders	1	8.00	187	0.41
Paving of Deep Water Pad	Pavers	1	8.00	130	0.42
Paving of Deep Water Pad	Excavators	0	8.00	158	0.38
Development of shallow Groundwater Wells	Cranes	0	7.00	231	0.29
Development of shallow Groundwater Wells	Forklifts	1	8.00	89	0.20
Development of shallow Groundwater Wells	Generator Sets	1	8.00	84	0.74
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Pavers	0	8.00	130	0.42
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Rollers	0	8.00	80	0.38
Paving of Deep Water Pad	Paving Equipment	0	8.00	132	0.36

Paving of Deep Water Pad	Rubber Tired Dozers	0	8.00	247	0.40
Development of shallow Groundwater Wells	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving of Deep Water Pad	Graders	0	8.00	187	0.41
Paving of Deep Water Pad	Tractors/Loaders/Backhoes	0	8.00	97	0.37
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Paving Equipment	0	8.00	132	0.36
Development of Deep Water Well	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Development of Deep Water Well	Rubber Tired Dozers	0	8.00	247	0.40
Paving of Deep Water Pad	Scrapers	0	8.00	367	0.48
Development of shallow Groundwater Wells	Welders	0	8.00	46	0.45
Paving of Deep Water Pad	Rollers	0	8.00	80	0.38
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Rubber Tired Dozers	1	8.00	247	0.40
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Scrapers	0	8.00	367	0.48
Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Development of Deep Water Well	Bore/Drill Rigs	1	8.00	221	0.50
Development of Deep Water Well	Off-Highway Trucks	1	8.00	402	0.38
Development of Deep Water Well	Forklifts	1	8.00	89	0.20
Development of Deep Water Well	Other Construction Equipment	1	6.00	172	0.42
Development of Deep Water Well	Generator Sets	1	6.00	84	0.74
Paving of Deep Water Pad	Rubber Tired Dozers	1	8.00	247	0.40
Development of shallow Groundwater Wells	Bore/Drill Rigs	1	8.00	221	0.50
Development of shallow Groundwater Wells	Off-Highway Trucks	2	6.00	402	0.38
Development of shallow Groundwater Wells	Other Construction Equipment	1	6.00	172	0.42

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Development of Deep Water Well	6	4.00	0.00	0.00	10.20	11.90	5.00	LD_Mix	HDT_Mix	HHDT
Paving of Deep Water Pad	2	4.00	0.00	0.00	10.20	11.90	5.00	LD_Mix	HDT_Mix	HHDT
Development of shallow Groundwater	8	4.00	0.00	0.00	10.20	11.90	5.00	LD_Mix	HDT_Mix	HHDT
Scarifying, Instillation of Water Storage Tank	3	8.00	0.00	0.00	10.20	11.90	5.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Development of Deep Water Well - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.2900e-003	0.0511	0.0447	1.1000e-004		2.3300e-003	2.3300e-003		2.1800e-003	2.1800e-003	0.0000	9.6770	9.6770	2.7800e-003	0.0000	9.7466
Total	**5.2900e-003**	**0.0511**	**0.0447**	**1.1000e-004**		**2.3300e-003**	**2.3300e-003**		**2.1800e-003**	**2.1800e-003**	**0.0000**	**9.6770**	**9.6770**	**2.7800e-003**	**0.0000**	**9.7466**

3.2 Development of Deep Water Well - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	7.0000e-005	5.9000e-004	0.0000	0.0175	0.0000	0.0175	1.7600e-003	0.0000	1.7600e-003	0.0000	0.0743	0.0743	1.0000e-005	0.0000	0.0745
Total	**8.0000e-005**	**7.0000e-005**	**5.9000e-004**	**0.0000**	**0.0175**	**0.0000**	**0.0175**	**1.7600e-003**	**0.0000**	**1.7600e-003**	**0.0000**	**0.0743**	**0.0743**	**1.0000e-005**	**0.0000**	**0.0745**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.2900e-003	0.0511	0.0447	1.1000e-004		2.3300e-003	2.3300e-003		2.1800e-003	2.1800e-003	0.0000	9.6770	9.6770	2.7800e-003	0.0000	9.7466
Total	**5.2900e-003**	**0.0511**	**0.0447**	**1.1000e-004**		**2.3300e-003**	**2.3300e-003**		**2.1800e-003**	**2.1800e-003**	**0.0000**	**9.6770**	**9.6770**	**2.7800e-003**	**0.0000**	**9.7466**

3.2 Development of Deep Water Well - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	7.0000e-005	5.9000e-004	0.0000	0.0175	0.0000	0.0175	1.7600e-003	0.0000	1.7600e-003	0.0000	0.0743	0.0743	1.0000e-005	0.0000	0.0745
Total	**8.0000e-005**	**7.0000e-005**	**5.9000e-004**	**0.0000**	**0.0175**	**0.0000**	**0.0175**	**1.7600e-003**	**0.0000**	**1.7600e-003**	**0.0000**	**0.0743**	**0.0743**	**1.0000e-005**	**0.0000**	**0.0745**

3.3 Paving of Deep Water Pad - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2800e-003	0.0134	6.9000e-003	1.0000e-005		6.5000e-004	6.5000e-004		6.0000e-004	6.0000e-004	0.0000	1.1546	1.1546	3.7000e-004	0.0000	1.1639
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.2800e-003**	**0.0134**	**6.9000e-003**	**1.0000e-005**		**6.5000e-004**	**6.5000e-004**		**6.0000e-004**	**6.0000e-004**	**0.0000**	**1.1546**	**1.1546**	**3.7000e-004**	**0.0000**	**1.1639**

3.3 Paving of Deep Water Pad - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.0000e-004	0.0000	5.8400e-003	0.0000	5.8400e-003	5.9000e-004	0.0000	5.9000e-004	0.0000	0.0248	0.0248	0.0000	0.0000	0.0248
Total	**3.0000e-005**	**2.0000e-005**	**2.0000e-004**	**0.0000**	**5.8400e-003**	**0.0000**	**5.8400e-003**	**5.9000e-004**	**0.0000**	**5.9000e-004**	**0.0000**	**0.0248**	**0.0248**	**0.0000**	**0.0000**	**0.0248**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2800e-003	0.0134	6.9000e-003	1.0000e-005		6.5000e-004	6.5000e-004		6.0000e-004	6.0000e-004	0.0000	1.1546	1.1546	3.7000e-004	0.0000	1.1639
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.2800e-003**	**0.0134**	**6.9000e-003**	**1.0000e-005**		**6.5000e-004**	**6.5000e-004**		**6.0000e-004**	**6.0000e-004**	**0.0000**	**1.1546**	**1.1546**	**3.7000e-004**	**0.0000**	**1.1639**

3.3 Paving of Deep Water Pad - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.0000e-005	2.0000e-005	2.0000e-004	0.0000	5.8400e-003	0.0000	5.8400e-003	5.9000e-004	0.0000	5.9000e-004	0.0000	0.0248	0.0248	0.0000	0.0000	0.0248
Total	**3.0000e-005**	**2.0000e-005**	**2.0000e-004**	**0.0000**	**5.8400e-003**	**0.0000**	**5.8400e-003**	**5.9000e-004**	**0.0000**	**5.9000e-004**	**0.0000**	**0.0248**	**0.0248**	**0.0000**	**0.0000**	**0.0248**

3.4 Development of shallow Groundwater Wells - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.8800e-003	0.0655	0.0579	1.4000e-004		2.9900e-003	2.9900e-003		2.8000e-003	2.8000e-003	0.0000	12.4415	12.4415	3.5600e-003	0.0000	12.5305
Total	**6.8800e-003**	**0.0655**	**0.0579**	**1.4000e-004**		**2.9900e-003**	**2.9900e-003**		**2.8000e-003**	**2.8000e-003**	**0.0000**	**12.4415**	**12.4415**	**3.5600e-003**	**0.0000**	**12.5305**

3.4 Development of shallow Groundwater Wells - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	7.0000e-005	5.9000e-004	0.0000	0.0175	0.0000	0.0175	1.7600e-003	0.0000	1.7600e-003	0.0000	0.0743	0.0743	1.0000e-005	0.0000	0.0745
Total	**8.0000e-005**	**7.0000e-005**	**5.9000e-004**	**0.0000**	**0.0175**	**0.0000**	**0.0175**	**1.7600e-003**	**0.0000**	**1.7600e-003**	**0.0000**	**0.0743**	**0.0743**	**1.0000e-005**	**0.0000**	**0.0745**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.8800e-003	0.0655	0.0579	1.4000e-004		2.9900e-003	2.9900e-003		2.8000e-003	2.8000e-003	0.0000	12.4415	12.4415	3.5600e-003	0.0000	12.5305
Total	**6.8800e-003**	**0.0655**	**0.0579**	**1.4000e-004**		**2.9900e-003**	**2.9900e-003**		**2.8000e-003**	**2.8000e-003**	**0.0000**	**12.4415**	**12.4415**	**3.5600e-003**	**0.0000**	**12.5305**

3.4 Development of shallow Groundwater Wells - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	7.0000e-005	5.9000e-004	0.0000	0.0175	0.0000	0.0175	1.7600e-003	0.0000	1.7600e-003	0.0000	0.0743	0.0743	1.0000e-005	0.0000	0.0745
Total	**8.0000e-005**	**7.0000e-005**	**5.9000e-004**	**0.0000**	**0.0175**	**0.0000**	**0.0175**	**1.7600e-003**	**0.0000**	**1.7600e-003**	**0.0000**	**0.0743**	**0.0743**	**1.0000e-005**	**0.0000**	**0.0745**

3.5 Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps - 2021

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1583	0.0000	0.1583	0.0639	0.0000	0.0639	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0361	0.3952	0.2203	4.3000e-004		0.0185	0.0185		0.0170	0.0170	0.0000	37.6531	37.6531	0.0122	0.0000	37.9575
Total	**0.0361**	**0.3952**	**0.2203**	**4.3000e-004**	**0.1583**	**0.0185**	**0.1768**	**0.0639**	**0.0170**	**0.0809**	**0.0000**	**37.6531**	**37.6531**	**0.0122**	**0.0000**	**37.9575**

3.5 Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps - 2021

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.4000e-004	7.6000e-004	6.8600e-003	1.0000e-005	0.2042	1.0000e-005	0.2042	0.0205	1.0000e-005	0.0206	0.0000	0.8672	0.8672	6.0000e-005	0.0000	0.8688
Total	**9.4000e-004**	**7.6000e-004**	**6.8600e-003**	**1.0000e-005**	**0.2042**	**1.0000e-005**	**0.2042**	**0.0205**	**1.0000e-005**	**0.0206**	**0.0000**	**0.8672**	**0.8672**	**6.0000e-005**	**0.0000**	**0.8688**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1583	0.0000	0.1583	0.0639	0.0000	0.0639	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0361	0.3952	0.2203	4.3000e-004		0.0185	0.0185		0.0170	0.0170	0.0000	37.6530	37.6530	0.0122	0.0000	37.9575
Total	**0.0361**	**0.3952**	**0.2203**	**4.3000e-004**	**0.1583**	**0.0185**	**0.1768**	**0.0639**	**0.0170**	**0.0809**	**0.0000**	**37.6530**	**37.6530**	**0.0122**	**0.0000**	**37.9575**

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3.5 Scarifying, Instillation of Water Storage Tanks & Instillation of Solar Pumps - 2021

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	9.4000e-004	7.6000e-004	6.8600e-003	1.0000e-005	0.2042	1.0000e-005	0.2042	0.0205	1.0000e-005	0.0206	0.0000	0.8672	0.8672	6.0000e-005	0.0000	0.8688
Total	**9.4000e-004**	**7.6000e-004**	**6.8600e-003**	**1.0000e-005**	**0.2042**	**1.0000e-005**	**0.2042**	**0.0205**	**1.0000e-005**	**0.0206**	**0.0000**	**0.8672**	**0.8672**	**6.0000e-005**	**0.0000**	**0.8688**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	16.40	9.50	11.90	0.00	0.00	0.00	0	0	0

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.519925	0.031155	0.160764	0.115847	0.015498	0.004819	0.018987	0.121625	0.003553	0.001235	0.005240	0.000729	0.000624

5.0 Energy Detail

Historical Energy Use: N

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5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.2 Energy by Land Use - NaturalGas

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.1091	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.2000e-004	5.2000e-004	0.0000	0.0000	5.6000e-004
Unmitigated	0.1091	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.2000e-004	5.2000e-004	0.0000	0.0000	5.6000e-004

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0266					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0825					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.2000e-004	5.2000e-004	0.0000	0.0000	5.6000e-004
Total	**0.1091**	**0.0000**	**2.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.2000e-004**	**5.2000e-004**	**0.0000**	**0.0000**	**5.6000e-004**

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0266					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0825					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.0000e-005	0.0000	2.7000e-004	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	5.2000e-004	5.2000e-004	0.0000	0.0000	5.6000e-004
Total	**0.1091**	**0.0000**	**2.7000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**5.2000e-004**	**5.2000e-004**	**0.0000**	**0.0000**	**5.6000e-004**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Clubhouse Operations

Imperial County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Other Non-Asphalt Surfaces	128.71	Acre	128.71	5,606,607.60	0
Unrefrigerated Warehouse-No Rail	0.10	1000sqft	0.00	100.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	3.4	**Precipitation Freq (Days)**	12
Climate Zone	15			**Operational Year**	2023
Utility Company	Imperial Irrigation District				
CO2 Intensity (lb/MWhr)	1270.9	**CH4 Intensity (lb/MWhr)**	0.029	**N2O Intensity (lb/MWhr)**	0.006

1.3 User Entered Comments & Non-Default Data

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Project Characteristics -

Land Use - Industrial warehouse is modeled to generate trips to the project site. It is noted that no structures are resulting from project implementation.

Construction Phase - Model run done for project implementation.

Off-road Equipment - Model run done for project implementation.

Trips and VMT - Model run done for project implementation.

Road Dust - Roads surrounding the site are paved.

Energy Use - Project will not result in the development of any structures.

Water And Wastewater - Project will not result in the development of any structures

Solid Waste - Project will not result in the development of any structures

Vehicle Trips - Assuming one vehicle trip per day per information provided by the project description.

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	220.00	0.00
tblConstructionPhase	PhaseEndDate	1/7/2037	3/5/2036
tblEnergyUse	LightingElect	1.17	0.00
tblEnergyUse	NT24E	0.82	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	0.37	0.00
tblEnergyUse	T24NG	2.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblRoadDust	RoadPercentPave	50	70
tblSolidWaste	SolidWasteGenerationRate	0.09	0.00
tblTripsAndVMT	WorkerTripNumber	471.00	0.00
tblVehicleTrips	ST_TR	1.68	10.00
tblVehicleTrips	SU_TR	1.68	10.00
tblVehicleTrips	WD_TR	1.68	10.00
tblWater	AerobicPercent	87.46	0.00

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tblWater	AerobicPercent	87.46	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaDigestCombDigestGasPercent	100.00	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorForWastewaterTreatment	1,911.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToDistribute	1,272.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
tblWater	ElectricityIntensityFactorToSupply	9,727.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	ElectricityIntensityFactorToTreat	111.00	0.00
tblWater	IndoorWaterUseRate	23,125.00	0.00
tblWater	SepticTankPercent	10.33	100.00
tblWater	SepticTankPercent	10.33	100.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2036	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2036	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0799	1.0000e-005	1.1800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-003	2.3000e-003	1.0000e-005	0.0000	2.4500e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.8000e-004	3.1600e-003	5.5300e-003	2.0000e-005	0.2889	1.0000e-005	0.2890	0.0289	1.0000e-005	0.0289	0.0000	1.4979	1.4979	9.0000e-005	0.0000	1.5003
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.4804**	**3.1700e-003**	**6.7100e-003**	**2.0000e-005**	**0.2889**	**1.0000e-005**	**0.2890**	**0.0289**	**1.0000e-005**	**0.0289**	**0.0000**	**1.5002**	**1.5002**	**1.0000e-004**	**0.0000**	**1.5027**

2.2 Overall Operational

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0799	1.0000e-005	1.1800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-003	2.3000e-003	1.0000e-005	0.0000	2.4500e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	4.8000e-004	3.1600e-003	5.5300e-003	2.0000e-005	0.2889	1.0000e-005	0.2890	0.0289	1.0000e-005	0.0289	0.0000	1.4979	1.4979	9.0000e-005	0.0000	1.5003
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.4804**	**3.1700e-003**	**6.7100e-003**	**2.0000e-005**	**0.2889**	**1.0000e-005**	**0.2890**	**0.0289**	**1.0000e-005**	**0.0289**	**0.0000**	**1.5002**	**1.5002**	**1.0000e-004**	**0.0000**	**1.5027**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	3/6/2036	3/5/2036	5	0	

Acres of Grading (Site Preparation Phase): 0

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Acres of Grading (Grading Phase): 0

Acres of Paving: 128.71

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 150; Non-Residential Outdoor: 50; Striped Parking Area: 336,396 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	7.30	8.90	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

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3.2 Architectural Coating - 2036

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

3.2 Architectural Coating - 2036

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

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4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	4.8000e-004	3.1600e-003	5.5300e-003	2.0000e-005	0.2889	1.0000e-005	0.2890	0.0289	1.0000e-005	0.0289	0.0000	1.4979	1.4979	9.0000e-005	0.0000	1.5003
Unmitigated	4.8000e-004	3.1600e-003	5.5300e-003	2.0000e-005	0.2889	1.0000e-005	0.2890	0.0289	1.0000e-005	0.0289	0.0000	1.4979	1.4979	9.0000e-005	0.0000	1.5003

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Other Non-Asphalt Surfaces	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	1.00	1.00	1.00	2,581	2,581
Total	1.00	1.00	1.00	2,581	2,581

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Other Non-Asphalt Surfaces	6.70	5.00	8.90	0.00	0.00	0.00	0	0	0
Unrefrigerated Warehouse-No	6.70	5.00	8.90	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Other Non-Asphalt Surfaces	0.519925	0.031155	0.160764	0.115847	0.015498	0.004819	0.018987	0.121625	0.003553	0.001235	0.005240	0.000729	0.000624
Unrefrigerated Warehouse-No Rail	0.519925	0.031155	0.160764	0.115847	0.015498	0.004819	0.018987	0.121625	0.003553	0.001235	0.005240	0.000729	0.000624

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

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5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

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5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

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	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.4799	1.0000e-005	1.1800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-003	2.3000e-003	1.0000e-005	0.0000	2.4500e-003
Unmitigated	0.4799	1.0000e-005	1.1800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-003	2.3000e-003	1.0000e-005	0.0000	2.4500e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1170					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3628					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1000e-004	1.0000e-005	1.1800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-003	2.3000e-003	1.0000e-005	0.0000	2.4500e-003
Total	**0.4799**	**1.0000e-005**	**1.1800e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3000e-003**	**2.3000e-003**	**1.0000e-005**	**0.0000**	**2.4500e-003**

6.2 Area by SubCategory

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.1170					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.3628					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	1.1000e-004	1.0000e-005	1.1800e-003	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.3000e-003	2.3000e-003	1.0000e-005	0.0000	2.4500e-003
Total	**0.4799**	**1.0000e-005**	**1.1800e-003**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**2.3000e-003**	**2.3000e-003**	**1.0000e-005**	**0.0000**	**2.4500e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

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7.2 Water by Land Use

Mitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Other Non-Asphalt Surfaces	0 / 0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0 / 0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000

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8.2 Waste by Land Use

Unmitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Other Non-Asphalt Surfaces	0	0.0000	0.0000	0.0000	0.0000
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

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10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

ATTACHMENT B

Biological Resources Assessment

Biological Resources Assessment

Clubhouse Plot Studies Project

Imperial County, California

May 11, 2021

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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CONTENTS

EEC ORIGINAL PKG

LIST OF TABLES

LIST OF FIGURES

LIST OF ATTACHMENTS

EEC ORIGINAL PKG

LIST OF ACRONYMS AND ABBREVIATIONS

Act	Rivers and Harbors Act
AJD	Approved Jurisdictional Determination
AMM	Avoidance and minimization measure
BCC	Birds of Conservation Concern
BRA	Biological resources assessment
bsl	Below sea level
CBOC	California Burrowing Owl Consortium
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CNDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
DCMs	Dust control measures
ESA	Endangered Species Act
HCP	Habitat conservation plan
IID	Imperial Irrigation District
MBTA	Migratory Bird Treaty Act
NPDES	National Pollutant Discharge Elimination System
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
Project	Clubhouse Plot Study Project
RWQCB	Regional Water Quality Control Board
SSC	Species of Special Concern
Study Area	Clubhouse Plot Study Project Study Area
USACE	U.S. Army Corps of Engineers
USC	U.S. Code
USFS	U.S. Forest Service
USGS	U.S. Geological Survey
WBWG	Western Bat Working Group

1.0 INTRODUCTION

On behalf of the Imperial Irrigation District (IID) ECORP Consulting, Inc. conducted a biological resources assessment (BRA) for the IID Clubhouse Plot Studies Project (Project) located in Imperial County, California. The purpose of the assessment was to collect information on the biological resources present or with the potential to occur in the Project Study Area.

2.0 STUDY AREA

2.1 Study Area Location

The approximately 128.64-acre Study Area is located along the western margin of the Salton Sea in Imperial County, California (Figure 1. *Study Area Location and Vicinity*). The Study Area corresponds to Section 5 of Township 10 South and Range 10 East (San Bernardino Base Meridian) of the "Truckhaven, California" 7.5-minute Topographic Quadrangles (U.S. Geological Survey [USGS] 1998). The approximate center of the Study Area is located at 33.334194° and -115.948172° within the Salton Sea Watershed (Hydrologic Unit Code #18100204, Natural Resources Conservation Service [NRCS] et al. 2016).

2.2 Project Description

IID is proposing to stabilize air quality particulate matter emissions (e.g., PM_{10}) originating from the Salton Sea playa (exposed seabed) within the Project Study Area by implementing waterless and water-dependent dust control measures (DCMs) in late 2021. Water-dependent DCMs will include establishment and persistence of halophytic vegetation facilitated by irrigation from four new groundwater wells (one deep-water and three shallow-water wells). Waterless DCMs will include placement of hay bales and sand fencing. The area of ground disturbance within the approximately 129-acre area of impact could be as large as 73 acres. DCMs implemented at the Project were anticipated by IID's Water Transfer Project Environmental Impact Report/Environmental Impact Statement in 2003. IID is preparing a California Environmental Quality Act (CEQA) addendum to evaluate the impacts associated with implementation of the Project.

2.3 Purpose of this Biological Resources Assessment

The purpose of this BRA is to assess the potential for occurrence of special-status plant and animal species or their habitat, and sensitive habitats such as wetlands within the Study Area. This assessment does not include determinate field surveys conducted according to agency-promulgated protocols. The conclusions and recommendations presented in this report are based upon a review of the available literature and site reconnaissance.

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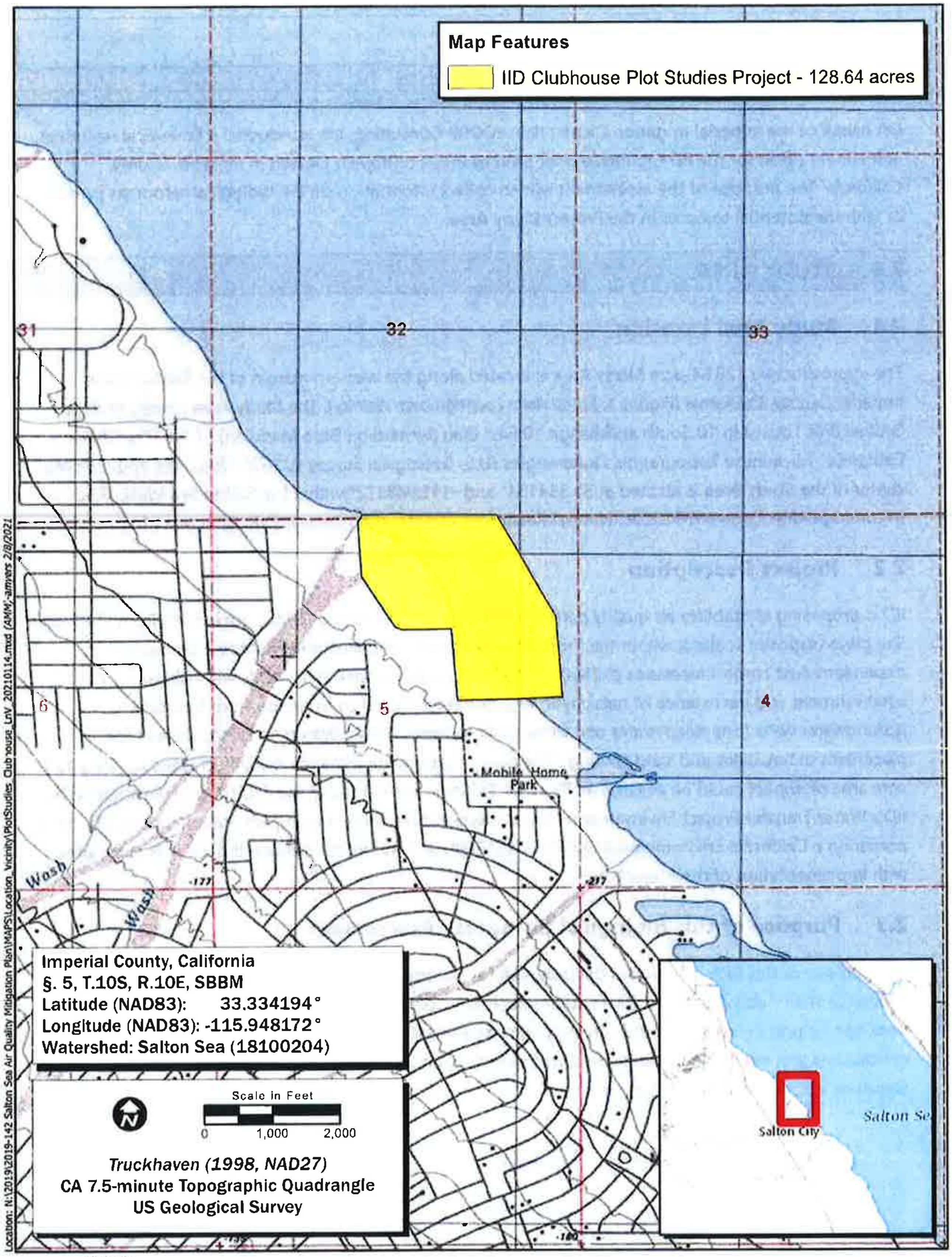

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Map Date: 2/8/2021

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Figure 1. Study Area Location and Vicinity

2019-142.03/001 IID Clubhouse Plot Studies Project

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2.4 Definition of Special-Status Species

For the purposes of this assessment, special-status species are defined as plants or animals that:

- are listed, proposed for listing, or candidates for future listing as threatened or endangered under the federal Endangered Species Act (ESA);
- are listed or candidates for future listing as threatened or endangered under the California ESA;
- meet the definitions of endangered or rare under Section 15380 of CEQA Guidelines;
- are identified as a Species of Special Concern (SSC) by the California Department of Fish and Wildlife (CDFW);
- are birds identified as Birds of Conservation Concern (BCC) by the U.S. Fish and Wildlife Service (USFWS);
- are plants considered by the California Native Plant Society (CNPS) to be "rare, threatened, or endangered in California" (California Rare Plant Rank [CRPR] 1 and 2);
- are plants listed by CNPS as species about which more information is needed to determine their status (CRPR 3), and plants of limited distribution (CRPR 4);
- are plants listed as rare under the California Native Plant Protection Act (NPPA, California Fish and Game Code, § 1900 et seq.); or
- are fully protected in California in accordance with the California Fish and Game Code, §§ 3511 (birds), 4700 (mammals), 5050 (amphibians and reptiles), and 5515 (fishes).

Only species that fall into one of the above-listed groups were considered for this assessment. Other species without special status that are sometimes found in database or literature searches were not included within this analysis.

3.0 REGULATORY SETTING

3.1 Federal Regulations

3.1.1 Federal Endangered Species Act

The federal ESA protects plants and animals that are listed as endangered or threatened by the USFWS and the National Marine Fisheries Service. Section 9 of ESA prohibits the taking of listed wildlife, where take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or attempt to engage in such conduct" (50 Code of Federal Regulations [CFR] 17.3). For plants, this statute governs removing, possessing, maliciously damaging, or destroying any listed plant on federal land and removing, cutting, digging up, damaging, or destroying any listed plant on non-federal land in knowing violation of state law (16 U.S. Code [USC] 1538). Under Section 7 of ESA, federal agencies are required to consult with the USFWS if their actions, including permit approvals or funding, could adversely affect a listed (or proposed) species (including plants) or its critical habitat. Through consultation and the issuance of a biological opinion, the USFWS may issue an incidental take statement allowing take of the species that is incidental to an otherwise authorized activity provided the activity will not jeopardize the continued existence of the species. Section 10 of ESA provides for issuance of incidental take permits where no other federal actions are necessary provided a habitat conservation plan (HCP) is developed.

3.1.1.1 Critical Habitat

Critical Habitat is defined in Section 3 of the ESA as (1) the specific areas within the geographical area occupied by a species, at the time it is listed in accordance with the ESA, on which are found those physical or biological features essential to the conservation of the species and that may require special management considerations or protection; and (2) specific areas outside the geographical area occupied by a species at the time it is listed, upon a determination that such areas are essential for the conservation of the species. For inclusion in a Critical Habitat designation, habitat within the geographical area occupied by the species at the time it was listed must first have features that are essential to the conservation of the species. Critical Habitat designations identify, to the extent known and using the best scientific data available, habitat areas that provide essential life cycle needs of the species.

3.1.2 Migratory Bird Treaty Act

The Migratory Bird Treaty Act (MBTA) implements international treaties between the U.S. and other nations devised to protect migratory birds, any of their parts, eggs, and nests from activities such as hunting, pursuing, capturing, killing, selling, and shipping, unless expressly authorized in the regulations or by permit. As authorized by the MBTA, the USFWS issues permits to qualified applicants for the following types of activities: falconry, raptor propagation, scientific collecting, special purposes (rehabilitation, education, migratory game bird propagation, and salvage), take of depredating birds, taxidermy, and waterfowl sale and disposal. The regulations governing migratory bird permits can be found in 50 CFR part 13 General Permit Procedures and 50 CFR part 21 Migratory Bird Permits. The State of California has incorporated the protection of birds of prey in Sections 3800, 3513, and 3503.5 of the California Fish and Game Code.

3.1.3 Bald and Golden Eagle Protection Act

The Bald and Golden Eagle Protection Act of 1940 (as amended) provides for the protection of bald eagle and golden eagle by prohibiting the take, possession, sale, purchase, barter, offer to sell, purchase or barter, transport, export or import, of any bald or golden eagle, alive or dead, including any part, nest, or egg, unless allowed by permit [16 USC 668(a); 50 CFR 22]. USFWS may authorize take of bald eagles and golden eagles for activities where the take is associated with, but not the purpose of, the activity and cannot practicably be avoided (50 CFR 22.26).

3.1.4 Federal Clean Water Act

The purpose of the federal Clean Water Act (CWA) is to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." Section 404 of the CWA prohibits the discharge of dredged or fill material into "Waters of the U.S." without a permit from the U.S. Army Corps of Engineers (USACE). "Discharges of fill material" is defined as the addition of fill material into Waters of the U.S., including, but not limited to, the following: placement of fill necessary for the construction of any structure, or impoundment requiring rock, sand, dirt, or other material for its construction; site-development fills for recreational, industrial, commercial, residential, and other uses; causeways or road fills; and fill for intake and outfall pipes, and subaqueous utility lines" (33 CFR § 328.2(f)). In addition, Section 401 of the CWA (33 USC 1341) requires any applicant for a federal license or permit to conduct any activity that may result in a discharge of a pollutant into Waters of the U.S. to obtain a certification that the discharge will comply with the applicable effluent limitations and water quality standards.

Substantial impacts to wetlands (over 0.5 acre of impact) may require an individual permit. Projects that only minimally affect wetlands (less than 0.5 acre of impact) may meet the conditions of one of the existing Nationwide Permits. A Water Quality Certification or waiver pursuant to Section 401 of the CWA is required for Section 404 permit actions; this certification or waiver is issued by the Regional Water Quality Control Board (RWQCB).

3.1.5 Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act of 1899 (Act) requires authorization from the Secretary of the Army, acting through the USACE, for the construction of any structure in or over any navigable Waters of the U.S. Structures or work outside the limits defined for navigable Waters of the U.S. require a Section 10 permit if the structure or work affects the course, location, or condition of the water body. The law applies to any dredging or disposal of dredged materials, excavation, filling, re-channelization, or any other modification of a navigable water of the U.S., and applies to all structures, from the smallest floating dock to the largest commercial undertaking. It further includes, without limitation, any wharf, dolphin, weir, boom breakwater, jetty, groin, bank protection (e.g., riprap, revetment, bulkhead), mooring structures such as pilings, aerial or subaqueous power transmission lines, intake or outfall pipes, permanently moored floating vessel, tunnel, artificial canal, boat ramp, aids to navigation, and any other permanent, or semi-permanent obstacle or obstruction. The alteration of a USACE federally authorized civil works project requires a permit pursuant to Section 14 of the Act, as amended and codified in 33 USC 408. Projects with minimal impacts require approval by the USACE Sacramento District Construction Operations Group; however, projects with more substantial impacts may require USACE Headquarters review. Coordination with the Central Valley Flood Protection Board, who serve as the Non-Federal Sponsor, is required as a part of the process of obtaining a Section 408 permit.

3.2 State Regulations

3.2.1 California Fish and Game Code

3.2.1.1 California Endangered Species Act

The California ESA (California Fish and Game Code §§ 2050-2116) generally parallels the main provisions of the ESA, but unlike its federal counterpart, the California ESA applies the take prohibitions to species

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proposed for listing (called "candidates" by the State). Section 2080 of the California Fish and Game Code prohibits the taking, possession, purchase, sale, and import or export of endangered, threatened, or candidate species, unless otherwise authorized by permit or in the regulations. Take is defined in Section 86 of the California Fish and Game Code as "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." The California ESA allows for take incidental to otherwise lawful development projects. State lead agencies are required to consult with CDFW to ensure that any action they undertake is not likely to jeopardize the continued existence of any endangered, threatened or candidate species or result in destruction or adverse modification of essential habitat.

3.2.1.2 Fully Protected Species

The State of California first began to designate species as "fully protected" prior to the creation of the federal and California ESAs. Lists of fully protected species were initially developed to provide protection to those animals that were rare or faced possible extinction and included fish, amphibians and reptiles, birds, and mammals. Most fully protected species have since been listed as threatened or endangered under the federal and/or California ESAs. The regulations that implement the Fully Protected Species Statute (California Fish and Game Code § 4700 for mammals, § 3511 for birds, § 5050 for reptiles and amphibians, and § 5515 for fish) provide that fully protected species may not be taken or possessed at any time. Furthermore, the CDFW prohibits any State agency from issuing incidental take permits for fully protected species. The CDFW will issue licenses or permits for take of these species for necessary scientific research or live capture and relocation pursuant to the permit.

3.2.1.3 Native Plant Protection Act

The NPPA of 1977 was created with the intent to "preserve, protect and enhance rare and endangered plants in this State." The NPPA is administered by CDFW and provided in California Fish and Game Code §§ 1900-1913. The Fish and Wildlife Commission has the authority to designate native plants as "endangered" or "rare" and to protect endangered and rare plants from take. The California ESA of 1984 (California Fish and Game Code § 2050-2116) provided further protection for rare and endangered plant species, but the NPPA remains part of the California Fish and Game Code.

3.2.1.4 Nesting Birds

Section 3503 of the California Fish and Game Code prohibits the take, possession, or needless destruction of the nest or eggs of any bird. Sections 3800, 3513, and 3503 of the California Fish and Game Code specifically protect birds of prey. Section 3800 states that it is unlawful to take nongame birds, such as those occurring naturally in California that are not resident game birds, migratory game birds, or fully protected birds, except when in accordance with regulations of the commission or a mitigation plan approved by CDFW for mining operations. Section 3513 specifically prohibits the take or possession of any migratory nongame bird as designated in the MBTA. These provisions, along with the federal MBTA, serve to protect nesting native birds.

3.2.2 Species of Special Concern

SSC are defined by CDFW as a species, subspecies, or distinct population of an animal native to California that are not legally protected under the ESA, California ESA, or California Fish and Game Code, but currently satisfy one or more of the following criteria:

- The species has been completely extirpated from the state or, as in the case of birds, it has been extirpated from its primary seasonal or breeding role.
- The species is listed as federally (but not State) threatened or endangered, or meets the State definition of threatened or endangered but has not formally been listed.
- The species has or is experiencing serious (noncyclical) population declines or range retractions (not reversed) that, if continued or resumed, could qualify it for State threatened or endangered status.
- The species has naturally small populations that exhibit high susceptibility to risk from any factor that if realized, could lead to declines that would qualify it for State threatened or endangered status.

SSC are typically associated with habitats that are threatened. Project-related impacts to SSC, State-threatened, or endangered species are considered "significant" under CEQA.

3.2.3 California Rare Plant Ranks

The CNPS maintains the Inventory of Rare and Endangered Plants of California (CNPS 2020), which provides a list of plant species native to California that are threatened with extinction, have limited distributions, and/or low populations. Plant species meeting one of these criteria are assigned to one of six CRPRs. The rank system was developed in collaboration with government, academia, non-governmental organizations, and private sector botanists, and is jointly managed by CDFW and CNPS. The CRPRs are currently recognized in the California Natural Diversity Database (CNDDB). The following are definitions of the CNPS CRPRs:

Rare Plant Rank 1A – presumed extirpated in California and either rare or extinct elsewhere

Rare Plant Rank 1B – rare, threatened, or endangered in California and elsewhere

Rare Plant Rank 2A – presumed extirpated in California, but more common elsewhere

Rare Plant Rank 2B – rare, threatened, or endangered in California but more common elsewhere

Rare Plant Rank 3 – a review list of plants about which more information is needed

Rare Plant Rank 4 – a watch list of plants of limited distribution

Additionally, the CNPS has defined Threat Ranks that are added to the CRPR as an extension. Threat Ranks designate the level of threat on a scale of 1 through 3, with 1 being the most threatened and 3 being the least threatened. Threat Ranks are generally present for all plants ranked 1B, 2B, or 4, and for the majority of plants ranked 3. Plant species ranked 1A and 2A (presumed extirpated in California), and some species ranked 3, which lack threat information, do not typically have a Threat Rank extension. The following are definitions of the CNPS Threat Ranks:

> Threat Rank 0.1 – Seriously threatened in California (more than 80 percent of occurrences threatened/high degree and immediacy of threat)
>
> Threat Rank 0.2 – Moderately threatened in California (20 to 80 percent occurrences threatened/moderate degree and immediacy of threat)
>
> Threat Rank 0.3 – Not very threatened in California (less than 20 percent of occurrences threatened/low degree and immediacy of threat or no current threats known)

Factors such as habitat vulnerability and specificity, distribution, and condition of occurrences, are considered in setting the Threat Rank; and differences in Threat Ranks do not constitute additional or different protection (CNPS 2020). Depending on the policy of the lead agency, substantial impacts to plants ranked 1A, 1B, or 2 are typically considered significant under CEQA Guidelines § 15380. Significance under CEQA is typically evaluated on a case-by-case basis for plants ranked 3 or 4.

3.2.4 Porter-Cologne Water Quality Act

The RWQCB implements water quality regulations under the federal CWA and the Porter-Cologne Water Quality Act. These regulations require compliance with the National Pollutant Discharge Elimination System (NPDES), including compliance with the California Storm Water NPDES General Construction Permit for discharges of stormwater runoff associated with construction activities. General Construction Permits for projects that disturb one or more acres of land require development and implementation of a Storm Water Pollution Prevention Plan. Under the Porter-Cologne Water Quality Act, the RWQCB regulates actions that would involve "discharging waste, or proposing to discharge waste, with any region that could affect the water of the state" (Water Code 13260(a)). Waters of the State are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (Water Code 13050 (e)). The RWQCB regulates all such activities, as well as dredging, filling, or discharging materials into Waters of the State, that are not regulated by USACE due to a lack of connectivity with a navigable water body. The RWQCB may require issuance of a Waste Discharge Requirement for these activities.

3.2.5 California Environmental Quality Act

In accordance with CEQA Guidelines § 15380, a species not protected on a federal or State list may be considered rare or endangered if the species meets certain specified criteria. These criteria follow the definitions in the ESA, California ESA, and §§ 1900-1913 of the California Fish and Game Code, which deal with rare or endangered plants or animals. Section 15380 was included in the CEQA Guidelines primarily to deal with situations where a project under review may have a significant effect on a species that has not yet been listed by either USFWS or CDFW.

3.2.5.1 California Environmental Quality Act Significance Criteria

Sections 15063-15065 of the CEQA Guidelines address how an impact is identified as significant and are particularly relevant to SSC. Generally, impacts to rare, threatened, or endangered species are considered significant, requiring thorough analysis in a CEQA document and often requiring mitigation to avoid or minimize potential impacts. Assessment of "impact significance" to populations of non-listed species (e.g., SSC) usually considers the proportion of the species' range that will be affected by a project, impacts to habitat, and the regional and population level effects.

Specifically, § 15064.7 of the CEQA Guidelines encourages local agencies to develop and publish the thresholds that the agency uses in determining the significance of environmental effects caused by projects under its review. However, agencies may also rely upon the guidance provided by the expanded Initial Study checklist contained in Appendix G of the CEQA Guidelines. Appendix G provides examples of impacts that would normally be considered significant. Based on these examples, impacts to biological resources would normally be considered significant if a project would:

> 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 CDFW or USFWS;
>
> have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFW or USFWS;
>
> have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the CWA (including, but not limited to, marsh, vernal pool, and coastal) through direct removal, filling, hydrological interruption, or other means;
>
> interfere substantially with the movement of any native resident or migratory fish or wildlife species, or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
>
> conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
>
> conflict with the provisions of an adopted HCP, Natural Community Conservation Plan, or other approved local, regional, or State HCP.

An evaluation of whether or not an impact on biological resources would be substantial must consider both the resource itself and how that resource fits into a regional or local context. Substantial impacts would be those that would diminish, or result in the loss of, an important biological resource, or those that would obviously conflict with local, State, or federal resource conservation plans, goals, or regulations. Impacts are sometimes locally important but not significant according to CEQA. The reason for this is that although the impacts would result in an adverse alteration of existing conditions, they would not substantially diminish or result in the permanent loss of an important resource on a population- or region-wide basis.

4.0 METHODS

4.1 Literature Review

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

CDFW CNDDB data for the "Truckhaven, California" 7.5-minute quadrangle as well as the nine surrounding USGS quadrangles (CDFW 2020);

USFWS Information, Planning, and Consultation System Resource Report List for the Study Area (USFWS 2020a);

CNPS' electronic Inventory of Rare and Endangered Plants of California was queried for the "Truckhaven, California" 7.5-minute quadrangle and the nine surrounding quadrangles (CNPS 2020).

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

The Status of Rare, Threatened, and Endangered Plants and Animals of California 2000-2004 (California Department of Fish and Game [CDFG] 2005);

California Bird Species of Special Concern (Shuford and Gardali 2008);

Amphibian and Reptile Species of Special Concern in California (Thompson, Wright, and Shaffer 2016);

Mammalian Species of Special Concern in California (Williams 1986);

California's Wildlife, Volumes I-III (Zeiner et al. 1988, 1990a, 1990b);

A Guide to Wildlife Habitats of California (Mayer and Laudenslayer Jr., eds. 1988);

USFWS Online Critical Habitat Mapper (USFWS 2021); and

NRCS Web Soil Survey (NRCS 2021a).

4.2 Site Surveys

4.2.1 Reconnaissance Site Survey

ECORP Biologists Jeff Tupen, Daniel Wong, and Christina Congedo conducted the site reconnaissance visit on October 6, 2020. The Study Area was systematically surveyed on foot using an ESO Arrow Global Positioning System unit with sub-meter accuracy, topographic maps, and aerial imagery to ensure total site coverage. Special attention was given to identifying those portions of the Study 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 Study Area photographs (Attachment B)

4.2.2 Aquatic Resources Delineation Site Survey

An aquatic resources delineation of the Study Area was completed on October 6, 2020 and January 29, 2021 by ECORP biologists. The delineation was conducted in accordance with the *Corps of Engineers Wetlands Delineation Manual* (Environmental Laboratory 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (Arid West Region Supplement) (USACE 2008). The USACE issued an Approved Jurisdictional Determination (AJD) for the Study Area on April 21, 2021 (USACE 2021, Attachment C). Results of the aquatic resources delineation/AJD have been incorporated into this BRA.

4.2.3 Special-Status Plant Survey

An early-season special-status plant survey was conducted by ECORP botanists for the Study Area on March 15, 2021. A follow up late-season survey is planned for September 2021.

4.3 Special-Status Species Considered for the Project

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 Study Area was generated. Only special-status species as defined in Section 2.4 were included in this analysis. Each of these species' potential to occur within the Study Area was assessed based on the following criteria:

Present - Species was observed during the site visit or is known to occur within the Study Area based on documented occurrences within the CNDDB or other literature.

Potential to Occur - Habitat (including soils and elevation requirements) for the species occurs within the Study Area.

Low Potential to Occur - Marginal or limited amounts of habitat occurs and/or the species is not known to occur within the vicinity of the Study Area based on CNDDB records and other available documentation.

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Absent - No suitable habitat (including soils and elevation requirements) present at the Study Area and/or the species is not known to occur within the vicinity of the Study Area based on CNDDB records and other documentation.

5.0 RESULTS

5.1 Site Characteristics and Topography

The Study 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 five to 10 years as a result of seawater evaporation and decreased agricultural inflows. Slopes on the playa within the Study Area are very flat, ranging from 0.1 percent (one inch of vertical drop over 100 feet of horizontal distance) to 0.01 percent (one inch per 1,000 feet). Exposed elevations within the Study Area range from approximately -230 feet below sea level (bsl) to approximately -225 feet bsl (NAVD88).

5.2 Soils

Soils within the Study Area have not been mapped by the NRCS because this area was inundated by the Salton Sea until very recently (NRCS 2021a; Figure 2. *Natural Resources Conservation Service Soil Types*).

5.3 Habitat and Land Cover Types

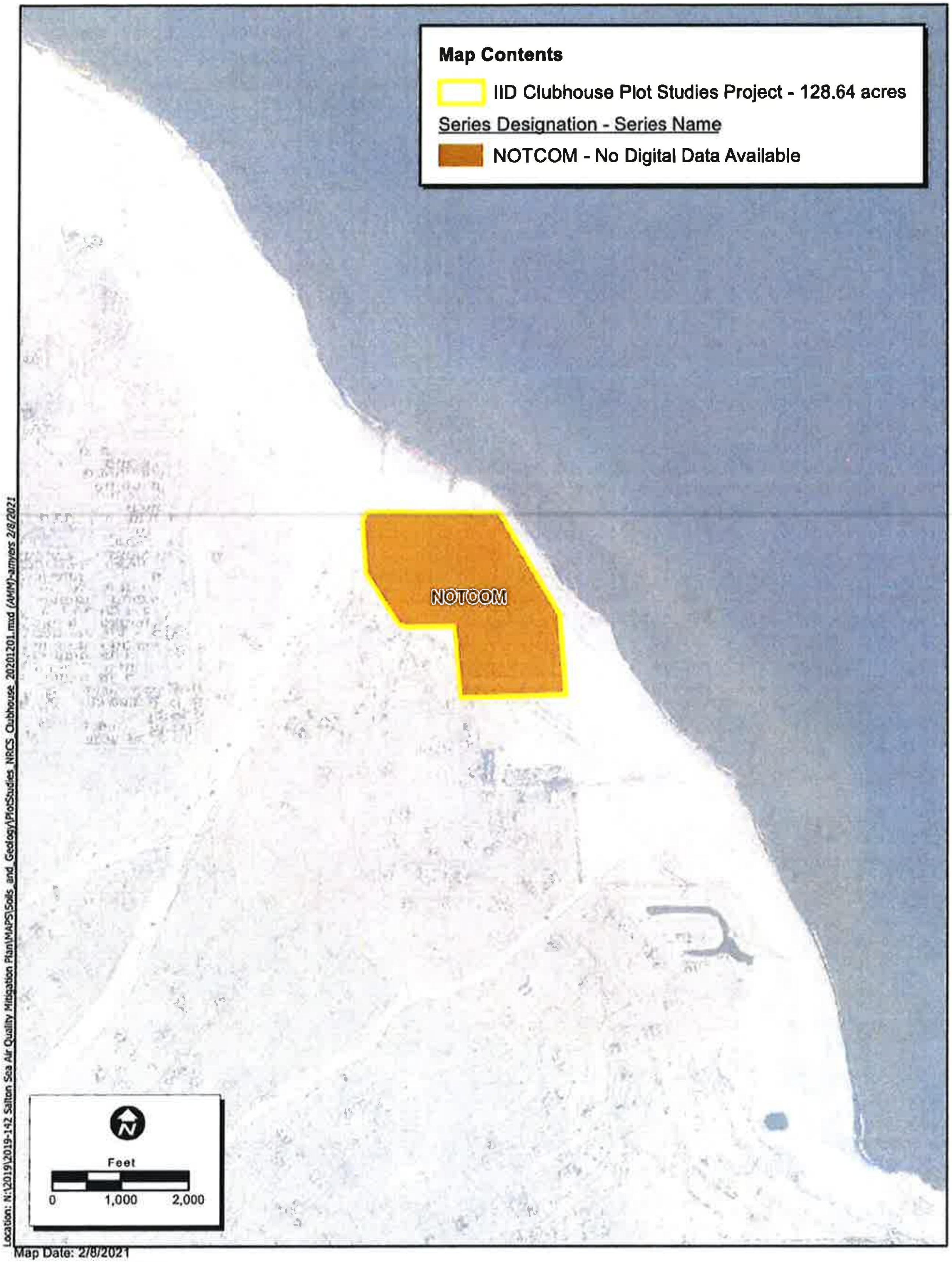
The Study Area is characterized by three coarse habitat types. These are salt pan, iodine bush scrub, and disturbed (Figure 3. *Habitat and Land Cover Types*). Descriptions of the habitat and land cover types present within the Study Area are provided below.

5.3.1 Salt Pan

This habitat type is found within those portions of the Study Area that were, until fairly recently (2004-2014), inundated by the Salton Sea. Salt pan areas typically support little to no vegetation and are characterized by a salt crust at the soil surface. Barnacle tests, relics from past inundation, commonly litter the surface of salt pan areas of the Salton Sea. Salt pans provide very little habitat value for plant or animal species due to highly saline (and alkaline) soils. Birds will on occasion establish ground nests within salt pan habitats.

5.3.2 Iodine Bush Scrub

Iodine bush (*Allenrolfea occidentalis*) scrub occupies the portion of the Study Area east of the mapped salt pan. This habitat type is characterized by scattered to moderately abundant iodine bush, a halophyte, within those portions of the Study Area not historically inundated by the Salton Sea. Iodine bush also occupy older salt pan areas where "barnacle bars" have accumulated in drift lines, forming higher elevation substrates for vegetation to recruit and persist. The linear signatures of vegetation evident in Figure 3 are due to iodine bush presence along these barnacle bars. High soil salinities within iodine bush scrub habitat is still a limiting factor for plant recruitment, persistence, and condition, though not as



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Map Date: 2/8/2021
Photo Source: NAIP 2020

Figure 2. Natural Resources Conservation Service Soil Types

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significant of a stressor as within salt pan areas. Iodine bush scrub may provide habitat for several species of small mammals, reptiles, and nesting birds. Water-stressed iodine bush (as evidenced by the presence of brown, dry leaves) was observed throughout the Study Area, presumably reflecting the increasing depth to perched fresh groundwater as the Salton Sea surface elevation declines over time.

5.3.3 Disturbed/Developed

It appears that a small area near the southwestern aspect of the Study Area was historically developed as an recreational vehicle parking lot. The formal status of this facility is uncertain, but cars, trucks, and trailers do continue to use the parking slips. The disturbed area has been graded and has been surfaced with crushed gravel in places. Continual use has generally excluded the reestablishment of vegetation, though scattered iodine bush and salt bush (*Atriplex* spp.) are present in this area. This area provides very little to no habitat value for plants or wildlife.

5.4 Aquatic Resources

An aquatic resources delineation was conducted for the Study Area and an AJD issued by the USACE (USACE 2021; Attachment C). There are no aquatic resources mapped within the Study Area.

5.5 Evaluation of Species Identified in the Literature Search

A list of all of the special-status plant and wildlife species identified in the literature search as potentially occurring within the Study Areas is provided in Table 1. This table includes the listing status for each species, a brief habitat description, and a determination on the potential to occur in or near the Study Area. Following the table is a brief description of each species with potential to occur.

Several species and sensitive habitat types that came up in the database and literature searches have been formally delisted, are tracked by the CNDDB but possess no special status, or are identified as sensitive habitats but not located within the Study Area. These species and habitat types were not included in Table 1 and are not discussed further in this report.

Table 1. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Plants						
Chaparral sand-verbena *(Abronia villosa* var. *aurita)*	-	-	1B.1	Chaparral, coastal scrub, desert dunes (75–1,600m)	(January) March-September	**Presumed absent.** Marginally suitable habitat in the Study Area. One historic CNDDB record (1949) was recorded approximately 9.69 miles from the Study Area. Not detected during special-status plant survey on March 15, 2021.

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Table 1. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Salton milk-vetch *(Astragalus crotalariae)*	-	-	4.3	Sonoran desert scrub (-60-250m).	January-April	**Presumed absent.** Marginally suitable habitat in the Study Area. No CNDDB records within 10 miles of the Study Area. Not detected during special-status plant survey on March 15, 2021.
Harwood's milk-vetch *(Astragalus insularis* var. *harwoodii)*	-	-	2B.2	Desert dunes; Mojavean desert scrub (0–710m)	January-May	**Presumed absent.** Marginally suitable habitat in the Study Area. No CNDDB records within 10 miles of the Study Area. Not detected during special-status plant survey on March 15, 2021.
Borrego milk-vetch *(Astragalus lentiginosus* var. *borreganus)*	-	-	4.3	Mojavean desert scrub; Sonoran desert scrub (30-895m).	February-May	**Presumed absent.** Marginally suitable habitat in the Study Area. No CNDDB records within 10 miles of the Study Area. Not detected during special-status plant survey on March 15, 2021.
Gravel milk-vetch *(Astragalus sabulonum)*	-	-	2B.2	Desert dunes; Mojavean desert scrub; Sonoran desert scrub (-60-930m).	February-June	**Presumed absent.** Marginally suitable habitat in the Study Area. No CNDDB records within 10 miles of the Study Area. Not detected during special-status plant survey on March 15, 2021.
Triple-ribbed milk-vetch *(Astragalus tricarinatus)*	FE	-	-	Joshua tree woodland and Sonoran desert scrub in sandy or gravelly soils. Known from fewer than 20 occurrences (450-1,190m)	February-May	**Presumed absent.** Marginally suitable habitat in the Study Area. No CNDDB records within 10 miles of the Study Area. Not detected during special-status plant survey on March 15, 2021.
California ayenia *(Ayenia compacta)*	-	-	2B.3	Mojavean desert scrub and Sonoran desert scrub in rocky soils (150-1,095m).	March-April	**Presumed Absent.** No suitable habitat in the Study Area. No CNDDB records within 10 miles of the Study Area. Not detected during special-status plant survey on March 15, 2021

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Table 1. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Peirson's milk-vetch *(Astragalus magdalenae* var. *peirsonii)*	FE	CE	1B.2	Desert dunes (60-225m).	December-April	**Presumed absent.** Marginally suitable habitat in the Study Area. No CNDDB records within 10 miles of the Study Area. Not detected during special-status plant survey on March 15, 2021.
Peirson's pincushion *(Chaenactis carphoclinia* var. *personii)*	-	-	1B.3	Sonoran desert scrub in sandy soils. Known only form the eastern Santa Rosa Mountains.	March-April	**Presumed absent.** No suitable habitat in the Study Area. There are seven CNDDB records within 10 miles, the closest from 2008, located approximately 3.76 miles away from the Study Area. Not detected during special-status plant survey on March 15, 2021.
Sand evening-primrose *(Chylismia arenaria)*	-	-	2B.2	Sonoran desert scrub (-70-915m).	November-May	**Presumed absent.** No suitable habitat in the Study Area. No CNDDB records within 10 miles of the Study Area. Not detected during special-status plant survey on March 15, 2021.
California sawgrass *(Cladium californicum)*	-	-	2B.2	Meadows and seeps and alkaline or freshwater marshes and swamps (60-1,600m).	June-September	**Presumed absent** No suitable habitat in the Study Area. No CNDDB records within 10 miles of the Study Area. Not detected during special-status plant survey on March 15, 2021.
Abrams' spurge *(Euphorbia abramsiana)*	-	-	2B.2	Mojavean desert scrub; Sonoran desert scrub (-5-1,310m').	September-November	**Low potential to occur.** Marginally suitable habitat in the Study Area. No CNDDB records within 10 miles of the Study Area. Not detected during special-status plant survey on March 15, 2021.

Table 1. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Ribbed cryptantha *(Johnstonella costata)*	-	-	4.3	Desert dunes; Mojavean desert scrub; Sonoran desert scrub (-60-500m).	February-May	**Presumed absent.** Marginally suitable habitat in the Study Area. No CNDDB records within 10 miles of the Study Area..
Parish's Desert-thorn *(Lycium parishii)*	-	-	2B.3	Coastal scrub and Sonoran desert scrub (135-1,000m).	March–April	**Presumed absent.** Marginal habitat within the Study Area. No CNDDB records within 10 miles of the Study Area. Not detected during special-status plant survey on March 15, 2021.
Torrey's Box-thorn *(Lycium torreyi)*	-	-	4.2	Mojavean and Sonoran desert scrub. Found in sandy, rocky soils in washes, streambanks, and desert valleys (-50-1,220).	January-November	**Presumed absent.** Marginal habitat exists within the Study Area. No CNDDB records within 10 miles of the Study Area. Not detected during special-status plant survey on March 15, 2021.
Slender-lobed four o'clock *(Mirabilis tenuiloba)*	-	-	4.3	Rocky slopes in Sonoran desert scrub (0-500m).	March-May	**Presumed absent.** No suitable scrub habitat for this species within the Study Area. No CNDDB records within 10 miles of the Study Area. Not detected during special-status plant survey on March 15, 2021.
Narrow-leaf sandpaper-plant *(Petalonyx linearis)*	-	-	2B.3	Mojavean desert scrub and Sonoran desert scrub in sandy soils or rocky canyons (0-1,000m).	March-May	**Presumed absent.** No suitable scrub habitat for this species within the Study Area. No CNDDB records within 10 miles of the Study Area. Not detected during special-status plant survey on March 15, 2021.

Table 1. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Thuber's pilostyles *(Pilostyles thurberi)*	-	-	4.3	Open desert scrub (0-300m).	January	**Presumed absent.** No suitable scrub habitat for this species within the Study Area. No CNDDB records within 10 miles of the Study Area. Not detected during special-status plant survey on March 15, 2021.
Orocopia sage *(Salvia greatae)*	-	-	1B.3	Alluvial slopes, floodplains, edges of washes, Sonoran creosote scrub (30-450m).	March-April	**Presumed absent.** No suitable slope, wash, or scrub habitat for this species within the Study Area. No CNDDB records within 10 miles of the Study Area. Not detected during special-status plant survey on March 15, 2021.
Mecca-aster *(Xylorhiza cognata)*	-	-	1B.2	Sonoran desert scrub (20-400m).	January-June	**Presumed absent.** Limited suitable habitat within the Study Area. No CNDDB records within 10 miles of the Study Area. Not detected during special-status plant survey on March 15, 2021.
Orcutt's woody-aster *(Xylorhiza orcuttii)*	-	-	1B.2	Sonoran desert scrub (0-365m).	March-April	**Presumed absent.** Limited suitable habitat within the Study Area. There are 26 CNDDB records within 10 miles, the closest record from 2001, located approximately 3.8 miles away from the Study Area. Not detected during the special-status plant survey on March 15, 2021.

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Table 1. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Fish						
Desert pupfish (*Cyprinodon macularius*)	FE	CE		Shallow and slow moving water features with sand or silt bottoms and aquatic plants. May include desert springs, marshes, lakes, and saline or stream pools. Extant in Salton Sea agricultural drains, and in natural drainages like San Felipe Creek and Salt Creek. Historically present in the Salton Sea.	N/A	**Absent.** No suitable habitat in the Study Area. There are five CNDDB records located within 10 miles of the Project, the closest is approximately 7.9 miles north of the Study Area.
Razorback sucker (*Xyranuchen texanus*)	FE	CE	CFP	Rivers and lakes in the southwestern U.S. Extant but declining in the Colorado River. Detected on occasion within the All-American Canal.	N/A	**Absent.** No suitable habitat in the Study Area. There is one historic CNDDB record (1951) located approximately 7.3 miles from the Study Area.
Reptiles						
Flat-tailed horned lizard (*Phrynosoma mcallii*)	-	-	SSC	Desert scrub on sandy flats and valleys with little or no windblown sand, salt flats, and areas with gravelly soils. There are three regional populations of flat-tailed horned lizard in California; two of these (representing the majority of the range in the state) occur in Imperial County. These are on the west side of the Salton Sea/Imperial Valley and on the east side of the Imperial Valley.		**Low potential to occur.** Limited suitable habitat within the Study Area. There are 40 CNDDB records within 10 miles of the Study Area, the closet being approximately 4.8 miles southwest of the Study Area.

EEC ORIGINAL PKG

Table 1. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Colorado Valley fringe-toed lizard (*Uma notata*)	-	-	SSC	Sparsely vegetated areas with fine sand including flats, riverbanks, dunes, and washes. Burrows in fine loose sand.		**Presumed absent.** No suitable habitat within the Study Area. There is one CNDDB record from 2009 located approximately 9.9 miles from the Study Area.
Birds						
Clark's grebe *(Aechmophorus clarkii)*	-	-	BCC	Winters on salt or brackish bays, estuaries, sheltered sea coasts, freshwater lakes, and rivers. Breeds on freshwater to brackish marshes, lakes, reservoirs and ponds, with a preference for large stretches of open water fringed with emergent vegetation.	June-August (breeding)	**Absent.** No suitable habitat present within the Study Area. No CNDDB records within 10 miles of the Study Area.
Black skimmer (*Rynchops niger*)	-	-	SSC	Coastal beaches and islands near oceans or Gulf of Mexico; occasionally seen inland, particularly sites such as Salton Sea. Nests on sparsely vegetated beaches, dredge spoil islands, and salt marshes.	April-September (breeding)	**Potential to occur**. Suitable beach nesting habitat for this species within the Study Area. No CNDDB records within 10 miles of the Study Area.
White-faced ibis (nesting colony) (*Plegadis chihi*)	-	-	CDFW WL	Freshwater habitats such as ponds, rivers, marshes, and swamps. Nests in low tree or on ground in reeds in marshes.	April-July (breeding)	**Absent**. No suitable nesting habitat within Study Area due to lack of marshes. One CNDDB (1977) approximately 6 miles from the Study Area.
Gull-billed tern (*Gelochelidon nilotica*)	-	-	SSC, BCC	Salt marshes, estuaries, coastlines, and plowed fields. Nests on beaches, sandy shores of salt marshes, and sandy barrier islands.	April-July (breeding)	**Potential to occur.** Suitable nesting is present within the Study Area. No CNDDB records within 10 miles of the Study Area.

EEC ORIGINAL PKG

Table 1. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
California brown pelican *(Pelecanus occidentalis californicus)*	De-listed	De-listed	CFP	Nests on rocky offshore islands along Pacific Coast of California south to Baja California. Winters throughout coastal California	January-September (nesting); wintering grounds September-April	**Absent.** No suitable foraging or nesting habitat present within the Study Area. One CNDDB record (2004) within the Study Area. No suitable nesting habitat within the Study Area.
Great blue heron *(Ardea herodias)*	-	-	CNDDB	Inhabits a wide range of water habitats, including marshes, swamps, shorelines, tideflats, slow-moving rivers, and shallow coastal bays. Nests within trees and shrubs near water, occasionally on the ground in areas free of predators.	February – May (breeding)	**Absent.** No suitable foraging or nesting habitat present within the Study Area No CNDDB record within the Study Area. No CNDDB records within 10 miles of the Study Area. No suitable nesting habitat within the Study Area.
Costa's hummingbird *(Calypte costae)*	-	-	BCC	In California, breeds in coastal scrub and chaparral communities from Santa Barbara County south into Baja California, from Mexico north into Mojave desert scrub of Eastern Sierra Nevada;	February-June	**Low potential to occur.** Iodine scrub may provide marginal nesting habitat within the Study Area. No CNDDB records within 10 miles of the Study Area.
California black rail *(Laterallus jamaicensis coturniculus)*	-	CT	BCC, CFP	Salt marsh, shallow freshwater marsh, wet meadows, and flooded grassy vegetation. In California, primarily found in coastal and Bay-Delta communities, but also in Sierran foothills (Butte, Yuba, Nevada, Placer, El Dorado counties)	March-September (breeding)	**Absent** No suitable habitat within the Study Area. There is one CNDDB record from 2007 located approximately 8.5 miles from the Study Area.

EEC ORIGINAL PKG

Table 1. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Mountain plover *(Charadrius montanus)*	-	-	BCC, SSC	Breeds in the Great Plains/Midwestern US; winters in California, Arizona, Texas, and Mexico; wintering habitat in California includes tilled fields, heavily grazed open grassland, burned fields, and alfalfa fields.	September-March (wintering)	**Absent.** No suitable habitat within the Study Area. There are two recent CNDDB records (2008 and 2009) approximately 8 miles from the Study Area.
Western snowy plover (interior population) *(Charadrius nivosus nivosus)*	-	-	BCC, SSC	Nests on the ground, on open sandy coastal beaches, barrier islands, barrens shores of inland saline lakes, on river bars, and man-made ponds such as wastewater ponds, dredge spoils, and salt evaporation ponds.	March-September	**Potential to occur.** Suitable open barren shore habitat for nesting within the Study Area. There is a CNDDB record from 1999 within the Study Area.
Whimbrel *(Numenius phaeopus)*	-	-	BCC	Nesting occurs in Alaska and northern Canada; winters in coastal Oregon, California, south to Central America; wintering habitat includes tidal mudflats, coral reefs, lagoons, marshes, swamps, estuaries, sandy beaches, and rocky shores.	October-March	**Absent.** No suitable habitat in within the Study Area. No CNDDB records within 10 miles of the Study Area.

EEC ORIGINAL PKG

Table 1. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Long-billed curlew (*Numenius americanus*)	-	-	BCC	Breeds east of the Cascades in Washington, Oregon, northeastern California (Siskiyou, Modoc, Lassen counties), east-central California (Inyo County), through Great Basin region into Great Plains. Winters in California, Texas, and Louisiana. Wintering habitat includes tidal mudflats and estuaries, wet pastures, sandy beaches, salt marsh, managed wetlands, evaporation ponds, sewage ponds, and grasslands.	September-March (wintering)	**Absent.** No suitable habitat within the Study Area. No CNDDB records within 10 miles of the Study Area.
Marbled godwit (*Limosa fedoa*)	-	-	BCC	Nests in Montana, North and South Dakota, Minnesota, into Canada. Winter range along Pacific Coast from British Columbia south to Central America, with small numbers wintering in interior California. Wintering habitat includes coastal mudflats, meadows, estuaries, sandy beaches, sandflats, and salt ponds.	August-April (migrant/ wintering in California)	**Absent.** No suitable habitat within the Study Area. No CNDDB records within 10 miles of the Study Area.

EEC ORIGINAL PKG

Table 1. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Willet (*Tringa semipalmata*)	-	-	BCC	Breeds locally in interior of western North America. In California, breeding range includes the Klamath Basin and Modoc Plateau and portions of Mono and possibly Inyo counties. Breeding habitat includes prairies, Breeds in wetlands and grasslands on semiarid plains; in uplands near brackish or saline wetlands; prefers temporary, seasonal, and alkali wetlands over semi-permanent and permanent wetlands.	April-August	**Absent.** No suitable habitat within the Study Area. No CNDDB records within 10 miles of the Study Area.
Bald eagle (*Haliaeetus leucocephalus*)	De-listed	CE	CFP BCC	Typically nests in forested areas near large bodies of water in the northern half of California; nest in trees and rarely on cliffs; wintering habitat includes forest and woodland communities near water bodies (e.g., rivers, lakes), wetlands, flooded agricultural fields, open grasslands.	February – September (nesting); October-March (wintering)	**Absent.** No suitable habitat within the Study Area. No CNDDB records within 10 miles of the Study Area.

EEC ORIGINAL PKG

Table 1. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Yuma Ridgway's rail (*Rallus obsoletus* spp. *yumanesis*)	FE	CT	CFP	Consistently found in freshwater marshes that are composed of cattail and bulrush. This emergent vegetation averages greater than 6 feet tall. Water depth tends to be around 3.5 inches deep. Range extends from Nevada, California, and Arizona to Baja California and Sonora Mexico.	March-August	**Absent.** No suitable habitat within the Study Area. Historic CNDDB record (1988) approximately 9.3 miles from the Study Area.
Burrowing owl (*Athene cunicularia*)	-	-	BCC SSC	Nests in burrows or burrow surrogates in open, treeless, areas within grassland, steppe, and desert biomes. Often with other burrowing mammals (e.g.,prairie dogs, California ground squirrels). May also use human-made habitat such as agricultural fields, golf courses, cemeteries, roadside, airports, vacant urban lots, and fairgrounds.	February-August	**Low potential to occur.** Marginally suitable habitat in the form of open area within the Study Area; however, no suitable burrows observed. There are two recent CNDDB record (2006 and 2008) located approximately 4 miles from the Study Area.

Table 1. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Prairie falcon (*Falco mexicanus*)	-	-	BCC CDFW WL	Found in open habitat at all elevations up to 3,350 meters (Steenhof 2013). Nests on cliffs and bluffs in arid plains and steppes; In California, nesting throughout state except northwest corner, along immediate coast, and the Central Valley floor. Winters throughout California, in open habitats, such as grasslands in Central Valley.	March-July (breeding); September-February (wintering in Central Valley)	**Absent.** No suitable habitat within the Study Area. However, this species may forage within the Study Area. There is one historic CNDDB (1976) located within the Study Area.
Le Conte's thrasher (*Toxostoma lecontei*)	-	-	SSC	Desert flats, dunes, and scrub with sparse saltbush and sometimes creosote bush.	December-March (breeding)	**Low potential to occur.** Marginally suitable habitat within the Study Area. There are two historic CNDDB records (1934 and 1933) located approximately 4.8 and 9.4 miles from the Study Area.
Mammals						
Palm Springs pocket mouse (*Perognathus longimembris bangsi*)	-	-	SSC	Occurs in flat or gently sloping habitats of loose or sandy soils, with relatively sparse vegetation.		**Low potential to occur.** Marginally suitable habitat within the Study Area. There are two recent CNDDB records from 2015 located approximately 7.2 and 8.7 miles from the Study Area.

EEC ORIGINAL PKG

Table 1. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			
Pallid bat (*Antrozous pallidus*)	-	-	SSC	Crevices in rocky outcrops and cliffs, caves, mines, trees (e.g., basal hollows of redwoods, cavities of oaks, exfoliating pine and oak bark, deciduous trees in riparian areas, and fruit trees in orchards). Also roosts in various human structures such as bridges, barns, porches, bat boxes, and human-occupied as well as vacant buildings (Western Bat Working Group [WBWG]2017).	April-September	**Absent.** No suitable roosting habitat within the Study Area. No CNDDB records within 10 miles of the Study Area.
Western yellow bat (*Lasisurus xanthius*)	-	-	SSC	Roosts in trees, especially in fan palms with dead fronds. Found in riparian woodlands in arid regions, oak or pinyon-juniper woodlands, and human developed areas.	April-September	**Absent.** No suitable roosting habitat within the Study Area. No CNDDB records within 10 miles of the Study Area.
Western mastiff bat (*Eumops perotis californicus*)	-	-	SSC	Primarily a cliff-dwelling species, found in similar crevices in large boulders and buildings (WBWG 2017).	April-September	**Absent.** No suitable roosting habitat within the Study Area. Historic CNDDB (1967) record approximately 9.4 miles from the Study Area.

Status Codes NOTE:

FESA	Federal Endangered Species Act
CESA	California Endangered Species Act
FE	FESA listed, Endangered
BCC	USFWS Bird of Conservation Concern)
CT	CESA or NPPA listed, Threatened
CE	CESA or NPPA listed, Endangered
CFP	California Fish and Game Code Fully Protected Species (§ 3511-birds, § 4700-mammals, §5 050-reptiles/amphibians)
CDFW WL	CDFW Watch List
SSC	CDFW Species of Special Concern (updated July 2017)
CNDDB	Species that is tracked by CDFW's CNDDB but does not have any of the above special-status designations otherwise
1B	CRPR/Rare or Endangered in California and elsewhere
2B	Plants rare, threatened, or endangered in California but more common elsewhere
4	CRPR/Plants of Limited Distribution – A Watch List

Table 1. Special-Status Species Evaluated for the Study Area

Common Name (Scientific Name)	Status			Habitat Description	Survey Period	Potential To Occur Onsite
	ESA	CESA	Other			

0.1	Threat Rank/Seriously threatened in California (over 80% of occurrences threatened / high degree and immediacy of threat)
0.2	Threat Rank/Moderately threatened in California (20-80% occurrences threatened / moderate degree and immediacy of threat)
0.3	Threat Rank/Not very threatened in California (<20% of occurrences threatened / low degree and immediacy of threat or no current threats known)
Delisted	Formally Delisted (delisted species are monitored for 5 years)

5.5.1 Plants

Twenty-one special-status plant species were identified historically in the vicinity of the Study Areas based on the literature review (Table 1). Upon further analysis, and after the reconnaissance site visit the focused plant survey effort on March 15, 2021, all but one species was determined to not occur within the Study Area. No further discussion of these species is provided in this analysis. A brief description of the single species that has the potential to occur within the Study Area is presented below.

Abrams' Spurge

Abrams' spurge (*Euphorbia abramsiana*) is not listed pursuant to either the federal or California ESAs, but is a CRPR 2B.2 plant species. This species is known to occur at elevations between -5 and 1,310 meters (16 and 4,298 feet) and blooms between September and November. Abrams' spurge is known to occur in creosote scrub habitat within sandy flats, including playas, fields, disturbed areas, and washes.

There are no CNDDB records within 10 miles of the Study Area. The sandy playa onsite provides marginally suitable habitat for the species. This species was not observed during special-status plant surveys conducted on March 15, 2021, but this initial survey was outside the bloom period. Abrams' spurge has low potential to occur onsite.

5.5.2 Fish

Two special-status fish species were identified as having the potential to occur within Study Area based on the literature review (Table 1). Upon further analysis and after the reconnaissance site visit, both species were determined to not have potential to occur within the Study Area due to the absence of suitable habitat. No further discussion of these species is provided in this analysis.

5.5.3 Invertebrates

No special-status invertebrate species were identified as having the potential to occur within Study Area based on the literature review.

5.5.4 Reptiles

Two special-status reptile species were identified as having the potential to occur within Study Area based on the literature review (Table 1). Upon further analysis and after the reconnaissance site visit, one species was determined to not have potential to occur within the Study Area due to the absence of suitable habitat. No further discussion of this species is provided in this analysis. A brief description of the remaining species is provided below.

Flat-tailed Horned Lizard

The flat-tailed horned lizard (*Phrynosoma mcalli*) is a candidate for listing as endangered under the California ESA and is designated as an SSC by CDFW. This species is most commonly found on sandy flats and valleys within desert scrub habitat with little or no windblown sand. The flat-tailed horned lizard requires fine sand for cover as it burrows just beneath the surface to avoid extreme temperatures. They also use mammal burrows to seek refuge (Stebbins 2003).

There are 40 CNDDB occurrences of flat-tailed horned lizard within 10 miles of the Study Area (CDFW 2021). The iodine scrub provides marginal habitat for this species. Flat-tailed horned lizard has low potential to occur onsite.

5.5.5 Birds

Nineteen special-status bird species were identified as having the potential to occur within the Study Area based on the literature review (Table 1). Upon further analysis and after the reconnaissance site visit, all but six species were determined to not occur within the Study Area due to the absence of suitable habitat. No further discussion of these species is provided in this analysis. Brief descriptions of the remaining six species that have the potential to occur within the Study Area are presented below.

Black Skimmer

The black skimmer (*Rhynchops niger*) is not listed pursuant to either the federal or California ESAs; however, it is designated as a BCC by the USFWS and a SSC by the CDFW. In California, black skimmers breed inland at the Salton Sea and coastal San Diego and Orange counties (Gochfeld et al. 2020). They prefer to nest on open sandy areas or sparsely vegetated gravel or shell bars or broad mats of seawrack on salt marsh (Gochfeld et al. 2020). Nesting occurs during May through September.

There are no CNDDB records within 10 miles of the Study Area; however, the open playa may provide suitable nesting habitat onsite. Black skimmer has moderate potential to occur onsite.

Gull-billed Tern

The gull-billed tern (*Gelochelidon nilotica*) is not listed pursuant to either the California or federal ESAs; however, it is designated as a BCC by the USFWS and a SSC by the CDFW. In western North America, their breeding range includes the southernmost portion of California along the coast into western Mexico. In

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California, breeding colonies are restricted to San Diego Bay and the Salton Sea (Unitt 2004 and Molina and Erwin 2006 in Molina et al. 2020). The Salton Sea population nests on eroded earthen levees and gravel and barnacle islets or on constructed islets in shallow, brackish impoundments (Molina et al. 2020). Other gull-billed tern colonies are found on sparsely vegetated exposed mudflats, shell bars, or dredged spoil islands in impoundments (Molina et al. 2020). Nesting occurs from late April through July.

There are no CNDDB records within 10 miles of the Study Area; however, suitable nesting habitat occurs onsite in the open areas of the playa. Gull-billed tern has moderate potential to occur onsite.

Costa's Hummingbird

The Costa's hummingbird (*Calypte costae*) is not listed or protected under the federal or California ESAs; however, it is considered a BCC according to the USFWS. Costa's hummingbirds are found in the southwestern U.S. In California, Costa's hummingbirds breed in coastal sage scrub and chaparral as far north as Santa Barbara County and irregularly in Monterey County; along the western edge of the San Joaquin Valley as far north as Stanislaus County; and in the eastern Sierra Nevada from Inyo County southward (Baltosser and Scott 2020). Breeding habitat includes Sonoran desert scrub, Mojave Desert scrub, California chaparral, California coastal scrub, and Cape deciduous forests (Baja California) (Baltosser and Scott 2020). Nesting occurs during January through June.

There are no CNDDB records within 10 miles of the Study Area; however, marginal nesting habitat occurs onsite in the iodine scrub. Costa's hummingbird has low potential to occur onsite.

Western Snowy Plover

Two distinct populations of western snowy plover occur in California. Along the Pacific Coast, snowy plovers breed from southern Washington to Baja Sur, Mexico south to coastal Ecuador and Chile (Page et al. 2020). In California, inland breeding occurs locally in the San Joaquin Valley, the Salton Sea, and eastern California (Shuford et al. 2008). The "interior" population, which includes snowy plovers at the Salton Sea, resides in California and is a year-round resident at the Salton Sea. Western snowy plovers at the Salton Sea are a CDFW SSC and a USFWS BCC (CDFW 2019). 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 (Page et al. 2020). Breeding/nesting occurs from March through September.

There is one CNDDB record from 1999 located within the Study Area. Suitable nesting habitat occurs within open areas of sandy playa onsite. Western snowy plover has moderate potential to occur onsite.

Burrowing Owl

The burrowing owl (*Athene cunicularia*) is not listed pursuant to either the California or federal ESAs; however, it is designated as a BCC by the USFWS and a SSC by the CDFW. Burrowing owls inhabit dry open rolling hills, grasslands, desert floors, and open bare ground with gullies and arroyos. They can also inhabit developed areas such as golf courses, cemeteries, roadsides within cities, airports, vacant lots in

EEC ORIGINAL PKG

residential areas, school campuses, and fairgrounds (Poulin et al. 2020). This species typically uses burrows created by fossorial mammals, most notably the California ground squirrel (*Otospermophilus beecheyi*) but may also use man-made structures such as concrete culverts or pipes; concrete, asphalt, or wood debris piles; or openings beneath concrete or asphalt pavement (CDFG 2012). The breeding season typically occurs between February 1 and August 31 (California Burrowing Owl Consortium [CBOC] 1993; CDFG 2012).

There are two CNDDB records occurring in 2006 and 2008 approximately four miles from the Study Area. Marginally suitable habitat within open areas onsite; however, no suitable burrows were observed during the site reconnaissance survey. Burrowing owl has low potential to occur onsite.

Le Conte's Thrasher

The LeConte's thrasher (*Toxostoma lecontei*) is not listed or protected under the federal or California ESAs; however, it is considered a BCC by the USFWS and a SSC according to the CDFW. In California, this species is found in the San Joaquin Valley and Mojave and Colorado deserts of southern California (Sheppard 2020). They are found in sparsely vegetated desert flats, dunes, alluvial fans, or gently rolling hills having high proportion of saltbush or shadscale and/or cholla cactus (Sheppard 2020). LeConte's thrasher prefer to nest in thick, dense, thorny desert shrubs, or cholla cactus (Sheppard 2020). Breeding occurs during February through June.

There are two historic CNDDB records (from 1934 and 1933) located approximately 4.8 and 9.4 miles from the Study Area, respectively. Marginally suitable habitat occurs within the sandy and sparsely vegetated areas of playa onsite. Le Conte's thrasher has low potential to occur onsite.

5.5.6 Mammals

Four special-status mammal species were identified as having the potential to occur within Study Area based on the literature review (Table 1). Upon further analysis and after the reconnaissance site visit, three species were determined to not have potential to occur within the Study Area due to the absence of suitable habitat. No further discussion of these species is provided in this analysis. A brief description of the remaining species is provided below.

Palm Springs Pocket Mouse

Palm Springs pocket mouse (*Perognathus longimembris bangsi*) is not listed pursuant to either the federal or California ESAs, but is a CDFW SSC. This species is associated with flat or gently sloping habitats of loose or sandy soils, with relatively sparse vegetation.

There are two CNDDB records from 2015 located approximately 7.2 and 8.7 miles from the Study Area. Marginally suitable habitat occurs within the open, and sparsely vegetated areas of playa onsite. Palm Springs pocket mouse has low potential to occur onsite.

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5.6 Critical Habitat

The Study Area does not coincide with designated Critical Habitat for any federally listed species (USFWS 2021).

6.0 IMPACT ANALYSIS

6.1 Impacts to Special Status Plants

The Study Area provides habitat for special-status plants. Ground-disturbing activities (e.g., grading, well drilling) have potential to adversely impact special-status plants if present in areas planned for ground disturbance. Implementation of avoidance and minimization measure (AMM) PLANT-1 described in Section 7.0 would avoid or minimize potential impacts to special-status plants.

6.2 Impacts to Special Status Reptiles

The Study Area provides marginal habitat for flat-tailed horned lizard. Ground-disturbing activities (e.g., grading, well drilling) have potential to adversely impact this species if individuals are present during ground disturbance. Implementation of AMM FTHL-1 described in Section 7.0 would avoid or minimize potential impacts to flat-tailed horned lizard.

6.3 Impacts to Special Status Birds

The Study Area provides suitable nesting and foraging habitat for special-status birds and birds protected by the MBTA and Fish and Game Code. Nesting and/or foraging birds have potential to be adversely impacted by Project activities if present within and adjacent to the Study Area during implementation of the Project. Implementation of AMM BIRD-1 and AMM BIRD-2 described in Section 7.0 would avoid or minimize potential impacts to special-status birds and birds protected by the MBTA and Fish and Game Code.

6.4 Impacts to Special Status Mammals

The Study Area provides marginal habitat for Palm Springs pocket mouse. Ground-disturbing activities (e.g., grading, well drilling) have potential to adversely impact this species if individuals are present during ground disturbance. Implementation of AMM PSPM-1 described in Section 7.0 would avoid and minimize potential impacts to Palm Springs pocket mouse.

6.5 Aquatic Resources, Including Waters the U.S. and State

Per the USACE issued AJD, there are no aquatic resources within the Study Area (USACE 2021). The Project would have no impact on aquatic resources, including Waters of the U.S. and State.

EEC ORIGINAL PKG

7.0 RECOMMENDATIONS

This section summarizes recommended avoidance and minimization measures to avoid, minimize, or compensate for potential impacts to biological resources from the proposed Project.

7.1.1 Special-Status Plants

To ensure Project implementation would not impact Abrams' spurge, the following measure is recommended:

AMM PLANT 1 - Preconstruction floristic surveys shall be conducted for any areas of proposed ground disturbance (i.e., grading or earth work) in the Study Area with the potential to support Abram's spurge. The area of ground disturbance and a 25-foot buffer would be surveyed by a qualified botanist during the appropriate blooming period prior to the start of Project activities. If no special status plants are found during the preconstruction surveys, no further measures are necessary. If surveys identify any special-status plants with a California Native Plant Society California Rare Plant Rank of 1 or 2, the Applicant shall identify them with flagging and avoid them with a 25-foot no-disturbance buffer during Project activities.

7.1.2 Special-Status Reptiles

To ensure Project implementation would not impact flat-tailed horned lizard, the following measure is recommended:

AMM FTHL – 1: Conduct a pre-construction flat-tailed horned lizard survey for all areas planned for ground disturbance within 48 hours prior to construction activities. Any flat-tailed horned lizard individuals discovered in the Project work area immediately prior to or during Project activities shall be allowed to move out of the work area of their own volition. If this is not feasible, they shall be captured by a qualified wildlife biologist and relocated out of harm's way to the nearest suitable habitat at least 100 feet from the Project work area where they were found.

7.1.3 Special-Status Birds and Migratory Bird Treaty Act-Protected Birds (Including Nesting Raptors)

To ensure Project implementation would not disturb nesting birds, the following measures are recommended:

AMM BIRD -1: 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.

AMM BIRD -2: If it is not feasible to comply with AMM-BIRD-1, a qualified biologist shall survey all areas to be disturbed within 14 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

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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.

7.1.4 Special-Status Mammals

To ensure Project implementation would not impact Palm Springs pocket mouse, the following measure is recommended:

AMM PSPM – 1: Conduct a pre-construction Palm Springs pocket mouse survey for all areas planned for ground disturbance within 48 hours prior to construction activities. Any Palm Springs pocket mouse individuals discovered in the Project work area immediately prior to or during Project activities shall be allowed to move out of the work area of their own volition. If this is not feasible, they shall be captured by a qualified wildlife biologist and relocated out of harm's way to the nearest suitable habitat at least 100 feet from the Project work area where they were found.

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IPaC **U.S. Fish & Wildlife Service**

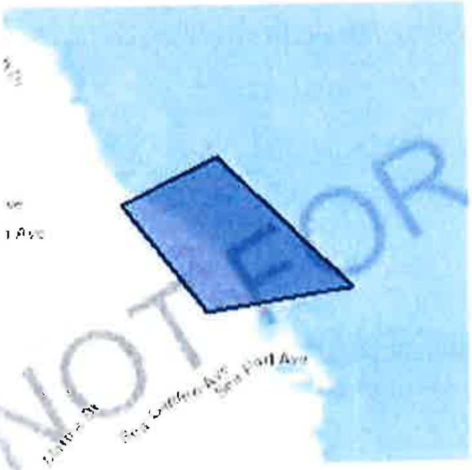
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Imperial County, California



Local office

Carlsbad Fish And Wildlife Office

☎ (760) 431-9440
📠 (760) 431-5901

2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385

http://www.fws.gov/carlsbad/

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Birds

NAME	STATUS

Western Snowy Plover Charadrius nivosus nivosus There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/8035	Threatened

Fishes

NAME	STATUS
Desert Pupfish Cyprinodon macularius There is **final** critical habitat for this species. Your location is outside the critical habitat. https://ecos.fws.gov/ecp/species/7003	Endangered

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
Bald Eagle Haliaeetus leucocephalus This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31
Black Skimmer Rynchops niger This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5234	Breeds May 20 to Sep 15
Burrowing Owl Athene cunicularia This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9737	Breeds Mar 15 to Aug 31
Clark's Grebe Aechmophorus clarkii This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jan 1 to Dec 31

Costa's Hummingbird Calypte costae This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9470	Breeds Jan 15 to Jun 10
Gull-billed Tern Gelochelidon nilotica This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9501	Breeds May 1 to Jul 31
Long-billed Curlew Numenius americanus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5511	Breeds elsewhere
Marbled Godwit Limosa fedoa This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Whimbrel Numenius phaeopus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9483	Breeds elsewhere
Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence ( )

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that

week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

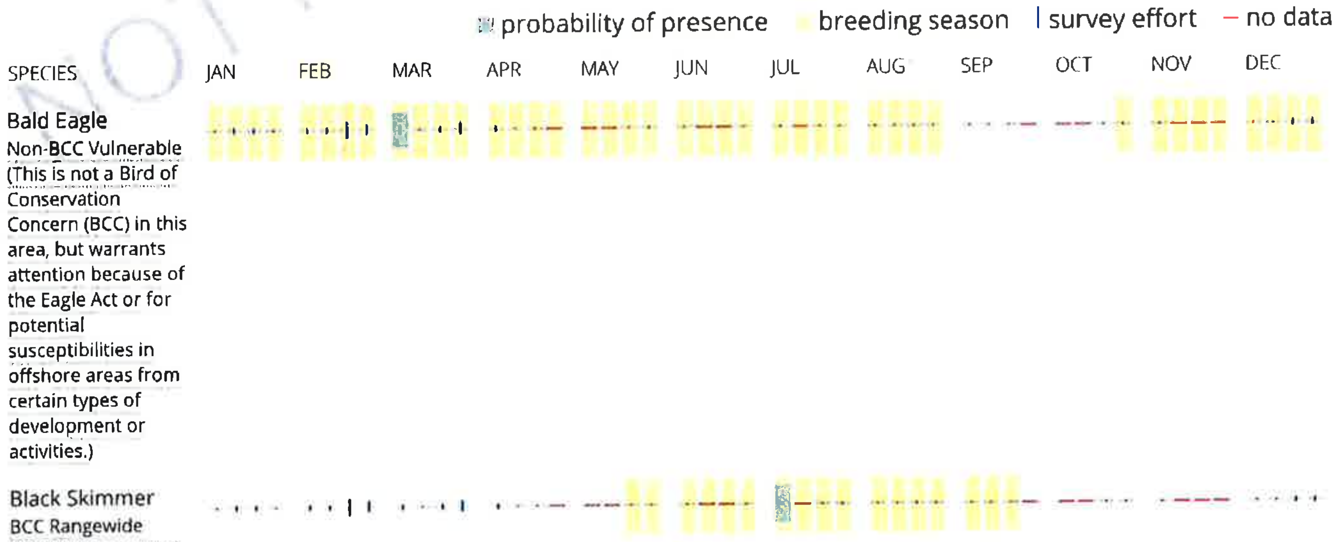
Breeding Season ( )
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Bald Eagle
Non-BCC Vulnerable (This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.)

Black Skimmer
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

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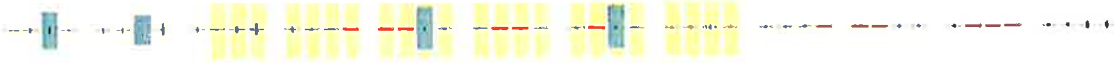
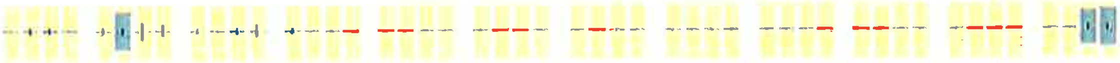
Burrowing Owl
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)



Clark's Grebe
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Costa's Hummingbird
BCC - BCR (This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA)

Gull-billed Tern
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Long-billed Curlew
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Marbled Godwit
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Whimbrel
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Willet
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

LAKE
- L1UBH1
- L2USC

RIVERINE
- R4SBJ

A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

CNPS California Native Plant Society

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

19 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3311641, 3311548, 3311547, 3311631, 3311538, 3311537, 3311621 3311528 and 3311527;

Modify Search Criteria Export to Excel Modify Columns Modify Sort Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Abronia villosa var. aurita	chaparral sand-verbena	Nyctaginaceae	annual herb	(Jan)Mar-Sep	1B.1	S2	G5T2?
Astragalus crotalariae	Salton milk-vetch	Fabaceae	perennial herb	Jan-Apr	4.3	S4	G4G5
Astragalus insularis var. harwoodii	Harwood's milk-vetch	Fabaceae	annual herb	Jan-May	2B.2	S2	G5T4
Astragalus lentiginosus var. borreganus	Borrego milk-vetch	Fabaceae	annual herb	Feb-May	4.3	S4	G5T5?
Astragalus sabulonum	gravel milk-vetch	Fabaceae	annual / perennial herb	Feb-Jun	2B.2	S2	G4G5
Ayenia compacta	California ayenia	Malvaceae	perennial herb	Mar-Apr	2B.3	S3	G4
Chaenactis carphoclinia var. peirsonii	Peirson's pincushion	Asteraceae	annual herb	Mar-Apr	1B.3	S2	G5T2
Chylismia arenaria	sand evening-primrose	Onagraceae	annual / perennial herb	Nov-May	2B.2	S2S3	G4?
Cladium californicum	California sawgrass	Cyperaceae	perennial rhizomatous herb	Jun-Sep	2B.2	S2	G4
Euphorbia abramsiana	Abrams' spurge	Euphorbiaceae	annual herb	(Aug)Sep-Nov	2B.2	S2	G4
Johnstonella costata	ribbed cryptantha	Boraginaceae	annual herb	Feb-May	4.3	S4	G4G5
Lycium parishii	Parish's desert-thorn	Solanaceae	perennial shrub	Mar-Apr	2B.3	S1	G3?
Lycium torreyi	Torrey's box-thorn	Solanaceae	perennial shrub	(Jan-Feb)Mar-Jun(Sep-Nov)	4.2	S3	G4G5
Mirabilis tenuiloba	slender-lobed four o'clock	Nyctaginaceae	perennial herb	(Feb)Mar-May	4.3	S4	G5
Petalonyx linearis	narrow-leaf sandpaper-plant	Loasaceae	perennial shrub	(Jan-Feb)Mar-May(Jun-Dec)	2B.3	S3?	G4
Pilostyles thurberi	Thurber's pilostyles	Apodanthaceae	perennial herb (parasitic)	Dec-Apr	4.3	S4	G5
Salvia greatae	Orocopia sage	Lamiaceae	perennial	Mar-Apr	1B.3	S2S3	G2G3

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			evergreen shrub				
Xylorhiza cognata	Mecca-aster	Asteraceae	perennial herb	Jan-Jun	1B.2	S2	G2
Xylorhiza orcuttii	Orcutt's woody-aster	Asteraceae	perennial herb	Mar-Apr	1B.2	S2	G3?

Suggested Citation

California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 17 November 2020].

Search the Inventory
Simple Search
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Glossary

Information
About the Inventory
About the Rare Plant Program
CNPS Home Page
About CNPS
Join CNPS

Contributors
The Calflora Database
The California Lichen Society
California Natural Diversity Database
The Jepson Flora Project
The Consortium of California Herbaria
CalPhotos

Questions and Comments
rareplants@cnps.org

ATTACHMENT B

Representative Site Photographs

Photo 1: Disturbed parking area within Study Area, view north, 1/28/2021

Photo 2: Disturbed parking area within Study Area, view east, 1/28/2021

Photo 3: Iodine scrub within Study Area, view west, 1/28/2021

Photo 3: Open playa/salt pan, view southwest, 1/28/2021

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Attachment B. Representative Site Photographs

2019-142.03 Clubhouse Plot Studies Project

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ATTACHMENT C

Approved Jurisdictional Determination

DEPARTMENT OF DEFENSE UNITED STATES OF AMERICA

DEPARTMENT OF THE ARMY
U.S. ARMY CORPS OF ENGINEERS
LOS ANGELES DISTRICT
5900 LA PLACE COURT, SUITE 100
CARLSBAD, CALIFORNIA 92008

April 21, 2021

SUBJECT: Approved Jurisdictional Determination

Jessica Hummes
Imperial Irrigation District
333 E. Barioni Blvd.
Imperial, California 92251

Dear Ms. Hummes:

I am responding to your request dated March 15, 2021, for an approved Department of the Army jurisdictional determination (JD) for the Imperial Irrigation District AQMP Clubhouse Review Area ("Review Area", File No. SPL-2020-00598-CJA). The Review Area is located in near the census designated place of Salton City, Imperial County, California (Latitude 33.3376°, Longitude -115.9523°).

The Corps' evaluation process for determining whether or not a Department of the Army permit is needed involves two tests. If both tests are met, a permit would likely be required. The first test determines whether or not the proposed project is located within the Corps' geographic jurisdiction (i.e., it is within a water of the United States). The second test determines whether or not the proposed project is a regulated activity under Section 10 of the Rivers and Harbors Act or Section 404 of the Clean Water Act. This evaluation pertains only to geographic jurisdiction.

Based on the information provided in the aquatic resource delineation report entitled, "*Request for Approved Jurisdictional Determination for the Imperial Irrigation District Salton Sea Air Quality Mitigation Program Clubhouse Plot Study Assessment Area Aquatic Resource Delineation*", dated March 5, 2021, I have determined that waters of the United States do not occur within the Review Area (Figure 1, "*Clubhouse Review Area Aquatic Resource Delineation Map*", dated April 15, 2021). The basis for our determination can be found in the enclosed Approved Jurisdictional Determination (JD) form.

This letter includes an approved jurisdictional determination for the Imperial Irrigation District AQMP Clubhouse Review Area. If you wish to submit new information regarding this jurisdictional determination, please do so within 60 days. We will consider any new information so submitted and respond within 60 days by either revising the prior determination, if appropriate, or reissuing the prior determination. If you object to this or any revised or reissued jurisdictional determination, you may request an administrative appeal under Corps regulations at 33 CFR Part 331.

Enclosed you will find a Notification of Appeal Process (NAP) and Request for Appeal (RFA) form. If you wish to appeal this decision, you must submit a completed RFA form within 60 days of the date on the NAP to the Corps South Pacific Division Office at the following address:

Tom Cavanaugh
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division, CESPD-PDO
450 Golden Gate Ave.
San Francisco, CA 94102

In order for an RFA to be accepted by the Corps, the Corps must determine that it is complete, that it meets the criteria for appeal under 33 CFR Part 331.5 (see below), and that it has been received by the Division Office by **June 20, 2021**.

This determination has been conducted to identify the extent of the Corps' Clean Water Act jurisdiction on the particular project site identified in your request, and is valid for five years from the date of this letter, unless new information warrants revision of the determination before the expiration date. This determination may not be valid for the wetland conservation provisions of the Food Security Act of 1985. If you or your tenant are USDA program participants, or anticipate participation in USDA programs, you should request a certified wetland determination from the local office of the Natural Resources Conservation Service prior to starting work.

Thank you for participating in the regulatory program. If you have any questions, please contact me at (760) 602-4836 or via email at christopher.allen@usace.army.mil. Please help me to evaluate and improve the regulatory experience for others by completing the customer survey form at http://corpsmapu.usace.army.mil/cm_apex/f?p=regulatory_survey.

Sincerely,

Chris Allen
Senior Project Manager
San Diego and Imperial Counties Section

Enclosures

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NOTIFICATION OF ADMINISTRATIVE APPEAL OPTIONS AND PROCESS AND REQUEST FOR APPEAL

Applicant: Jessica Hummes	File Number: SPL-2020-00598-CJA	Date: APRIL 21, 2021
Attached is:		See Section below
	INITIAL PROFFERED PERMIT (Standard Permit or Letter of permission)	A
	PROFFERED PERMIT (Standard Permit or Letter of permission)	B
	PERMIT DENIAL	C
X	APPROVED JURISDICTIONAL DETERMINATION	D
	PRELIMINARY JURISDICTIONAL DETERMINATION	E

SECTION I - The following identifies your rights and options regarding an administrative appeal of the above decision. Additional information may be found at http://www.usace.army.mil/cecw/pages/reg_materials.aspx or Corps regulations at 33 CFR Part 331.

A: INITIAL PROFFERED PERMIT: You may accept or object to the permit.

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- OBJECT: If you object to the permit (Standard or LOP) because of certain terms and conditions therein, you may request that the permit be modified accordingly. You must complete Section II of this form and return the form to the district engineer. Your objections must be received by the district engineer within 60 days of the date of this notice, or you will forfeit your right to appeal the permit in the future. Upon receipt of your letter, the district engineer will evaluate your objections and may: (a) modify the permit to address all of your concerns, (b) modify the permit to address some of your objections, or (c) not modify the permit having determined that the permit should be issued as previously written. After evaluating your objections, the district engineer will send you a proffered permit for your reconsideration, as indicated in Section B below.

B: PROFFERED PERMIT: You may accept or appeal the permit

- ACCEPT: If you received a Standard Permit, you may sign the permit document and return it to the district engineer for final authorization. If you received a Letter of Permission (LOP), you may accept the LOP and your work is authorized. Your signature on the Standard Permit or acceptance of the LOP means that you accept the permit in its entirety, and waive all rights to appeal the permit, including its terms and conditions, and approved jurisdictional determinations associated with the permit.

- APPEAL: If you choose to decline the proffered permit (Standard or LOP) because of certain terms and conditions therein, you may appeal the declined permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

C: PERMIT DENIAL: You may appeal the denial of a permit under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

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D: APPROVED JURISDICTIONAL DETERMINATION: You may accept or appeal the approved JD or provide new information.

- ACCEPT: You do not need to notify the Corps to accept an approved JD. Failure to notify the Corps within 60 days of the date of this notice means that you accept the approved JD in its entirety, and waive all rights to appeal the approved JD.

- APPEAL: If you disagree with the approved JD, you may appeal the approved JD under the Corps of Engineers Administrative Appeal Process by completing Section II of this form and sending the form to the division engineer. This form must be received by the division engineer within 60 days of the date of this notice.

E: PRELIMINARY JURISDICTIONAL DETERMINATION: You do not need to respond to the Corps regarding the preliminary JD. The Preliminary JD is not appealable. If you wish, you may request an approved JD (which may be appealed), by contacting the Corps district for further instruction. Also you may provide new information for further consideration by the Corps to reevaluate the JD.

SECTION II - REQUEST FOR APPEAL or OBJECTIONS TO AN INITIAL PROFFERED PERMIT

REASONS FOR APPEAL OR OBJECTIONS: (Describe your reasons for appealing the decision or your objections to an initial proffered permit in clear concise statements. You may attach additional information to this form to clarify where your reasons or objections are addressed in the administrative record.)

ADDITIONAL INFORMATION: The appeal is limited to a review of the administrative record, the Corps memorandum for the record of the appeal conference or meeting, and any supplemental information that the review officer has determined is needed to clarify the administrative record. Neither the appellant nor the Corps may add new information or analyses to the record. However, you may provide additional information to clarify the location of information that is already in the administrative record.

POINT OF CONTACT FOR QUESTIONS OR INFORMATION:

If you have questions regarding this decision and/or the appeal process you may contact:
Christopher Allen
U.S. Army Corps of Engineers
Los Angeles District
5900 La Place Court, Suite 100
Carlsbad, California 92008
Phone: (760) 602-4836
Email: christopher.allen@usace.army.mil

If you only have questions regarding the appeal process you may also contact: Thomas J. Cavanaugh
Administrative Appeal Review Officer
U.S. Army Corps of Engineers
South Pacific Division
450 Golden Gate Ave.
San Francisco, CA 94102
Phone: (415) 503-6574
Fax: (415) 503-6646
Email: thomas.j.cavanaugh@usace.army.mil

RIGHT OF ENTRY: Your signature below grants the right of entry to Corps of Engineers personnel, and any government consultants, to conduct investigations of the project site during the course of the appeal process. You will be provided a 15 day notice of any site investigation, and will have the opportunity to participate in all site investigations.

_______________________ Signature of appellant or agent.	Date:	Telephone number:

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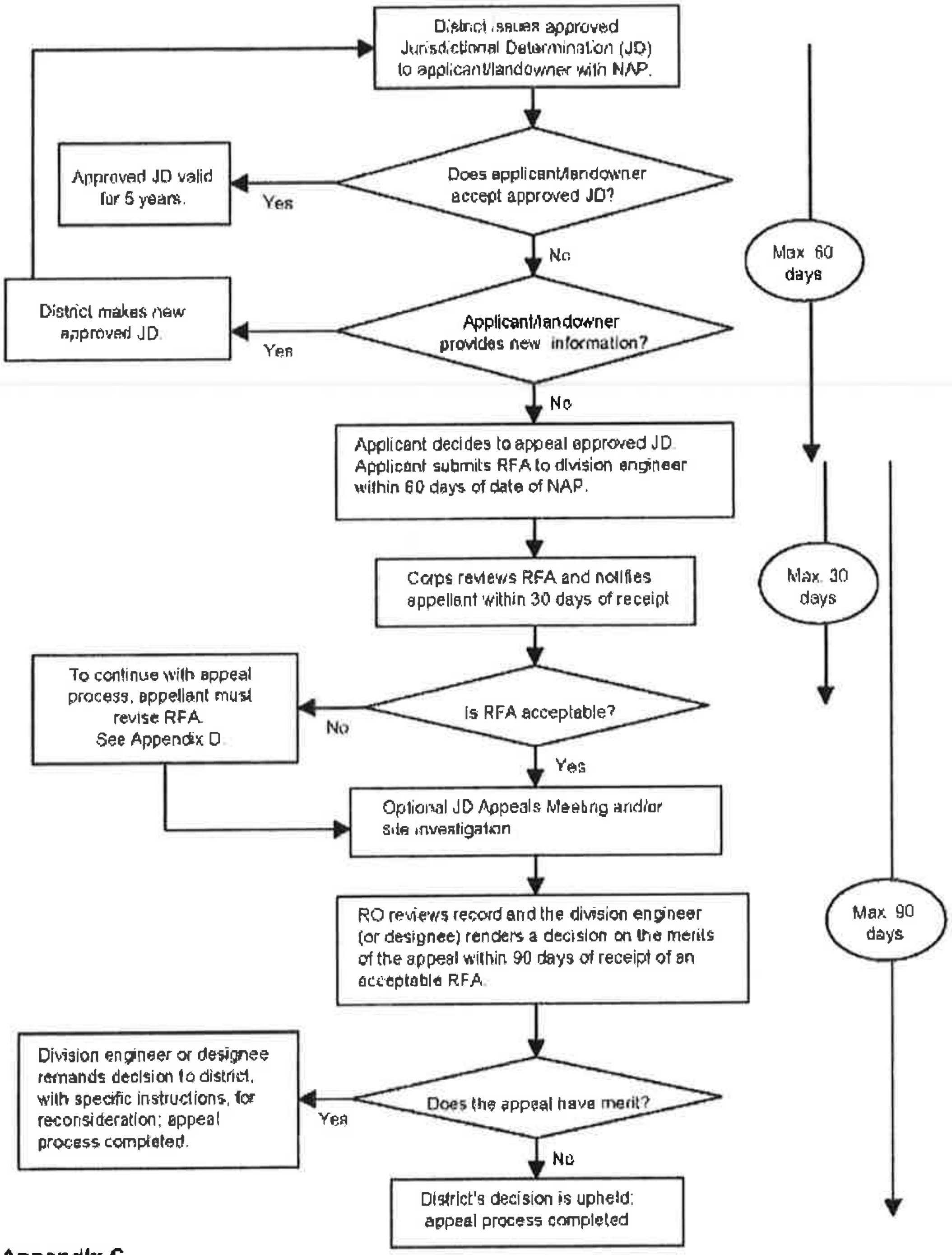
Administrative Appeal Process for Approved Jurisdictional Determinations



Appendix C

EEC ORIGINAL PKG

§ 331.5 Criteria.

(a) *Criteria for appeal* —(1) *Submission of RFA*. The appellant must submit a completed RFA (as defined at §331.2) to the appropriate division office in order to appeal an approved JD, a permit denial, or a declined permit. An individual permit that has been signed by the applicant, and subsequently unilaterally modified by the district engineer pursuant to 33 CFR 325.7, may be appealed under this process, provided that the applicant has not started work in waters of the United States authorized by the permit. The RFA must be received by the division engineer within 60 days of the date of the NAP.

(2) *Reasons for appeal*. The reason(s) for requesting an appeal of an approved JD, a permit denial, or a declined permit must be specifically stated in the RFA and must be more than a simple request for appeal because the affected party did not like the approved JD, permit decision, or the permit conditions. Examples of reasons for appeals include, but are not limited to, the following: A procedural error; an incorrect application of law, regulation or officially promulgated policy; omission of material fact; incorrect application of the current regulatory criteria and associated guidance for identifying and delineating wetlands; incorrect application of the Section 404(b)(1) Guidelines (see 40 CFR Part 230); or use of incorrect data. The reasons for appealing a permit denial or a declined permit may include jurisdiction issues, whether or not a previous approved JD was appealed.

(b) *Actions not appealable*. An action or decision is not subject to an administrative appeal under this part if it falls into one or more of the following categories:

(1) An individual permit decision (including a letter of permission or a standard permit with special conditions), where the permit has been accepted and signed by the permittee. By signing the permit, the applicant waives all rights to appeal the terms and conditions of the permit, unless the authorized work has not started in waters of the United States and that issued permit is subsequently modified by the district engineer pursuant to 33 CFR 325.7;

(2) Any site-specific matter that has been the subject of a final decision of the Federal courts;

(3) A final Corps decision that has resulted from additional analysis and evaluation, as directed by a final appeal decision;

(4) A permit denial without prejudice or a declined permit, where the controlling factor cannot be changed by the Corps decision maker (e.g., the requirements of a binding statute, regulation, state Section 401 water quality certification, state coastal zone management disapproval, etc. (See 33 CFR 320.4(j));

(5) A permit denial case where the applicant has subsequently modified the proposed project, because this would constitute an amended application that would require a new public interest review, rather than an appeal of the existing record and decision;

(6) Any request for the appeal of an approved JD, a denied permit, or a declined permit where the RFA has not been received by the division engineer within 60 days of the date of the NAP;

(7) A previously approved JD that has been superceded by another approved JD based on new information or data submitted by the applicant. The new approved JD is an appealable action;

(8) An approved JD associated with an individual permit where the permit has been accepted and signed by the permittee;

(9) A preliminary JD; or

(10) A JD associated with unauthorized activities except as provided in §331.11.

U.S. ARMY CORPS OF ENGINEERS
REGULATORY PROGRAM
APPROVED JURISDICTIONAL DETERMINATION FORM (INTERIM)
NAVIGABLE WATERS PROTECTION RULE

I. ADMINISTRATIVE INFORMATION

Completion Date of Approved Jurisdictional Determination (AJD): 4/14/2021
ORM Number: SPL-2020-00598
Associated JDs: N/A
Review Area Location[1]: State/Territory: California City: Salton City County/Parish/Borough: Imperial
Center Coordinates of Review Area: Latitude 33.3376° N Longitude -115.9523° W

II. FINDINGS

A. Summary: Check all that apply. At least one box from the following list MUST be selected. Complete the corresponding sections/tables and summarize data sources.

- ☒ The review area is comprised entirely of dry land (i.e., there are no waters or water features, including wetlands, of any kind in the entire review area). Rationale: The Review Area is currently comprised entirely of uplands
- ☐ There are "navigable waters of the United States" within Rivers and Harbors Act jurisdiction within the review area (complete table in Section II.B).
- ☐ There are "waters of the United States" within Clean Water Act jurisdiction within the review area (complete appropriate tables in Section II.C).
- ☐ There are waters or water features excluded from Clean Water Act jurisdiction within the review area (complete table in Section II.D).

B. Rivers and Harbors Act of 1899 Section 10 (§ 10)[2]

§ 10 Name	§ 10 Size		§ 10 Criteria	Rationale for § 10 Determination
N/A.	N/A.	N/A	N/A.	N/A.

C. Clean Water Act Section 404

Territorial Seas and Traditional Navigable Waters ((a)(1) waters):[3]				
(a)(1) Name	(a)(1) Size		(a)(1) Criteria	Rationale for (a)(1) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Tributaries ((a)(2) waters):				
(a)(2) Name	(a)(2) Size		(a)(2) Criteria	Rationale for (a)(2) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Lakes and ponds, and impoundments of jurisdictional waters ((a)(3) waters):				
(a)(3) Name	(a)(3) Size		(a)(3) Criteria	Rationale for (a)(3) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

Adjacent wetlands ((a)(4) waters):				
(a)(4) Name	(a)(4) Size		(a)(4) Criteria	Rationale for (a)(4) Determination
N/A.	N/A.	N/A.	N/A.	N/A.

---

[1] Map(s)/figure(s) are attached to the AJD provided to the requestor.

[2] If the navigable water is not subject to the ebb and flow of the tide or included on the District's list of Rivers and Harbors Act Section 10 navigable waters list, do NOT use this document to make the determination. The District must continue to follow the procedure outlined in 33 CFR part 329.14 to make a Rivers and Harbors Act Section 10 navigability determination.

[3] A stand-alone TNW determination is completed independently of a request for an AJD. A stand-alone TNW determination is conducted for a specific segment of river or stream or other type of waterbody, such as a lake, where upstream or downstream limits or lake borders are established. A stand-alone TNW determination should be completed following applicable guidance and should NOT be documented on the AJD Form.

D. Excluded Waters or Features

Excluded waters ((b)(1) – (b)(12)):[4]				
Exclusion Name	Exclusion Size		Exclusion[5]	Rationale for Exclusion Determination
N/A.	N/A.	N/A.	N/A.	N/A.

III. SUPPORTING INFORMATION

A. Select/enter all resources that were used to aid in this determination and attach data/maps to this document and/or references/citations in the administrative record, as appropriate.

☒ Information submitted by, or on behalf of, the applicant/consultant: Aquatic resource delineation report entitled, "Request for Approved Jurisdictional Determination for the Imperial Irrigation District Salton Sea Air Quality Mitigation Program Clubhouse Plot Study Assessment Area Aquatic Resource Delineation", dated March 5, 2021

This information is sufficient for purposes of this AJD.

Rationale: N/A

☐ Data sheets prepared by the Corps: Title(s) and/or date(s).

☒ Photographs: Other: Aquatic resource delineation report entitled, "Request for Approved Jurisdictional Determination for the Imperial Irrigation District Salton Sea Air Quality Mitigation Program Clubhouse Plot Study Assessment Area Aquatic Resource Delineation", dated March 5, 2021

☐ Corps site visit(s) conducted on: N/A

☐ Previous Jurisdictional Determinations (AJDs or PJDs): N/A

☐ Antecedent Precipitation Tool: *provide detailed discussion in Section III.B*.

☐ USDA NRCS Soil Survey: Title(s) and/or date(s).

☐ USFWS NWI maps: Title(s) and/or date(s).

☒ USGS topographic maps: Aquatic resource delineation report entitled, "Request for Approved Jurisdictional Determination for the Imperial Irrigation District Salton Sea Air Quality Mitigation Program Clubhouse Plot Study Assessment Area Aquatic Resource Delineation", dated March 5, 2021

Other data sources used to aid in this determination:

Data Source (select)	Name and/or date and other relevant information
USGS Sources	N/A.
USDA Sources	N/A.
NOAA Sources	N/A.
USACE Sources	N/A.
State/Local/Tribal Sources	N/A.
Other information (specify)	Aquatic resource delineation report entitled, "Request for Approved Jurisdictional Determination for the Imperial Irrigation District Salton Sea Air Quality Mitigation Program Clubhouse Plot Study Assessment Area Aquatic Resource Delineation", dated March 5, 2021

B. Typical year assessment(s): N/A

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[4] Some excluded waters, such as (b)(2) and (b)(4), may not be specifically identified on the AJD form unless a requestor specifically asks a Corps district to do so. Corps districts may, in case-by-case instances, choose to identify some or all of these waters within the review area.

[5] Because of the broad nature of the (b)(1) exclusion and in an effort to collect data on specific types of waters that would be covered by the (b)(1) exclusion, four sub-categories of (b)(1) exclusions were administratively created for the purposes of the AJD Form. These four sub-categories are not new exclusions, but are simply administrative distinctions and remain (b)(1) exclusions as defined by the NWPR.

C. Additional comments to support AJD: N/A

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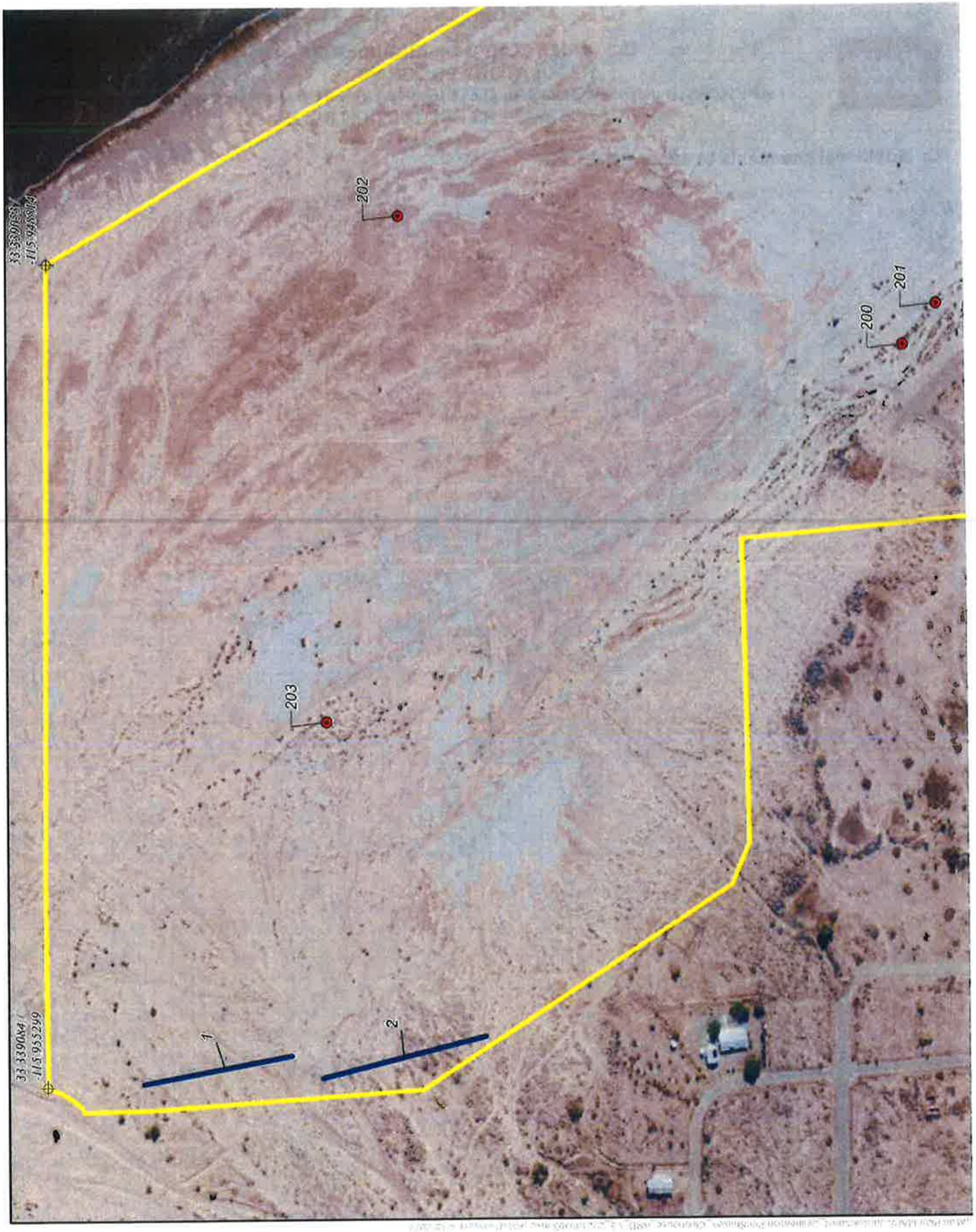

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ATTACHMENT C

Groundwater Resources Impact Assessment

FORMATION
ENVIRONMENTAL

TECHNICAL MEMORANDUM

GROUNDWATER RESOURCES IMPACT ASSESSMENT, CLUBHOUSE STUDY AREA, 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: April 27, 2021

MICHAEL TIETZE
No. HG 63

Mike Tietze

This technical memorandum presents the methods and results of a Groundwater Resources Impact Assessment (GRIA) to evaluate use of four water supply test wells to support vegetation enhancement at the Clubhouse Study Area located along the western shore of the Salton Sea, in Imperial County, California. Vegetation enhancement, which includes expansion and maintenance of existing vegetation, is planned as part of several plot studies in the Imperial Irrigation District's (IID) Salton Sea Air Quality Mitigation Program (SS AQM Program). This GRIA provides an assessment of the potential environmental impacts associated with groundwater extraction by the proposed test wells from shallow and deeper groundwater bearing zones in the Clubhouse Study Area and will be used to support preparation of an environmental document under the California Environmental Quality Act (CEQA).

1 BACKGROUND

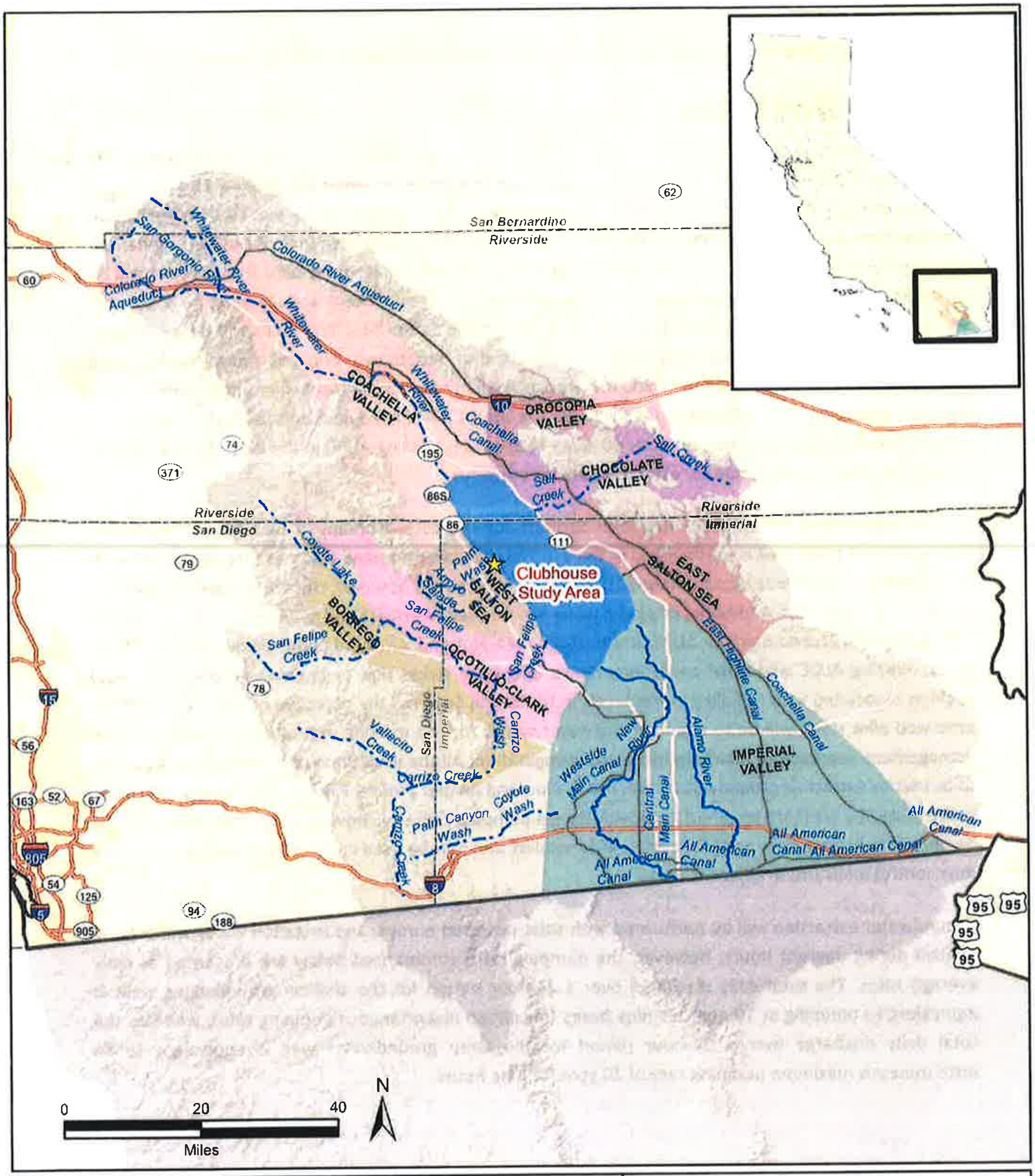
A series of plot studies and irrigation water supply development activities are planned for the Western domain of the Salton Sea (IID 2020). Water supplies are limited in this area, with no agricultural drains or other currently developed sources readily available for irrigation use. There are limited data regarding groundwater availability and suitability in this area; however, available data suggest that groundwater within the West Salton Sea Groundwater Basin could potentially be developed as a water supply source for irrigation. Groundwater resources in the Clubhouse Study Area will be investigated with the objective of developing an irrigation water supply for vegetation enhancement in the proposed plot study area. Review of well completion records for a few existing wells near the Clubhouse Study Area indicates that the subsurface sediments are composed primarily of fine-grained lacustrine and distal alluvial fan sediments, with some thin sand and gravel layers in the upper 300 to 500 feet of sediments. At some of these wells, artesian conditions were encountered. Similar conditions were observed in the upper 100 feet of soil investigated as part of a pilot soil boring drilled in May 2020. The purpose of the four water supply test wells is to investigate the groundwater conditions in the Clubhouse Study Area and provide an irrigation water supply. For the purposes of this study, groundwater resources have been subdivided into a "shallow zone" in the upper 100 feet of sediment below ground surface (bgs), and a deep zone, comprising sediments between 150 and 300 feet bgs.

2 PROJECT DESCRIPTION

The Clubhouse Study Area is located in Imperial County on the west side of the Salton Sea (Figure 1). The Study Area is located off Highway 86, immediately east and north of Salton City (Figure 2), and on IID-owned land (Accessor's Parcel Number 008-010-006) (Figure 3). The dust control plot study will evaluate groundwater supply development, establishment of new vegetation, maintenance of existing vegetation, and waterless dust control measures (DCMs). Specifically, information from the pilot study project will be used to gather information regarding to inform water supply development and planning for expanded future vegetation-based dust control on the west side of the Salton Sea. Test wells will be developed, tested and operated; 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. Vegetation will include the use of *Allenrolfea occidentalis* (ALOC), commonly known as iodine bush, on approximately 60 acres to augment existing ALOC in the area. ALOC is native, drought-resistant, and suitable for establishment on the playa.

The average annual groundwater irrigation demand for the establishment of new vegetation in the Clubhouse plot study area is summarized in Table 1. The calculated demand assumes that ALOC is planted in hedgerows that provide approximately 20 percent ground cover; however, the actual planting rate may be as low as 10 percent. Additional irrigation water will be used to irrigate and maintain existing ALOC and bush seepweed (*Sueda nigris* or SUNI) in the study area plot and surrounding IID-owned land. In these areas, existing ALOC and SUNI could experience long-term stress due to ongoing groundwater level declines associated with of falling water levels in the Salton Sea, and the objective of this portion of the proposed pilot study will be to augment the water supply for this existing vegetation using an adaptive management approach to maintain this existing vegetation. All the irrigation water demand is proposed to be met by extracting groundwater from the shallow and deeper groundwater zones (Table 1). As noted in the table, the wells are assumed to provide excess pumping capacity above the plot study demand, will be utilized to irrigate existing ALOC and SUNI as needed, and may be used in the implementation of future dust control measures in adjacent areas.

Groundwater extraction will be performed with solar-powered pumps, and irrigation water will only be applied during daylight hours; however, the pumping rates summarized below are presented as daily average rates. The total daily discharge over a 24-hour period for the shallow groundwater wells is equivalent to pumping at 10 gpm for nine hours (maximum instantaneous pumping rate); whereas the total daily discharge over a 24-hour period for the deep groundwater well is equivalent to an instantaneous maximum pumping rate of 20 gpm for nine hours.



Legend

▭	State Boundary	▨	Chocolate Valley	▨	Orocopia Valley	Stream Intermittent
⬚	Counties	▨	Coachella Valley	▨	West Salton Sea	Canal; Aqueduct; Intracoastal Waterway
	Major Highways	▨	East Salton Sea	▨	Salton Sea Watershed	Canal Intermittent
	Highways	▨	Imperial Valley		Stream; Braided Stream	
▨	Borrego Valley	▨	Ocotillo-Clark Valley		Ephemeral Stream	

Clubhouse Study Area

Salton Sea

Figure 1: Study Area and Regional Groundwater Basins

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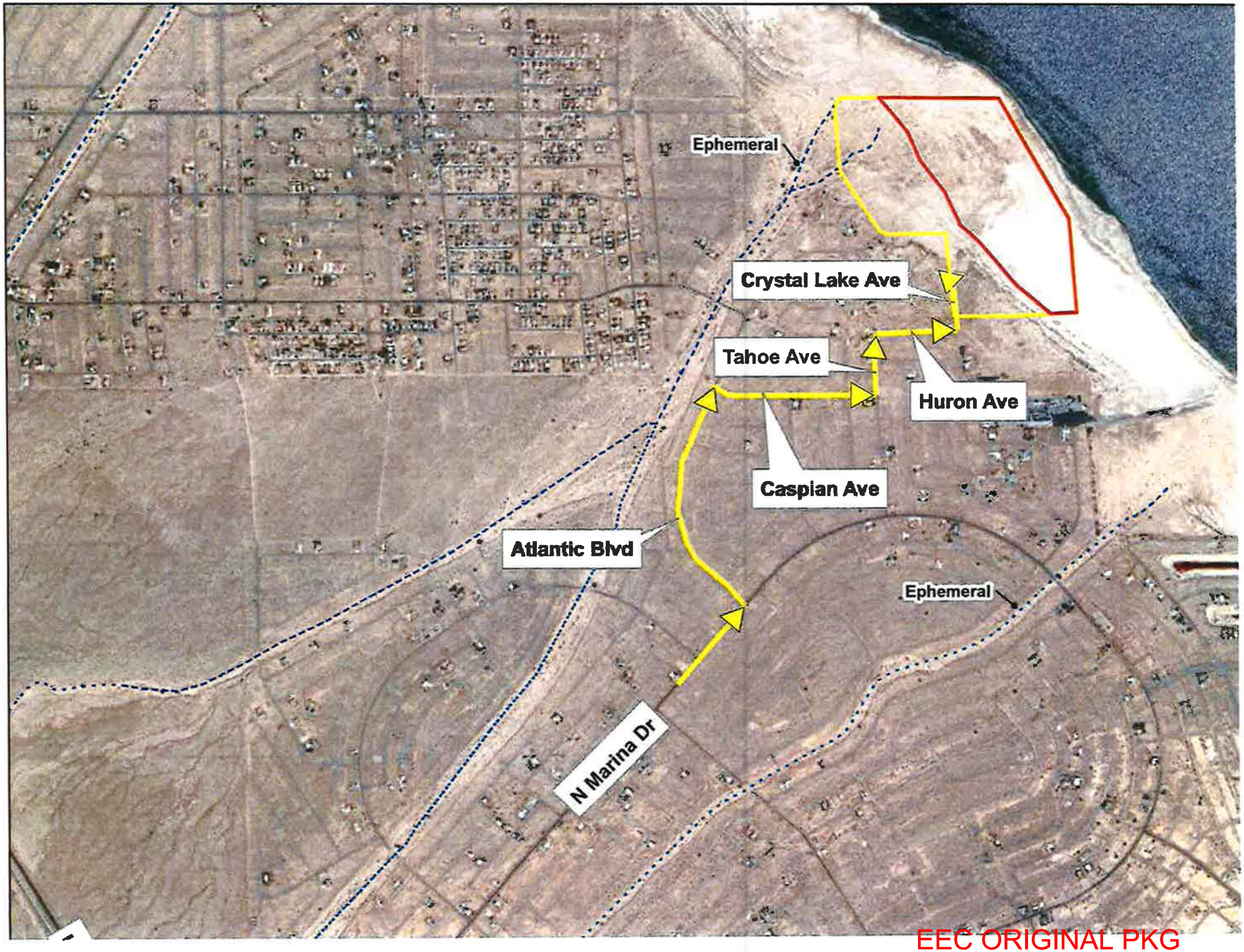

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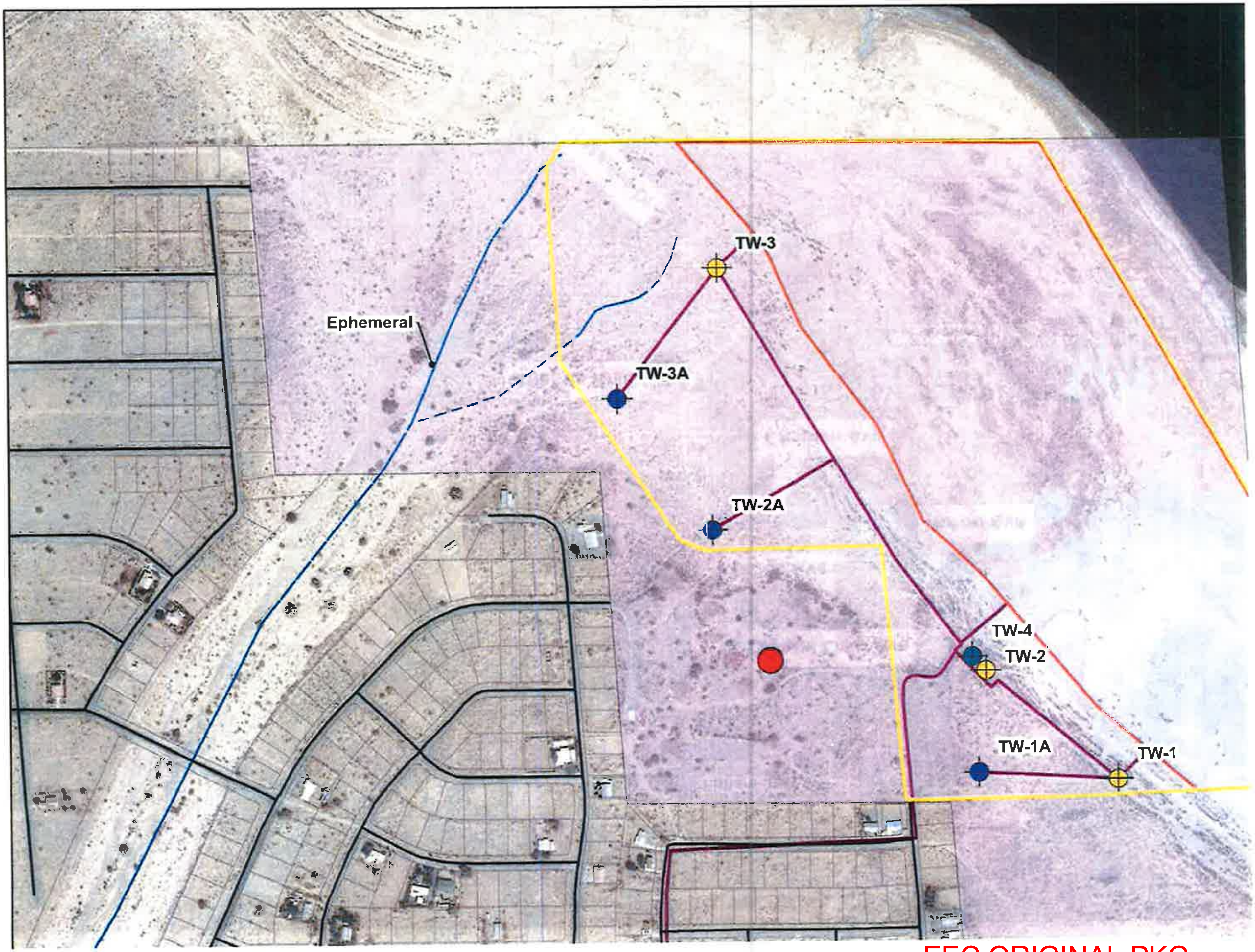

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TABLE 1. AVERAGE ANNUAL WATER DEMAND AND GROUNDWATER SUPPLY

Water Balance Component	Average Annual Water Demand and Supply		
	gallons/day	acre-feet/year	gallons/minute
Irrigation Water Demand - ***Allenrolfea occidentalis*** (60 acres, assume up to 20% cover)			
Year 1 (1.8 feet/year for planted area @ 20% cover)	19,300	21.6	13.4
Years 2 through 4 (1.2 feet/year for planted area @ 20% cover)	12,800	14.4	8.9
Long Term (10 inches/year for planted area @ 20% cover)	8,900	10	6.2
Groundwater Supply to Meet Irrigation Water Demand			
Shallow Zone Groundwater Pumping Capacity	16,200 (5,400 per well)	18 (6 per well)	11.25 (3.75 per well)
Deep Zone Groundwater Pumping Capacity	10,800	12	7.5
Total Anticipated Groundwater Supply Pumping Capacity	**27,000**	**30**	**18.75**

Notes: Surplus groundwater supply pumping capacity will be used to irrigate existing ALOC in the study area plot and surrounding area, and potentially to supply future vegetation-based dust control measures.

Up to three shallow supply test wells and one deeper groundwater supply test well will be constructed and operated. The three shallow test wells, screened from approximately 50 to 100 feet below ground surface (bgs), are proposed to investigate and develop the shallow semi-confined groundwater system (less than 100 feet bgs). The locations of three shallow test wells are shown on Figure 3 (TW-1, TW-2, TW-3). Depending on the groundwater conditions encountered during drilling of pilot borings for these wells, one or more of the shallow test wells may be completed at the alternative locations (TW-1A, TW-2A, TW-3A) shown on Figure 3. One deep test well (TW-4), screened between approximately 150 and 300 feet bgs, is proposed to investigate and develop the deeper confined groundwater system (Figure 3).

The deep groundwater supply test well will be constructed as follows:

1) A pilot boring will be drilled to a depth of approximately 300 feet using a truck mounted Rotosonic drilling rig to characterize subsurface conditions, sample water quality, and collect data necessary for design of the test well. Equipment used typically includes the drilling rig, a support truck and crew trucks. The work area will measure about 50 by 100 feet. No drilling additives will be used, and native soil cuttings will be spread on the ground surface in the work area.

2) The test well will be constructed using 4-inch diameter polyvinyl chloride (PCV) casing and screen. A grout sanitary seal will be placed to a depth of at least 20 feet and a filter pack will be placed in the anulus opposite the screen. Equipment will include the drilling rig, delivery trucks and crew trucks.

3) The well will be developed by mechanical methods, pumping, and with biodegradable dispersant. Groundwater removed during development will be dispersed on the playa using a high-capacity sprinkler under a Low Threat Discharge Permit obtained from the Regional Water Quality Control Board (RWQCB). Equipment will include a development truck and crew trucks.

4) A pump test will be conducted, including a step drawdown test and a 24-hour constant discharge test with water level measurements in the pumping well and nearby test wells during pumping and recovery. Groundwater removed during pump testing will be dispersed on the playa using a high-capacity sprinkler under the Low Threat Discharge Permit obtained from the RWQCB. Equipment will include a development truck and crew trucks.

5) A solar-powered pump will be installed in the well, and well surface equipment, piping, a storage tank and solar panels will be installed in a fenced compound measuring approximately 30 by 40 feet.

The shallow groundwater supply test wells will be constructed to a depth of approximately 100 feet using a similar approach, except that a track-mounted mobile drilling rig will be used and only a single well will be selected for pump testing.

After initial pump testing and surface completion of the wells, a long term pumping test may be conducted for up to approximately one-month to assess long-term well performance, water quality, and water level response during diurnal solar pumping for an extended period. During this test period, groundwater will be extracted from the shallow and deep test wells and this water will be used to irrigate the study plot in advance of planting the vegetation described above.

3 PROJECT SETTING

The Clubhouse Study Area is located in the West Salton Sea Groundwater Basin (Figure 4). The West Salton Sea Groundwater Basin is bounded by the Coachella Valley Groundwater Basin and non-water-bearing rocks of the Santa Rosa Mountains to the north and northwest, by the Ocotillo-Clark Valley Groundwater Basin to the south and southwest, and by the Salton Sea to the east (Figure 4).

The topography of the basin is sloped to the east. The highest elevations are along the mountain front of the Santa Rosa mountains to the west and the lowest elevations are along the playa on the western shores of the Salton Sea. Surface water generally flows from west to east, where it discharges into the Salton Sea, which is a terminal or closed basin with no outlets. Ephemeral and intermittent drainages are mapped on Figure 4. There are no perennial streams in the basin.

Potential groundwater dependent ecosystems (GDEs) in the West Salton Sea Groundwater Basin are shown on Figure 5. These GDEs were identified in the Commonly Associated with Groundwater (NCCAG) dataset of potential GDEs, developed for DWR by The Nature Conservancy (TNC) in cooperation with the California Department of Fish and Wildlife, and downloaded from the GDE Pulse website (TNC 2021). The NCCAG database includes a series of potential wetlands along the shore of the Salton Sea that have dried up since they were originally mapped and are therefore not included in the potential GDEs included in the GDE Pulse website.

A study regarding the establishment of salt-tolerant vegetation on the Salton Sea playa in the Tule Wash and Naval Test Station sites (on the west side of the Salton Sea) was conducted in 2019 by PlanTierra and Formation (2020). Field observations indicated that naturally propagating ALOC and Bush Seepweed (*Suaeda nigris*, SUNI) occurred on the playa below elevations of -194 and -213 feet below sea level, respectively. These plants were determined to likely be at least partially dependent on groundwater. As such, it is assumed that ALOC and SUNI may occur on the playa below these elevations near the Clubhouse Study Area and may be at least partially groundwater dependent. The locations of potential ALOC and SUNI alkaline shrub habitat GDEs are also shown on Figure 5, as defined by the land lying below the surface elevation threshold contours described above. The maximum rooting depth of ALOC is approximately 12 feet, based on observations at Salton Sea, and the maximum rooting depth of SUNI is approximately 4 to 5 feet (PlanTierra and Formation 2020). Both ALOC and SUNI can adjust to gradual groundwater level changes of less than about 1 foot per year within these maximum ranges.

According to DWR (DWR 2004), recharge to the West Salton Sea groundwater basin is primarily due to infiltration of runoff through coarse-grained deposits occurring at the base of the Santa Rosa Mountains, and groundwater generally flows to the east and discharges to the Salton Sea. Fine-grained lacustrine deposits associated with paleo Lake Cahuilla may limit the downward and eastward movement of groundwater in the east and southeast portions of the basin. The available data suggest lacustrine deposits associated with Lake Cahuilla are about 10 feet thick near the ancient Lake Cahuilla shoreline and may thicken to approximately 60 feet near the modern Salton Sea shoreline (Waters 1983). The storage capacity, or the amount of groundwater in storage within the basin, is unknown (DWR 2004). It is estimated that wells can locally produce up to 400 to 540 gallons per minute (gpm). Generally, the

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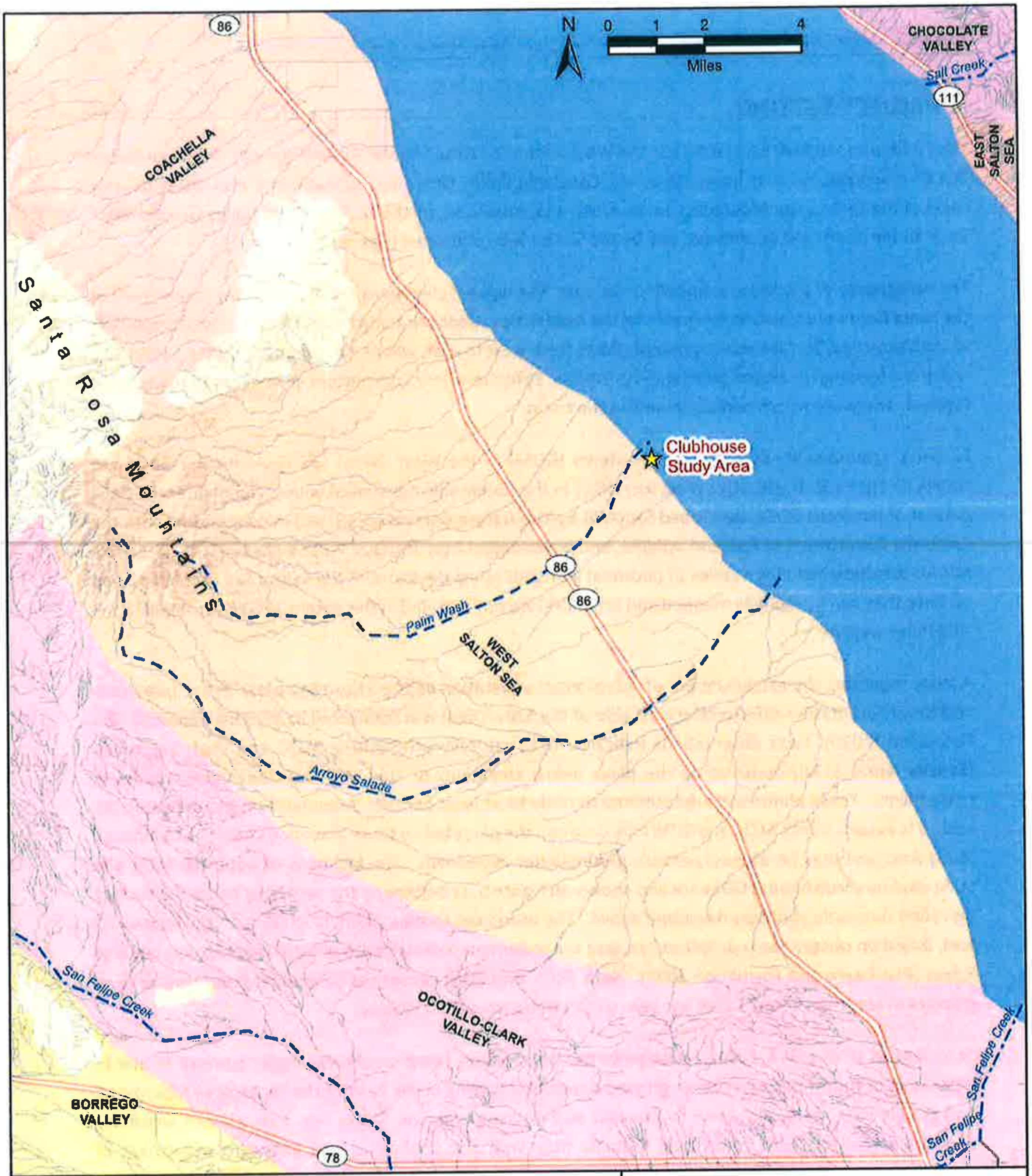

Legend

- Highways
- Major Roads
- Borrego Valley
- Chocolate Valley
- Coachella Valley
- East Salton Sea
- Ocotillo-Clark Valley
- West Salton Sea
- Ephemeral Stream
- Stream Intermittent
- Canal; Aqueduct; Intracoastal Waterway
- Surface Water

Clubhouse Study Area

Salton Sea

Figure 4. Surface Hydrology in the West Salton Sea Groundwater Basin

DATE: MAY 07, 2021

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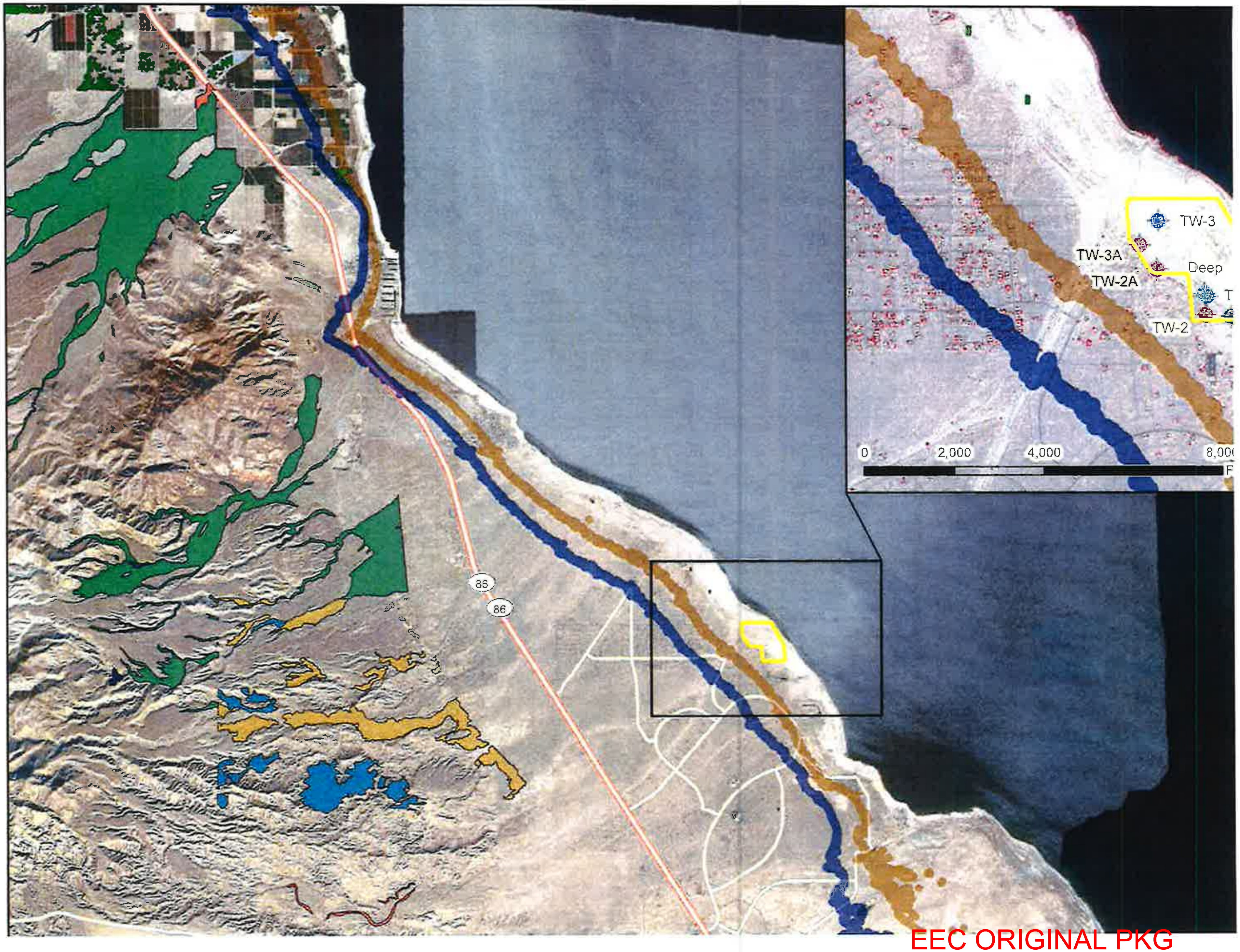
TW-3
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groundwater the basin is characterized as predominantly sodium-chloride type water, and the quality is considered marginal to poor for domestic or irrigation purposes due to concentrations of fluoride, boron, and total dissolved solids (TDS).

A summary of information regarding the West Salton Sea Groundwater Basin is provided in Table 2. According to DWR (2004), information on the groundwater budget is not available. The California Statewide Groundwater Elevation Monitoring (CADGEM) program designates the basin as a "very low" priority (DWR 2019). The basin is not listed as being in critical overdraft (DWR 2016).

TABLE 2. SUMMARY OF WEST SALTON SEA GROUNDWATER BASIN

DWR Groundwater Basin Number	Approximate Area	CASGEM Priority	Critical Overdraft
7-22	106,000 acres	Very Low	No

Sources:
DWR 2004, DWR 2016, DWR 2019

Groundwater resources in the West Salton Sea Groundwater Basin are very sparsely developed. Although historical well completion records are available for 11 domestic wells in the vicinity of the Study Area (Attachment A), none of these wells are currently believed to be operating. These wells were installed between 1957 and 1960 and are assumed to be abandoned or destroyed because the community of Salton City surrounding the Study Area is served by treated surface water supplied by the Coachella Valley Water District. No evidence of current groundwater use has been observed in the area within about 1 mile of the Study Area. According to the "Groundwater Exchange" website,[1] the West Salton Sea Groundwater Basin in total has approximately 14 wells, of which none are currently operated as water supply wells.

Groundwater level hydrographs are not available for any wells in shallow or deep supply zone the vicinity of the Clubhouse area. Three shallow piezometers were installed on the playa at Salton Wash in 2015 and used to monitor water table elevations. Groundwater level monitoring data for these wells is available from January 2016 to November 2018 on the IID Salton Sea data portal.[2] These data indicate that groundwater levels dropped by approximately 1.1 to 2.7 feet during this time. The data suggest that groundwater levels in the uppermost groundwater-bearing zone beneath the playa are declining as water levels in the Salton Sea drop. Further declines may be expected in the future and will be confirmed by future monitoring data.

In May 2020, a soil boring was drilled and geophysically logged at the Clubhouse Study Area to investigate groundwater conditions in the shallow groundwater system to a depth of about 100 feet bgs (Figure 3).

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[1] https://groundwaterexchange.org/basin/west-salton-sea

[2] https://www.saltonseaprogram.com/aqm/data-portal/data-portal.php#

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The boring log is included in Attachment A. Groundwater was encountered at a depth of approximately 20 feet bgs. The boring encountered sand in the upper 20 feet, underlain predominantly by clay to the total depth of about 100 feet, with a clean sand stratum between approximately 50 and 60 feet bgs. This is consistent with the presence of alluvial and aeolian sediments at the surface, underlain by lacustrine sediments associated with paleo Lake Cahuilla, which have been observed to deepen from approximately 10 feet thick near the ancient shoreline to approximately 50 feet or more near the current shore of the Salton Sea (Waters 1983). The unconfined hydrostratigraphic zone underlying the Lake Cahuilla sediments between approximately 50 and 100 feet bgs (depending on location) is the primary target of the proposed shallow test wells. Based on historical DWR well completion records, lower permeability sediments are present between approximately 100 and 150 feet bgs (Attachment A) and likely represent older lacustrine sediments. Semi-confined to confined sandy groundwater bearing sediments were encountered at various intervals between approximately 150 and 350 feet bgs. This hydrostratigraphic zone is the target for the proposed deep test well.

The nearest reported subsidence monitoring station to the Clubhouse Study Area is the SLMS SCGN CS1999 GPS monitoring station operated by UNAVCO and located approximately 1 mile southwest of the Study Area (UNAVCO 2021). At this station, since recording began in 1999, no subsidence has been reported.

4 EFFECTS ANALYSIS

4.1 CONCEPTUAL APPROACH

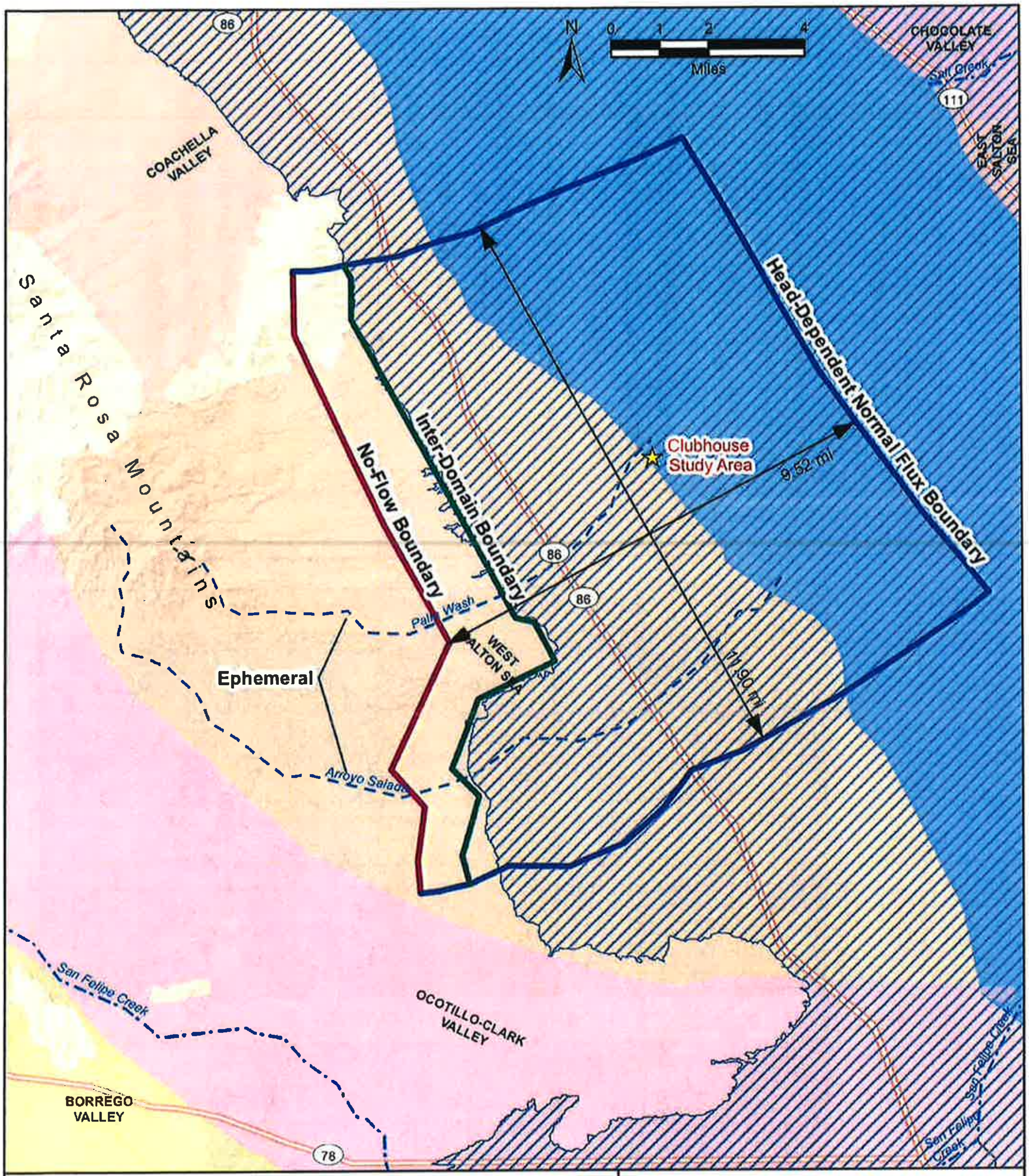
As described in Section 2, up to three shallow supply test wells and one deep supply test well are proposed to be installed and operated at the Clubhouse Study Area. The data to characterize the aquifer system in the West Salton Sea Groundwater Basin is limited and groundwater resources in the shallow and deeper groundwater zones 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 modeling approach was implemented 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 is able to 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. 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 model domain is shown on Figure 6 and includes most of the West Salton Sea groundwater basin. A no flow boundary was modeled to the west, to represent the non-water bearing rocks of the Santa Rosa Mountains and head-dependent normal flux boundaries were modeled to the north, south, and east. The model domain measures approximately 10 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. The western extent of the paleo Lake Cahuilla sediments is shown on Figure 6. West of this area, a single layer is used to simulate potentially coarser grained sediments along the base of the Santa Rosa Mountains (Figure 7). The area underlain by the paleo Lake Cahuilla sediments is represented in the model as a multi-later system that includes the following and is shown on Figure 7:

- Layer 1 represents a relatively thin veneer (approximately 10 feet) of alluvial and aeolian sediments containing unconfined groundwater in potential communication with GDEs. It is possible that groundwater in this layer is perched or is too deep to be in communication with the underlying pumped aquifers, but for the purposes of this analysis, it is assumed the groundwater table is shallow enough to be connected to GDEs (i.e, less than about 12 feet bgs).

- Layer 2 is used to simulate the Paleo Lake Cahuilla lacustrine sediments as a continuous lower permeability layer separating the overlying water table zone from underlying pumped shallow and deeper zone aquifers. The available data suggest this layer is about 10 feet thick near the ancient Lake Cahuilla shoreline and may thicken to approximately 60 feet near the modern Salton Sea shoreline (Waters 1983); however, for the purposes of this analysis it is assumed that this layer is uniformly 10 feet thick. This is a conservative assumption that likely overestimates the level of hydraulic connection between the pumped aquifers and the overlying water table aquifer and the amount of drawdown that would be induced by pumping.



Clubhouse Study Area

Salton Sea

Figure 6: Model Domain

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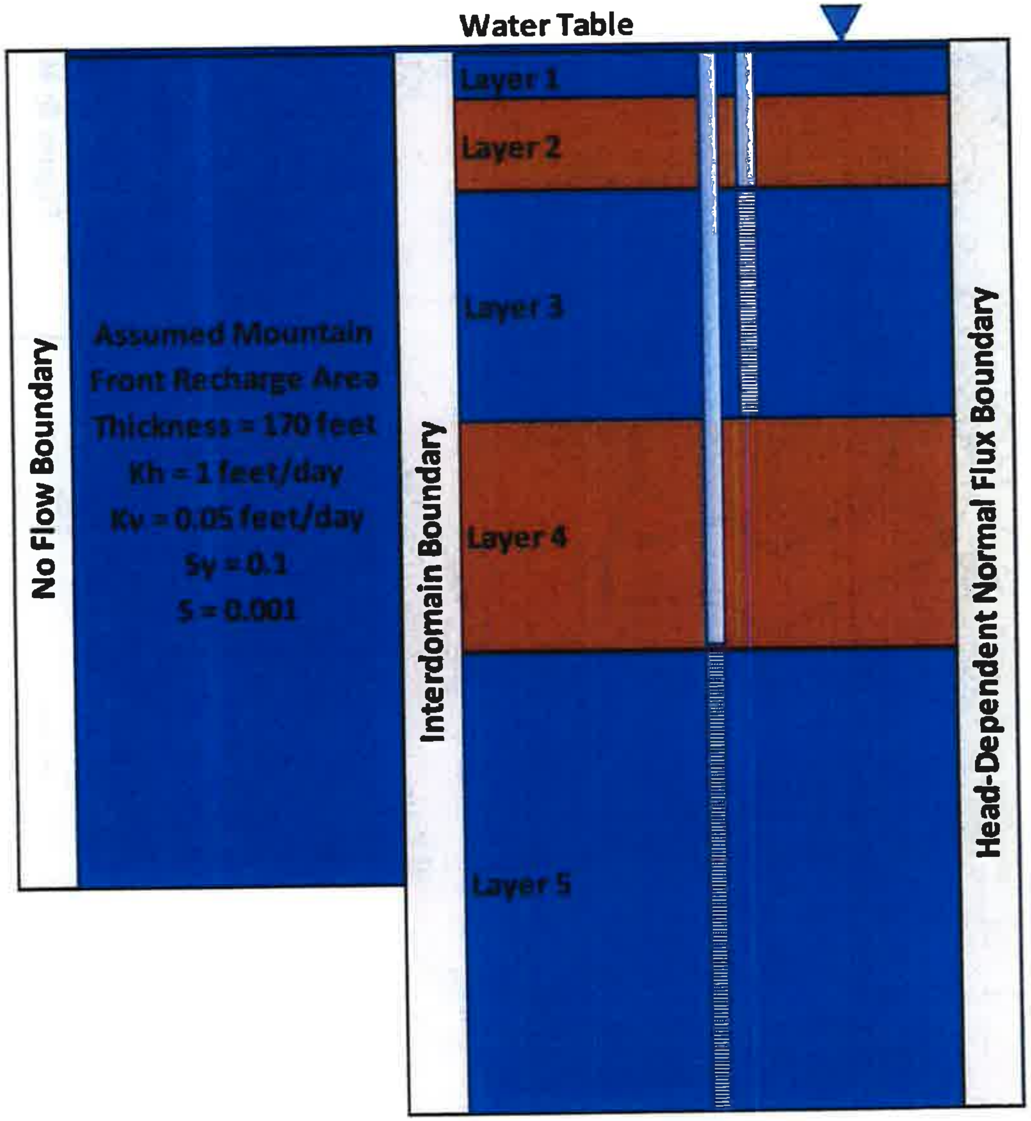


Layer Description	**Thickn**
Uppermost Groundwater-Bearing Zone	
Lake Cahuilla Sediments (actual thickness varies from 10 to 50 feet)	
Shallow Groundwater Supply Zone (interbedded lacustrine and alluvial sediments)	
Deeper Aquitard Zone (mostly lacustrine sediments)	
Deeper Groundwater Supply Zone (interbedded lacustrine and alluvial sediments) (actual thickness varies from 100 to 150 feet)	

- Layer 3 represents the shallow groundwater producing zone between about 50 and 100 feet bgs.
- Layer 4 represents about 50 feet of lower permeability lacustrine sediments identified between the shallow and the deeper groundwater producing zones that were identified in most well completion logs in the area (Appendix A).
- Layer 5 represents the deeper groundwater producing zone.

The model inputs for the various layers described above are summarized in Figure 7. The following additional assumptions are incorporated into the model:

- The pumped aquifers are homogeneous. This is a common simplifying assumption.
- The simulated aquifers are uniform in thickness. This is a common simplifying assumption.
- The model receives no recharge, and all flow from the pumping wells comes from aquifer storage. This simplifying assumption tends to produce a conservative result that over-predicts drawdown.
- The well pumping rates in the upper and lower producing zones 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.
- To address uncertainty in aquifer properties, a range of parameters were considered, and the lowest reasonable value was assumed (about half of the value estimated based on available lithologic data). This is a conservative assumption.
- The upper aquitard associated with Paleo Lake Cahuilla is assumed to have uniform thickness of 10 feet. The available data suggest the thickness of this aquitard is likely closer to 50 feet near the proposed supply test well locations, so this assumption is conservative and will likely lead to over-estimation of drawdown at the water table beneath the playa.
- To address uncertainty in aquitard properties and communication between that pumped groundwater producing zones and overlying water table zone that may be in communication with GDEs, a range of parameters were considered and modeled (Figure 7).
- Pumping was simulated for a period up to 20 years, after which drawdown is assumed to reach relatively stable conditions.

4.2 METHODS

The model inputs for the layers described in Section 4.1, are summarized in Figure 7. The most likely (high) and reasonable minimum (low) hydraulic conductivity (K_h) values for aquitard layers 2 and 4 were estimated based on lithologic data available for the exploratory borehole (CH-001-BH) drilled in the Clubhouse Study Area and other nearby borehole logs. Vertical hydraulic conductivity values (K_v) for layers 2 and 4 were assumed to be 1/10th of the horizontal hydraulic conductivity values. The other parameters summarized on Figure 5 were not varied in the model and were based on a combination of published values (Fetter 2001) and estimated values using the available lithologic data included in Attachment A. The locations and logs for the nearby boreholes are provided in Attachment A.

For layers 3 and 5, a composite hydraulic conductivity was estimated for the hydrostratigraphic interval from 50 to 100 feet bgs and 150 to 250 feet, respectively. The composite values consider the interbedded nature of the lacustrine and alluvial sediments evident in the boring logs in Attachment A. One half of the hydraulic conductivity calculated from the log data was used in the model.

Specific yield values (Sy) were estimated based on reasonable values for sands for groundwater-bearing layers 1, 3, and 5. Storativity (S) values were based on professional judgment and our experience for a reasonable value for unconfined aquifers for layer 1 and confined/semi-confined aquifers/aquitards for the underlying layers.

The simulated pumping rates for the shallow test wells simulated in layer 3 and the deep well simulated in layer 5 are summarized in Table 3. These pumping rates assume the wells will be pumped at their maximum estimated capacity, which exceeds the irrigation water demand of the vegetation test plot (Table 1). Actual pumping rates may be lower, so this is a conservative assumption from an impact analysis viewpoint (i.e., impacts will likely be overestimated). It allows potential impacts to be evaluated if the wells are used in the future to supply the irrigation demand for additional vegetation plots, and thus will allow operating flexibility. As described in Section 2, irrigation water will only be applied during daylight hours; however, the pumping rates summarized below are long-term averages and assume a constant rate over a 24-hour period to simplify the modeling scenarios.

TABLE 3. PUMPING INPUTS

Pumping	Input Value (24 hrs/day constant rate)	Source	Additional Comments
Shallow Zone	3.75 gpm	Irrigation Design	Pumping per well (three wells are simulated for a total pumping rate of 11.25 gpm)
Deep Zone	7.5 gpm	Irrigation Design	Pumping from one well

The modeling scenarios for the proposed shallow and deep groundwater zone test wells are summarized in Table 4. A total of 10 scenarios were simulated to assess potential differences in effects resulting from the following:

- The hydraulic conductivity (K) of the aquitard layers (model layers 2 and 4) was varied to assess the effect of varying degrees of aquitard competence and communication between the aquifer layers during pumping (model layers 1, 3, and 5). High and low K scenarios were simulated to represent the upper and lower range of hydraulic conductivities for lacustrine sediments.

- Different scenarios were simulated to assess the differences in effects related to pumping the shallow test wells only, the deep test well only, or the shallow and deep test wells in combination.
- Different scenarios were simulated to assess the effects of pumping for 20 years (the anticipated service life of the wells), and one month, which evaluates the short-term effects from the one-month aquifer test.

TABLE 4. MODELING SCENARIOS

Scenario	Duration	Shallow Groundwater Zone			Deep Groundwater Zone		
		Discharge (gpm)	Aquitard Hydraulic Conductivity (ft/day)	Other Parameters	Discharge (gpm)	Aquitard Hydraulic Conductivity (ft/day)	Other Parameters
1A (Cumulative pumping; high aquitard permeability)	20 yrs.	11.25	0.01	Constant (Figure 7)	7.5	0.01	Constant (Figure 7)
1B (Cumulative pumping; low aquitard permeability)	20 yrs.	11.25	0.001	Constant (Figure 7)	7.5	0.001	Constant (Figure 7)
2A (Deep test well pumping; high aquitard permeability)	20 yrs.	0	0.01	Constant (Figure 7)	7.5	0.01	Constant (Figure 7)
2B (Deep test well pumping; low aquitard permeability)	20 yrs.	0	0.001	Constant (Figure 7)	7.5	0.001	Constant (Figure 7)
3A (Shallow wells pumping, high aquitard permeability)	20 yrs.	11.25	0.01	Constant (Figure 7)	0	0.01	Constant (Figure 7)
3B (Shallow wells pumping; low aquitard permeability)	20 yrs.	11.25	0.001	Constant (Figure 7)	0	0.001	Constant (Figure 7)
4A (Long-term pumping test of deep test well; high aquitard permeability)	1 mo.	0	0.01	Constant (Figure 7)	7.5	0.01	Constant (Figure 7)
4B (Long-term pumping test of deep test well; low aquitard permeability)	1 mo.	0	0.001	Constant (Figure 7)	7.5	0.001	Constant (Figure 7)
5A (Long-term pumping test of shallow test wells; high aquitard permeability)	1 mo.	11.25	0.01	Constant (Figure 7)	0	0.01	Constant (Figure 7)

Scenario	Duration	Shallow Groundwater Zone			Deep Groundwater Zone		
		Discharge (gpm)	Aquitard Hydraulic Conductivity (ft/day)	Other Parameters	Discharge (gpm)	Aquitard Hydraulic Conductivity (ft/day)	Other Parameters
5B (Long-term pumping test of shallow test wells; low aquitard permeability)	1 mo.	11.25	0.001	Constant (Figure 7)	0	0.001	Constant (Figure 7)

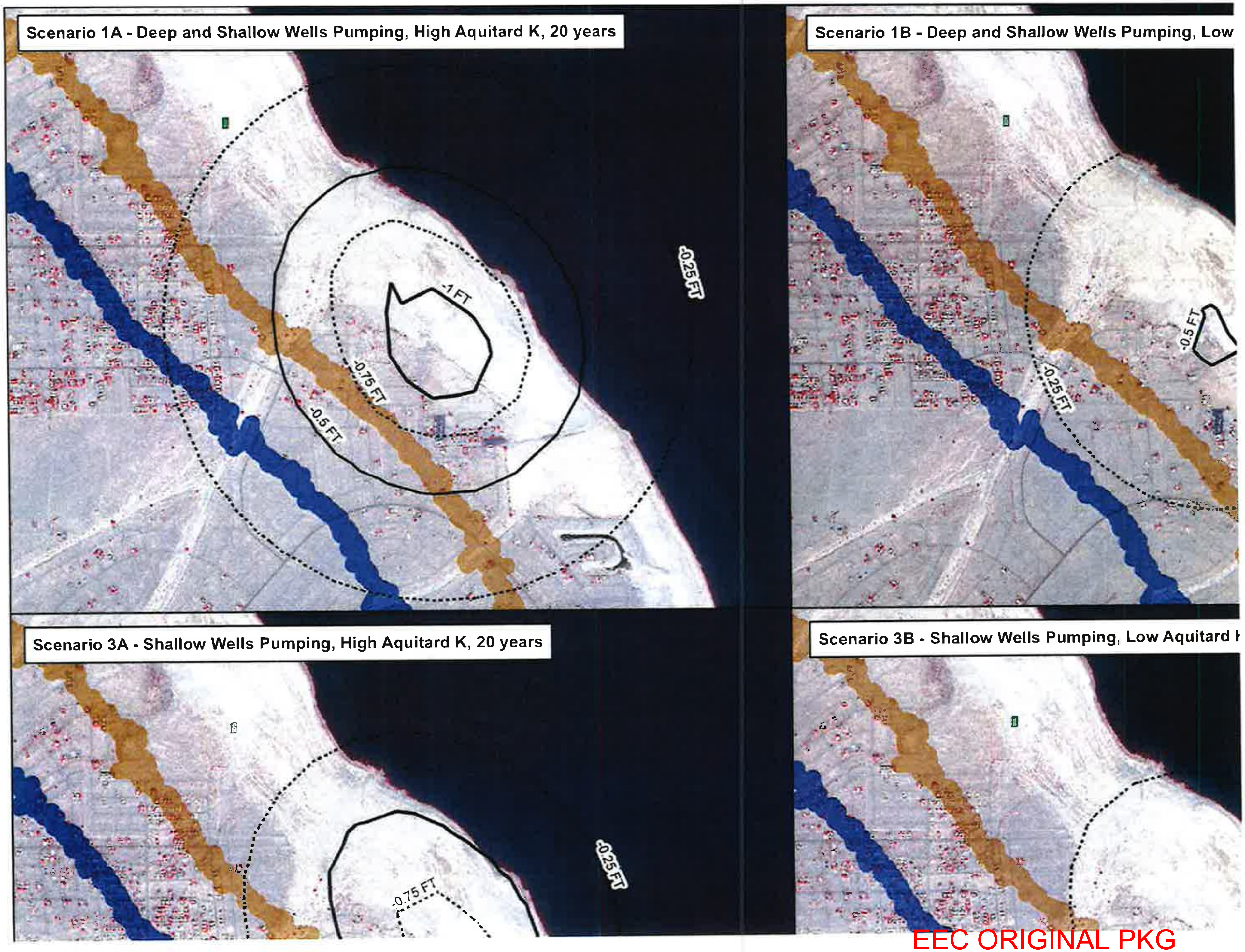
4.3 RESULTS

The predicted drawdown associated with pumping of the proposed test wells completed in the shallow and deep groundwater zones for the various scenarios described in Section 4.2, is summarized in Table 5 after 20 years of pumping.

- In model layer 1 (the water table zone, which is potentially connected to GDEs), drawdowns of 1 foot or more were only observed during Scenario 1A (combined shallow and deep pumping) and Scenario 3A (shallow test well pumping) under high aquitard permeability. The predicted drawdown associated with pumping from the deep test well or simulation of the lower aquitard permeability (Scenarios 1B, 2A, 2B and 3B) was less than 0.5 foot. The distribution of drawdown associated with the cumulative and shallow test well pumping scenarios (Scenarios 1A, 1B, 3A and 3B) relative to the locations of groundwater-dependent vegetation is shown on Figure 8. The area where drawdown exceeding 1 foot is predicted under worst case conditions measures approximately 2,000 by 1,800 feet and is centered around the shallow test wells within the study area plot and locally extending onto surrounding IID land. A drawdown of 1 foot would generally not be distinguishable from normal seasonal groundwater level fluctuations measured in nearby shallow piezometers. Modeling indicates that about 60% of this drawdown would occur within the first 10 years of well operation, with the remaining 40% occurring between years 11 and 20.

- In the shallow pumping layer (model layer 3), the maximum predicted drawdown at the pumping wells was less than 5 feet under all scenarios. Drawdowns of less than 5 feet in pumping aquifers are not generally considered significant (JJ&A 2018). The maximum predicted drawdown at the closest property line was less than 2 feet. During pumping of the deep test well (Scenarios 2A and 2B), drawdown in the shallow pumping layer was predicted to be less than 0.5 foot. The distribution of drawdown in model layer 3 during pumping of the shallow test wells is shown on Figure 9.

- In the deep pumping layer (model layer 5), the maximum predicted drawdown at the pumping well was less than 10 feet and the predicted distance to 5 feet of drawdown ranged from 10 to 35 feet. The maximum predicted drawdown at the closest property line was 1.4 to 2.5 feet. During pumping of the shallow test wells, the predicted drawdown in the deep aquifer layer was less than 0.5 feet. The distribution of drawdown in model layer 5 during pumping of the deep test well is shown on Figure 9.


Scenario 1A - Deep and Shallow Wells Pumping, High Aquitard K, 20 years

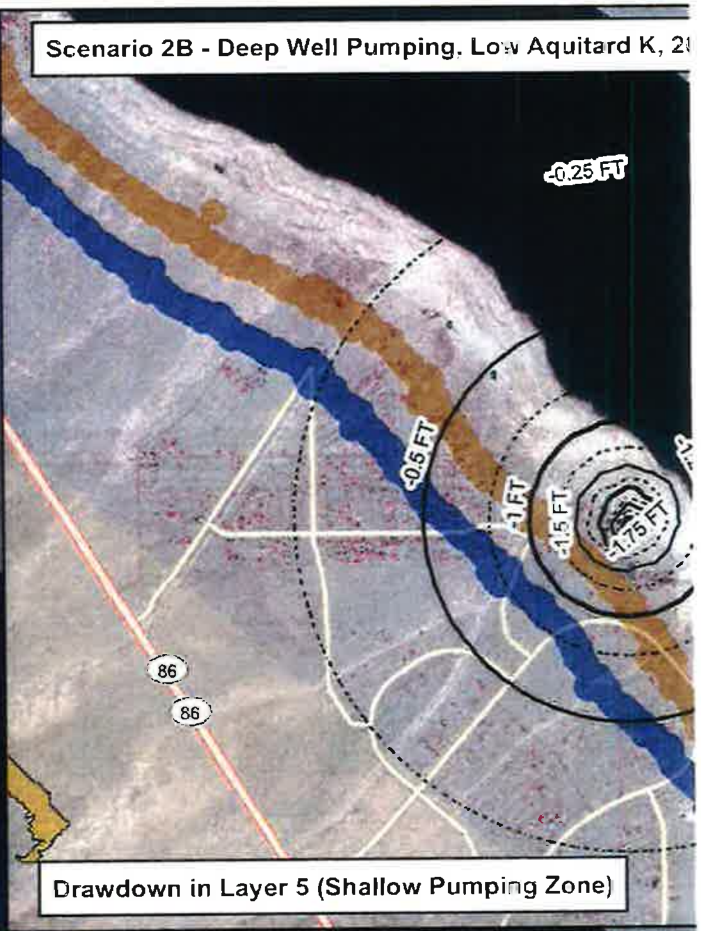
Scenario 1B - Deep and Shallow Wells Pumping, Low

Scenario 3A - Shallow Wells Pumping, High Aquitard K, 20 years

Scenario 3B - Shallow Wells Pumping, Low Aquitard

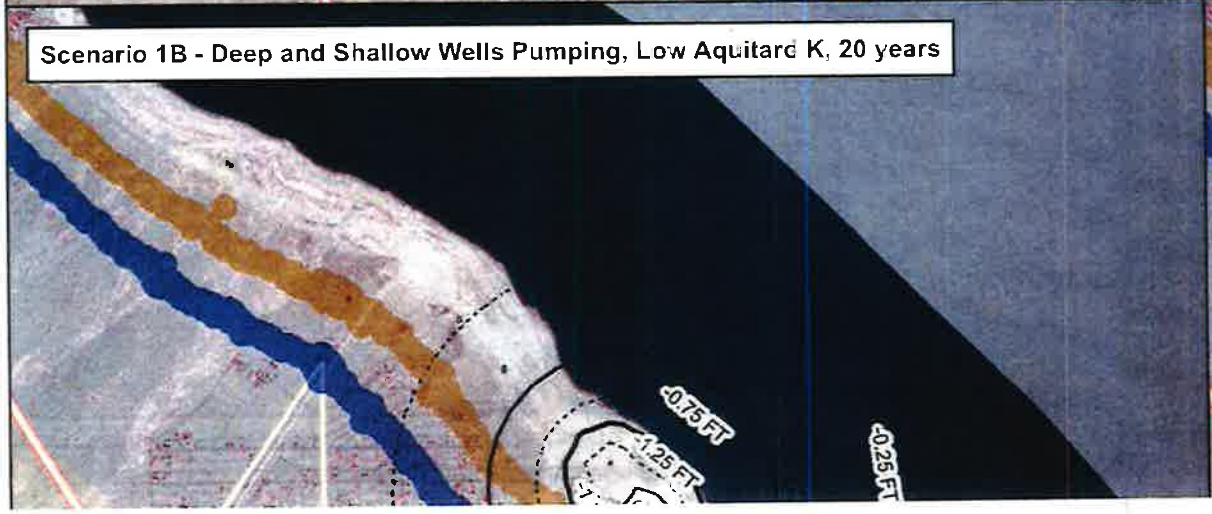
Scenario 3B - Shallow Wells Pumping, Low Aquitard K, 20 years

Drawdown in Layer 3 (Shallow Pumping Zone)

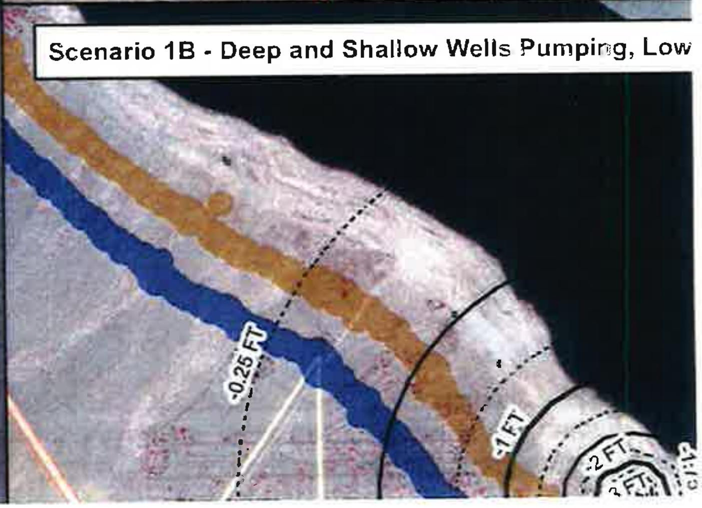


Scenario 2B - Deep Well Pumping, Low Aquitard K, 2

Drawdown in Layer 5 (Shallow Pumping Zone)



Scenario 1B - Deep and Shallow Wells Pumping, Low Aquitard K, 20 years



Scenario 1B - Deep and Shallow Wells Pumping, Low

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TABLE 5. PREDICTED DRAWDOWN - 20 YEARS OF PUMPING

Model Scenario	Maximum Predicted Drawdown at Property Line in Layer 1 (feet)	Maximum Predicted Drawdown at Property Line in Layer 3 (feet)	Maximum Predicted Drawdown at Property Line in Layer 5 (feet)	Predicted Distance to 1 ft Drawdown in Layer 1 (feet)	Predicted Distance to 5 ft Drawdown in Layer 5 (feet)
1A	1.1	1.3	1.9	1,100	17
1B	0.5	1.5	2.5	NA	35
2A	0.3	0.3	1.4	NA	10
2B	<0.25	<0.25	2.2	NA	26
3A	0.8	1.0	0.4	NA	NA
3B	0.4	1.4	<0.25	NA	NA

NA = not applicable, the noted drawdown was not observed.

The predicted drawdown associated with pumping of the proposed test wells completed in the shallow and deep groundwater zones for the various scenarios described in Section 4.2, is summarized in Table 6 after one month of pumping. Drawdown in layer 1 was less than 0.25 feet under all scenarios. In the pumped aquifers, small cones of depression were predicted to form in the immediate proximity of the pumping wells. The maximum predicted drawdown in the shallow aquifer layer ranges from about 3 feet at the pumping wells to about 0.3 to 0.7 feet at the closest property boundary. The maximum drawdown in the deep aquifer layer was between 8 and 9 feet near the pumping well and the distance to 5 feet of drawdown was predicted to be about 7 to 15 feet.

TABLE 6. PREDICTED DRAWDOWN - ONE MONTH OF PUMPING

Model Scenario	Maximum Predicted Drawdown in Layer 1 (feet)	Maximum Predicted Drawdown in Layer 3 (feet)	Maximum Predicted Drawdown in Layer 5 (feet)	Predicted Distance to 1 feet of Drawdown in Layer 1 (feet)	Predicted Distance to 5 feet of Drawdown in Layer 5 (feet)
4A	<0.25	<0.25	1.1	NA	NA
4B	<0.25	<0.25	1.8	NA	NA
5A	<0.25	0.3	<0.25	NA	7
5B	<0.25	0.7	<0.25	NA	15

NA = not applicable, the noted drawdown was not observed.

5 IMPACT ANALYSIS

This section presents an evaluation of the potential environmental impacts of the project associated with pumping of the proposed water supply test 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.

5.1 GROUNDWATER-DEPENDENT ECOSYSTEMS

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 GDEs identified in the West Salton Sea groundwater basin are shown on Figure 5. Several potential GDEs have been mapped in the Santa Rosa Mountains to the west of the Study Area; however, the results summarized in Tables 5 and 6 and shown on Figure 8 indicate that drawdown in layer 1, which is the assumed to be the groundwater source for the GDEs, will not reach these areas.

Areas where ALOC and SUNI that are at least partially dependent on groundwater may exist on the playa below elevations of -194 and -213 amsl, respectively, and are shown on Figure 5. The location of these areas relative to predicted drawdown in layer 1 are shown on Figure 8. The following conclusions may be made:

- No measurable drawdown is predicted in layer 1 as a result of pumping the deep test well for 20 years. Therefore, there will be no impact to GDEs as a result of operating the deep test well.
- Drawdown in layer 1 after 20 years of pumping the shallow supply test wells is predicted to range up to between approximately 0.25 and 1 foot within approximately 0.65 mile of the test wells (Scenario 3A). This drawdown is likely over-predicted due to the conservative assumptions used in the modeling predictions. Drawdown is predicted to occur slowly, with approximately 60% of the total drawdown manifesting after 10 years. ALOC and SUNI are expected to be able to adapt to such a small amount of drawdown over such a long period of time. In addition, both the newly planted and existing ALOC and SUNI within the potentially affected area would be irrigated as part of the project, which would eliminate the possibility of plant stress resulting from drawdown

associated with the project. Based on the available information, impacts to GDEs from operating the shallow supply test wells will be less than significant.

- Drawdown in layer 1 after 20 years of combined pumping of the shallow and deep supply test wells is predicted to range up to between approximately 0.25 and 1.25 foot within approximately 0.9 mile of the test wells (Scenario 1A). As stated above, drawdown at the water table is likely over-predicted, ALOC and SUNI are expected to be able to adapt to such a small amount of drawdown over such a long period of time, and as part of the project both existing and new ALOC and SUNI vegetation would be irrigated, thus eliminating the potential of plant stress to be induced by project pumping. Based on the available information, impacts to GDEs from operating the shallow and deep supply test wells will be less than significant.

The streams near the Clubhouse study area include ephemeral washes that convey stormwater discharge after infrequent rain events (Figure 10). There are no perennial streams. Thus, no impact to interconnected surface water will occur.

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 found in the West Salton Sea groundwater basin is characterized as predominantly sodium-chloride type water, and the quality is considered marginal to poor for domestic or irrigation purposes due to concentrations of fluoride, boron, and TDS. The wells will be completed with sanitary seals that will prevent the vertical migration of shallow saline groundwater through the well bores. The groundwater-producing zones are separated from each other and from the uppermost groundwater-bearing zone and the Salton Sea by laterally-extensive lacustrine aquitards that will impede vertical migration of groundwater of different salinities.

Figure 11 shows reported nearby contamination sites. The nearest sites are located well over 1 mile from the Study Area and are not expected to be affected by gradient changes that would interfere required discharge requirements or cleanups.

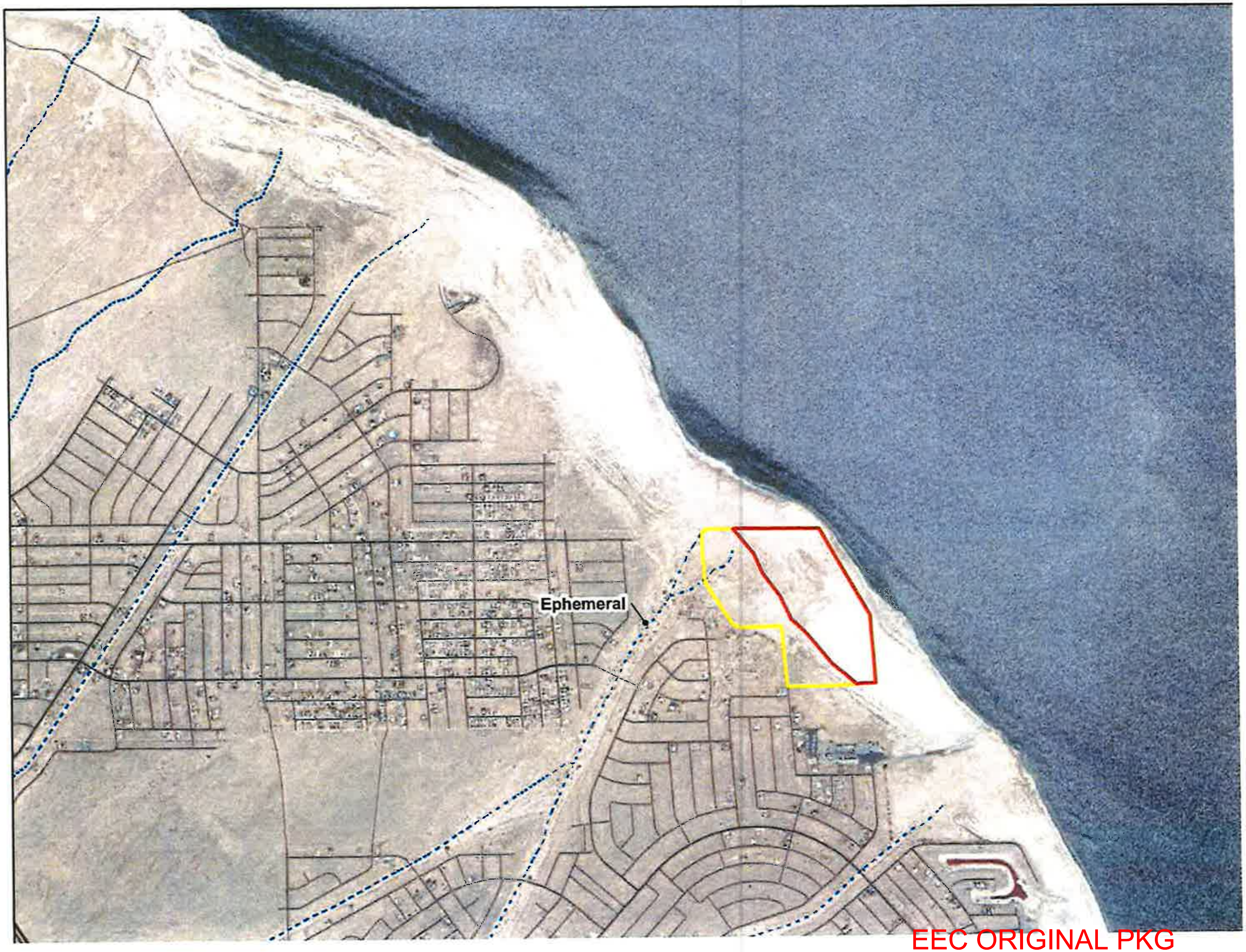
Based on the above information, potential impacts to water quality will be less than significant.

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 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 Study Area. The proposed test wells will extract a relatively limited amount of water from the confined to semi-confined aquifer systems. The predicted maximum drawdown near the project boundary is predicted to be limited to less than about 2.5 feet, and drawdown exceeding 5 feet will be limited to a relatively small area within a maximum distance of approximately 35 feet of the proposed wells (Table 4). Drawdown less than 5 feet is unlikely to result in measurable subsidence that would affect surface drainage or infrastructure. Given the limited amount of drawdown predicted to be associated with operation of proposed test wells, and the lack of reported subsidence near the Study Area, no impacts are expected.



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Exxon Walty's
Desert Shores Marina
Salton Sea Bomb Target (FBT 11) (#
Proposed Salton City Elementary School
Seadrome Landin

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 proposed test wells to interfere with implementation of a water quality control plan is discussed in Section 5.2, above.

The long-term groundwater extraction associated with the proposed test wells will be relatively limited. The average annual water demand that will be met by the wells is at most 10 and 30 acre-feet/year (AFY), which is equivalent to a long-term pumping rate just over 18 gpm (Table 1). This would be the only known anthropogenic groundwater demand in the basin and is not anticipated to interfere with existing beneficial environmental groundwater uses by GDEs.

Operation of the proposed test wells is predicted to result in limited drawdown in close proximity to the pumping wells. Drawdown exceeding 5 feet is predicted to be limited to within 35 feet or less of the pumping wells after 20 years of pumping, and drawdown at the nearest property lines is predicted to be less than 2.5 feet. The area surrounding the test plot is served with treated surface water provided by Coachella Valley Water District, and no existing wells have been identified in the area that would be affected by project-induced drawdown. If existing wells were to be present, a drawdown less than 5 feet is unlikely to be distinguishable from normal seasonal and inter-annual fluctuations and would represent only a small percentage of a domestic well's available drawdown. As such, it would be unlikely to result in an observable decrease in well yield. In addition, localized drawdown of this magnitude would represent a very small percentage of the total available drawdown in an aquifer system that is likely at least 500 feet thick. Therefore, it would not significantly change the amount of groundwater in storage or interfere with foreseeable groundwater demands. Furthermore, the community of Salton City, in the vicinity of the Study Area, is served by the Coachella Valley Water District, leaving local water supplies unaffected.

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 West Salton Sea Groundwater Basin are very sparsely developed. No active groundwater production wells are evident and the community of Salton City in the vicinity of the Study Area is served by the Coachella Valley Water District.

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Cumulative impacts associated with operating the proposed shallow and deep test wells were evaluated by scenarios 1A and 1B. The results of the cumulative pumping over 20 years show less than significant impacts (Table 5).

Based on shallow groundwater monitoring data, it is likely that shallow groundwater levels below the playa will continue to decline as water levels in the Salton Sea decline. In and near the test plot study area, within the area potentially affected by project drawdown, groundwater extracted by the wells would be used to irrigate new and existing ALOC and SUNI vegetation. As such, the project will protect existing vegetation on the playa that is currently potentially groundwater dependent from the stress induced by drawdown and existing trends in groundwater level decline around the Salton Sea.

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. The basin is not listed as being in critical overdraft. 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. A Conditional Use Permit will be obtained from Imperial County to operate the wells.

6 REFERENCES

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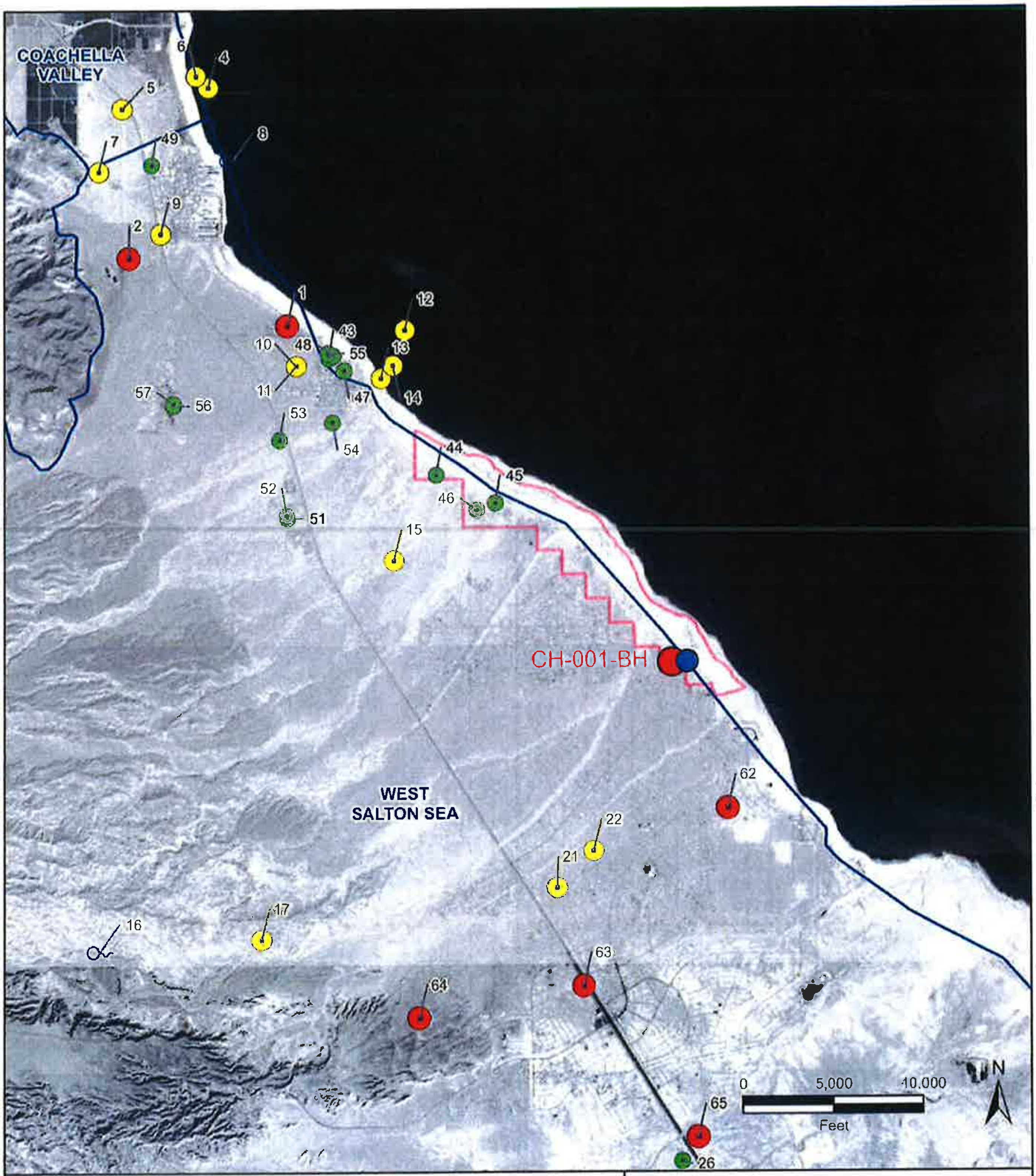
ATTACHMENT A – BORING LOGS



Legend

● Wells with DWR Completion Log

● DWR Data Record

● USGS Record

● Mud Rotary Boring

● Deep Groundwater Supply Test Well

○~ DWR Spring Record

☐ Clubhouse Study Area

☐ Groundwater Basins

Club House Deep Test Well

Salton Sea

Figure A-1

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TABLE A-1. AVAILABLE INFORMATION FOR EXISTING WELLS IN THE VICINITY OF THE STUDY AREA

Formation ID	DWR Number	USGS Number	USGS Site Number	Completion Report	Well Name	Data Available	Data Range	Completion Date	Total Depth	Depth to Top of Screen	Depth to Bottom of Screen
1	NA	009S009E15Q001S	332303116011401	NA	NA	Water Quality	1962-1973	NA	NA	NA	NA
2	NA	009S009E16D001S	332340116025601	NA	NA	NA	NA	NA	NA	NA	NA
4	09S09E04K001S	009S009E04K001S	332505116022401	NA	NA	Water Quality	1967	NA	NA	NA	NA
5	09S09E04M001S	009S009E04M001S	332501116025701	NA	NA	GW Levels	1979-2017	NA	NA	NA	NA
6	09S09E04X001S	NA	NA	NA	NA	Water Quality	1967	NA	NA	NA	NA
7	09S09E08X001S	NA	NA	NA	NA	Water Quality	1950	NA	NA	NA	NA
8	09S09E09H0015S	009S009E08H001S	332422116030401	NA	NA	Water Quality	1917	NA	NA	NA	NA
9	09S09E16D002S	NA	NA	NA	NA	Water Quality	1955	NA	NA	NA	NA
10	09S09E22X001S	NA	NA	NA	NA	Water Quality	1950 - 1957	NA	NA	NA	NA
11	09S09E22X002S	NA	NA	NA	NA	Water Quality	1952	NA	NA	NA	NA
12	09S09E23B001S	NA	NA	NA	NA	Water Quality	1952	NA	NA	NA	NA
13	09S09E23L001S	009S009E23L001S	332231116003001	NA	NA	Water Quality	1962	NA	NA	NA	NA
14	09S09E23X001S	NA	NA	NA	NA	Water Quality	1956	NA	NA	NA	NA
15	09S09E35X001S	NA	NA	NA	NA	Water Quality	1950	NA	NA	NA	NA
16	10S09E20X0015S	NA	NA	NA	NA	Water Quality	1948	NA	NA	NA	NA
17	10S09E22E001S	NA	NA	NA	NA	Water Quality	1955	NA	NA	NA	NA
21	10S10E18N001S	010S010E18N001S	331750115583401	NA	NA	Water Quality	1950 - 1967	NA	NA	NA	NA
22	10S10E18X001S	NA	NA	NA	NA	Water Quality	1952 - 1955	NA	NA	NA	NA
26	NA	NA	NA	10S10E32J001	Water Supply Well	Well Log	NA	8/28/1950	217	195	217

TABLE A-1. AVAILABLE INFORMATION FOR EXISTING WELLS IN THE VICINITY OF THE STUDY AREA (CONTINUED)

Formation ID	DWR Number	USGS Number	USGS Site Number	Completion Report	Well Name	Data Available	Data Range	Completion Date	Total Depth	Depth to Top of Screen	Depth to Bottom of Screen
43	NA	NA	NA	27702	Domestic Well	Well Log	NA	1/18/1957	166	104	166
44	NA	NA	NA	27705	Domestic Well	Well Log	NA	4/19/1957	182	140	182
45	NA	NA	NA	27706	Test Well	Well Log	NA	5/1/1957	244	NA	NA
46	NA	NA	NA	27707	Domestic Well	Well Log	NA	5/15/1957	213	NA	NA
47	NA	NA	NA	27708	Domestic Well	Well Log	NA	6/7/1957	186	143	186
48	NA	NA	NA	27717	Domestic Well	Well Log	NA	10/25/1958	194	145	194
49	NA	NA	NA	27721	Domestic Well	Well Log	NA	2/7/1959	318	160	318
50	NA	NA	NA	29765	Test Well	Well Log	NA	4/30/1960	809	NA	NA
51	NA	NA	NA	29932	Domestic Well	Well Log	NA	9/30/1959	200	120	200
52	NA	NA	NA	29947	Domestic Well	Well Log	NA	9/20/1960	202	142	202
53	NA	NA	NA	34721	Domestic Well	Well Log	NA	8/15/1969	220	110	220
54	NA	NA	NA	59077	Domestic Well	Well Log	NA	5/31/1960	216	194	216
55	NA	NA	NA	59078	Domestic Well	Well Log	NA	6/8/1960	202	172	202
56	NA	NA	NA	e0111199	Well #2	Well Log	NA	5/14/2010	370	210	370
57	NA	NA	NA	e0111200	Well #1	Well Log	NA	5/26/2010	360	NA	NA
58	NA	008S009E31Q001S	332535116050001	NA	NA	NA	NA	NA	350	NA	NA
59	NA	008S009E31R002S	332537116044201	NA	NA	NA	NA	NA	348	NA	NA
60	NA	011S009E27E001S	331110116013901	NA	NA	NA	NA	NA	NA	NA	NA
61	NA	009S009E25L001S	332135115592401	NA	NA	NA	NA	NA	NA	NA	NA
62	NA	010S010E09N001S	331840115563101	NA	NA	NA	NA	NA	NA	NA	NA
63	NA	010S010E19K001S	331704115580501	NA	NA	NA	NA	NA	NA	NA	NA
64	NA	010S009E26A001S	331647115595001	NA	NA	Water Quality	1944	NA	NA	NA	NA
65	NA	010S010E32J001S	331542115565101	NA	NA	NA	NA	NA	NA	NA	NA

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Available Borehole and Well Completion Logs

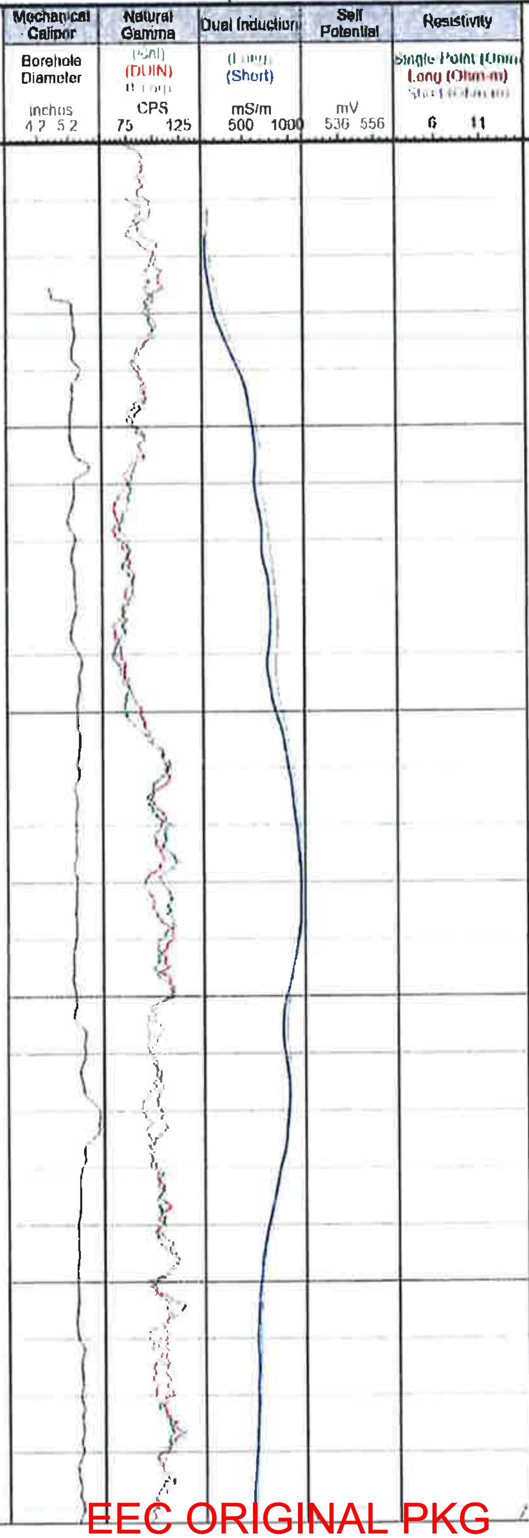
FORMATION ENVIRONMENTAL

Log of Boring Completion: IID20200508_W12_CH_001_BH

Page: 1 of 2

Club House **SALTON SEA, CA**	Drilling Company: **Cascade Drilling, Upland, CA**	Logged By: **Hank Dickey**	Latitude (decimal degrees): **33.3332**
	Drilling Method: **Mud Rotary**	Borehole Diameter (inches): **4.75**	Longitude (decimal degrees): **-115.9525**
Project Number: **061-012 Task 8.3**	Sampling Method: **Hand Auger, Terzaghi Split Spoon (Standard Penetration, 2" O.D., 1.375" I.D.), Cuttings**	Ground Elevation (NAVD 88): **-220.94**	Total Depth (ft bgs): **101.5**
	Top of Casing Elevation: **N/A**	Date Started: **5/7/2020**	Date Completed: **5/8/2020**

Depth (feet)	Description	USCS	Sample Type (Blow Count) (% Recovery)
0	SAND, well graded, ~75% subangular, medium grained, ~25% angular, coarse, (~60% quartz, ~30% feldspathoid, ~10% micaceous), unconsolidated, very pale brown (10YR 7/4), dry	SW	Hand Auger
8			Split Spoon (5/5/7) (60%)
10	First Water SAND, poorly graded, fine grained (~45% quartz, ~40% feldspathoid, ~10% micaceous), ~5% fines, brown (10YR 4/3), wet	SP	
12	SAND, well graded, ~50% subangular, fine grained, ~20% subangular, medium grained, ~30% angular, very coarse grained, (~45% quartz, ~30% feldspathoid, ~25% mafic), yellowish brown (10YR 5/4)	SW	Cuttings
19			Split Spoon (11/9/8) (55%)
20	CLAY, lean, yellowish brown (10YR 3/6), ~1 mm reduced black specs ~90% lean clay and gel, ~10% subrounded, coarse grained sand, light yellowish brown (10YR 6/4)	CL	Cuttings
29			Split Spoon (5/8/10) (100%)
30	CLAY, fat, tight, high plasticity, dark yellowish brown (10YR 4/6), ~1 mm redox enclaves, ~1-5 mm vertically oriented lenses of fine sand	CH	
32	SANDY CLAY, ~60% clay, ~40% subangular, coarse sand, light yellowish brown (10YR 6/4)	CL	Cuttings
39			Split Spoon (4/6/11) (100%)
40	CLAY, fat, high plasticity, dark yellowish brown (10YR 4/6), isolated lenses of very fine sand (<1 mm in thickness)	CH	
42	CLAY, ~90% lean clay, ~10% subrounded, coarse grained sand, yellowish brown (10YR 5/4)	CL	Cuttings



Backfill: Native; Grout (Part II and V Portland Cement and CETCO Super Gel-X 10:0.5 ratio)

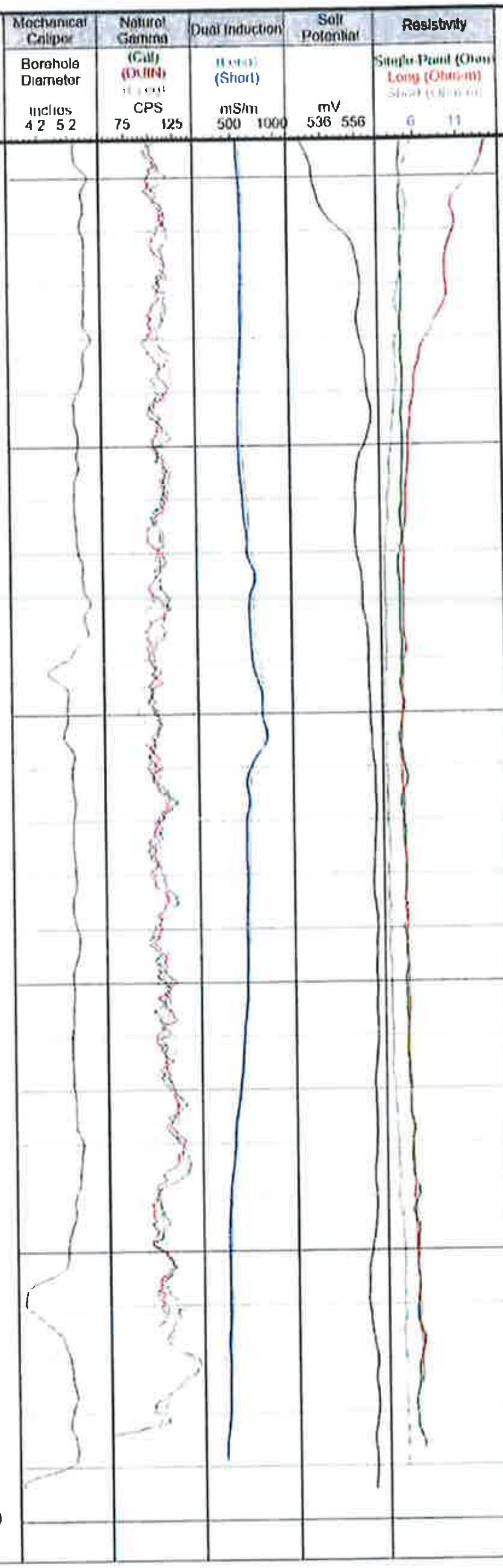
EEC ORIGINAL PKG

FORMATION ENVIRONMENTAL

Log of Boring Completion: **IID20200508_W12_CH_001_BH**

Page: 2 of 2

Depth (feet)	Description	USCS	Sample Type (Blow Count) (% Recovery)
50			Split Spoon (4/8/13) (68%)
52	SAND, subangular, poorly graded, medium grained, (~55% quartz, ~30% feldspathoid, ~15% micaceous), unconsolidated, light yellowish brown (10YR 6/4) Coarse grained, (~55% quartz, ~25% feldspathoid, ~10% micaceous, ~10% 1-2 mm gastropod shells), yellowish brown (10YR 5/4)	SP	
54			Cuttings
56			
58			
60	CLAY, fat, tight, high plasticity, very dark grey (2.5Y 3/1), periodic <1 mm fine sand laminations Color change to brown (10YR 5/3)	CH	Split Spoon (5/8/11) (100%)
62			
64			Cuttings
66			
68			
70	CLAY, lean, medium plasticity, dark grey (2.5Y 4/1), ~1-2 mm reduced enclaves <5% subangular, coarse grained sand, grey (2.5Y 5/1)	CL	Split Spoon (0/6/8) (100%)
72			
74			Cuttings
76			
78			
80	Color change to dark grey (2.5Y 4/1)		Split Spoon (0/7/9) (100%)
82	Color change to greyish brown (2.5Y 5/2)		
84			Cuttings
86			
88			
90	CLAY, fat, tight, high plasticity, dark greyish brown (10YR 4/2), 2" sandy clay layers at ~90.3' and ~90.8' (~25% subangular, fine grained sand), dark grey (2.5Y 4/1), sparse ~1-2 mm reduced enclaves Color change to grey (2.5Y 5/1)	CH	Split Spoon (0/10/11) (100%)
92			
94			Cuttings
96			
98			Split Spoon (14/21/20) (100%)
100	SANDY CLAY, ~80% lean clay, ~20% fine grained sand, thin layers of silty sand	CL	



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.: Open 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

EEC ORIGINAL PKG

File Original, Duplicate and Triplicate with the
DIVISION OF WATER RESOURCES
P. O. BOX 1079
SACRAMENTO 5, CALIFORNIA

SHEET 2

Do Not Fill In
State Well No.
Other Well No.
Region

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

/

12-60

7

(7) Perforations:

Type of perforator used Torch

Perforated 195 ft. to 217 ft. Hole size 1/8"x6" No. of holes 160

(8) Water levels:

Depth at which water first encountered ft.

Depth to water before perforating ft.

Depth to water after perforating 18 ft.

Note any change in water level while drilling

(9) Well pumping test:

Date of test 8-11-50 By whom Self

Depth to water when test started 18 ft.

G.P.M. at beginning of test Not known

Drawdown from standing level 140 ft.

G.P.M. at completion of test Approximately 10 min. per hr

Drawdown at completion of test Same ft.

Length of time tested 3 hrs

Temperature of water Not known

Was gas present in water? ☐ Yes ☒ No

(10) General:

Was well gravel packed? No 2 Size of rock Thickness of pack

Was a surface sanitary seal provided? Yes

Were any strata sealed against pollution? ☐ Yes ☒ No If yes, attach detailed description. 2

Strata sealed

Was analysis made of water? ☐ Yes ☒ No If yes, attach copy.

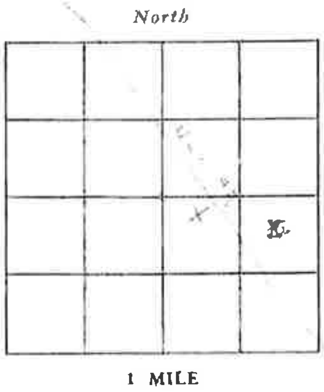
Was electric log made of well? ☐ Yes ☐ No If yes, attach copy.

MICROFILMED

If well abandoned, was it plugged and sealed?

Method of plugging and sealing

(11) Location: Imperial County [illegible]



Section No. 32

Township 10S 9

Range 10E

Base & Meridian S.B.M.

Show location of well in Section, thus (X)

Distances to section lines from well, N or S 2640 ft.

and E or W 1825 ft.

Show location of nearest known well, thus (O)

Distance to nearest known well Not known ft.

(12) Time of work:

Work started date 7-17-50 Completed date 8-28-50

Date of this report 9-25-50

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

[SIGNED]
Well Driller

By

License No. 118658 Classification 2 57

Dated April 24, 1950 , 1950

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No. 7
(Insert appropriate number)

WATER WELL DRILLERS RE[illegible]RT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
№ 27705
State Well No.
Other Well No.

(2) LOCATION OF WELL:

County Imperal Owner's number, if any—
R. F. D. or Street No. Well located 500' South of
Helena Cafe y

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft. to	ft.	Diam.	Gage or Wall
0	182	3"	std.

If gravel packed

Diameter of Bore	from ft.	to ft.

Size of gravel:
Type and size of shoe or well ring
Describe joint

(7) PERFORATIONS:

Type of perforator used Torch cut
Size of perforations 6" by 1/8" in., length, by in.
From 140 ft. to 182 ft. Perf. per row 4 - 1 Rows per ft.

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 140 ft.
Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata
From 140 ft. to ft.
Method of Sealing Cuttings & slurry

(9) WATER LEVELS:

Depth at which water was first found 6' ft.
Standing level before perforating ft.
Standing level after perforating A rtis ian ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 204 ft. Depth of completed well 182
Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0	22	surface fine sand mixed with clay streaks
22	50	clay with medium sand streaks
50	104	clay with fine sand strea
104	115	fine sand
115	140	clay
140	182	fine sand with streaks
182	197	clay
197	203	fine sand
203	204	clay

MICROFILMED

Work started April 17 1957 Completed April 19 1957

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME MOFFITT & WELLS
(Person, firm, or corporation) (Typed or printed)
Address P.O.Box 312 Thermal California

[SIGNED] Lloyd W. Wells
Well Driller

License No. 160605 Dated May 9, 1957

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
DIVISION OF WATER RESOURCES
P. O. BOX 1079
MENTO 5, CALIFORNIA

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS

DIVISION OF WATER RESOURCES

SHEET 1

Do Not Fill In
State Well No. 10S/10E-32J
Other Well No.
Region 7 ✓

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

1016

(1) Driller:
Name F. L. Merrifield
Address Rt. 1, Box 255
Thermal, California
License No. 118658 Classification C 57

(2) Proposed use or uses *(check)*:
Domestic ☐
Irrigation ☐
Domestic and Irrigation ☒
Municipal ☐
Industrial ☐
Test well ☐
Other

(3) Equipment used *(check)*:
Rotary ☒
Cable ☐
Dug well ☐
Other

(4) Type of work *(check)*:
New well ☒
Reconditioning of well ☐
Deepening existing well ☐

(5) Well log:
Total depth of well 217 ft.

Give details of formations penetrated, such as silt, peat, muck, sand, gravel, clay, shale, sandstone, hardpan, rock. Include size of gravel (diameter) and sand (fine, medium, coarse), color of material, structure (loose, packed, cemented, soft, hard, brittle).

Depth From Ground Surface

0	ft. to	75	ft.	Red clay
75	" "	190	"	Blue clay
190	" "	205	"	Shale, broken clay balls
205	" "	217	"	Blue clay

MICROFILMED

If additional space is required, continue on DWR Form No. 246—Supplement, and attach to respective report copies.

(6) Casing left in well:

LENGTH FT	DIAMETER INCHES	SINGLE, DOUBLE, WELDED, OTHER	LBS. PER FOOT OR GAGE OF CASING	SEATING BELOW GROUND SURFACE, FT
217	6"	Welded	10 gage	217

2-134

Type and size of shoe or well ring Welded joints—☒ Yes ☐ No

EEC ORIGINAL PKG

File Original, Duplicate and Triplicate with the
DIVISION OF WATER RESOURCES
P. O. BOX 1079
SACRAMENTO 5, CALIFORNIA

SHEET 2

Do Not Fill In
State Well No.
Other Well No.
Region 7

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

1

(7) Perforations:

Type of perforator used Torch 12-60 7

Perforated 195 ft. to 217 ft. Hole size 1/8"x6" No. of holes 160

(8) Water levels:

Depth at which water first encountered ft.

Depth to water before perforating ft.

Depth to water after perforating 18 ft.

Note any change in water level while drilling

(9) Well pumping test:

Date of test 8-11-50 By whom Self

Depth to water when test started 18 ft.

G.P.M. at beginning of test Not known

Drawdown from standing level 140 ft.

G.P.M. at completion of test Approximately 10 min. per hr

Drawdown at completion of test Same ft.

Length of time tested 3 hrs

Temperature of water Not known

Was gas present in water? ☐ Yes ☒ No

(10) General:

Was well gravel packed? No 2 Size of rock Thickness of pack

Was a surface sanitary seal provided? Yes

Were any strata sealed against pollution? ☐ Yes ☒ No If yes, attach detailed description. 2

Strata sealed

Was analysis made of water? ☐ Yes ☒ No If yes, attach copy.

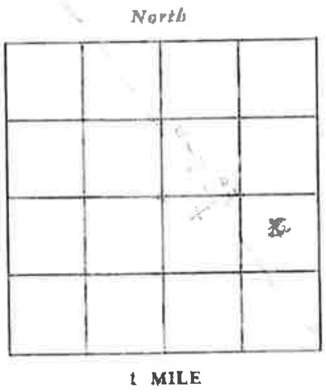
Was electric log made of well? ☐ Yes ☒ No If yes, attach copy.

MICROFILMED

If well abandoned, was it plugged and sealed?

Method of plugging and sealing

(11) Location: Imperial County



Section No. 32

Township 10E S

Range 10E

Base & Meridian S.B.M.

Show location of well in Section, thus (X)

Distances to section lines from well, N or S 2640 ft.

and E or W 1825 ft.

Show location of nearest known well, thus (O)

Distance to nearest known well Not known ft.

(12) Time of work:

Work started date 7-17-50 Completed date 8-28-50

Date of this report 9-23-50

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

[SIGNED] F. L. Merrifield
Well Driller

By Mrs. F. L. Merrifield

License No. 118658 Classification 2 57

Dated April 24, 1950 , 1950

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No. 7
(Insert appropriate number)

WATER WELL DRILLERS RE[illegible]RT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
№ 27702
State Well No. 9 S/9E 23
Other Well No. ....

(2) LOCATION OF WELL:

County Imperial   Owner's number, if any—
R. F. D. or Street No.
Sun Dial Beach   Highway 99
Legal Description - North 15 Acres
of the N.W. ¼ of Sect. 23 R 9
T 9 SBBM

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	166	3"	1/4"

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring None
Size of gravel:
Describe joint Threaded & Coupled

(7) PERFORATIONS:

Type of perforator used
Size of perforations 1/8" in., length, by 6" in.

From ft.	to ft.	Perf. per row	Rows per ft.
104'	166'	4	2

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 104' ft.
Were any strata sealed against pollution? ☒ Yes ☐ No If yes, note depth of strata
From 0' ft. to 104' ft.
Method of Sealing Clay and mixed cuttings

(9) WATER LEVELS:

Depth at which water was first found 6' ft.
Standing level before perforating Artesian ft.
Standing level after perforating Artesian ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water   Was a chemical analysis made? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 172 ft. ft. Depth of completed well 166 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0'	22'	Surface(fine sand, grave mixed)
22'	67'	Clay with Gravel streaks
67'	131'	In and out clay and fine sand.
131'	151'	Gravel and sand mixed with thin clay streaks
151'	172'	Fine and medium sand mixed with thin clay streaks.

MICROFILMED

Work started January 16 1957   Completed January 18 195

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME MOFFITT & WELLS
(Person, firm, or corporation) (Typed or printed)
Address Box 312
Thermal, California
[SIGNED] James H. Moffitt Partner
Well Driller
License No. 160605   Dated January 24, 1957

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No. 7
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
№ 27705
State Well No.
Other Well No.

(2) LOCATION OF WELL:

County Imperal Owner's number, if any—
R. F. D. or Street No. Well located 500' South of Helena Cafe y

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft. to	ft.	Diam.	Gage or Wall
0	182	30"	std.

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring
Size of gravel:
Describe joint

(7) PERFORATIONS:

Type of perforator used Torch out
Size of perforations 6" by 1/8" in., length, by in.
From 140 ft. to 182 ft. Perf. per row 4 1 Rows per ft.

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 140 ft.
Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata
From 140 ft. to ft.
Method of Sealing Cuttings & slurry

(9) WATER LEVELS:

Depth at which water was first found 6' ft.
Standing level before perforating ft.
Standing level after perforating A rtis ian ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 204 ft. Depth of completed well 182

Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0	22	surface fine sand mixed with clay strdeks
22	50	clay with medium sand streaks
50	104	clay with fine sand strea
104	115	fine sand
115	140	clay
140	182	fine sand with streaks
182	197	clay
197	203	fine sand
203	204	clay

MICROFILMED

Work started April 17 1957 Completed April 19 1957

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME MOFFITT & WELLS
(Person, firm, or corporation) (Typed or printed)
Address P.O.Box 312 Thermal California

[SIGNED] Lloyd W. Wells
Well Driller
License No. 16060 Dated May 9, 1957

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.________
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
Nº 27706
State Well No. 9S/9E-25
Other Well No.

(2) LOCATION OF WELL:

County Imperal Owner's number, if any—
R. F. D. or Street No.
Section 25, 1 ½ mi. east of hiway 99.
600 ft west & 300 ft South of the center
point of Sec. 25, T 9 S R 9 E

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☒ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From	ft. to	ft. Diam.	Gage or Wall
0	244	3"	std.

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring
Size of gravel:
Describe joint

(7) PERFORATIONS:

Type of perforator used Torch cut
Size of perforations 1/8 in., length, by 6" in.
From ft. to #1 ft. Perf. per row 4 Rows per ft.

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 160 ft.
Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata
From 0 ft. to 160 ft.
Method of Sealing Slury and cuttings from well

(9) WATER LEVELS:

Depth at which water was first found Artes ian ft.
Standing level before perforating ft.
[illegible]ling level after perforating ft.

(10) WELL TESTS:

Was a pump test made? ☒ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

(11) WELL LOG:

Total depth 244 ft. Depth of completed well 244
Formation: *Describe by color, character, size of material, and structure.*

ft.	to ft.	
0	42	Fine to corse sand mixed
42	60	Medium sand with clay stk
60	83	fine sand with clay stks.
83	160	Blue clay with fine sand stk
160	165	Shale
165	222	In and out clay and fine sand
222	224	sand stone
224	244	Clay and shale with fine sand streaks

MICROFILMED

Work started April 28 19 , Completed May 1. 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME MOFFITT & WELLS (Person, firm, or corporation) (Typed or printed)
Address Po Box 312 Thermal California

[SIGNED] James H. Moffitt
License No. 16066 Dated May 23 19 57

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No. ______
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
No 27707
State Well No. 9S/9E-25
Other Well No. ______

(2) LOCATION OF WELL:

County: Imperial   Owner's number, if any—
R. F. D. or Street No. Section 25, 1½ mi. eas t of hiway 99.
600 ft East and 300 ft north of the center point of Sec 25, T9S R9E.

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	213	9"	std.

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring
Size of gravel:
Describe joint

(7) PERFORATIONS:

Type of perforator used Torch cut
Size of perforations 1/8 in., length, by 6" in.
From ft. to [illegible] ft. Perf. per row 4 Rows per ft.

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth ft.
Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata
From 0 ft. to 140 ft.
Method of Sealing Slury and cuttings from well

(9) WATER LEVELS:

Depth at which water was first found Artesian ft.
Standing level before perforating ft.
Standing level after perforating ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

(11) WELL LOG:

Total depth 237 ft. Depth of completed well 213 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0	22	Surface sand
22	64	Clay
62	85	Clay with sand streaks
85	128	Blue clay
128	134	Medium and fine sand mixed
134	145	Clay
145	160	Clay with fine streaks
160	184	IN and out clay medium and fine sand
184	200	Clay with fine medium sand and gravel mixed
200	224	Clay with gravel mixed
224	237	Clay and shale with gravel streaks

MICROFILMED

Work started May 13 19 . Completed May 15 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Moffitt & Wells
(Person, firm, or corporation) (Typed or printed)

Address P.O. Box 313
Thermal California

[SIGNED] Lloyd W. Wells
Well Driller

License No. 160665 Dated May 16, 1957

EEC ORIGINAL PKG

Formation ID 47

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
Nº 27708
State Well No. 9S/9E-23
Other Well No.

(2) LOCATION OF WELL:

County Imperial Owner's number, if any—
R. F. D. or Street No.
Salton sea
Lot 24 Block 10, Unit 4 of Salton Sea Beach Estates subdivision in Sec 23, T9S R9E approx 1000 ft North of Brawley ave & fronting on Santa Rosa Ave.

(3) TYPE OF WORK (*check*):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	186	3	[illegible]

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring
Size of gravel:
Describe joint ~~Torch cut~~ Threaded and coupled

(7) PERFORATIONS:

Type of perforator used Torch cut
Size of perforations 1/8 in., length, by 6" in.

From ft.	to ft.	Perf. per row	Rows per ft.
143	186	3	1

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 138 ft.
Were any strata sealed against pollution? ☒ Yes ☐ No If yes, note depth of strata
From 0 ft. to 138 ft.
Method of Sealing slurry

(9) WATER LEVELS:

Depth at which water was first found ft.
Standing level before perforating 4 ft.
Standing level after perforating surface artesian ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 210 ft. Depth of completed well 200 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0	22	surface (course sand and gravel)
22	39	med. & course sand
39	65	clay with med sand str
65	76	clay
76	82	clay and gravel
82	119	soft clay with fine sand streaks
119	140	soft clay
140	144	fine sand to gravel
144	159	clay
159	164	med and fine sand
164	210	clay with thin gravel streaks

MICROFILMED

Work started June 5 1957 Completed June 7 19

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME (Person, firm, or corporation) (Typed or printed)
moffitt and wells
Address box 312 Thermal California
[SIGNED] Lloyd W. Wells
Well Driller
License No. [illegible] Dated [illegible] 1957

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No. 7
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
Nº 27717
State Well No. 9S/11[illegible]
Other Well No. ....

(2) LOCATION OF WELL:

County Imperial Owner's number, if any—
R. F. D. or Street No. Salton Sea Area

E ½ of 5 acres of 10 acres of
NW ¼ of NW¼ Sec.23 R 9E, T.9S

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	194	~~[illegible]~~	
3½"		std tubing	

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring
Size of gravel:
Describe joint Threaded

(7) PERFORATIONS:

Type of perforator used Acetylene Torch
Size of perforations in., length, by in.

From ft.	to ft.	Perf. per row	Rows per ft.
145	194	4	4

(8) CONSTRUCTION:

Was a surface sanitary seal provided? x ☐ Yes ☐ No To what depth ft.
Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata
From ft. to ft.
Method of Sealing Rotary mud

(9) WATER LEVELS:

Depth at which water was first found Flowing ft.
Standing level before perforating ft.
Standing level after perforating ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes x ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

(11) WELL LOG:

Total depth 203 ft. Depth of completed well 194 ft.

Formation: *Describe by color, character, size of material, and structure.*

ft.	to ft.	
0	43	Fine,med,course ~~m~~mix w/clay stk
43	63	Fine,med,course mix w/clay stk
63	83	Fine,med,course mix w/clay stk
83	103	Fine,med,course mix w/clay stk
103	123	Fine,med,course mix w/clay stk
123	143	Fine to med,corse mix
143	183	Fine,med to course mix w/clay
183	203	Fine,med to course mix w/clay

MICROFILMED

Work started 10/23/58 19 Completed 10/25/58 19

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Moffitt & Wells
(Person, firm, or corporation) *(Typed or printed)*
Address P.O.Box 312.
Thermal, Calif.

[SIGNED] Lloyd W. Wells
Well Driller

License No. 160605 Dated 12/2/58 19

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No. 7
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
Nº 27721
State Well No. 9S/9E-9
Other Well No.

(2) LOCATION OF WELL:

County Imperial Owner's number, if any—
R. F. D. or Street No.
NW 1/4 of Sec 9 T. 9S R. 9E
S B B & M

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft. to	ft.	Diam.	Gage or Wall
~~0xx318x~~			
0	118	8"	
118	318	6"	

If gravel packed

Diameter of Bore	from ft.	to ft.
15"		

Type and size of shoe or well ring
Size of gravel: Pea
Describe joint Welded

(7) PERFORATIONS:

Type of perforator used Torch cut
Size of perforations 1/8" in., length, by in.

From ft. to	ft.	Perf. per row	Rows per ft.
160	253		
291	318		

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth ft.
Were any strata sealed against pollution? ☒ Yes ☐ No If yes, note depth of strata
From ft. to ft.
Method of Sealing Cutting slurry

(9) WATER LEVELS:

Depth at which water was first found 44' ft.
Standing level before perforating ft.
Standing level after perforating ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

(11) WELL LOG:

Total depth 318 ft. Depth of completed well 318 ft.
Formation: *Describe by color, character, size of material, and structure:*

ft. to	ft.	
0	42	Surface sand
42	44	Clay
44	50	Fine sand
50	65	Clay
65	70	Med sand
70	91	Clay
91	155	Clay & fine sand
155	183	Course sand
183	204	Small gravel
204	253	Small gravel w/clay
253	291	Clay w/fine sand stk
291	316	Course sand
316	318	Clay

MICROFILMED

Work started 2/5 1959 Completed 2/7 1959

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Moffitt & Wells
(Person, firm, or corporation) (Typed or printed)
Address P.O.Box 312
Thermal, Calif.
[SIGNED] James W. Moffitt
Well Driller
License No. 1[illegible]605 Dated 2/12, 1959

EEC ORIGINAL PKG

ORIGINAL
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No. 7
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In

№ 29932

State Well No. 9S/9E – 27

Other Well No.

(2) LOCATION OF WELL:

County Imperial Owner's number, if any—

R. F. D. or Street No.

So. West corner of lot 10 in the Salton Sea Oasis Tract which is located so. one half of Sec.27 T9S R 9E.

(3) TYPE OF WORK (*check*):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Well
0	200		10ga.

Type and size of shoe or well ring

If gravel packed

Diameter of Bore	from ft.	to ft.

Size of gravel:

Describe joint butt weld

(7) PERFORATIONS:

Type of perforator used Torch

Size of perforations 1/8 in., length, by 5 in.

From 120 ft. to 200 ft. 4 Perf. per row 2 Rows per ft.

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth ft.

Were any strata sealed against pollution? ☒ Yes ☐ No If yes, note depth of strata

From ft. to ft.

Method of Sealing CLAY SLURRY

(9) WATER LEVELS:

Depth at which water was first found 72' ft.

Standing level before perforating ft.

Standing level after perforating 72' ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?

Yield: gal./min. with ft. draw down after hrs.

Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

(11) WELL LOG:

Total depth ft. Depth of completed well ft.

Formation: *Describe by color, character, size of material, and structure.*

ft.	to ft.	
0	45	rocks and surfce sand
45	58	fine to coarse sand with clay streak
58	76	clay (red)
76	85	cemented sand
85	87	clay(red)sand
87		cemented sand
87	116	cemented sand
116	128	coarse (free)
128	135	fine to coarse sand with clay streak
135	160	fine to coarse
160	185	fine to coarse (tight some free
185	187	blue clay
187	204	blue fine to coarse sand.

MICROFILMED

Work started Sept. 26 1959. Completed Sept. 30 19 5

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Moffitt & Wells
(Person, firm, or corporation) (*Typed or printed*)

Address Box 312
Thermal, California

[SIGNED] Lloyd A. Wells
Well Driller

License No. 160605 Dated 19

EEC ORIGINAL PKG

ORIGINAL
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.________
(Insert appropriate number)

WATER WELL DRILLERS REPORT
(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
Nº 29947
State Well No. 9S/9E-27
Other Well No. ....

(2) LOCATION OF WELL:

County Imperial Owner's number, if any—
R. F. D. or Street No.
Parcel 14 Sec. 27 T-9S R-9E
S.B.B.M.

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	202	6 5/8	10

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring
Size of gravel:
Describe joint Welded

(7) PERFORATIONS:

Type of perforator used Torch Cut
Size of perforations 6" in., length, by 1/8" in.

From ft.	to ft.	Perf. per row	Rows per ft.
142	202	6	1

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 142 ft.
Were any strata sealed against pollution? ☒ Yes ☐ No If yes, note depth of strata
From 0 ft. to 142 ft.
Method of Sealing Slurry

(9) WATER LEVELS:

Depth at which water was first found 142 ft.
Standing level before perforating ft.
Standing level after perforating ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 20 ft. Depth of completed well 202' ft.
Formation: *Describe by color, character, size of material, and structure.*

ft.	to ft.	
0	45	Boulders & Sand
45	67	Clay with rock nests
67	89	Rocks with thin clay st
89	111	Cemented sand and
		conglomerated, mixed
111	133	Gravel & boulders, thin
		clay stk
133	155	Sand, gravel and rock,
		tight
155	177	Gravel & rock, tight
177	202	Rock & gravel, mixed,
		loose.

MICROFILMED

Work started Sept. 9 1960 Completed Sept. 20 1960

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME MOFFITT & WELLS
(Person, firm, or corporation) (Typed or printed)
Address Box 312
Thermal, Calif.
[SIGNED] James W. Moffitt
(Well Driller)
License No. 160605 Dated 9/26 1960

EEC ORIGINAL PKG

ORIGINAL
File with DWR

AUG 2 1 1969

WATER WELL DRILLERS REPORT

(Sections 7079, 7080, 7081, 7082, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Do Not Fill In

№ 34721

State Well No. ____

Other Well No. ____

(2) LOCATION OF WELL:

County Imperial Owner's number, if any

Township, Range, and Section Twp. 9S Range 9E

Distance from cities, roads, railroads, etc. Sec. 27. S.B.B.M? NW¼ NE¼

(3) TYPE OF WORK *(check)*:

New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE *(check)*:

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Other ☐

(6) CASING INSTALLED:

STEEL: OTHER:

SINGLE ☒ DOUBLE ☐

If gravel packed

From ft.	To ft.	Diam.	Gage or Wall	Diameter of Bore	From ft.	To ft.
0	220	6-5/8"		Gravel packed in area of perforations.		

Size of shoe or well ring: Size of gravel:

Describe joint

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
110	220	6 rows	x 1/8	x 2½

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☒ No ☒ To what depth ft.

Were any strata sealed against pollution? Yes ☒ No ☐ If yes, note depth of strata

From 0 ft. to 110 ft.

From ft. to ft.

Method of sealing Drilling mud

(9) WATER LEVELS:

Depth at which water was first found, if known Rotary ft.

Standing level before perforating, if known " ft.

Standing level after perforating and developing ft.

(10) WELL TESTS:

Was pump test made? Yes ☐ No ☐ If yes, by whom?

Yield: gal./min. with ft. drawdown after hrs.

Temperature of water Was a chemical analysis made? Yes ☐ No ☐

Was electric log made of well? Yes ☐ No ☒ If yes, attach copy

(11) WELL LOG:

Total depth 220 ft. Depth of completed well 220 ft.

Formation: *Describe by color, character, size of material, and structure*

Med. Sand 0 ft. to Rock, clay sand 60 ft.
Rock clay sand Coarse sand 90
Coarse sand Coarse sand 100
Coarse sand Boulders clay
& coarse sand 160
Boulders clay &c Rock patches
course sand &
clay 190
Rock patches &c Coarse sand 220

Work started May 1 1969. Completed May 14 69

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME MANN BROS.
(Person, firm, or corporation) *(Typed or printed)*

Address P.O.Box 755, Thermal, Calif.

[SIGNED] F. Mandeville
(Well Driller)

License No. 148880 C57 Dated Aug. 15, 1969

SKETCH LOCATION OF WELL ON REVERSE SIDE

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.________
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
№ 59077
State Well No. 9S/9E-23N
Other Well No.

(2) LOCATION OF WELL:

County IMPERIAL Owner's number, if any--
R. F. D. or Street No.
SW¼ of SW¼ of SEC 23 T9S
R 9 E SBBM

(3) TYPE OF WORK *(check)*:

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE *(check)*:

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
~~[illegible]~~	~~[illegible]~~		1/4
0	216		

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring
Size of gravel:
Describe joint

(7) PERFORATIONS:

Type of perforator used split
Size of perforations 5/32 in., length, by 4 in.

From ft.	to ft.	Perf. per row	Rows per ft.
194	216		

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 194 ft.
Were any strata sealed against pollution? ☑ Yes ☐ No If yes, note depth of strata 194
From ft. to ft.
Method of Sealing clay

(9) WATER LEVELS:

Depth at which water was first found 4 ft.
Standing level before perforating flowing ft.
Standing level after perforating flowing ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: 20 gal./min. with ft. draw down after hrs.
Temperature of water 80° Was a chemical analysis made? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 216 ft. Depth of completed well 216 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0	16	surf. sand
16	20	clay
20	41	fine to coarse sand
41	58	fino to coars esand with blue clay
58	70	clay--red
70	160	sand & clay
160	172	fine sand with clay
172	190	med. to coarse sand
190	220	clay
220	241	med. sand

MICROFILMED

Work started 5/29 19 60 Completed 5/31 19 60

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME GAYLER & GAYLER WELL DRILLING
Address P. O. BOX 656
THERMAL, CALIFORNIA
[SIGNED] Well Driller
License No. Dated 1960

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
Nº 59078
State Well No. 9S/9E-23 D
Other Well No.

(2) LOCATION OF WELL:

County IMPERIAL Owner's number, if any--

R. F. D. or Street No.

NW¼ NW¼ OF SEC 23
T9S R9E SBBM

(3) TYPE OF WORK (*check*):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft. to	ft.	Diam.	Gage or Wall
0	202		7/4

If gravel packed

Diameter of Bore	from ft.	to ft.
8 7/8		

Type and size of shoe or well ring

Size of gravel:

Describe joint

(7) PERFORATIONS:

Type of perforator used split

Size of perforations 5/32 in., length, by 4 in.

From ft. to	ft.	Perf. per row	Rows per ft.
172	202	4	4

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 172 ft.

Were any strata sealed against pollution? ☒ Yes ☐ No If yes, note depth of strata 172

From ft. to ft.

Method of Sealing clay

(9) WATER LEVELS:

Depth at which water was first found 4 ft.

Standing level before perforating flowing ft.

[illegible]nding level after perforating flowing ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?

Yield 20 gal./min. with no ft. draw down after hrs.

Temperature of water 80° Was a chemical analysis made? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 202 ft., Depth of completed well 202 ft.

Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0	60	sur. sand and clay
60	79	fine sand
70	82	med & med coarse
82	120	fine sand and clay
120	136	fine to med. coars with clay
136	147	med to coarse sand with clay strk
147	157	clay
157	202	fine to coarse sand with clay strk

MICROFILMED

Work started 6/21 1960 Completed 6/8 1960

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME GAYLER & GAYLER WELL DRILLING CO.
(Person, firm, or corporation) (Typed or printed)

Address P. O. BOX 656
THERMAL, CALIFORNIA

[SIGNED] Harold E. Gayler
Well Driller

License No. 1916[illegible] Dated [illegible] 1960

EEC ORIGINAL PKG

/ Formation ID 56

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR 09S09E21

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0111199

Page 1 of 1

Owner's Well Number #2

Date Work Began 03/25/2010 Date Work Ended 5/14/2010

Local Permit Agency Imperial County Planning and Building Department

Permit Number 52771 Permit Date 3/25/01

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ● Vertical ○ Horizontal ○ Angle Specify

Drilling Method Direct Rotary Drilling Fluid Bentonite mud

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	120	Coarse sand, gravel, few Cobbles
120	240	Coarse to med sand w/ streaks of gravel
240	365	Coarse med to fine sand w/ streaks of gravel
365	400	Clays with thin streak of med to fine sand

Total Depth of Boring 400 Feet

Total Depth of Completed Well 370 Feet

Well Location

Address 100 W Brawley Ave

City Salton Sea Beach County Imperial

Latitude ___ Deg. ___ Min. ___ Sec. N Longitude ___ Deg. ___ Min. ___ Sec. W

Datum ___ Decimal Lat. ___ Decimal Long. ___

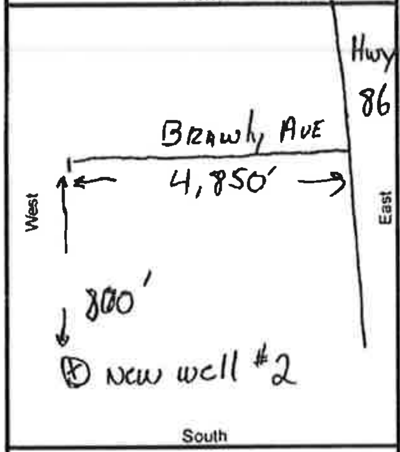
APN Book ___ Page ___ Parcel 001-190-061

Township 9S Range 9E Section 6

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North



South

Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. **Please be accurate and complete.**

Activity

● New Well
○ Modification/Repair
  ○ Deepen
  ○ Other
○ Destroy
  Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

● Water Supply
  ☐ Domestic ☐ Public
  ☐ Irrigation ☑ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 170 (Feet below surface)

Depth to Static Water Level 175 (Feet) Date Measured 05/08/2010

Estimated Yield* 150 (GPM) Test Type Air Lift

Test Length 24.0 (Hours) Total Drawdown ___ (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
0	210	14 3/4	Blank	304 Stainless Steel	.250	8 5/8		
210	370	14 3/4	Screen	304 Stainless Steel		8 5/8	Wire Wrap	0.050

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	25	Cement	10.3 Sack
25	370	Filter Pack	8X16

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Palm Springs Pump Inc.
Person, Firm or Corporation

83-651 Dr. Carreon Indio CA 92201
Address City State Zip

Signed 6/7/10 749713
C-57 Licensed Water Well Contractor Date Signed C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

06/14/10

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*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR 09S09E21

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0111200

Page 1 of 1

Owner's Well Number #1

Date Work Began 05/26/2010 Date Work Ended 5/26/2010

Local Permit Agency Imperial County Planning and Building Department

Permit Number 52771 Permit Date 3/25/01

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ● Vertical ○ Horizontal ○ Angle Specify____

Drilling Method Direct Rotary Drilling Fluid Bentonite mud

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
	1	Fill well from 360' to 25' below grade with 3/8"
		Pea Gravel
	2	Fill well from 25' below grade to 5' below grade
		w/ 3/8" Bentonite hole plug (Hydrate to seal)
	3	Cut casing and install Bentonite mushroom cap
	4	Backfill and compact with native soil from 5' below
		grade to surface

Total Depth of Boring ____ Feet

Total Depth of Completed Well ____ Feet

Well Location

Address 100 W Brawley Ave

City Salton Sea Beach County Imperial

Latitude __ Deg __ Min. __ Sec. N Longitude __ Deg. __ Min. __ Sec W

Datum ____ Decimal Lat. ____ Decimal Long. ____

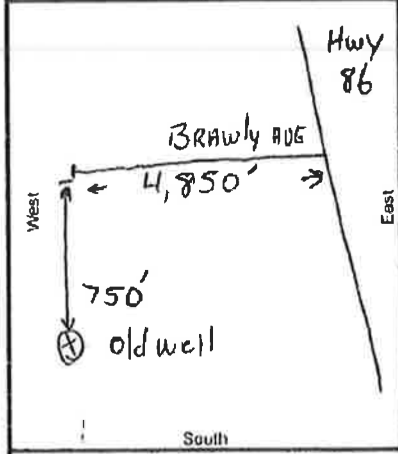
APN Book ____ Page ____ Parcel 001-190-061

Township 9S Range 9E Section 61

Location Sketch

(Sketch must be drawn by hand after form is printed.)

North



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

○ New Well

○ Modification/Repair

- ○ Deepen
- ○ Other ____

● Destroy

Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

● Water Supply

- ☐ Domestic ☐ Public
- ☐ Irrigation ☐ Industrial

○ Cathodic Protection

○ Dewatering

○ Heat Exchange

○ Injection

○ Monitoring

○ Remediation

○ Sparging

○ Test Well

○ Vapor Extraction

○ Other ____

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.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	5	Fill	Native
5	25	Bentonite	3/8" Hole Plug
25	360	Fill	3/8" Pea Gravel

Attachments

☐ Geologic Log

☐ Well Construction Diagram

☐ Geophysical Log(s)

☐ Soil/Water Chemical Analyses

☐ Other ____

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

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DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

06/14/10

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ATTACHMENT D

Noise Impact Assessment

Noise Impact Assessment

Clubhouse (Salton Sea Plot Studies) Project

Imperial County, California

Prepared For:

Imperial Irrigation District
333 East Barioni Boulevard
Imperial, California 92251

January 2021

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

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CONTENTS

EEC ORIGINAL PKG

LIST OF TABLES

LIST OF FIGURES

LIST OF ATTACHMENTS

LIST OF ACRONYMS AND ABBREVIATIONS

County	Imperial County
CNEL	Community Noise Equivalent Level
dB	Decibel
dBA	Decibel is A-weighted
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
HDR	High Density Residential
Hz	Hertz
IID	Imperial Irrigation District
L_{dn}	Day/Night noise level
L_{eq}	Equivalent noise level
OPR	Office of Planning and Research
OSHA	Occupational Safety and Health Administration
PPV	Peak particle velocity
Project	Clubhouse (Salton Sea Plot Studies) Project
RMS	Root mean square
WEAL	Western Electro-Acoustic Laboratory, Inc.

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1.0 INTRODUCTION

This report documents the results of a Noise Impact Assessment completed for the Clubhouse (Salton Sea Plot Studies) Project (Project) located near the northern extent of the Salton Sea in Imperial County, California. The Imperial Irrigation District (IID) is proposing the development of groundwater wells and associated features to establish and sustain vegetation cover and waterless dust control measures on 128.64 acres of the exposed Salton Sea playa to reduce air quality risks from emissive particles. This assessment was prepared as a comparison of predicted Project noise levels to noise standards promulgated by the Imperial County General Plan Noise Element. The purpose of this report is to estimate Project-generated noise levels and determine the level of impact the Project would have on the environment.

1.1 Final EIR/EIS for the IID Water Conservation and Transfer Project and Habitat Conservation Plan

The Final Environmental Impact Report and Environmental Impact Statement (Final EIR/EIS or EIR/EIS) for the Imperial Irrigation District's (IID) Water Conservation and Transfer Project and Habitat Conservation Plan (HCP) was certified by IID (as CEQA Lead Agency) in June 2002. 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 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 Water Conservation and 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 Water Conservation and 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 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 toxic air contaminant concentrations associated with [receding Sea levels] and to provide a basis for mitigation efforts.*
    - *f. If incremental increases in toxic air contaminants (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 PM10 emission reduction credits.*
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].*

The EIR/EIS concludes that windblown dust from exposed shoreline caused by the Water Conservation and 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 Salton Sea Air Quality Mitigation Program (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.

1.2 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 dust control measures (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.

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 2019/2020 Proactive Dust Control Plan (PDCP) was prepared by IID as part of the SSAQMP to identify priority playa areas for dust control. The PDCP recommends dust mitigation projects on approximately 7,000 acres, including a series of plot studies and irrigation water supply development. 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;

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- 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.

In the PDCP, Planning Areas have been identified within the 7,000-acres for implementation of DCMs and are identified as follows:

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

This CEQA Addendum addresses implementation of a proposed dust control plot study in the Clubhouse Planning Area identified in the 2019/2020 PDCP under the SSAQMP (titled the Clubhouse Plot Study).

1.3 Clubhouse Plot Study Project Description

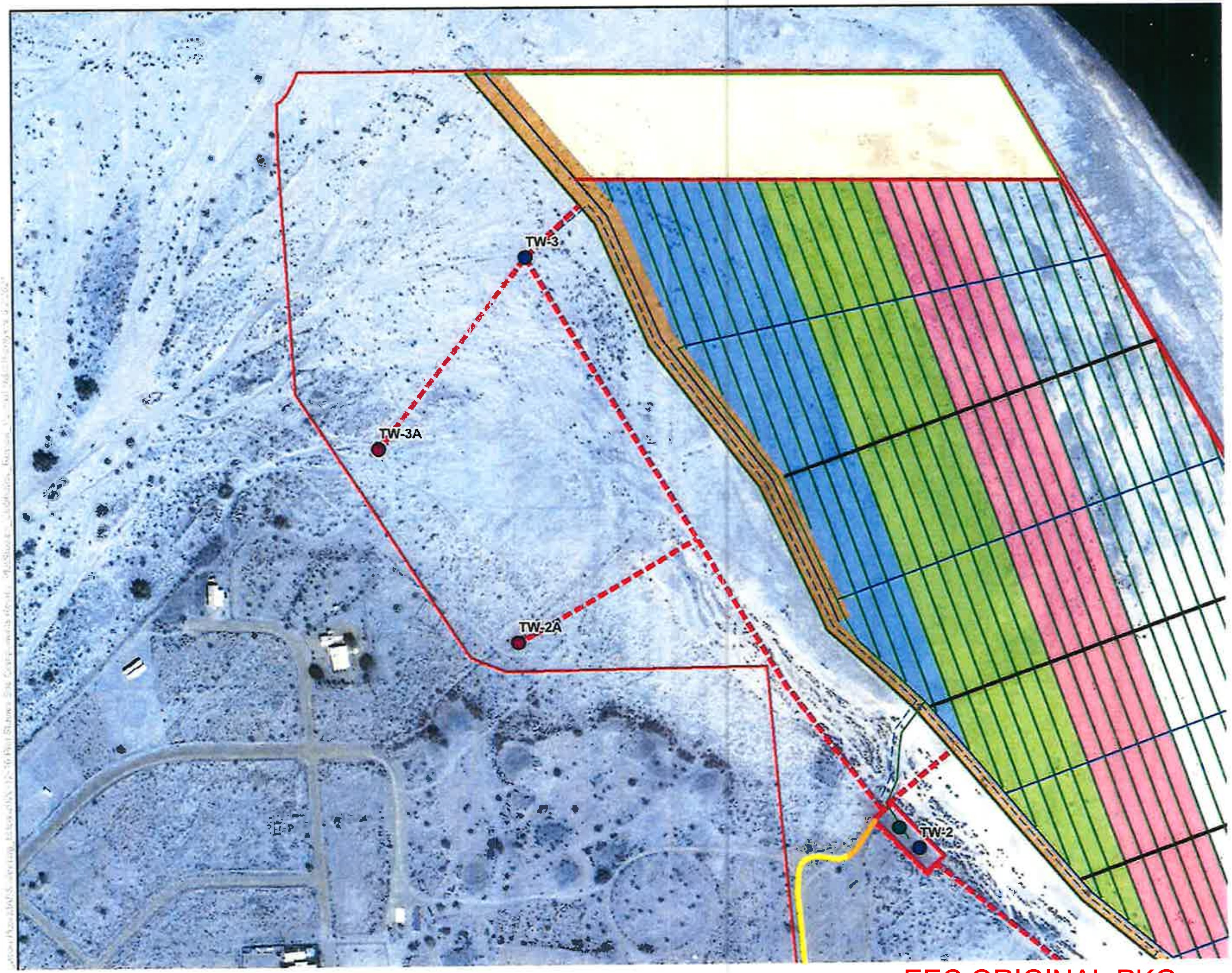
The Clubhouse Plot Study site comprises 128.64 acres that has been identified as a priority playa area to evaluate water supply options and vegetation establishment and maintenance requirements, as well as the efficacy of several waterless dust control measures.. The Clubhouse Plot Study site is located along the western 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 (Figure 1). As shown in Figure 1, the Clubhouse Plot Study would include:

- Development (drilling, testing and operations) of one deep groundwater water well (approximately 300 feet deep) and up to three shallow groundwater wells (approximately 100 feet deep);
- Installation and operations of solar-powered groundwater pumps;

- Placement and use of approximately six 5,000 gallon water storage tanks;
- Installation of conveyance pipelines from wells to storage tanks and from storage tanks to vegetation plots on the exposed playa;
- Establishment of 58.57 acres of vegetation within the approximately 73.15-acre plot study perimeter and associated the installation of a drip irrigation system;
- Implementation of waterless DCMs on approximately 13.69 acres of the approximately 73.15-acre plot study perimeter;
- Improvements to 3,800 linear feet of access road; and
- Ongoing operations and maintenance 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 approximately 58.57 acres and implementation of DCMs on the remaining 13.68 acres that would be implemented as part of the 2019/2020 PDCP.

Vegetation would be seeded or transplanted iodine bush (*Allenrolfea occidentalis*). Waterless DCMs will include placement of hay bales and sand fencing. Site preparation for vegetation establishment involves activities similar to surface roughening. For the purposes of this analysis, it is assumed that site preparation activities for vegetation establishment would be implemented throughout the entire plot study area to represent a "worst-case" ground disturbance scenario.



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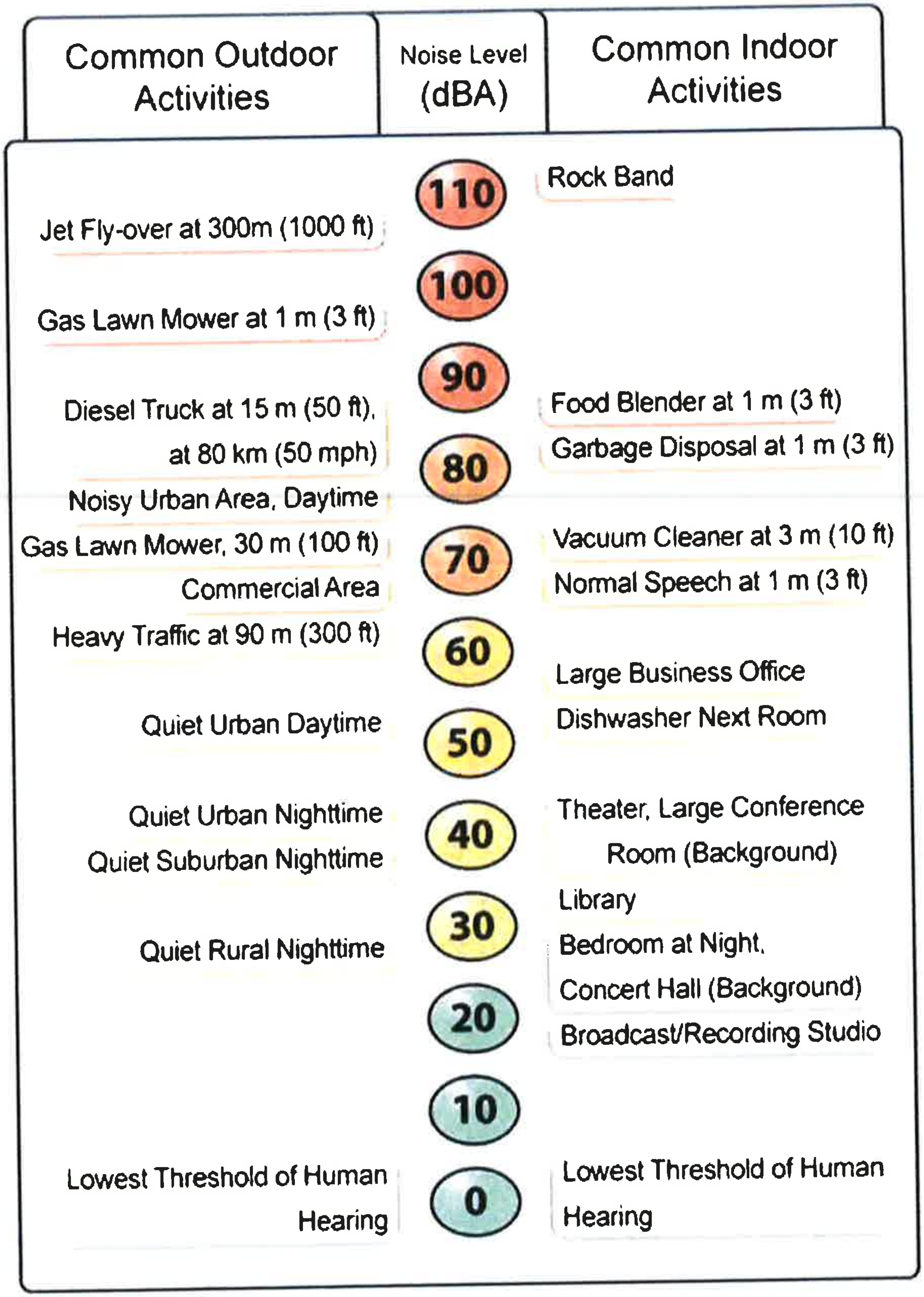
2.0 ENVIRONMENTAL NOISE AND GROUNDBORNE VIBRATION ANALYSIS

2.1 Fundamentals of Noise and Environmental Sound

2.1.1 Addition of Decibels

The decibel (dB) scale is logarithmic, not linear; 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. For example, a 70-dBA sound is half as loud as an 80-dBA sound and twice as loud as a 60-dBA sound. 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 (Federal Transit Administration [FTA] 2018). For example, a 65-dB source of sound, such as a truck, when joined by another 65 dB source results in a sound amplitude of 68 dB, not 130 dB (i.e., doubling the source strength increases the sound pressure by three dB). Under the decibel scale, three sources of equal loudness together would produce an increase of five dB.

Typical noise levels associated with common noise sources are depicted on Figure 2. *Common Noise Levels*.



Source: California Department of Transportation (Caltrans) 2020a

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Figure 2. Common Noise Levels
IID Clubhouse Salton Sea Plot Studies

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2.1.2 *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 six dB for each doubling of distance from a stationary or point source. 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 three dB for each doubling of distance from a line source, such as a roadway, depending on ground surface characteristics (Federal Highway Administration [FHWA] 2011). 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 dB 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).

Noise levels may also be reduced by intervening structures; generally, a single row of detached buildings between the receptor and the noise source reduces the noise level by about five dBA (FHWA 2008), while a solid wall or berm generally reduces noise levels by 10 to 20 dBA (FHWA 2011). However, noise barriers or enclosures specifically designed to reduce site-specific construction noise can provide a sound reduction of 35 dBA or greater (Western Electro-Acoustic Laboratory, Inc. [WEAL] 2000). To achieve the most potent noise-reducing effect, a noise enclosure/barrier must physically fit in the available space, must completely break the "line of sight" between the noise source and the receptors, must be free of degrading holes or gaps, and must not be flanked by nearby reflective surfaces. Noise barriers must be sizable enough to cover the entire noise source and extend lengthwise and vertically as far as feasibly possible to be most effective. The limiting factor for a noise barrier is not the component of noise transmitted through the material, but rather the amount of noise flanking around and over the barrier. In general, barriers contribute to decreasing noise levels only when the structure breaks the line of sight between the source and the receiver.

The manner in which older homes in California were constructed generally provides a reduction of exterior-to-interior noise levels of about 20 to 25 dBA with closed windows (Caltrans 2002). The exterior-to-interior reduction of newer residential units is generally 30 dBA or more (Harris Miller, Miller & Hanson Inc. [HMMH] 2006). Generally, in exterior noise environments ranging from 60 dBA Community Noise Equivalent Level (CNEL) to 65 dBA CNEL, interior noise levels can typically be maintained below 45 dBA, a typically residential interior noise standard, with the incorporation of an adequate forced air mechanical ventilation system in each residential building, and standard thermal-pane residential windows/doors with a minimum rating of Sound Transmission Class (STC) 28. (STC is an integer rating of how well a building partition attenuates airborne sound. In the U.S., it is widely used to rate interior partitions, ceilings, floors, doors, windows, and exterior wall configurations.) In exterior noise environments of 65 dBA CNEL or greater, a combination of forced-air mechanical ventilation and sound-rated construction methods is often required to meet the interior noise level limit. Attaining the necessary noise reduction from exterior to interior spaces is readily achievable in noise environments less than 75 dBA CNEL with proper wall construction techniques following California Building Code methods, the selections of proper windows and doors, and the incorporation of forced-air mechanical ventilation systems.

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2.1.3 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 L_{eq} is a measure of ambient noise, while the Community Noise Equivalent Level (CNEL) is a measurement of community noise. Each is applicable to this analysis and defined in Table 2-1.

Table 2-1. 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 one pascal is the pressure resulting from a force of one newton exerted over an area of one 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.
L_{01}, L_{10}, L_{50}, L_{90}	The A-weighted noise levels that are exceeded one percent, 10 percent, 50 percent, and 90 percent 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.

The scientific instrument used to measure noise is the sound level meter. Sound level meters can accurately measure environmental noise levels to within about ± 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 about ± one to two dBA.

2.1.4 *Human Response to Noise*

The human response to environmental noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing to undue stress and annoyance. The health effects of noise in the community arise from interference with human activities including sleep, speech, recreation, and tasks that demand concentration or coordination. Hearing loss can occur at the highest noise intensity levels.

Noise environments and consequences of human activities are usually well represented by median noise levels during the day or night or over a 24-hour period. Environmental noise levels are generally considered low when the CNEL is below 60 dBA, moderate in the 60 to 70 dBA range, and high above 70 dBA. Examples of low daytime levels are isolated, natural settings with noise levels as low as 20 dBA and quiet, suburban, residential streets with noise levels around 40 dBA. Noise levels above 45 dBA at night can disrupt sleep. Examples of moderate-level noise environments are urban residential or semi-commercial areas (typically 55 to 60 dBA) and commercial locations (typically 60 dBA). People may consider louder environments adverse, but most will accept the higher levels associated with noisier urban residential or residential-commercial areas (60 to 75 dBA) or dense urban or industrial areas (65 to 80 dBA). Regarding increases in dBA noise levels, the following relationships should be noted in understanding this analysis:

> Except in carefully controlled laboratory experiments, a change of one dBA cannot be perceived by humans.
>
> Outside of the laboratory, a three-dBA change is considered a just-perceivable difference.
>
> A change in level of at least five dBA is required before any noticeable change in community response would be expected. An increase of five dBA is typically considered substantial.
>
> A 10-dBA change is subjectively heard as an approximate doubling in loudness and would almost certainly cause an adverse change in community response.

2.1.5 *Effects of Noise on People*

Hearing Loss

While physical damage to the ear from an intense noise impulse is rare, a degradation of auditory acuity can occur even within a community noise environment. Hearing loss occurs mainly due to chronic exposure to excessive noise but may be due to a single event such as an explosion. Natural hearing loss associated with aging may also be accelerated from chronic exposure to loud noise.

The Occupational Safety and Health Administration (OSHA) has a noise exposure standard that is set at the noise threshold where hearing loss may occur from long-term exposures. The maximum allowable level is 90 dBA averaged over eight hours. If the noise is above 90 dBA, the allowable exposure time is correspondingly shorter.

Annoyance

Attitude surveys are used for measuring the annoyance felt in a community for noises intruding into homes or affecting outdoor activity areas. In these surveys, it was determined that causes for annoyance include interference with speech, radio and television, house vibrations, and interference with sleep and rest. The L_{dn} as a measure of noise has been found to provide a valid correlation of noise level and the percentage of people annoyed. People have been asked to judge the annoyance caused by aircraft noise and ground transportation noise. There continues to be disagreement about the relative annoyance of these different sources. For ground vehicles, a noise level of about 55 dBA L_{dn} is the threshold at which a substantial percentage of people begin to report annoyance.

2.2 Fundamentals of Environmental Groundborne Vibration

2.2.1 *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).

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 amplitudes are used to evaluate human response to vibration.

Table 2-2 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.

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 vibration velocity levels of

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0.006 PPV at 50 feet under typical circumstances, which as identified in Table 2-2 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.

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

PPV (inches/second)	Approximate Vibration Velocity Level (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	Recommended upper level to which ruins and ancient monuments should be subjected
0.1	92	Level at which continuous vibrations may begin to annoy people, particularly those involved in vibration sensitive activities	Virtually no risk of architectural damage to normal buildings
0.2	94	Vibrations may begin to annoy people in buildings	Threshold at which there is a risk of architectural damage to normal dwellings
0.4–0.6	98–104	Vibrations considered unpleasant by people subjected to continuous vibrations and unacceptable to some people walking on bridges	Architectural damage and possibly minor structural damage

Source: Caltrans 2020b

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.

3.0 EXISTING ENVIRONMENTAL NOISE SETTING

3.1 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.

As stated previously, the Project is proposing the development of groundwater wells and associated features to establish and sustain vegetation cover and waterless dust control measures on 128.71 acres of the exposed Salton Sea playa with the goal of reducing air quality risks from emissive particles. The nearest noise-sensitive receptors to the Project site are residences located directly adjacent to the southern and western Project site boundary in Salton City.

3.2 Existing Ambient Noise Environment

Imperial County is impacted by various noise sources. It is subject to typical urban noise such as noise generated by traffic, heavy machinery, and day-to-day outdoor activities as well as noise generated from the various land uses (i.e., residential, commercial, agricultural, institutional, and recreational activities) throughout the County that generate stationary source noise. Mobile sources of noise, especially cars and trucks, are the most common and continuous source of noise in the County. The Project site is located in a rural part of the County, adjacent to the Salton Sea, and is located over two miles from any existing principal roadway, the closest being State Route (SR) 86 approximately 2.5 miles to the west.

The Project site is located outside of any airport land use plan. Furthermore, the Project site is located beyond two miles from any airport. The Ocotillo Airport is the closest operating airport to the Project site and is located over 16 miles to the southwest. Thus, the ambient noise environment of the Project area is not heavily influenced by aircraft noise.

4.0 REGULATORY FRAMEWORK

4.1 Federal

4.1.1 Occupational Safety and Health Act (OSHA) of 1970

OSHA regulates onsite noise levels and protects workers from occupational noise exposure. To protect hearing, worker noise exposure is limited to 90 dB with A-weighting (dBA) over an eight-hour work shift (29 Code of Federal Regulations 1910.95). Employers are required to develop a hearing conservation program when employees are exposed to noise levels exceeding 85 dBA. These programs include provision of hearing protection devices and testing employees for hearing loss on a periodic basis.

4.2 State

4.2.1 State of California General Plan Guidelines

The State of California regulates vehicular and freeway noise affecting classrooms, sets standards for sound transmission and occupational noise control, and identifies noise insulation standards and airport noise/land-use compatibility criteria. The State of California General Plan Guidelines (State of California 2003), published by the Governor's Office of Planning and Research (OPR), also provides guidance for the acceptability of projects within specific CNEL contours. The guidelines also present adjustment factors that may be used in order to arrive at noise acceptability standards that reflect the noise-control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution.

4.2.2 State Office of Planning and Research Noise Element Guidelines

The State OPR Noise Element Guidelines include recommended exterior and interior noise level standards for local jurisdictions to identify and prevent the creation of incompatible land uses due to noise. The

Noise Element Guidelines contain a land-use compatibility table that describes the compatibility of various land uses with a range of environmental noise levels in terms of the CNEL.

4.3 Local

4.3.1 *Imperial County General Plan Noise Element*

The Noise Element of the Imperial County General Plan provides a basis for comprehensive local policies to control and abate environmental noise and to protect the citizens of Imperial County from excessive noise exposure. By identifying noise-sensitive land uses and establishing compatibility guidelines for land use and noises, noise considerations will influence the general distribution, location, and intensity of future land uses. The result is that effective land use planning and mitigation can alleviate the majority of noise problems.

The Noise Element establishes maximum allowable average-hourly noise limits for various land use designations. These noise standards are to be applied at the property line of the noise-generating land use. In instances where the adjoining land use designations differ from that of the noise-generating land use, the more restrictive noise standard shall apply.

Table 4-1. Imperial County Property Line Noise Standards

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

Source: Imperial County 2015

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}.

Additionally, the General Plan Noise Element limits construction between 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 construction operations are permitted on Sundays or holidays. Construction noise, from a single piece of equipment or a combination of equipment, shall not exceed 75 dBA L_{eq} when averaged over an eight-hour period and measured at the nearest sensitive receptor.

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5.0 IMPACT ASSESSMENT

5.1 Thresholds of Significance

The impact analysis provided below is based on the following California Environmental Quality Act Guidelines Appendix G thresholds of significance. The Project would result in a significant noise-related impact if it would produce the following:

1) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
2) Generation of excessive groundborne vibration or groundborne noise levels.
3) For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels.

5.2 Methodology

This analysis of the existing and future noise environments is based on noise prediction modeling. In order to estimate the worst-case construction noise levels that may occur at the nearest noise-sensitive receptors in the Project vicinity, predicted construction noise levels are calculated utilizing the FHWA's Roadway Construction Model (2006). Stationary noise sources are addressed qualitatively. Groundborne vibration levels associated with construction-related activities were evaluated utilizing typical groundborne vibration levels associated with construction equipment based on the Caltrans guidelines set forth above. Potential groundborne vibration impacts related to structural damage and human annoyance are evaluated, taking into account the distance from construction activities to nearby land uses.

5.3 Impact Analysis

5.3.1 *Project Construction/ Implementation Noise*

Would the Project Result in Short-Term Construction-Generated Noise in Excess of Standards?

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., grading, drilling, paving). Noise generated by construction equipment, including earthmovers, material handlers, 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 receptors in the vicinity of the construction site.

Nearby noise-sensitive land uses consist of residences located directly adjacent to the southern and western Project site boundary. As previously described, the General Plan Noise Element limits construction between 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 construction operations are permitted on Sundays or holidays. Additionally, construction noise, from a single piece of equipment or a combination of equipment, shall not exceed 75 dBA L_{eq} when averaged over an eight-hour period and measured at the nearest sensitive receptor.

The anticipated short-term implementation related noise levels generated for the necessary construction equipment are presented in Table 5-1. Consistent with FTA recommendations for calculating construction noise, construction noise was measured from the center of the project site (FTA 2018).

Table 5-1. Construction Average (dBA) Noise Levels at Nearest Receptor

Equipment	Estimated Exterior Construction Noise Level @ 1,000 feet	Construction Noise Standards (dBA L_{eq})	Exceeds Standard at Nearest Sensitive Receptor?
	Project Implementation		
Graders (4)	55.0 (each)	75	No
Pavers (1)	48.2	75	No
Forklifts (2)	53.4 (each)	75	No
Generator Sets (2)	51.6 (each)	75	No
Tractors/Loaders/Backhoes (10)	54.0 (each)	75	No
Rubber Tired Dozers (3)	51.7 (each)	75	No
Bore/Drill Rigs (2)	46.1 (each)	75	No
Off-Highway Trucks (3)	44.3 (each)	75	No
Trenchers	51.3	75	No
Water Truck	59.1	75	No
Ground Compactor (2)	50.2 (each)	75	No
Combined Project Implementation Equipment	**68.0**	75	No

Source: Construction noise levels were calculated by ECORP Consulting, Inc. using the FHWA Roadway Noise Construction Model (FHWA 2006). Refer to Attachment A for Model Data Outputs.

Notes: Construction equipment used during construction derived from information provided by the IID and CalEEMod 2016.3.2. CalEEMod is designed to calculate air pollutant emissions from construction activity and contains default construction equipment and usage parameters for typical construction projects based on several construction surveys conducted in order to identify such parameters. The distance to the nearest sensitive receptor was calculated from the center of the Project site (approximately 1,000 feet).

As shown in Table 5-1, no individual or cumulative pieces of construction equipment would exceed the 75 dBA County construction noise standard during Project implementation at the nearby noise-sensitive receptors. It is noted that construction noise was modeled on a worst-case basis. It is very unlikely that all pieces of constriction equipment would be operating at the same time for the various phases of Project implementation.

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5.3.2 *Project Operational Noise*

Would the Project Result in a Substantial Permanent Increase in Ambient Noise Levels in Excess of County Standards During Operations?

As previously described, noise-sensitive land uses are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. Residences, schools, places of worship, hospitals, guest lodging, libraries, and some passive recreation areas would each be considered noise sensitive and may warrant unique measures for protection from intruding noise. The nearest noise-sensitive land use consists of residences located directly adjacent to the southern and western Project site boundary, in Salton City.

Project Operational Offsite Traffic Noise

Project operation would result in minimal and infrequent additional traffic on adjacent roadways. As previously stated, the Project site is located in a rural part of the County. The closest existing principal roadway to the site is SR 86 located over two miles distant. Average existing daily traffic volumes on SR 86 ranges from 9,400 to 36,000 vehicles per day and primarily provides travel for interregional, intra-regional and international trips (Imperial County 2008). Based off assumptions and information provided by the IID, the proposed Project is anticipated to result in no more than one daily vehicle trip per day. It is noted that this is a conservative estimate and many days will have no operational related vehicle trips. According to the California Department of Transportation (Caltrans) Technical Noise Supplement to the Traffic Noise Analysis Protocol (2013), doubling of traffic on a roadway would result in an increase of 3 dB (a barely perceptible increase). The Projects contribution of one trip over several roadways would not result in a doubling of traffic on any single facility, thus the Project's contribution to existing traffic noise would not be perceptible.

Project Operations-Onsite Noise Sources

The Project is proposing the development of groundwater wells and associated features to establish and sustain vegetation cover and waterless dust control measures on the exposed Salton Sea playa. The main operational noise associated with the Project would be the infrequent vehicle trips, performed using a light-duty truck, for ongoing operations and maintenance. Once implementation of the Project is complete it would not be a substantial source of mobile noise sources or a source of stationary noise.

Would the Project Result in the Generation of Excessive Groundborne Vibration or Groundborne Noise Levels?

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 site 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 site and would not be concentrated at the point closest to sensitive receptors. Groundborne vibration levels associated with typical construction equipment are summarized in Table 5-2.

Table 5-2. Representative Vibration Source Levels for Construction Equipment

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

Source: FTA 2018; Caltrans 2020b

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 (2020b) recommended standard of 0.2 inch per second PPV with respect to the prevention of structural damage for older residential buildings is used as a threshold. 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 site (FTA 2018). The nearest structures of concern to the construction site are the residences located directly adjacent to the Project site boundary on Huron Avenue.

Based on the representative vibration levels presented for various construction equipment types in Table 5-2 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:

$$PPVequip = PPVref \times (25/D)^{1.5}$$

Table 5-3 presents the expected Project related vibration levels at a distance of 1,000 feet.

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Table 5-3. Construction Vibration Levels at 1,000 Feet

Receiver PPV Levels (in/sec)[1]					Peak Vibration	Threshold	Exceed Threshold
Small Bulldozer	Jackhammer	Loaded Trucks	Large Bulldozer, Caisson Drilling, and Hoe Ram	Vibratory Roller			
0.00001	0.00013	0.00029	0.00034	0.00081	**0.00081**	0.2	**No**

[1]*Based on the Vibration Source Levels of Construction Equipment included on Table 5-2 (FTA 2018).*

As shown, groundborne vibrations attenuate rapidly from the source due to geometric spreading and material damping. Geometric spreading occurs because the energy is radiated from the source and spreads over an increasingly large distance while material damping is a property of the friction loss which occurs during the passage of a vibration wave. As shown in Table 5-3, 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.

Operational Groundborne Vibration

Project operations would not include the use of any stationary equipment that would result in excessive groundborne vibration levels.

Would the Project Expose People Residing or Working in the Project Area to Excessive Airport Noise?

The Project site is located over 16 miles southwest of the Ocotillo Airport. The proposed Project is not located within an airport land use plan or within two miles of a public airport or public use airport that is currently in operations. Implementation of the proposed Project would not affect airport operations nor result in increased exposure of people working at the Project site to aircraft noise.

Would the Project Result in Cumulatively Considerable Noise 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 site 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.

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Cumulative Stationary Source Noise Impacts

Long-term stationary noise sources associated with the development at the Project, 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.

6.0 REFERENCES

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LIST OF ATTACHMENTS

Attachment A - Roadway Construction Noise Model Outputs – Project Construction Noise

ATTACHMENT A

Roadway Construction Noise Model Outputs – Project Construction Noise

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/25/2021
Case Description: Project Implementation

Description	**Affected Land Use**
Project Implementation	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Grader	No	40	85		1000
Grader	No	40	85		1000
Grader	No	40	85		1000
Grader	No	40	85		1000
Paver	No	50		77.2	1000
Forklifts	No	40		83.4	1000
Forklifts	No	40		83.4	1000
Generator	No	50		80.6	1000
Generator	No	50		80.6	1000
Tractors/Loaders/Backhoes	No	40	84		1000
Tractors/Loaders/Backhoes	No	40	84		1000
Tractors/Loaders/Backhoes	No	40	84		1000
Tractors/Loaders/Backhoes	No	40	84		1000
Tractors/Loaders/Backhoes	No	40	84		1000
Tractors/Loaders/Backhoes	No	40	84		1000
Tractors/Loaders/Backhoes	No	40	84		1000
Tractors/Loaders/Backhoes	No	40	84		1000
Tractors/Loaders/Backhoes	No	40	84		1000
Tractors/Loaders/Backhoes	No	40	84		1000

	Calculated (dBA)	
Equipment	***Lmax**	**Leq**
Grader	59	55
Grader	59	55
Grader	59	55
Grader	59	55
Paver	51.2	48.2
Forklifts	57.4	53.4
Forklifts	57.4	53.4
Generator	54.6	51.6
Generator	54.6	51.6
Tractors/Loaders/Backhoes	58	54
Tractors/Loaders/Backhoes	58	54
Tractors/Loaders/Backhoes	58	54
Tractors/Loaders/Backhoes	58	54
Tractors/Loaders/Backhoes	58	54
Tractors/Loaders/Backhoes	58	54
Tractors/Loaders/Backhoes	58	54
Tractors/Loaders/Backhoes	58	54
Tractors/Loaders/Backhoes	58	54
Tractors/Loaders/Backhoes	58	54
Total	**59**	**66.6**

*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/25/2021
Case Description: Project Implementation

Description	**Affected Land Use**
Project Implementation	Residential

Description	**Impact Device**	**Usage(%)**	**Equipment Spec Lmax (dBA)**	**Actual Lmax (dBA)**	**Receptor Distance (feet)**
Rubber Tired Dozers	No	40		81.7	1000
Rubber Tired Dozers	No	40		81.7	1000
Rubber Tired Dozers	No	40		81.7	1000
Bore/Drill Rigs	No	20		79.1	1000
Bore/Drill Rigs	No	20		79.1	1000
Off-Highway Trucks	No	40		74.3	1000
Off-Highway Trucks	No	40		74.3	1000
Off-Highway Trucks	No	40		74.3	1000
Trenchers	No	20		84.4	1000
Water Truck	No	20		92.1	1000
Compactor (ground)	No	20		83.2	1000
Compactor (ground)	No	20		83.2	1000

Calculated (dBA)

Equipment	***Lmax**	**Leq**
Rubber Tired Dozers	55.6	51.7
Rubber Tired Dozers	55.6	51.7
Rubber Tired Dozers	55.6	51.7

Bore/Drill Rigs		53.1	46.1
Bore/Drill Rigs		53.1	46.1
Off-Highway Trucks		48.2	44.3
Off-Highway Trucks		48.2	44.3
Off-Highway Trucks		48.2	44.3
Trenchers		58.3	51.3
Water Truck		66.1	59.1
Compactor (ground)		57.2	50.2
Compactor (ground)		57.2	50.2
	Total	**66.1**	**62.5**

*Calculated Lmax is the Loudest value.

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FORMATION
ENVIRONMENTAL

TECHNICAL MEMORANDUM

GROUNDWATER RESOURCES IMPACT ASSESSMENT, CLUBHOUSE PLOT STUDY AREA, 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: October 2022

Mike Tietze

Michael Tietze
No. HG 63
Exp. 04/30/23

This technical memorandum presents the methods and results of an updated Groundwater Resources Impact Assessment (GRIA) to evaluate the potential groundwater-related impacts associated with the installation of up to four test wells, and their conversion to supply wells, to support vegetation enhancement at the Clubhouse Plot Study Area (hereafter referred to as the Plot Study Area). The Plot Study Area is located along the western shore of the Salton Sea, in Imperial County, California (Figure 1). An initial GRIA was prepared by Formation in April 2021 to support the Final Addendum to the Environmental Impact Report (ECORP 2021) as the environmental document under the California Environmental Quality Act (CEQA) for implementation of the Plot Study Area. The Plot Study Area includes development of vegetation-based and waterless dust control plots on approximately 127 acres of the Salton Sea playa. The vegetation-based dust control plot is approximately 60 acres in area. The Plot Study Area is being implemented as part of the Salton Sea Air Quality Mitigation Program (SSAQMP), which is required mitigation by the EIR/EIS.

The initial GRIA results have been revised based on data gathered during installation and testing of the first test well completed at the Plot Study Area. These updates are based on the findings of the deep test well investigation conducted in February and March 2022, as described by Formation (2022). As a result, the simulated model inputs and pumping rates have been updated to reflect the site-specific data collected during the investigation. Thus, the predicted model results in the updated GRIA differ from the preliminary results reported by Formation (2021) in the initial GRIA; however, they do not substantively change the impact conclusions summarized in Section 5.

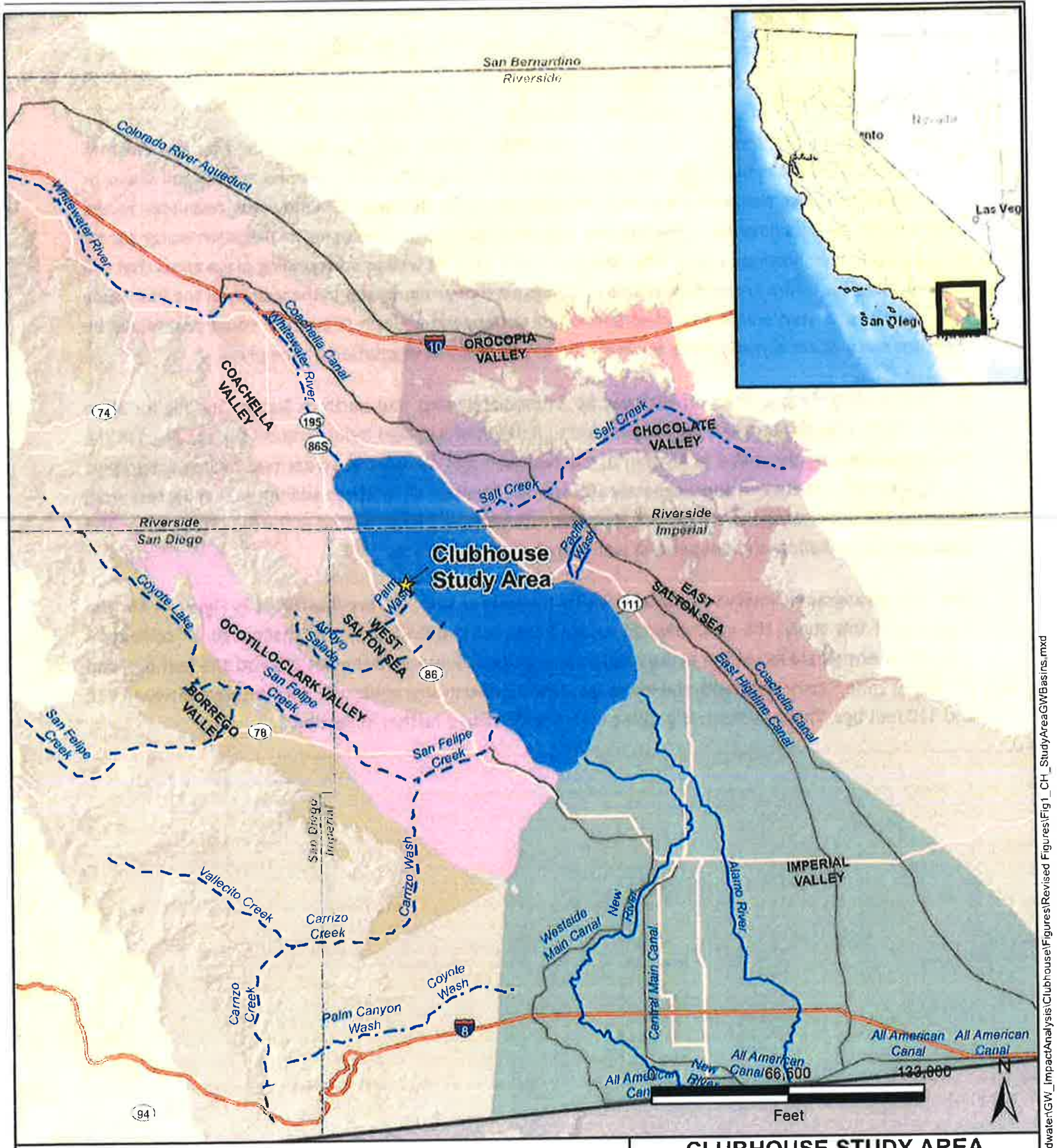
The updated GRIA will be used to support the application for the Conditional Use Permit (CUP) required by Imperial County to operate the test wells as groundwater extraction wells. An updated groundwater model was used to simulate the effects and potential environmental impacts from pumping the test wells, as described in Section 4. As summarized in Section 5, the potential groundwater resources-related impacts associated with the proposed groundwater extraction from the four supply wells over an operational period of 20 years will be less than significant.

1 BACKGROUND

A series of plot studies and irrigation water supply development activities are planned for the Western domain of the Salton Sea (IID 2020). Water supplies are limited in this area, with no agricultural drains or other currently developed sources readily available for irrigation use. Groundwater resources in the Clubhouse Study Area have been investigated with the objective of developing an irrigation water supply for vegetation enhancement in the proposed Plot Study Area, as well as surrounding playa areas that will be designated for future projects. Available data suggest that groundwater in the vicinity of the Plot Study Area, which is located within the West Salton Sea Groundwater Basin (Figure 1), could potentially be developed as a water supply source for irrigation of salt-tolerant vegetation on the playa.

The Plot Study Area is located off Highway 86, immediately east and north of Salton City (Figure 2). In March 2022, a "deep" test well was completed to a depth of 320 feet below ground surface (bgs) in the Plot Study Area. As described in Section 3, the test well was completed across two hydrostratigraphic intervals occurring between approximately 105 and 320 feet bgs. Up to three additional shallow test wells targeting the upper of the two hydrostratigraphic intervals will be completed in the Plot Study Area. The locations of the shallow and deeper test wells are shown in Figure 3.

The hydrostratigraphic intervals encountered by the deeper test well are illustrated in Figure 4. For the purposes of this study, the groundwater supply zones are subdivided into a "shallow zone" coincident with the intermediate lacustrine hydrostratigraphic unit encountered between 105 and 185 feet bgs, and a "deeper zone," coincident with the lower lacustrine hydrostratigraphic unit encountered between 210 and 320 feet bgs. These hydrostratigraphic units are described further in Section 3.



Legend

▭ State Boundary

⬚ Counties

Groundwater Basins

Borrego Valley

Chocolate Valley

Coachella Valley

East Salton Sea

Imperial Valley

Ocotillo-Clark Valley

Orocopia Valley

West Salton Sea

Salton Sea Watershed

Rivers and Streams

——— Stream; Braided Stream

– – – Ephemeral Stream

–·–· Stream Intermittent

——— Canal; Aqueduct; Intracoastal Waterway

CLUBHOUSE STUDY AREA

SALTON SEA

FIGURE 1

STUDY AREA AND REGIONAL GROUNDWATER BASINS

DATE: JUN 27, 2022

BY: DKG

FOR: NBB

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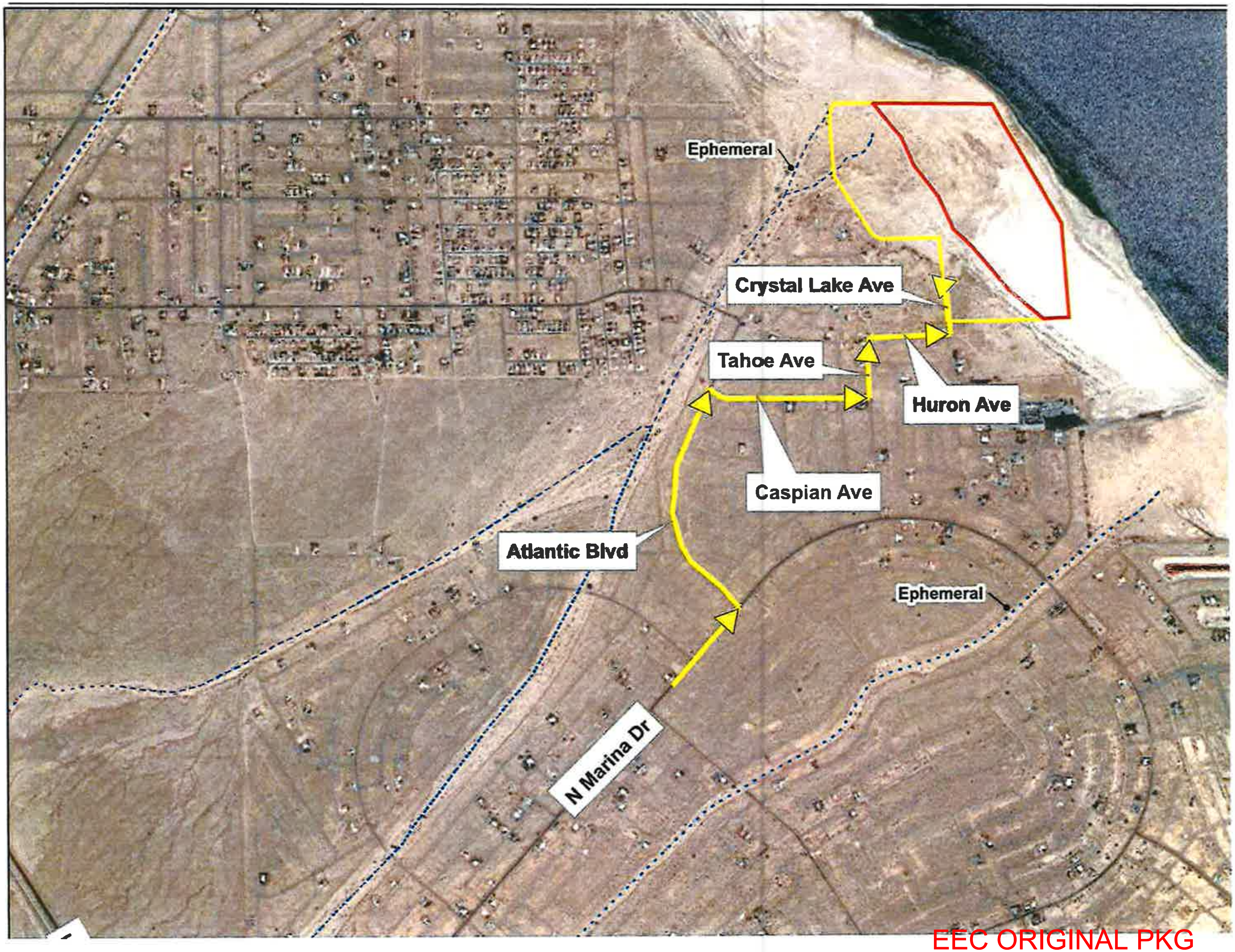

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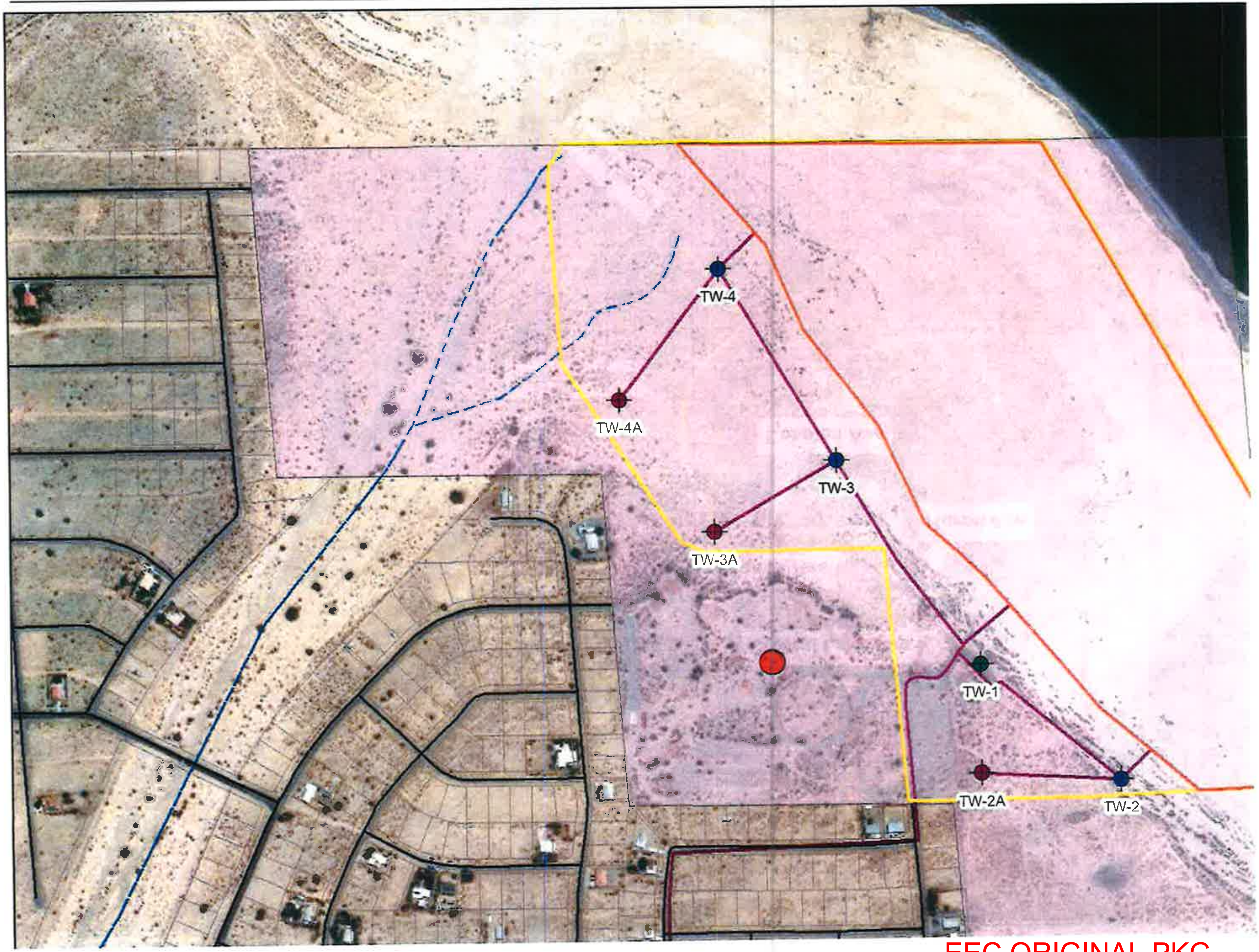

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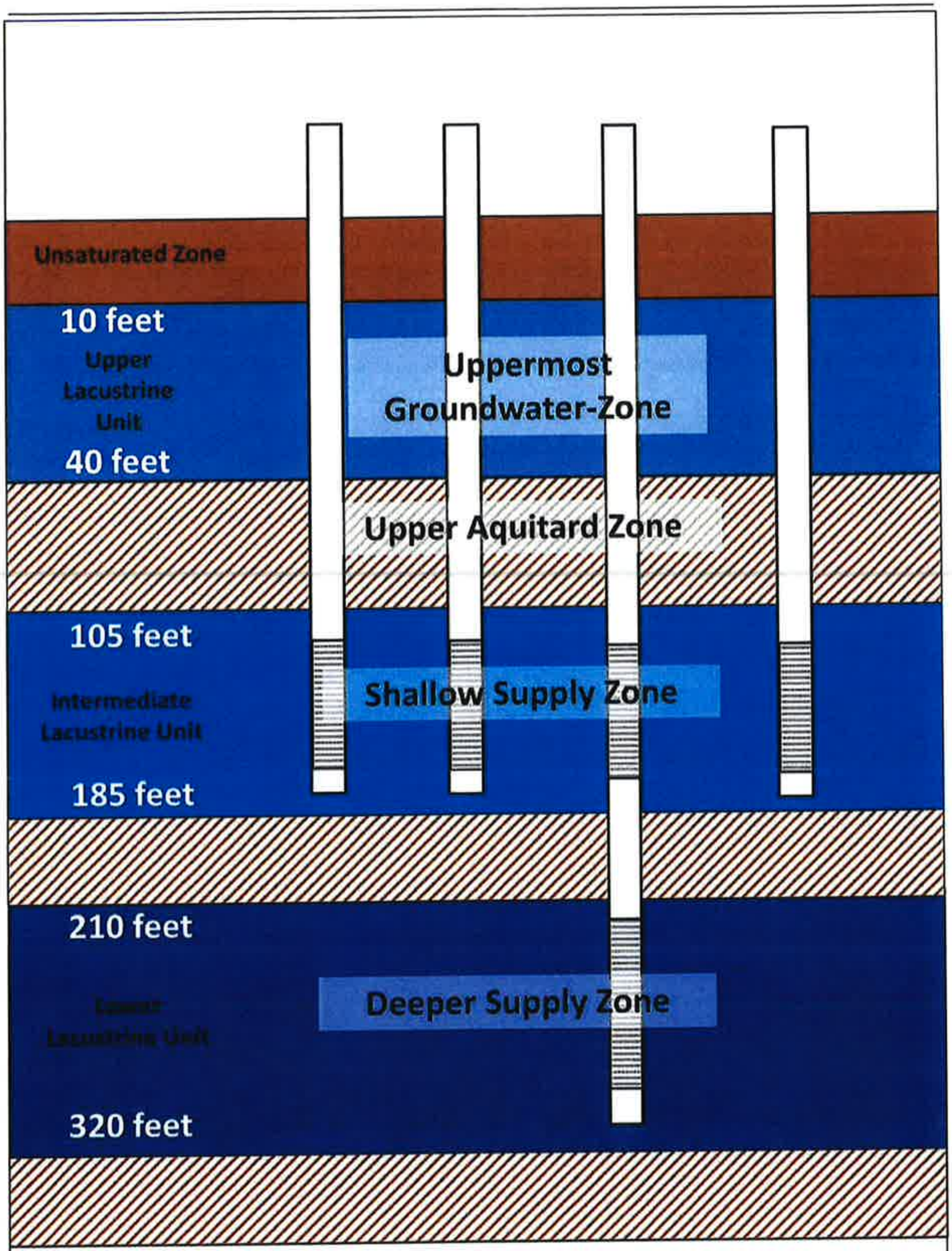

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LEGEND

▨ Aquitard

☰ Screen

CLUBHOUSE STUDY AREA
SALTON SEA

FIGURE 4

Hydrostratigraphy

DATE: MAY 2022
BY: NBB | FOR: BT

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ENVIRONMENTAL

2 PROJECT DESCRIPTION

The Plot Study Area is located in Imperial County on the west side of the Salton Sea (Figure 1). The Plot Study Area is located off Highway 86, immediately east and north of Salton City (Figure 2), and on IID-owned land (Accessor's Parcel Number 008-010-006) (Figure 3). The Plot Study Area will evaluate groundwater supply development, establishment of new vegetation, maintenance of existing vegetation, and waterless dust control measures (DCMs) on approximately 127 acres of land. Specifically, information from the Plot Study project will be used to gather information to inform water supply development and planning for expanded future vegetation-based dust control on the west side of the Salton Sea.

The shallow and deep test wells shown in Figure 3 and Figure 4 are designed to characterize the groundwater conditions in the Plot Study Area and will be operated to support the irrigation water demands required for the establishment and maintenance of vegetation-based dust control measures in the Plot Study. Salt-tolerant native plant species will be planted in hedgerows and will be irrigated with groundwater produced from the one deep well and three shallow wells. Established and existing vegetation will be monitored and irrigated as needed to maintain plant vigor and prevent loss of existing vegetation cover. Vegetation will include the use of *Allenrolfea occidentalis* (ALOC), commonly known as iodine bush, and Atriplex lentiformis (ATLE), commonly referred to as big saltbush. The vegetation will be planted on approximately 60 acres to augment existing vegetation in the area. ALOC and ATLE are native, drought-resistant, and suitable for establishment on the playa.

The average annual groundwater irrigation demand for the establishment of new vegetation in the Plot Study Area is summarized in Table 1. The calculated demand assumes that ALOC and ATLE are planted in hedgerows that provide approximately 20 percent ground cover; however, the actual planting rate may be lower. Additional irrigation water may be used to irrigate and maintain selected existing vegetation in the Plot Study Area and surrounding IID-owned land. In these areas, existing vegetation could experience long-term stress due to ongoing groundwater level declines associated with falling water levels in the Salton Sea, and the objective of this portion of the proposed pilot study will be to augment the water supply for selected existing vegetation using an adaptive management approach for additional irrigation, beyond what is planted by IID. All the irrigation water demand is proposed to be met by extracting groundwater from the shallow and deeper groundwater zones (Table 1).

Based on a step-drawdown pumping test performed on the deep test well in March 2022, which is completed in the shallow and deeper supply zones, the sustainable pumping rates estimated for the shallow and deep test wells are 20 and 45 gallons per minute (gpm), respectively. Groundwater extraction will be performed with solar-powered pumps, and irrigation water will only be pumped during daylight hours. As summarized in Table 1, the total daily discharge for the shallow groundwater wells is equivalent to approximately 7.5 gpm over a 24-hour period (pumping at an instantaneous rate of approximately 20 gpm for an average of nine hours per day). The total daily discharge over a 24-hour period for the deep groundwater well is equivalent to approximately 17 gpm (pumping at an instantaneous rate of approximately 45 gpm for an average of nine hours per day). The total estimated combined groundwater supply extraction from the shallow and deep test wells is up to approximately 63 acre-feet per year (afy)

(Table 1). The pumping rates simulated in the model were increased from the rates reported by Formation (2021) in the initial GIRA for both the shallow and deep test wells, based on the findings of the aquifer testing data, which are described by Formation (2022).

As presented in Table 1, the sustainable supply pumping rate is approximately three to six times greater than the demand for the Plot Study Area. The additional groundwater supply pumping capacity may be used to irrigate existing ALOC in the Plot Study and surrounding area as groundwater levels fall, and potentially to supply future vegetation-based dust control measures in the surrounding area. During well field operations, selected individual wells will be pumped on an as-needed basis, and pumping rates will be varied to optimize well performance to meet the project water demands, while remaining within the maximum estimated annual water supply capacity of 63 afy.

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 – ALOC and ATLE (60 acres, assume up to 20% cover)			
Year 1 (1.8 feet/year for planted area @ 20% cover)	19,300	21.6	13.4
Years 2 through 4 (1.8 feet/year for planted area @ 20% cover)	19,300	21.6	13.4
Long Term (10 inches/year for planted area @ 20% cover)	8,900	10	6.2
Groundwater Supply to Meet Irrigation Water Demand			
Shallow Zone Groundwater Pumping Capacity	32,400 (10,800 per well)	36 (12 per well)	22.5 (7.5 per well)
Deep Zone Groundwater Pumping Capacity	24,480	27	17
Total Anticipated Groundwater Supply Pumping Capacity	**57,200**	**63**	**39.5**

Notes: Excess groundwater supply pumping capacity may be used to irrigate existing ALOC in the study area plot and surrounding area, and potentially to supply future vegetation-based dust control measures.

As described previously, the deep test well was screened in both the shallow and deeper zones, to optimize well yield. Up to three shallow test wells will be screened in the shallow production zone. The hydrostratigraphy, based on the deep test well investigation, are shown in Figure 4. The location of the deep test well and the approximate locations of shallow test wells, including alternate locations, are shown in Figure 3.

The shallow test wells will be constructed during the next phase of groundwater supply development, using the sample drilling and well installation techniques as the deep test well. The final well design for the shallow test wells will be determined based on the hydrogeologic conditions encountered during the advancement of the exploratory boreholes planned for each of the shallow test well locations. Prior to well field operation, a long-term pumping test, using up to three shallow wells and the deep well, will be conducted for up to approximately one month to assess long-term well performance, water quality, and water level response during diurnal solar pumping for an extended period. During this test period, groundwater may be used to increase soil moisture conditions and leach near surface salts from the soil in the study plot in advance of planting the vegetation described above. Once the CUP is approved, the deep test well and up to three shallow test wells will be converted to production wells. During well operations, the average annual pumping rate will be up to 63 afy (Table 1).

3 PROJECT SETTING

The Plot Study Area is located in the West Salton Sea Groundwater Basin (Figure 1). The West Salton Sea Groundwater Basin is bounded by the Coachella Valley Groundwater Basin and non-water-bearing rocks of the Santa Rosa Mountains to the north and northwest, by the Ocotillo-Clark Valley Groundwater Basin to the south and southwest, and by the Salton Sea to the east (Figure 1).

The topography of the basin is sloped to the east. The highest elevations are along the mountain front of the Santa Rosa mountains to the west, and the lowest elevations are along the playa on the western shores of the Salton Sea. Surface water generally flows from west to east, where it discharges into the Salton Sea, which is a terminal or closed basin with no outlets. Ephemeral and intermittent drainages are mapped in Figure 5. There are no perennial streams in the basin.

Potential groundwater dependent ecosystems (GDEs) in the West Salton Sea Groundwater Basin are shown in Figure 6. These GDEs were identified in the Natural Communities Commonly Associated with Groundwater (NCCAG) dataset of potential GDEs, developed for DWR by The Nature Conservancy (TNC) in cooperation with the California Department of Fish and Wildlife, and downloaded from the GDE Pulse website (TNC 2021). The NCCAG database includes a series of potential wetlands along the shore of the Salton Sea that have dried up since they were originally mapped and are therefore not included in the potential GDEs included in the GDE Pulse website.

A study regarding the establishment of salt-tolerant vegetation on the Salton Sea playa in the Tule Wash and Naval Test Station sites (on the west side of the Salton Sea) was conducted in 2019 by PlanTierra and Formation (2020). Field observations indicated that naturally propagating ALOC and Bush Seepweed (*Suaeda nigra*, SUNI) occurred on the playa below elevations of -194 and -213 feet below sea level, respectively. These plants were determined to likely be at least partially dependent on groundwater. As such, it is assumed that ALOC and SUNI may occur on the playa below these elevations near the Plot Study Area and may be at least partially groundwater dependent. The locations of potential ALOC and SUNI alkaline shrub habitat GDEs are shown in Figure 6, as defined by the land lying below the surface elevation threshold contours described above. The maximum rooting depth of ALOC is approximately 12 feet, based on observations at Salton Sea, and the maximum rooting depth of SUNI is approximately 4 to 5 feet

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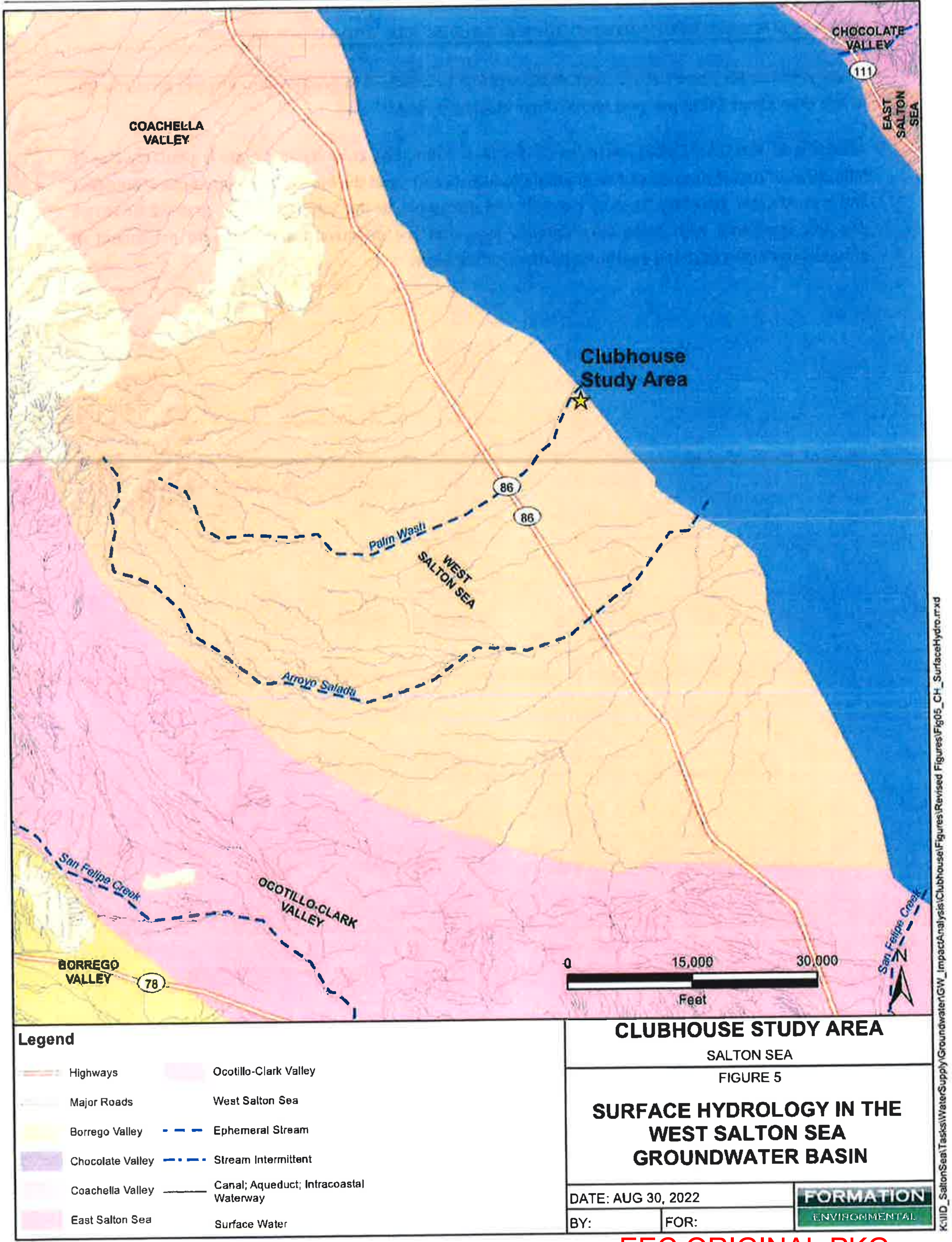
(PlanTierra and Formation 2020). Both ALOC and SUNI can adjust to gradual groundwater level changes of less than about 1 foot per year within these maximum ranges.

According to the DWR (2004), recharge to the West Salton Sea groundwater basin is primarily due to infiltration of runoff through coarse-grained deposits occurring at the base of the Santa Rosa Mountains, and groundwater generally flows to the east and discharges to the Salton Sea. Fine-grained lacustrine deposits associated with paleo Lake Cahuilla may limit the downward and eastward movement of groundwater in the east and southeast portions of the basin.



CLUBHOUSE STUDY AREA

SALTON SEA

FIGURE 5

SURFACE HYDROLOGY IN THE WEST SALTON SEA GROUNDWATER BASIN

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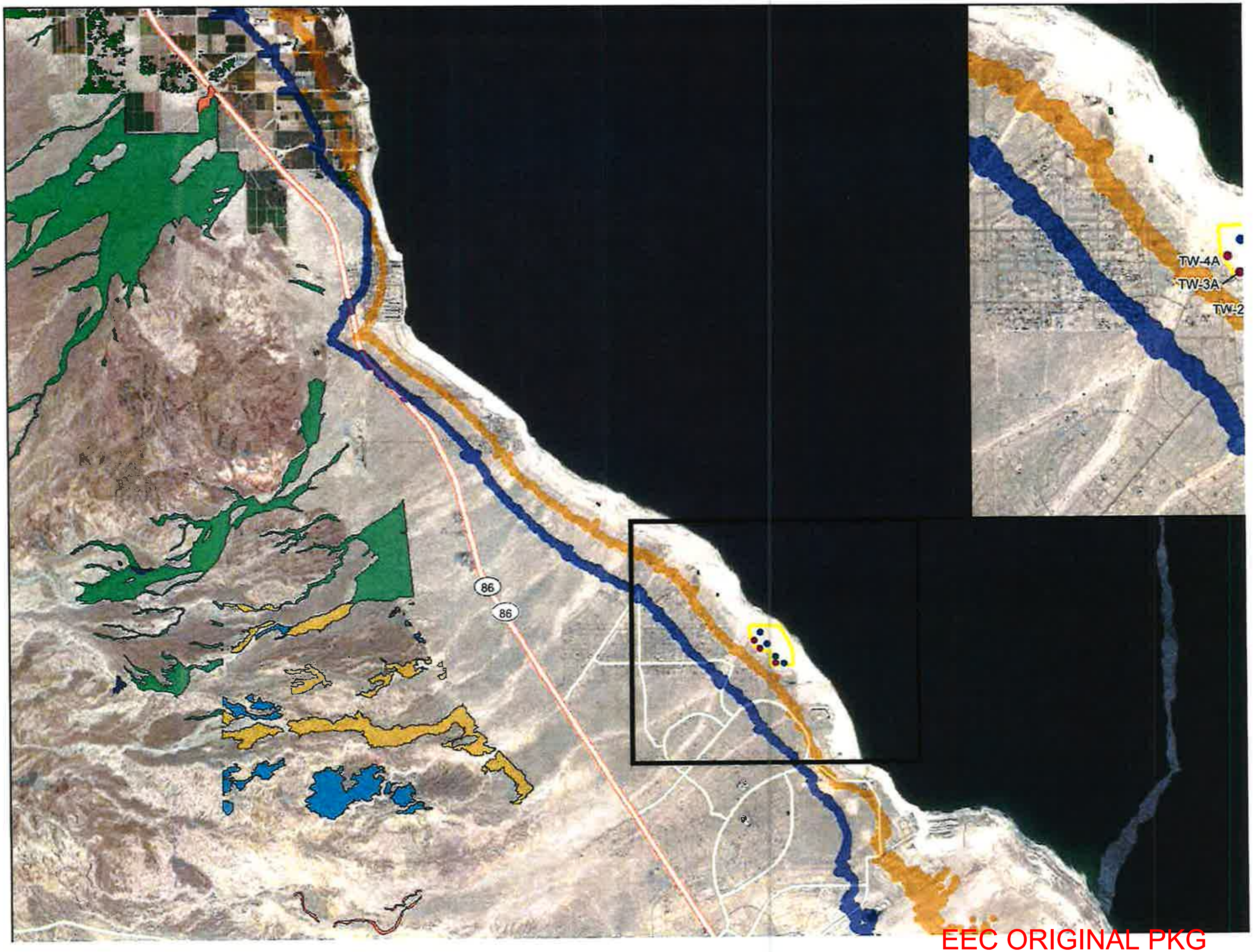

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The borehole recently advanced for the deep test well characterized three groundwater-bearing hydrostratigraphic units in the upper 320 feet of the strata investigated in the Plot Study Area (Figure 3). Interbedded packages of lacustrine deposits, deposited in paleo Lake Cahuilla, consisting of fine- and coarse-grained materials comprise the groundwater system described below. These units are separated by thick sequences of lacustrine clays. The boring log for the deep test well is included in Attachment A.

- **Upper Lacustrine Unit** – Occurs from first groundwater (approximately 10 feet bgs) to approximately 40 feet bgs. Comprised of sand and silty sand with few thin clay interbeds. Sands are primarily fine- to medium-grained. This unit occurs under unconfined groundwater conditions.

- **Intermediate Lacustrine Unit** – Occurs between approximately 105 and 185 feet bgs. Comprised of sand and silty sand, interbedded with clay units ranging from a few feet to 8 feet thick. Sands are primarily fine- to medium-grained. Approximately 50% of this unit by thickness is comprised of sand, silty sand and silt materials interpreted to be capable of transmitting significant groundwater to wells, while approximately 50% is comprised of interbedded materials with limited to no water producing capacity (i.e., clays). This unit is confined by a thick lacustrine clay sequence from approximately 40 to 105 feet bgs. Flowing artesian conditions were observed below this aquitard.

- **Lower Lacustrine Unit** – Occurs between approximately 210 to 320 feet bgs. Comprised of sand and silty sand, interbedded with clay units ranging from a few feet to 18 feet thick. Sands are primarily fine- to medium-grained. Approximately 46% of this unit by thickness is comprised of sand, silty sand and silt materials interpreted to be capable of transmitting significant groundwater to wells, while approximately 54% is comprised of interbedded materials with limited to no-water-producing capacity (i.e., clays). This unit is separated from the intermediate lacustrine unit by a thick confining clay sequence from approximately 185 to 210 feet bgs. Flowing artesian conditions were observed below this aquitard.

On April 20, 2022, a six-hour step-drawdown test was performed on the deep test well. The objective of the step drawdown test was to determine the specific capacity of the test well and to estimate the feasible long-term operational groundwater production rate for the solar-powered production pump, which will be installed during final well completion. In addition, the combined transmissivity of the intermediate and lower lacustrine units was estimated from the step-draw down test results, including the well recovery period. The estimated horizontal hydraulic conductivity of the intermediate and lower lacustrine units, described above, is approximately 2.4 feet per day (ft/day), as reported by Formation (2022).

The storage capacity, or the amount of groundwater in storage within the basin, has not been established. According to the DWR (2004), it is estimated that wells in the basin can locally produce up to 400 to 540 gpm and the groundwater in the basin is characterized as a predominantly sodium-chloride type water. Groundwater quality is considered marginal to poor for domestic or agricultural irrigation purposes due to concentrations of fluoride, boron, and total dissolved solids (TDS). Groundwater samples collected from the deep test well installed in the Plot Study Area contained TDS at concentrations of approximately 6,000 milligrams per liter (mg/L) (Formation 2022). Based on this information, the groundwater in the target production zones within the Plot Study Area is considered brackish and is not suitable for domestic or agricultural irrigation purposes. However, the groundwater quality is suitable for irrigation of the salt-tolerant vegetation described in Section 2.

A summary of information regarding the West Salton Sea Groundwater Basin is provided in Table 2. According to DWR (2004), information on the groundwater budget is not available. The California Statewide Groundwater Elevation Monitoring (CADGEM) program designates the basin as a "very low" priority (DWR 2019). The basin is not listed as being in critical overdraft (DWR 2016).

TABLE 2. SUMMARY OF WEST SALTON SEA GROUNDWATER BASIN

DWR Groundwater Basin Number	Approximate Area	CASGEM Priority	Critical Overdraft
7-22	106,000 acres	Very Low	No

Sources:
DWR 2004, DWR 2016, DWR 2019

Groundwater resources in the West Salton Sea Groundwater Basin are very sparsely developed. Although historical well completion records are available for 11 domestic wells in the vicinity of the Plot Study Area (Attachment A), none of these wells are currently believed to be operating. These wells were installed between 1957 and 1960 and are assumed to be abandoned or destroyed because the community of Salton City surrounding the Plot Study Area is now served by treated surface water supplied by the Coachella Valley Water District. No evidence of current groundwater use has been observed during a surface reconnaissance in the area within about 1 mile of the Plot Study Area. According to the "Groundwater Exchange" website,[1] the West Salton Sea Groundwater Basin in total has approximately 14 wells, of which none are currently operated as water supply wells. Reportedly, two wells owned by Coachella Valley Water District (CVWD) production wells are located near Highway 86, between Salton City and Desert Shores. These wells are not part of CVWD's active supply system and are on potential standby status. The exact location of these wells has not been determined; however, based on a review of publicly available well completion records and potential public supply well locations in the State Water Resources Control Board's GeoTracker GAMA database these wells are located outside of the anticipated area of project effects (APE).

We understand that the California Department of Water Resources (DWR) is planning to develop a groundwater supply in the vicinity of the Clubhouse Plot Study Area to irrigate a vegetation test plot on

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[1] https://groundwaterexchange.org/basin/west-salton-sea

the playa. Groundwater supply development for this project is still in the planning stage and no additional details are currently available.

Based on discussions with the Imperial County planning department, we understand that one or more wells are being installed to support the irrigation of an evapotranspiration cover for the Imperial County Dump (Salton City Landfill) located approximately 7 miles to the southwest of the Plot Study Area. The landfill is located outside the anticipated area of project effects.

Groundwater-level hydrographs are not available for any wells completed in the shallow or deeper supply zones in the vicinity of the Plot Study Area; however, based on the lack of groundwater development in the area, groundwater levels are expected to be stable. In 2015, three shallow piezometers were installed to monitor shallow groundwater elevations approximately 4 miles southeast of the Plot Study Area. The piezometers were completed on the playa at Salton (Tule) Wash. Groundwater-level monitoring data for these wells are available from January 2016 to January 2022. Hydrographs are included in Attachment B. These data indicate that groundwater levels are declining at a rate of approximately 0.5 feet per year. The observed drop in groundwater levels in the uppermost groundwater-bearing zone beneath the playa is correlated with declining water levels in the Salton Sea. Further declines may be expected in the future and will be confirmed by future monitoring data.

The nearest reported subsidence monitoring station to the Plot Study Area is the SLMS SCGN CS1999 GPS monitoring station operated by UNAVCO and located approximately 1 mile southwest of the Study Area (UNAVCO 2021). At this station, since recording began in 1999, no subsidence has been reported.

4 EFFECTS ANALYSIS

4.1 CONCEPTUAL APPROACH

As described in Section 2, the wellfield proposed to support the irrigation water demand for the Plot Study Area includes up to three shallow supply test wells and one deep supply test well (Figure 3). The data collected from the deep test well investigation described in Section 3, along with published literature, were used to develop an analytical element model with conservative simplifying assumptions to evaluate the potential effects of operating the wells.

To simulate drawdown, a multi-layered modeling approach was implemented 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 is able to 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. 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 model domain is shown in Figure 7 and includes most of the West Salton Sea groundwater basin. A no-flow boundary was modeled to the west, to represent the non-water-bearing rocks of the Santa Rosa Mountains, and head-dependent normal flux boundaries were modeled to the north, south, and east. The model domain measures approximately 10 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. The western extent of the paleo Lake Cahuilla sediments is shown in Figure 7. West of this area, a single layer is used to simulate potentially coarser grained sediments along the base of the Santa Rosa Mountains (Figure 7). The area underlain by the paleo Lake Cahuilla sediments is represented in the model as a multi-later system that includes the following and is shown in Figure 8:

- Layer 1 represents the upper lacustrine unit described in Section 3, which is the uppermost unconfined groundwater-bearing zone, and is in potential communication with GDEs. It is possible that groundwater in this layer is perched or is hydraulically separated from communication with the underlying pumped aquifers, but for the purposes of this analysis, it is assumed that Layer 1 and the deeper layers representing the underlying pumped aquifers are hydraulically connected. It is further assumed that the groundwater table is shallow enough to be connected to GDEs (i.e., less than about 12 feet bgs).

- Layer 2 is an aquitard zone used to simulate the paleo Lake Cahuilla lacustrine sediments as a continuous lower permeability layer separating the overlying water table zone from underlying pumped shallow and deeper zone aquifers. The data collected from the deep test well (boring log included in Attachment A) show this layer is about 65 thick in the project vicinity.

- Layer 3 represents the shallow-groundwater-producing zone between about 105 and 185 feet bgs. This zone correlates with the intermediate lacustrine unit described in Section 3 (Figure 4).

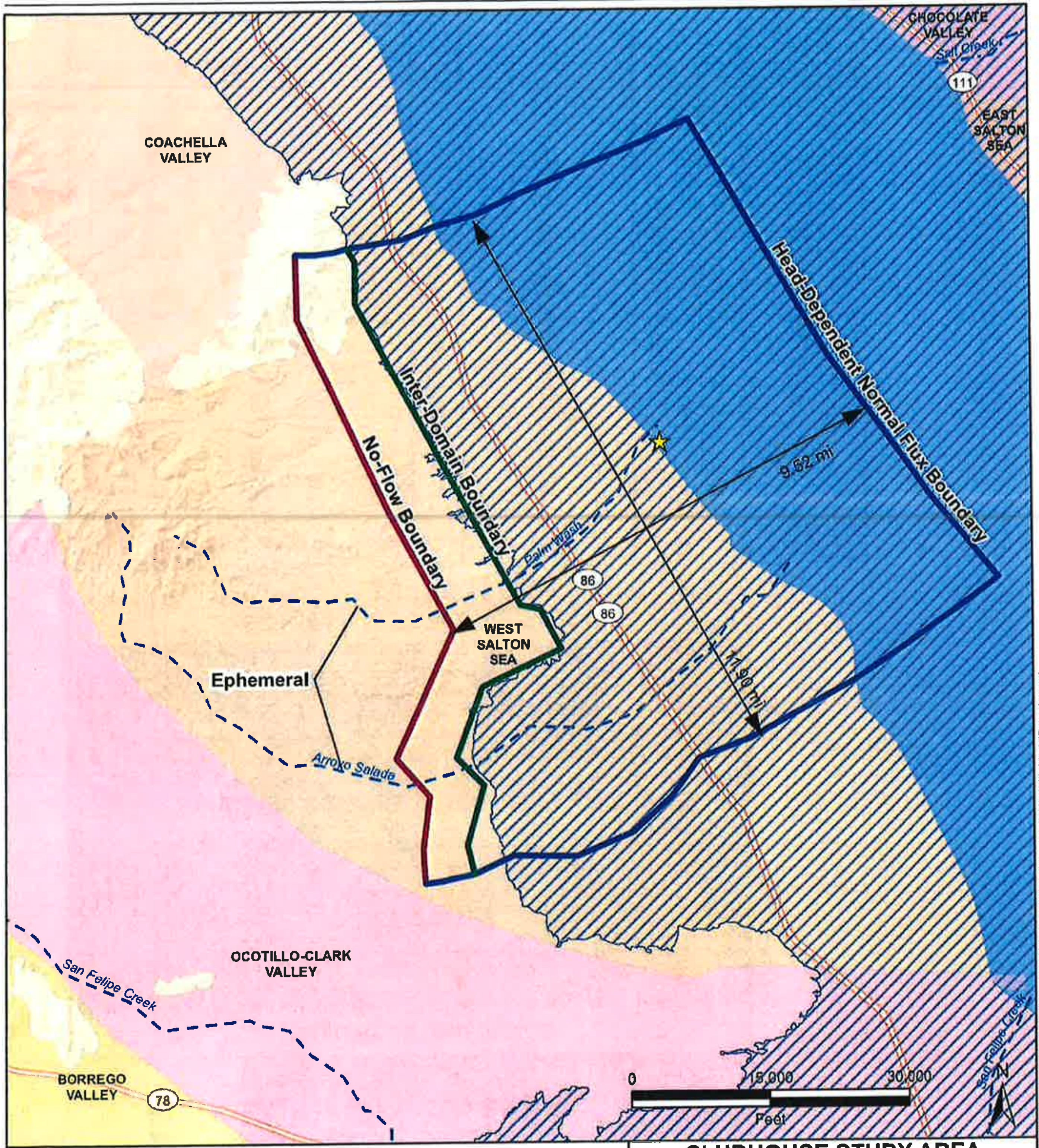
- Layer 4 is an aquitard zone used to simulate the paleo Lake Cahuilla lacustrine sediments as a continuous lower permeability layer separating the intermediate lacustrine unit from the lower lacustrine unit. The data collected from the deep test well (log included in Attachment A) show this layer is about 25 feet thick in the vicinity of the Plot Study Area.

- Layer 5 represents the deeper groundwater-producing zone between about 210 and 320 feet bgs. This zone correlates with the lower lacustrine unit described in Section 3 (Figure 4).

- The western model domain is modeled as a vertically continuous unit that is in hydraulic communication with Layers 1 through 5 in the eastern model domain and represents coarser grained sediments along the mountain front of the Santa Rosa Mountains (Figure 8). This domain also conceptualizes vertical hydraulic communication that may occur between Layers 1, 3, and 5 to the west, where the aquitards represented by Layers 2 and 4 may thin toward the shoreline of paleo Lake Cahuilla.

The model inputs for the various layers described above are summarized in Figure 8. The following additional assumptions are incorporated into the model:

- The pumped aquifers are homogeneous. This is a common simplifying assumption.
- The simulated aquifers 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 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 aquifer storage. This simplifying assumption tends to produce a conservative result that over-predicts drawdown.
- The well pumping rates in the upper and deeper groundwater-producing zones 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.
- Aquifer properties for Layers 3 and 5 were based on the results of the aquifer testing described in Section 3.
- The upper (Layer 2) and lower (Layer 4) aquitards associated with paleo Lake Cahuilla are assumed to have a uniform thickness of 65 and 25 feet, respectively, based on the borehole log for the deep test well (Attachment A). These fine-grained lacustrine units reportedly thin to the west of the Plot Study Area in the direction of the shoreline for paleo Lake Cahuilla (Waters 1983). The potential for hydraulic communication between the shallow and deeper groundwater-producing zones in this area is simulated using a continuous aquifer layer in the eastern model domain. This is a reasonable simplifying assumption.
- To address uncertainty in aquitard properties and communication between the pumped groundwater-producing zones and overlying water table zone that may be in communication with GDEs, a range of hydraulic conductivity values was considered and modeled (Figure 8).
- Pumping was simulated for a period up to 20 years, after which drawdown is assumed to reach relatively stable conditions.



Legend

- Head-Dependent Normal Flux Boundary
- Inter-Domain Boundary
- No-Flow Boundary
- Ephemeral Stream
- Stream Intermittent
- Canal; Aqueduct; Intracoastal Waterway
- Highways
- Major Roads
- Borrego Valley
- Chocolate Valley
- Coachella Valley
- East Salton Sea
- Ocotillo-Clark Valley
- West Salton Sea
- ▨ Ancient Lake Cahuilla

CLUBHOUSE STUDY AREA

SALTON SEA

FIGURE 7

MODEL DOMAIN

DATE: JUN 27, 2022

BY:

FOR:

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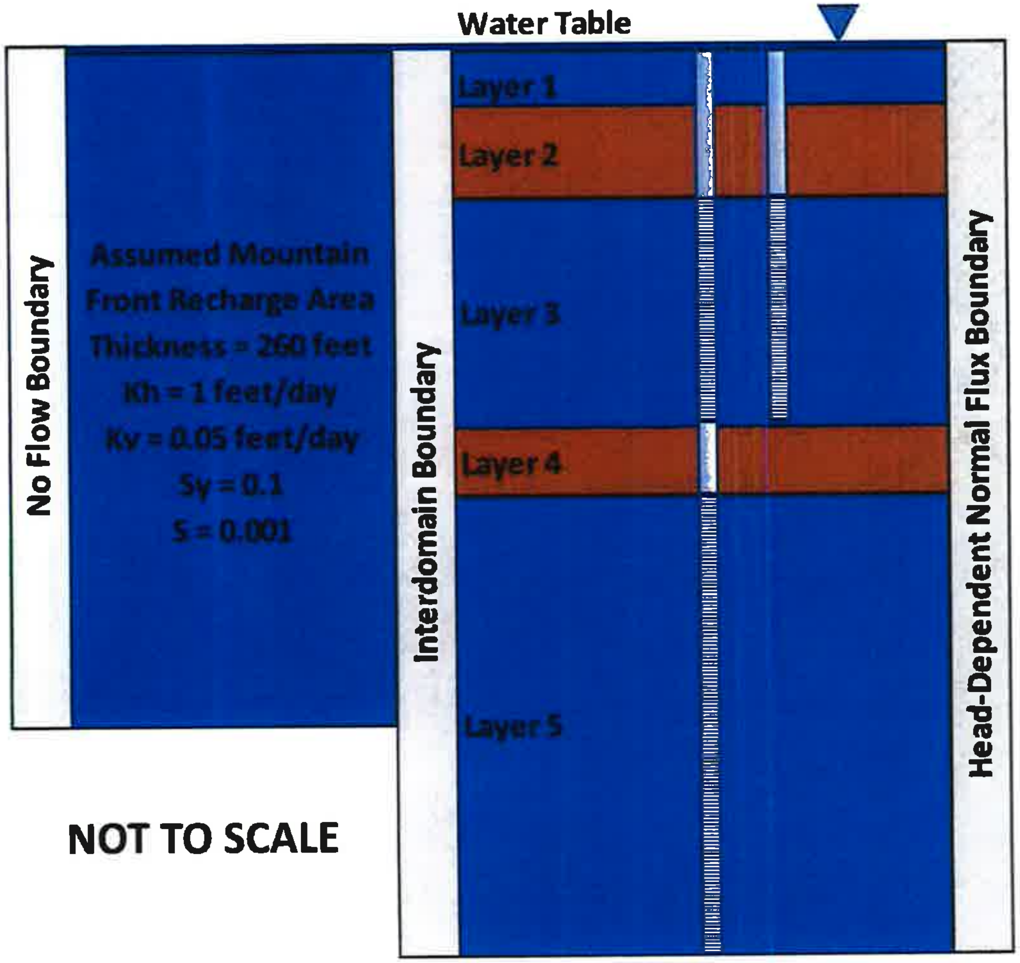

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Layer Description	Thickne
Uppermost Groundwater-Bearing Zone	
Upper Aquitard Zone	
Shallow Groundwater Supply Zone	
Lower Aquitard Zone	
Deeper Groundwater Supply Zone	1

4.2 METHODS

The model inputs for the layers described in Section 4.1 are summarized in Figure 8. The most likely (high) and reasonable minimum (low) hydraulic conductivity (K_h) values for aquitard model Layers 2 and 4 were estimated based on lithologic data available for the Plot Study Area and published values (Attachment A), as described below.

- The lower bound hydraulic conductivity value of 0.005 ft/day was estimated based on the silt and sand fractions described within the clay intervals between approximately 40 and 105 feet bgs (upper aquitard zone) and 185 to 210 feet bgs (lower aquitard zone) on the boring log included in Attachment A. This value is slightly higher than the range of hydraulic conductivities for clays, described by Fetter (2001), and the higher value accounts for the silt and sand fractions found across the aquitard interval (Attachment A). The lower bound hydraulic conductivity value was updated from the previous value reported by Formation (2021), based on the lithologic data collected during the test well investigation described in Section 3. Thus, the hydraulic conductivity values estimated by Formation (2021) and the results of the modeling simulations have been updated, as described in Section 4.3.
- The upper bound hydraulic conductivity value of 0.01 ft/day accounts for higher silt and sand fractions that may be present in the lacustrine aquitards in the vicinity of the Plot Study Area. This value was not modified from the upper bound value that was previously used (Formation 2021).
- Vertical hydraulic conductivity values (K_v) were assumed to be 1/10th of the horizontal hydraulic conductivity values.
- The other aquitard parameters summarized in Figure 8 were not varied in the model and were based on a combination of published values (Fetter 2001) and estimated values using the available lithologic data included in Attachment A. The locations and logs for the nearby boreholes are provided in Attachment A.

For Layers 3 and 5, hydraulic conductivity values were estimated based on the results of the aquifer testing for the deep test well, described by Formation (2022). Thus, the hydraulic conductivity values estimated by Formation (2021) and the results of the modeling simulations have been updated, as described in Section 4.3. A composite hydraulic conductivity value of approximately 2.4 ft/day was estimated for the shallow and deeper zones, based on aquifer testing results. The lithologic data for the deep test well boring indicate that a greater percentage of coarse-grained sediments is present in the shallow production zone than in the deeper production zone (Section 3 and Attachment A). Based on this information, hydraulic conductivity values of 3.2 and 1.8 ft/day were estimated for the shallow and deeper supply zones, respectively.

Specific yield values (Sy) were estimated based on reasonable values for sands for groundwater-bearing Layers 1, 3, and 5, consistent with other modeling studies in the area. Storativity (S) values were based on professional judgment and other modeling studies in the area for a reasonable value for unconfined aquifers for Layer 1 and confined/semi-confined aquifers/aquitards for the underlying layers.

The simulated pumping rates for the shallow test wells simulated in Layer 3 and the deep well simulated in Layers 3 and 5 are summarized in Table 3. These pumping rates assume that the wells will be pumped at or near the maximum sustainable capacity, which exceeds the currently planned irrigation water demand of the vegetation test plot (Table 1). Actual pumping rates may be lower, so this is a conservative assumption from an impact analysis viewpoint (i.e., impacts will likely be overestimated). It allows potential impacts to be evaluated if the wells are used in the future to supply the irrigation demand for additional vegetation plots and/or to irrigate existing vegetation in the area, and thus will allow operating flexibility. 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 constant rate over a 24-hour period to simplify the modeling scenarios.

TABLE 3. PUMPING INPUTS

Pumping	Input Value (24 hrs./day constant rate)	Source	Additional Comments
Shallow Zone	7.5 gpm	Irrigation Design	Pumping per well (three wells are simulated for a total pumping rate of 22.5 gpm)
Deeper Zone	17 gpm	Irrigation Design	Pumping from one well

The modeling scenarios for the proposed shallow and deep groundwater zone test wells are summarized in Table 4. Two scenarios were simulated to assess potential differences in drawdown effects under a range of potential aquifer conditions. The hydraulic conductivity of the aquitard layers (model Layers 2 and 4) was varied to assess the effect of varying degrees of aquitard competence and communication between the aquifer layers during pumping (model Layers 1, 3, and 5). High and low permeability scenarios were simulated to represent the upper and lower range of hydraulic conductivities for the clayey horizons that confine Layers 3 and 5.

TABLE 4. MODELING SCENARIOS

Scenario	Duration	Shallow Groundwater Zone			Deeper Groundwater Zone		
		Average Daily Discharge (gpm)	Aquitard Hydraulic Conductivity (ft/day)	Other Parameters	Average Daily Discharge (gpm)	Aquitard Hydraulic Conductivity (ft/day)	Other Parameters
1A (High aquitard permeability)	20 yrs.	22.5	0.01	Constant (Figure 8)	17	0.01	Constant (Figure 8)
1B (Low aquitard permeability)	20 yrs.	22.5	0.005	Constant (Figure 8)	17	0.005	Constant (Figure 8)

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4.3 RESULTS

The predicted drawdown associated with pumping of the proposed test wells completed in the shallow and deeper groundwater zones for 20 years for the various scenarios described in Section 4.2, is summarized in Table 5. The updated results reflect the modified model inputs described in Section 4.2, which are based on the site-specific lithologic and aquifer testing data collected during the test well investigation described in Section 1.

- The magnitude and distribution of the predicted drawdown effects in model Layer 1 associated with Scenarios 1A and 1B, relative to the locations of groundwater-dependent vegetation, are shown in Figure 9. Under Scenario 1A, the maximum predicted drawdown at the water table is approximately 2.3 feet, and drawdown greater than 1 foot is not predicted beyond a distance of approximately 5,100 feet from the pumping center, upslope from the playa (Table 5). Under Scenario 1B, the maximum predicted drawdown at the water table is approximately 1.6 feet, and drawdown greater than 1 foot is not predicted beyond a distance of approximately 3,700 feet from the pumping center, upslope from the playa (Table 5). Drawdowns of up to 2.3 feet would generally not be distinguishable from normal seasonal groundwater-level fluctuations measured in nearby shallow piezometers.

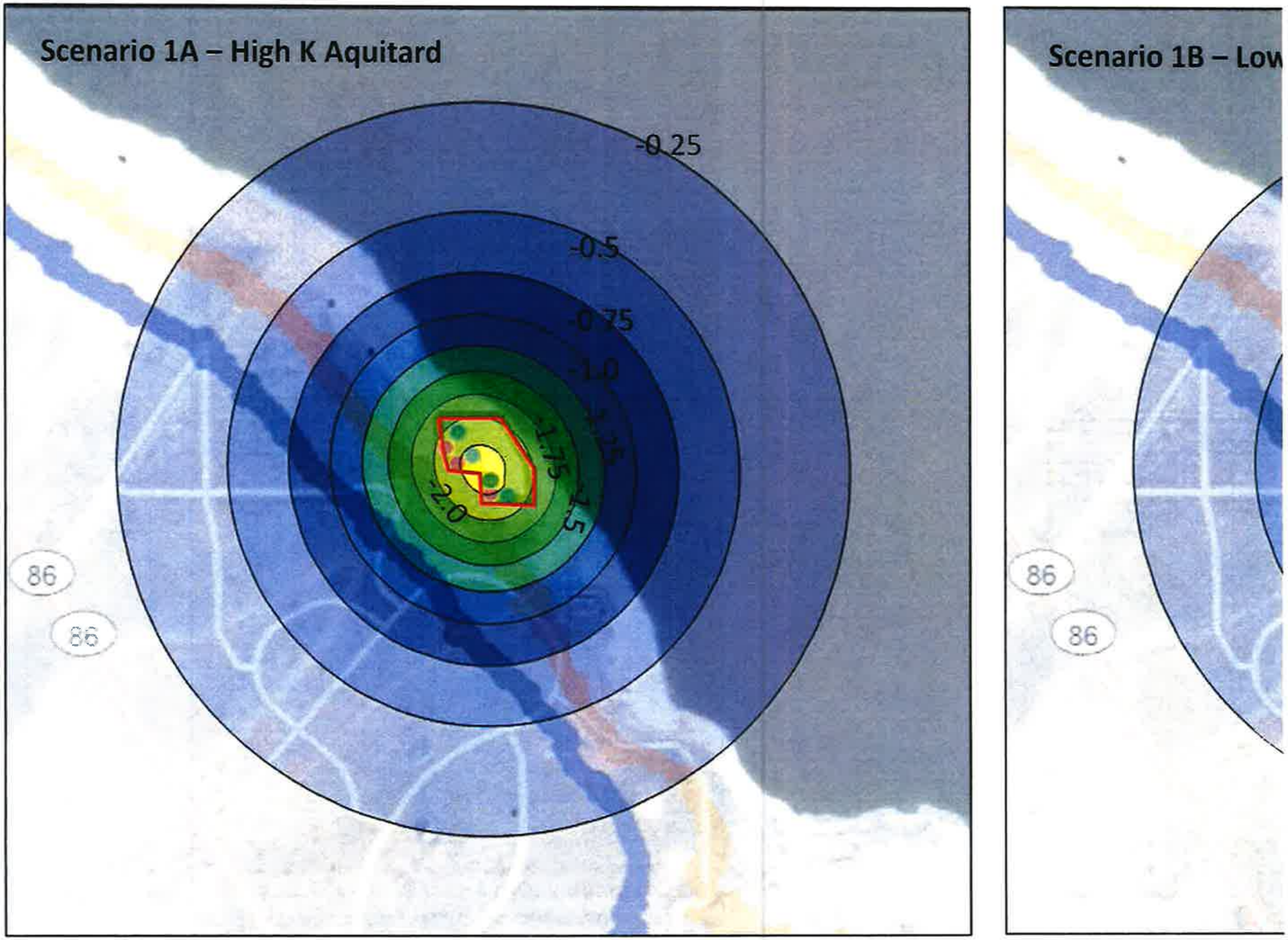
- The magnitude and distribution of the predicted drawdown effects in model Layer 3 after 20 years of pumping is shown in Figure 10. Under Scenarios 1A and 1B, a drawdown of up to 5 feet is predicted at approximately 1,400 and 1,700 feet from the pumping center, respectively (Table 5). A drawdown of 5 feet is predicted at a distance of up to 550 feet from the western Plot Study Area boundary. The maximum predicted drawdown is 6.1 feet, under Scenario 1B (Table 5). Maximum drawdowns in both scenarios are predicted near the pumping center, located within the Plot Study Area boundaries.

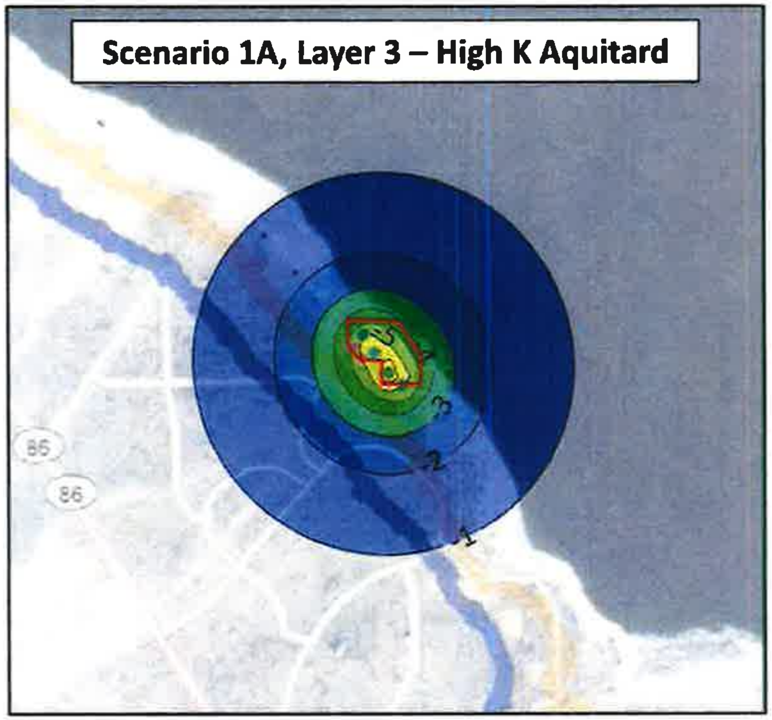
- The magnitude and distribution of the predicted drawdown in model Layer 5 after 20 years of pumping is shown in Figure 10. Under Scenarios 1A and 1B, drawdowns greater than 5 feet were generally limited to within the Plot Study Area. The exception is along the west central edge of the Plot Study Area boundary, where a drawdown of 5 feet is predicted at a distance of up to approximately 550 feet from the western boundary. The maximum predicted drawdown is 7.6 feet, under Scenario 1B (Table 5). Maximum drawdowns in both scenarios are predicted near the pumping center, located within the Plot Study Area boundaries.

TABLE 5. PREDICTED DRAWDOWN – 20 YEARS OF PUMPING

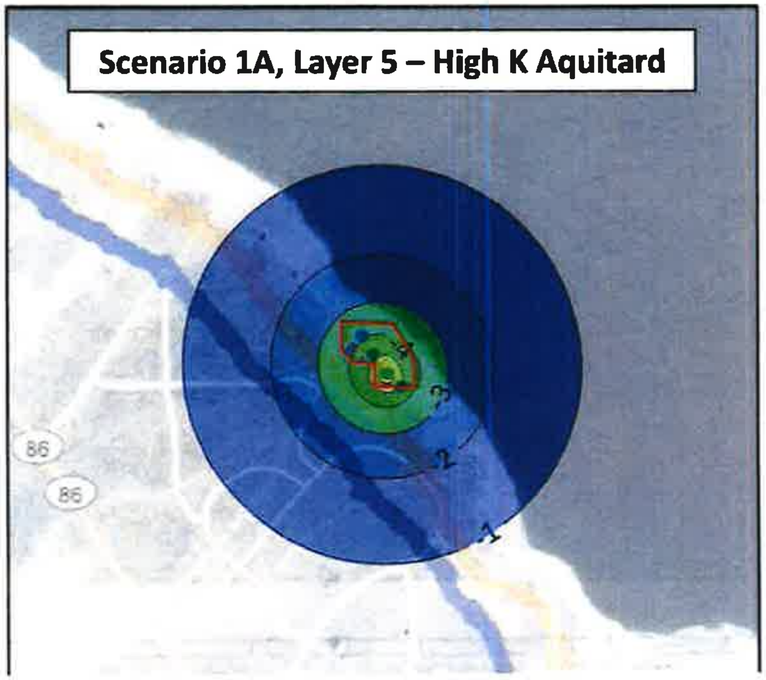
Model Scenario	Maximum Predicted Drawdown at Plot Study Area Boundary in Layer 1 (feet)	Maximum Predicted Drawdown at Plot Study Area Boundary in Layer 3 (feet)	Maximum Predicted Drawdown at Plot Study Area Boundary in Layer 5 (feet)	Predicted Distance to 1 ft Drawdown in Layer 1 (feet)	Predicted Distance to 5 ft Drawdown in Layer 3 (feet)
1A	2.3	6.9	5.8	5,100	1,400
1B	1.6	7.6	6.1	3,700	1,700

NA = not applicable, the noted drawdown was not observed.


Scenario 1A – High K Aquitard
-0.25
-0.5
-0.75
-1.0
-1.25
-1.5
-1.75
-2.0
86
86
Scenario 1B – Low
86
86



Scenario 1A, Layer 3 – High K Aquitard



Scenario 1A, Layer 5 – High K Aquitard

5 IMPACT ANALYSIS

This section presents an evaluation of the potential environmental impacts of the project associated with groundwater extraction if the proposed 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.

As discussed in Section 4.3, the preliminary modeling results reported by Formation (2021), in the initial GRIA, have been updated based on modified model inputs, which reflect the site-specific lithologic and aquifer testing data collected during the test well investigation. Furthermore, the pumping rates simulated in the model were increased from the rates reported by Formation (2021) in the initial GRIA for both the shallow and deeper test wells, based on the findings of the aquifer testing data. While the updated drawdown effects differ from those reported by Formation (2021) in the initial GRIA, the impact analysis findings described below are not substantively changed and continue to demonstrate less than significant impacts associated with the proposed groundwater extraction for the Plot Study.

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?

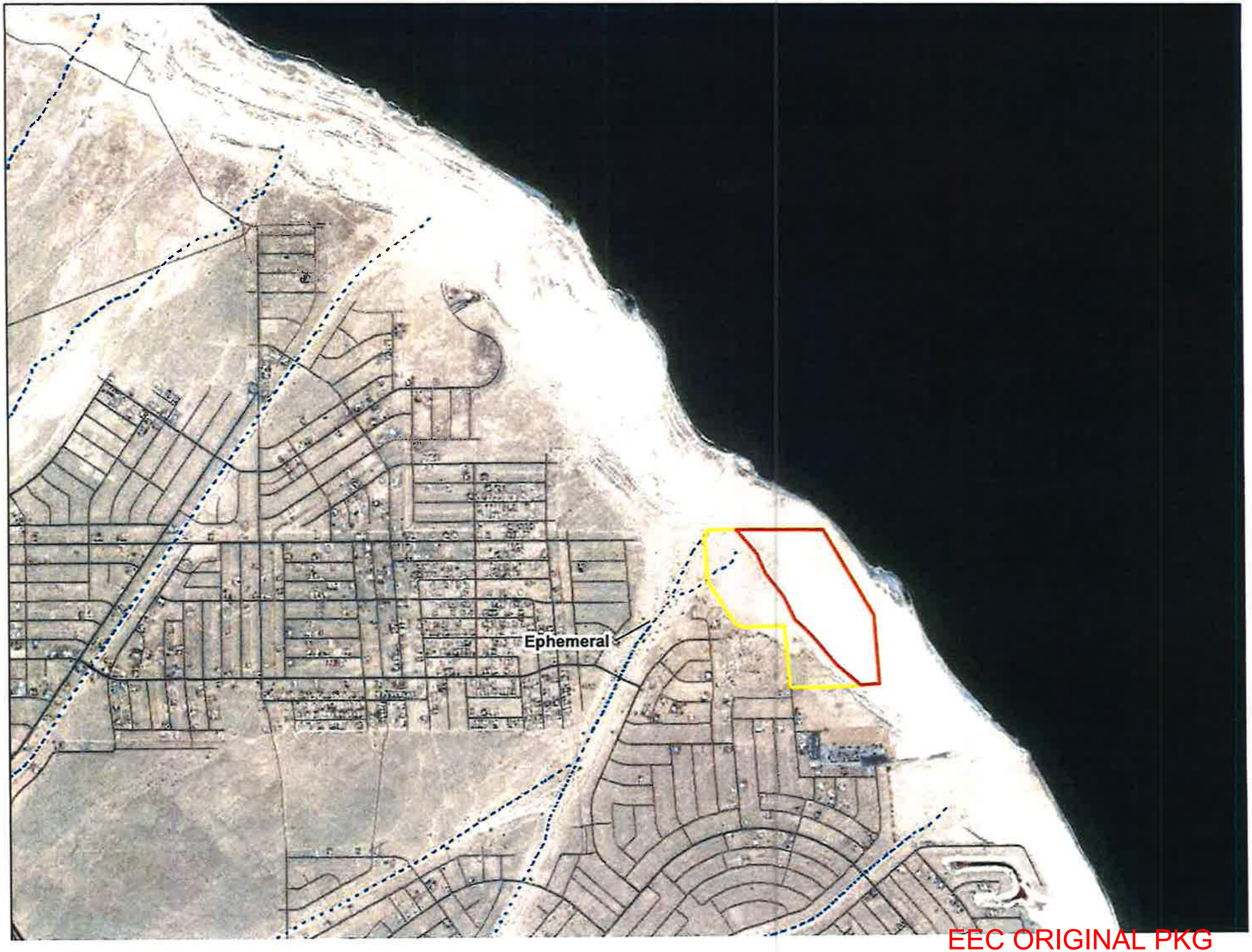
Question IV(c): Would the project have a substantial adverse effect on state or federally protected wetlands (including marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

The potential GDEs identified in the West Salton Sea groundwater basin are shown in Figure 6. Several potential GDEs have been mapped in the Santa Rosa Mountains to the west of the Study Area; however, the results summarized in Table 5 and shown in Figure 9 indicate that drawdown in Layer 1, which is assumed to be the groundwater source for the GDEs, will not reach these areas.

Where present on the playa, ALOC and SUNI may exist below elevations of -194 and -213 feet amsl, respectively, as shown in Figure 6. The locations of these areas relative to predicted drawdown in Layer 1 are shown in Figure 9.

Drawdown in Layer 1 after 20 years of combined pumping from the shallow and deep supply wells is predicted to range from approximately 1.0 to 1.25 feet, below an elevation of -194 feet amsl (maximum upslope elevation for GDEs) on the playa (Figure 9). The magnitude of the predicted drawdown is less than the expected seasonal variability, and ALOC and SUNI are expected to be able to adapt to such a small amount of drawdown over such a long period of time. Furthermore, within the Plot Study Area, where the maximum predicted drawdown is estimated, applied irrigation water would eliminate the potential of plant stress to be induced by project pumping in this area. Based on the available information, impacts to GDEs from operating the shallow and deep supply test wells will be less than significant.

The streams near the Plot Study Area include ephemeral washes that convey stormwater discharge after infrequent rain events and do not discharge groundwater (Figure 11). There are no perennial streams. Thus, no impact to interconnected surface water will occur.



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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 found in the West Salton Sea groundwater basin is characterized as predominantly sodium-chloride type water, and the quality is considered marginal to poor for domestic or irrigation purposes due to concentrations of fluoride, boron, and TDS. The wells will be completed with sanitary seals that will prevent the vertical migration of shallow saline groundwater through the well bores. The groundwater-producing zones are separated from each other and from the uppermost groundwater-bearing zone and the Salton Sea by laterally-extensive lacustrine aquitard packages that will impede vertical migration of groundwater of different salinities.

Figure 12 shows reported nearby contamination sites. The nearest sites are located well over 1 mile from the Plot Study Area and are not expected to be affected by gradient changes that would interfere with required discharge requirements or cleanups.

Based on the above information, potential impacts to water quality will be less than significant.

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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 Plot Study Area. The proposed test wells will extract a relatively limited amount of water from the confined to semi-confined aquifer systems. Predicted drawdowns of more than 5 feet in Layer 5 are generally limited to the Plot Study Area. Outside of the Plot Study Area, predicted drawdowns greater than 5 feet in Layer 3 extended to the west, upslope from the playa. However, drawdowns greater than 5 feet were not predicted in areas with significant residential or other infrastructure that could be adversely affected if subsidence were to occur (i.e., homes, drainage features, sewer lines, and roadways) (Figure 10). Less than 5 feet of drawdown is unlikely to result in measurable land subsidence (JJ&A 2018). Given the limited amount of drawdown predicted to be associated with operation of proposed wells, and the lack of reported subsidence near the Plot Study Area, 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 proposed test wells to interfere with implementation of a water quality control plan is discussed in Section 5.2, above. The West 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 groundwater sustainability plan.

The long-term groundwater extraction associated with the proposed wells will be relatively limited. The average annual water demand that will be met by the wells is at most 63 afy, which is equivalent to a long-term pumping rate just over 39 gpm (Table 1). This would be the only currently known anthropogenic

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groundwater demand in the basin and is not anticipated to interfere with existing beneficial environmental groundwater uses by GDEs.

Operation of the proposed test wells is predicted to result in limited drawdown in close proximity to the pumping wells. The area surrounding the Plot Study Area is served with treated surface water provided by CVWD, and no existing wells have been identified in the area that would be affected by project-induced drawdown.

If unreported wells were to be present within the area predicted to be affected by project-induced drawdown, a drawdown of less than 5 feet is unlikely to be distinguishable from normal seasonal and inter-annual fluctuations and would represent only a small percentage of a domestic well's available drawdown. As such, the predicted drawdown shown in Figure 10 would be unlikely to result in an observable decrease in well yield. In addition, localized drawdown of this magnitude would represent a very small percentage of the total available drawdown in an aquifer system that is likely at least 500 feet thick. Therefore, it would not significantly change the amount of groundwater in storage or interfere with foreseeable groundwater demands. Furthermore, the community of Salton City, in the vicinity of the Plot Study Area, is served by the Coachella Valley Water District, leaving local water supplies unaffected.

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 West Salton Sea Groundwater Basin are very sparsely developed. No active groundwater production wells are evident, and the community of Salton City in the vicinity of the Plot Study Area is served by the Coachella Valley Water District. Two CVWD standby wells are located near Highway 86, between Salton City and Desert Shores. These wells are located outside of the project-induced drawdown shown in Figure 10 and are outside of the predicted APE. In addition, CVWD has no plans to use these wells in the future. Based on this information, drawdown induced by the project will not act cumulatively with these wells.

The DWR is planning to develop a groundwater supply in the vicinity of the Clubhouse Plot Study Area to irrigate a vegetation test plot on the playa. These wells are still in the planning stage and to our knowledge no permit applications, environmental review documents, notifications or other documents prepared are available regarding this proposed groundwater development. Therefore, the scope of this project and the water demand to be met are considered speculative at this time, and the project is not categorized as reasonably foreseeable, and are not considered in the cumulative impact analysis. If and when the supply well(s) are officially proposed and permitted, the environmental review for this discretionary action will need to consider the potential cumulative effects of their pumping together with project pumping described herein.

According to Imperial County Planning Department staff, additional groundwater development is planned to support the irrigation of an evapotranspiration cover for the Imperial County Dump (Salton City Landfill) located approximately 7 miles to the southwest of the Plot Study Area. However, the landfill is located outside the APE.

Cumulative impacts associated with operating both the proposed shallow and deep test wells together were evaluated by Scenarios 1A and 1B. The results of the cumulative pumping over 20 years show less than significant impacts (Table 5).

Based on shallow groundwater monitoring data, it is likely that shallow groundwater levels below the playa will continue to decline as water levels in the Salton Sea decline. In and near the Plot Study Area, within the area potentially affected by project drawdown, groundwater extracted by the wells would be used to irrigate new and existing ALOC and SUNI vegetation. As such, the project will protect existing vegetation on the playa that is currently potentially groundwater-dependent from the stress induced by drawdown and existing trends in groundwater level decline around the Salton Sea.

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. The basin is not listed as being in critical overdraft. 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. A Conditional Use Permit will be obtained from Imperial County to operate the wells.

6 REFERENCES

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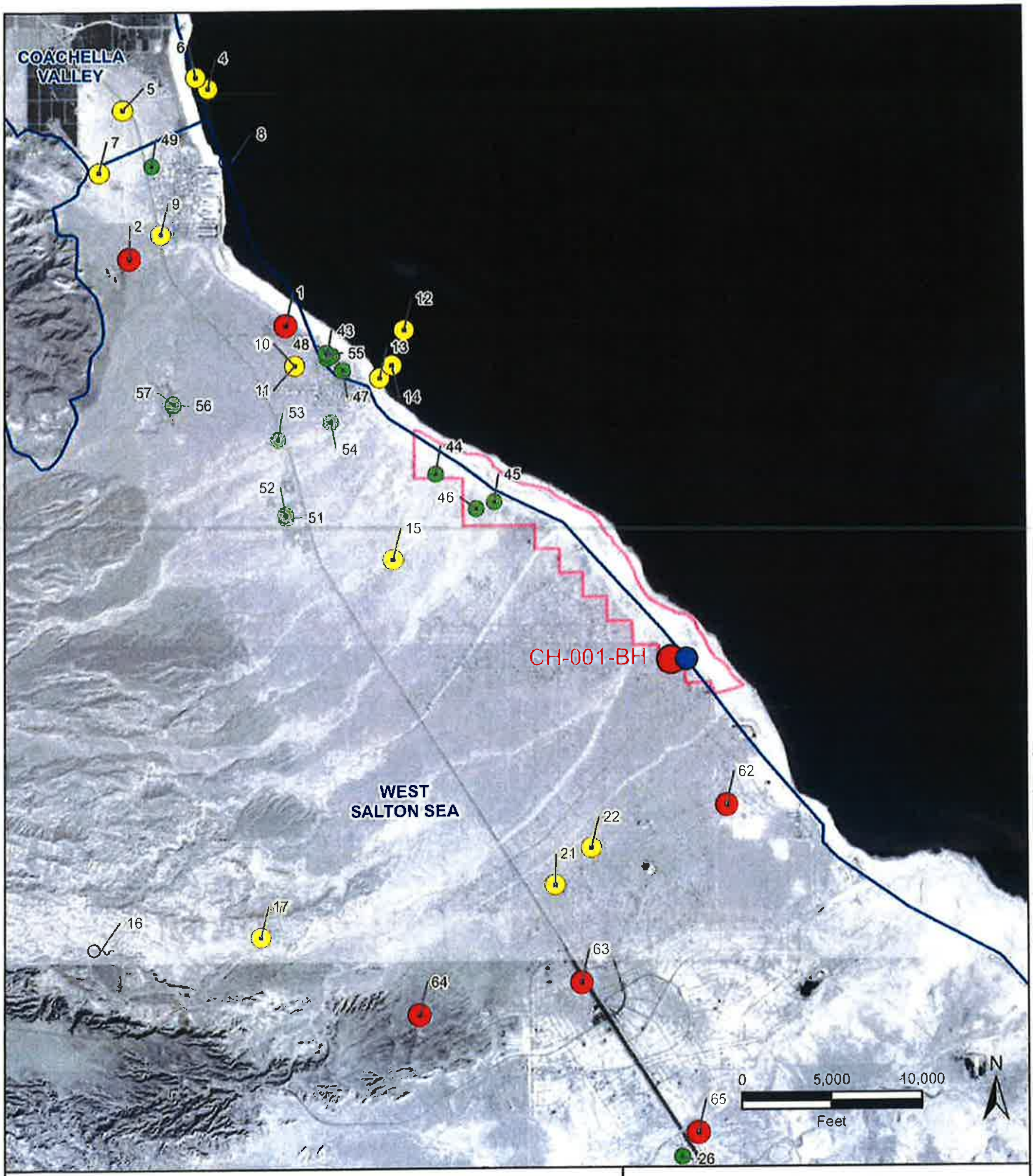
ATTACHMENT A – BORING LOGS



Club House Deep Test Well

Salton Sea

Figure A-1

DATE: NOV 19, 2020

K:\IID_SaltonSea\Tasks\WaterSupply\Groundwater\Deep Groundwater Supply Pilot\RFP\Attachment D materials\Fig2.mxd

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TABLE A-1. AVAILABLE INFORMATION FOR EXISTING WELLS IN THE VICINITY OF THE STUDY AREA

Formation ID	DWR Number	USGS Number	USGS Site Number	Completion Report	Well Name	Data Available	Data Range	Completion Date	Total Depth	Depth to Top of Screen	Depth to Bottom of Screen
1	NA	009S009E15Q001S	332303116011401	NA	NA	Water Quality	1962-1973	NA	NA	NA	NA
2	NA	009S009E16D001S	332340116025601	NA	NA	NA	NA	NA	NA	NA	NA
4	09S09E04K001S	009S009E04K001S	332505116022401	NA	NA	Water Quality	1967	NA	NA	NA	NA
5	09S09E04M001S	009S009E04M001S	332501116025701	NA	NA	GW Levels	1979-2017	NA	NA	NA	NA
6	09S09E04X001S	NA	NA	NA	NA	Water Quality	1967	NA	NA	NA	NA
7	09S09E08X001S	NA	NA	NA	NA	Water Quality	1950	NA	NA	NA	NA
8	09S09E09H0015S	009S009E08H001S	332422116030401	NA	NA	Water Quality	1917	NA	NA	NA	NA
9	09S09E16D002S	NA	NA	NA	NA	Water Quality	1955	NA	NA	NA	NA
10	09S09E22X001S	NA	NA	NA	NA	Water Quality	1950 - 1957	NA	NA	NA	NA
11	09S09E22X002S	NA	NA	NA	NA	Water Quality	1952	NA	NA	NA	NA
12	09S09E23B001S	NA	NA	NA	NA	Water Quality	1952	NA	NA	NA	NA
13	09S09E23L001S	009S009E23L001S	332231116003001	NA	NA	Water Quality	1962	NA	NA	NA	NA
14	09S09E23X001S	NA	NA	NA	NA	Water Quality	1956	NA	NA	NA	NA
15	09S09E35X001S	NA	NA	NA	NA	Water Quality	1950	NA	NA	NA	NA
16	10S09E20X0015S	NA	NA	NA	NA	Water Quality	1948	NA	NA	NA	NA
17	10S09E22E001S	NA	NA	NA	NA	Water Quality	1955	NA	NA	NA	NA
21	10S10E18N001S	010S010E18N001S	331750115583401	NA	NA	Water Quality	1950 - 1967	NA	NA	NA	NA
22	10S10E18X001S	NA	NA	NA	NA	Water Quality	1952 - 1955	NA	NA	NA	NA
26	NA	NA	NA	10S10E32J001	Water Supply Well	Well Log	NA	8/28/1950	217	195	217

TABLE A-1. **AVAILABLE INFORMATION FOR EXISTING WELLS IN THE VICINITY OF THE STUDY AREA (CONTINUED)**

Formation ID	DWR Number	USGS Number	USGS Site Number	Completion Report	Well Name	Data Available	Data Range	Completion Date	Total Depth	Depth to Top of Screen	Depth to Bottom of Screen
43	NA	NA	NA	27702	Domestic Well	Well Log	NA	1/18/1957	166	104	166
44	NA	NA	NA	27705	Domestic Well	Well Log	NA	4/19/1957	182	140	182
45	NA	NA	NA	27706	Test Well	Well Log	NA	5/1/1957	244	NA	NA
46	NA	NA	NA	27707	Domestic Well	Well Log	NA	5/15/1957	213	NA	NA
47	NA	NA	NA	27708	Domestic Well	Well Log	NA	6/7/1957	186	143	186
48	NA	NA	NA	27717	Domestic Well	Well Log	NA	10/25/1958	194	145	194
49	NA	NA	NA	27721	Domestic Well	Well Log	NA	2/7/1959	318	160	318
50	NA	NA	NA	29765	Test Well	Well Log	NA	4/30/1960	809	NA	NA
51	NA	NA	NA	29932	Domestic Well	Well Log	NA	9/30/1959	200	120	200
52	NA	NA	NA	29947	Domestic Well	Well Log	NA	9/20/1960	202	142	202
53	NA	NA	NA	34721	Domestic Well	Well Log	NA	8/15/1969	220	110	220
54	NA	NA	NA	59077	Domestic Well	Well Log	NA	5/31/1960	216	194	216
55	NA	NA	NA	59078	Domestic Well	Well Log	NA	6/8/1960	202	172	202
56	NA	NA	NA	e0111199	Well #2	Well Log	NA	5/14/2010	370	210	370
57	NA	NA	NA	e0111200	Well #1	Well Log	NA	5/26/2010	360	NA	NA
58	NA	008S009E31Q001S	332535116050001	NA	NA	NA	NA	NA	350	NA	NA
59	NA	008S009E31R002S	332537116044201	NA	NA	NA	NA	NA	348	NA	NA
60	NA	011S009E27E001S	331110116013901	NA	NA	NA	NA	NA	NA	NA	NA
61	NA	009S009E25L001S	332135115592401	NA	NA	NA	NA	NA	NA	NA	NA
62	NA	010S010E09N001S	331840115563101	NA	NA	NA	NA	NA	NA	NA	NA
63	NA	010S010E19K001S	331704115580501	NA	NA	NA	NA	NA	NA	NA	NA
64	NA	010S009E26A001S	331647115595001	NA	NA	Water Quality	1944	NA	NA	NA	NA
65	NA	010S010E32J001S	331542115565101	NA	NA	NA	NA	NA	NA	NA	NA

Available Borehole and Well Completion Logs

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FORMATION
ENVIRONMENTAL

Deta

Clubhouse **SALTON SEA, CA**	Drilling Company: **ABC Liovin**	Logged By: **C. Zarn**	Latitude (decir **TBD**
	Drilling Method: **Rotosonic**	Borehole Diameter (inches): **10" to 97', 9.5" to 327', 6" to 332'**	Longitude (de **TBD**
Project Number: **061-012 Task 8.1**	Sampling Method: **Core Barrel and Hydropunch**	Ground Elevation (NAVD 88): **TBD**	Total Depth (f **332.0**
	Top of Casing Elevation: **TBD**	Date Started: **2/14/2022**	Date Complet **3/6/2022**

Depth (feet)	Description	USCS	Interpreted Facies	
0 5	POORLY GRADED SAND with SILT, pinkish gray (7.5YR 6/2), dry. Sand is fine grained, subangular and immature. At 2.2 ft - slightly moist. At 5.5 ft - color changes to light brown (7.5YR 6/3). At 6 ft - 2-inch gravelly stringer. At 6.7 ft - 1-inch thick SILTY SAND stringer. Reacts to HCl.	SP-SM	L	
10	POORLY GRADED SAND, light brown (7.5YR 6/3), slightly moist. Sand is fine to medium grained and subangular. At 8.2 ft - 2-inch thick silty stringer. Sand is coarsening with depth. Between 8.7 and 10.5 ft - contains numerous gastropod shells, mostly intact and measuring 1-2 mm. At 11 ft - wet. Reacts to HCl.	SP	L	▼ I
15	POORLY GRADED SAND with GRAVEL, light brown (7.5YR 6/3), wet. With approximately 75% fine to coarse subrounded to subangular sand, 15-20% subrounded gravel (up to 2-inches in diameter), and 5-10% fines. Sand is mostly fine and consists of 30-35% quartz, 35% felspathoid, and 30% lithics and other (little to no mica). Gravel consists mostly granodiorite, diorite, with minor volcanics and yellowish shale. Unit reacts to HCl.		L/Al	
	LEAN CLAY, brown (10YR 5/3), moist. Soft and consists of low to medium plasticity fines. Contains significant silt fraction. Reacts to HCl.	CL	L	
20	WELL GRADED SAND, brown (10YR 5/3), very moist to wet. Sand is fine to coarse grained, subangular to subrounded and immature. Contains trace gravel, mostly granodiorite. At 19 ft - coarser and wet. Reacts to HCl.	SW	L/Al	

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Clubhouse

SALTON SEA, CA
Project Number:
061-012 Task 8.1

Sampling Method:
Core Barrel and Hydropunch
Top of Casing Elevation:
TBD

Ground Elevation (NAVD 88):
TBD
Date Started:
2/14/2022

Total Depth (ft
332.0
Date Complet
3/6/2022

Depth (feet)	Description	USCS	Interpreted Facies
35	POORLY GRADED SAND, brown (10YR 5/3), wet. Sand is fine (60-65%) to medium (35-40%) grained and subangular and clasts are generally spherical. Consists of primarily of quartz (40-45%), felspathoid (25-30%), biotite (5-10%) and lithics/other (20-25%). Reacts to HCl.	SP	L
	SANDY LEAN CLAY/SILT, locally with fine sand laminae, grayish brown (10YR 5/2), very moist. Contorted laminae suggest synsedimentary deformation. Reacts to HCl.	CL/ML	L
	SILTY SAND, brown (10YR 5/3), very moist to wet. Sand is fine to medium grained and subangular. Reacts to HCl. Lower contact based on geophysics.	SM	L
	LEAN CLAY, light yellowish brown (2.5Y 6/3), slightly moist. Faint laminations and contains few disseminated CaCO3 nodules (2 mm). Unit is firm to hard. Reacts to HCl. Upper contact adjusted based on geophysics.	CL	L
40 45 50 55	FAT CLAY, strong brown (7.5YR 5/6), slightly moist. Relatively massive appearance and homogeneous with faintly developed laminations. The upper 5 feet contains disseminated CaCO3 nodules. Firm to hard. High plasticity, and toughness and high dry strength. At 40.5 ft - locally trace black organic material and no CaCO3 nodules. Satring at 47 ft - occasional widely spaced (several feet) light gray (10R 7/2) silty evaporite horizons. At 56 ft - subvertical dessication cracks filled with light gray silt. Entire unit reacts to HCl.	CH	L

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Clubhouse **SALTON SEA, CA** Project Number: **061-012 Task 8.1**	Sampling Method: **Core Barrel and Hydropunch** Top of Casing Elevation: **TBD**	Ground Elevation (NAVD 88): **TBD** Date Started: **2/14/2022**	Total Depth (ft **332.0** Date Complet **3/6/2022**

Depth (feet)	Description	USCS	Interpreted Facies
75			
80			
		CL	L
85			
90			

Clubhouse **SALTON SEA, CA** Project Number: **061-012 Task 8.1**	Sampling Method: **Core Barrel and Hydropunch** Top of Casing Elevation: **TBD**	Ground Elevation (NAVD 88): **TBD** Date Started: **2/14/2022**	Total Depth (ft **332.0** Date Complet **3/6/2022**

Depth (feet)	Description	USCS	Interpreted Facies
		SM	
110	FAT CLAY, strong brown (7.5YR 5/6), moist. This unit is homogeneous and has a massive appearance with faintly developed laminae. Firm to hard, medium to high plasticity. Entire unit reacts to HCl. At 106 and 107 ft - thin (<2 inches) light gray sandy evaporite horizon.	CH	L
115			
	Mottled LEAN CLAY/SANDY CLAY, grayish brown (10YR 5/2), moist to very moist. At 120 ft - 2-inch thick light gray (10YR 7/1) sandy evaporite horizon. Reacts to HCl.	CL/SC	L
120	LEAN CLAY, strong brown (7.5YR 5/6), moist. Reacts to HCl.	CL	L
125	Mottled laminae of gray (2.5Y 6/1) SILTY SAND and strong brown (7.5YR 5/6) LEAN CLAY, moist. The upper portion of this unit is characterized by horizontal laminae while the remainder is disturbed forming sets of disorganized folds and slumps (synsedimentary deformation). Reacts to HCl.	CL/SM	L
	POORLY GRADED SAND with SILT, grayish brown (10YR 5/2), very moist to wet. Sand is fine to medium grained, subangular, and immature. Reacts to HCl.	SP-SM	L
	SILTY SAND, grayish brown (10YR 5/2), very moist to wet. Sand is primarily fine grained. With approximately 15-20% silt, 70-75% fine sand and 5-10% medium sand. Between 129.7 to 129.9 ft - light gray (10YR 7/1) sandy evaporite rich horizon. Reacts to HCl.	SM	L
130	LEAN CLAY, strong brown (7.5YR 5/6), moist. Locally sandy and with trace (<1%) black organic material. Reacts to HCl.	CL	L

Clubhouse **SALTON SEA, CA** Project Number: **061-012 Task 8.1**	Sampling Method: **Core Barrel and Hydropunch** Top of Casing Elevation: **TBD**	Ground Elevation (NAVD 88): **TBD** Date Started: **2/14/2022**	Total Depth (ft **332.0** Date Complet **3/6/2022**

Depth (feet)	Description	USCS	Interpreted Facies
	subangular. It is micaceous (biotite). Contains approximately 10-15% silt, 70-75% fine sand, and 15-20% medium sand. The base of this unit is laminated. Reacts to HCl.		
	LEAN CLAY, brown (7.5YR 5/2), moist. Firm with well defined laminae. Reacts to HCl.	CL	L
	POORLY GRADED SAND, grayish brown (10YR 5/2), wet. Sand is fine to medium grained, subrounded to rounded and spherical ("possible beach sand"). Contains approximately 5% silt, 45-50% fine sand, 40%-45% medium sand, and 5% coarse sand. Quartz rich. Reacts to HCl.	SP	L
	LEAN CLAY, brown (7.5YR 5/2) with some reddish hue, moist. Firm. Reacts to HCl.	CL	L
150	SILTY SAND, grayish brown (10YR 5/2) with few lumps of brown clayey material, very moist to wet. With approximately 40-45% non to low plasticity fines. Reacts to HCl.	SM	L
	LEAN CLAY, brown (7.5YR 5/2), moist. Locally laminated with olive gray clay and few sandy stringers. Two inch thick sandy stringers at 153.4 and 154 ft. Reacts to HCl.	CL	L
155 160	POORLY GRADED SAND with SILT, grayish brown (10YR 5/2), wet. Sand is fine to medium grained, subangular to subrounded and spherical. Charcteristically micaceous and immature. Contains 10% silt, 70% fine sand, and 20% medium sand. Composed of approximately 40% quartz, 30% felspathoids, 10-15% biotite, and 15-20% lithics/other. Reacts to HCl.	SP-SM	L
165	LEAN CLAY, brown (10YR 5/3) mottled with gray (2.5Y 6/1) silty material, moist. Locally with trace sand. Firm to hard. At 165.5 - 6-inch thick laminated, deformed evaporite rich horizon (very strong reaction to HCl).	CL	L
	Mottled grayish brown (10YR 5/2) POORLY GRADED SAND with SILT with gray (2.5Y 6/1) LEAN CLAY, moist. Reacts to HCl.	CL/SP-SM	L
	POORLY GRADED SAND with SILT, grayish brown (10YR 5/2), wet. Sand is fine to medium grained, subangular to subrounded and spherical. Charcteristically micaceous and immature. Contains 10% silt, 80% fine sand, and 10% medium sand. Composed of approximately 40% quartz, 30% felspathoids.		

EEC ORIGINAL PKG

Clubhouse

SALTON SEA, CA
Project Number:
061-012 Task 8.1

Sampling Method:
Core Barrel and Hydropunch
Top of Casing Elevation:
TBD

Ground Elevation (NAVD 88):
TBD
Date Started:
2/14/2022

Total Depth (ft
332.0
Date Complet
3/6/2022

Depth (feet)	Description	USCS	Interpreted Facies
		SP	
185	CLAYEY SAND, gray (2.5Y 5/1), moist. Contains 40% low-medium plasticity fines. Matrix supported. Reacts to HCl.	SC	L
	FAT CLAY, brown (7.5YR 5/3) with reddish hue, slightly moist. Relatively massive appearance and homogeneous with faintly developed laminations. Hard, medium to high plasticity, high toughness, and high dry strength. At 187.5 and 188.7 ft - 2-4 inch thick grayish brown (10YR 5/2) SANDY CLAY stringers. Between 190 and 190.5 ft - disturbed zone with mottled sand and clay, locally weakly oxidized. Starting at 191 ft - becomes dryer and stiffer with depth. Reacts to HCl.	CH	L
190			
195			
200			
205			

Clubhouse **SALTON SEA, CA** Project Number: **061-012 Task 8.1**	Sampling Method: **Core Barrel and Hydropunch** Top of Casing Elevation: **TBD**	Ground Elevation (NAVD 88): **TBD** Date Started: **2/14/2022**	Total Depth (ft **332.0** Date Complet **3/6/2022**

Depth (feet)	Description	USCS	Interpreted Facies
		CL/CH	L
225			
	LEAN CLAY, grayish brown (10YR 5/2) to gray (10YR 5/1), moist. Firm with low to medium plasticity fines. Starting at 229.7 ft - occasional 0.5 to 3 inch thick gray (10YR 6/1) wet sandy stringers (at 232, 232.5, 234, and 235 ft bgs). Reacts to HCl.	CL	L
230			
235			
	POORLY GRADED SAND with SILT, grayish brown (10YR 5/2), wet. Sand is fine to coarse grained, subangular to subrounded and spherical. Charcteristically micaceous and immature. Contains 10% silt/clay, 45% fine sand, 35% medium sand, and 10% coarse sand. Composed of approximately 45% quartz, 35% felspathoids, 5-10% biotite, and 10% lithics. Reacts to HCl.	SP-SM	L/Al
	CLAYEY SAND, grayish brown (10YR 5/2), moist. With approximately 35-45% low plasticity fines. Reacts to HCl.	SC	L
240	POORLY GRADED SAND with SILT, grayish brown (10YR 5/2) to light brownish gray (10YR 6/2), wet. Sand is fine to coarse grained, subangular to rounded and spherical. Only the coarse fraction is rounded. Contains 10% silt, 55% fine sand, 25-30% medium sand, and 5-10% coarse sand. Reacts to HCl.	SP-SM	L/Al
	CLAYEY SAND, grayish brown (10YR 5/2), moist. With approximately 35-45% low plasticity fines. Reacts to HCl.	SC	L
	SILTY SAND, grayish brown (10YR 5/2), wet. Sand is fine grained. Contains approximately 20% silt in matrix. Reacts to HCl.	SM	L
	SILTY SAND/CLAYEY SAND, grayish brown (10YR 5/2), moist to wet. Sand is fine grained. Contains approximately 30% low plasticity fines in matrix. Reacts to HCl.	SC/SM	L
	SILTY SAND, grayish brown (10YR 5/2), wet. Sand is fine to medium grained. Contains approximately 15-20% silt in matrix. Reacts to HCl.	SM	L
	LEAN CLAY, brown (10YR 5/3), moist. Firm to hard with low to medium plasticity. Relatively massive		

Clubhouse **SALTON SEA, CA** Project Number: **061-012 Task 8.1**	Sampling Method: **Core Barrel and Hydropunch** Top of Casing Elevation: **TBD**	Ground Elevation (NAVD 88): **TBD** Date Started: **2/14/2022**	Total Depth (ft **332.0** Date Complet **3/6/2022**

Depth (feet)	Description	USCS	Interpreted Facies
260	LEAN CLAY, brown (10YR 5/3), moist. Firm to hard with low to medium plasticity. Contains few partings lined with strongly HCl reactive light gray horizons (evaporite rich). Uncertain if in place.	CL	L
	SILTY SAND, grayish brown (10YR 5/2), wet. Sand is fine to medium grained, subangular to subrounded, and spherical. Characteristically micaceous (biotite) and immature. Contains approximately 10-15% silt, 80% fine sand and 5-10% medium sand. Reacts to HCl. (possible slough)	SM	L
265	LEAN CLAY/FAT CLAY, brown (7.5YR 5/4) with reddish hue, moist. Firm to hard with medium to high plasticity, and high dry strength. Relatively massive appearance and homogeneous with faintly developed laminations. At 264.5 ft - brown (10YR 5/3). The entire unit reacts to HCl.	CL/CH	L
	SILT, brown (10YR 4/3), very moist. Soft and with non to low plastic fines. Reacts to HCl.	ML	L
	Core loss		
	SILTY SAND, grayish brown (10YR 5/2), wet. Sand is fine to medium grained, subangular to subrounded, and spherical. Characteristically micaceous (biotite) and immature. Contains approximately 10-15% silt, 80% fine sand and 5-10% medium sand. Reacts to HCl.	SM	L
270	LEAN CLAY/FAT CLAY, dark grayish brown (10YR 4/2), moist. Firm with medium to high plasticity fines, medium toughness, and high dry strength. Relatively massive appearance and homogeneous with faintly developed laminations. The entire unit reacts to HCl.	CL/CH	L
	SILTY SAND with CLAY, gray (10YR 5/1), wet. Laminated. Sand is fine to medium grained, subangular to subrounded, and spherical. Contains approximately 20% non to low plasticity fines. Reacts to HCl.	SM	L
	LEAN CLAY, brown (10YR 4/3) mottled light gray (10YR 7/1), moist. Reacts to HCl.	CL	L
	SILTY SAND, gray (10YR 5/1), wet (saturated). Sand is fine to medium grained, subangular to subrounded, and spherical. Characteristically micaceous (biotite) and immature. Contains approximately 15-20% silt, 75% fine sand and 5-10% medium sand. Reacts to HCl.	SM	L
275	LEAN CLAY/FAT CLAY, gray (10YR 6/1), slightly moist. Reacts to HCl.	CL/CH	L
	POORLY GRADED SAND, gray (10YR 5/1), wet (saturated). Sand is fine to medium, subangular to subrounded, and immature. Contains approximately 5-10% silt, 75-80% fine sand, and 15% medium sand. Composed of approximately 45% quartz, 20-25% felspathoids, 15% biotite, and 15-20% lithics/other. Reacts to HCl.	SP	L
	LEAN CLAY/FAT CLAY, dark gray (2.5Y 4/1) with olive hue, slightly moist. Firm to hard with medium to high plasticity fines. Characterized by deformed alternating clay and evaporite rich laminae (synsedimentary deformation). Strong reaction to HCl.	CL/CH	L
280	POORLY GRADED SAND with SILT, gray (10YR 5/1), wet. Sand is fine to medium grained, subangular to subrounded and spherical. Sand is fining downward. Contains 10% silt, 80% fine sand, and 10% medium sand. Composed of approximately 40% quartz, 30% felspathoids, 10% biotite, and 20% lithics/other. Reacts to HCl.	SP-SM	L
	LEAN CLAY/FAT CLAY, grayish brown (10YR 5/2), slightly moist. Hard. Reacts to HCl.	CL/CH	L

EEC ORIGINAL PKG

Clubhouse **SALTON SEA, CA** Project Number: **061-012 Task 8.1**	Sampling Method: **Core Barrel and Hydropunch** Top of Casing Elevation: **TBD**	Ground Elevation (NAVD 88): **TBD** Date Started: **2/14/2022**	Total Depth (ft **332.0** Date Complet **3/6/2022**

Depth (feet)	Description	USCS	Interpreted Facies	
295	POORLY GRADED SAND with SILT, grayish brown (10YR 5/2), wet. Sand is fine to medium grained, subangular to subrounded and spherical. Contains 10% silt, 65% fine sand, and 25% medium sand. Composed of approximately 50% quartz, 25% felspathoids, 5% biotite, and 20% lithics/other. Reacts to HCl.	SP-SM	L	
	SILTY SAND, grayish brown (10YR 5/2), very moist to wet. Laminated near the base of this unit. Sand is fine to medium grained, subangular to subrounded, and spherical. Contains 25% silt. Starting at 299 ft - increasing fines. Reacts to HCl.	SM	L	A o A w II
	SANDY LEAN CLAY, mottled grayish brown (10YR 5/2) and brown (7.5YR 5/3), moist. Reacts to HCl.	CL	L	
300	SILTY SAND, grayish brown (10YR 5/2), very moist to wet. Sand is fine to medium grained, subangular to subrounded, and spherical. Contains 25% silt, 65-70% fine sand,and 5-10%. Reacts to HCl.	SM	L	A o ir
	POORLY GRADED SAND with SILT, grayish brown (10YR 5/2), wet. Sand is fine to medium grained, subangular to subrounded and spherical. Contains 10% silt, 80% fine sand, and 10% medium sand. Reacts to HCl.	SP-SM	L	tc w o
	SILTY SAND, grayish brown (10YR 5/2), very moist to wet. Sand is fine to medium grained, subangular to subrounded, and spherical. Contains 20-25% silt, 65-70% fine sand,and 5-10%. Reacts to HCl.	SM	L	
	POORLY GRADED SAND with SILT, grayish brown (10YR 5/2), very moist to wet. Sand is fine to medium grained, subangular to subrounded and spherical. Sand coarsens slightly with depth. Contains 10% silt, 65% fine sand, and 25% medium sand. Composed of approximately 40% quartz, 30% felspathoids, 5-10% biotite, and 20% lithics/other. Reacts to HCl.	SP-SM	L	
305	LEAN CLAY, grayish olive (5Y 4/2), slightly moist. Reacts to HCl.	CL	L	
	POORLY GRADED SAND with SILT, grayish brown (10YR 5/2), very moist to wet. Laminated near top contact. Sand is fine to medium grained, subangular to subrounded and spherical. Contains 10% silt, 75% fine sand, and 15% medium sand. Reacts to HCl.	SP-SM	L	
	LEAN CLAY/FAT CLAY, grayish olive (10Y-5GY) to brown (7.5YR 5/3), slightly moist. Laminated. Reacts to HCl.	CL/CH	L	
	POORLY GRADED SAND with SILT, grayish brown (10YR 5/2), wet. Sand is fine to medium grained, subangular to subrounded and spherical. Contains 10% silt, 70% fine sand, and 20% medium sand. Reacts to HCl.	SP-SM	L	
	LEAN CLAY, sandy in places, mottled brown (7.5YR 5/3) and grayish olive (10Y-5GY), slightly moist. Firm. Reacts to HCl.	CL	L	
310	LEAN CLAY/FAT CLAY, gray (5Y 5/1), slightly moist. Laminated with thin white evaporite deposits. Firm to hard. Reacts to HCl.	CL/CH	L	
	SILTY SAND, grayish brown (10YR 5/2), very moist to wet. Sand is fine to medium grained, subangular to subrounded, and spherical. Contains 20-25% silt, 65-70% fine sand,and 5-10%. With approximately 5% biotite. Reacts to HCl.	SM	L	
	POORLY GRADED SAND with SILT, grayish brown (10YR 5/2), very moist to wet. Sand is fine to medium grained, subangular to subrounded and spherical. Characteristically micaceous (biotite 15%) and immature. Contains 10% silt, 75% fine sand, and 15% medium sand. Reacts to HCl.	SP-SM	L	
	SILTY SAND, grayish brown (10YR 5/2), very moist to wet. Sand is fine to medium grained, subangular to subrounded, and spherical. Contains 20% silt, 70% fine sand, and 10%. Reacts to HCl.	SM	L	
315	POORLY GRADED SAND, grayish brown (10YR 5/2), wet. Sand is fine to medium grained, subangular to rounded, and spherical. The coarser fraction is rounded. Composed of approximately 40-45% quartz, 25-30% felspathoids, 5% biotite, and 10-20% lithics/other. "Possible beach sand?". Reacts to HCl.	SP	L	
	CLAYEY SAND/SILTY SAND, grayish brown (10YR 5/2) to brown (10YR 5/3), very moist. Fine to medium grained sand with approximately 30% low plasticity fines in the matrix. Reacts to HCl.	SM/SC	L	
	SANDY SILT, clayey in places, brown (10YR 4/3), moist. With approximately 45% fine sand. Reacts to HCl.			

EEC ORIGINAL PKG

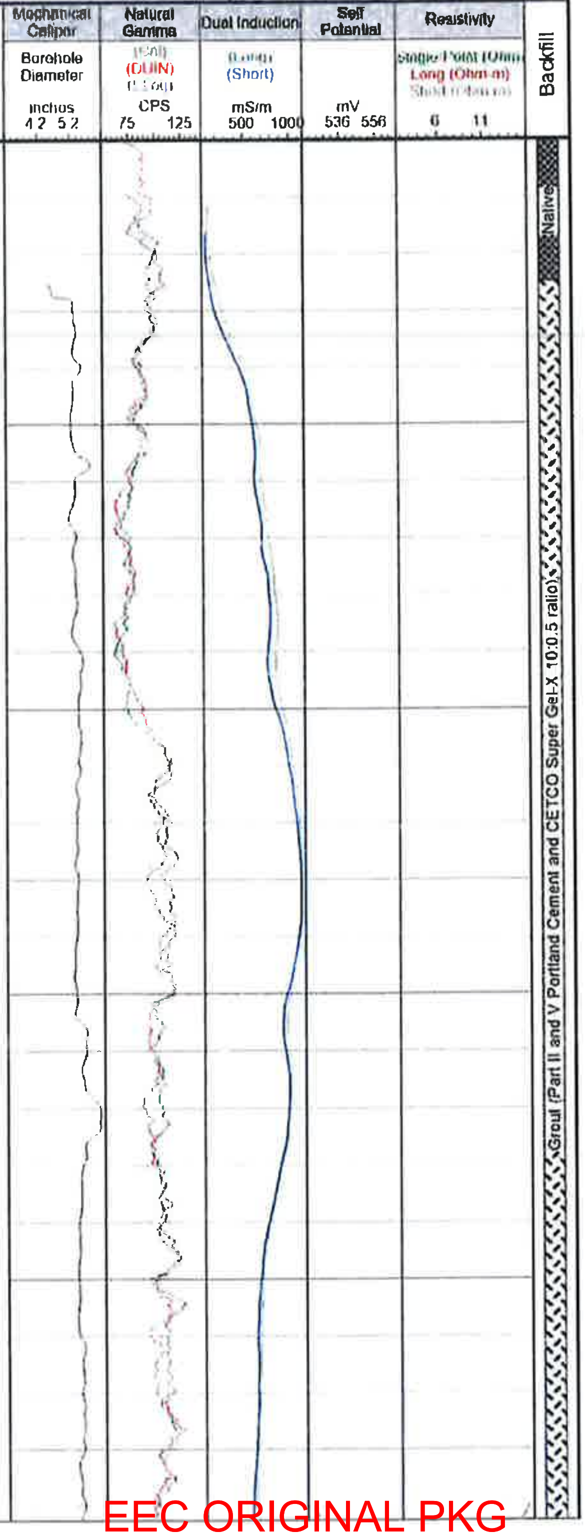
FORMATION ENVIRONMENTAL

Log of Boring Completion: IID20200508_W12_CH_001_BH

Page: 1 of 2

Club House **SALTON SEA, CA**	Drilling Company: **Cascade Drilling, Upland, CA**	Logged By: **Hank Dickey**	Latitude (decimal degrees): **33.3332**
	Drilling Method: **Mud Rotary**	Borehole Diameter (inches): **4.75**	Longitude (decimal degrees): **-115.9525**
Project Number: **061-012 Task 8.3**	Sampling Method: **Hand Auger, Terzaghi Split Spoon (Standard Penetration, 2" O.D., 1.375" I.D.), Cuttings**	Ground Elevation (NAVD 88): **-220.94**	Total Depth (ft bgs): **101.5**
	Top of Casing Elevation: **N/A**	Date Started: **5/7/2020**	Date Completed: **5/8/2020**

Depth (feet)	Description	USCS	Sample Type (Blow Count) (% Recovery)
0	SAND, well graded, ~75% subangular, medium grained, ~25% angular, coarse, (~60% quartz, ~30% feldspathoid, ~10% micaceous), unconsolidated, very pale brown (10YR 7/4), dry		
2			
4		SW	Hand Augur
6			
8			
10	First Water SAND, poorly graded, fine grained (~45% quartz, ~40% feldspathoid, ~10% micaceous), ~5% fines, brown (10YR 4/3), wet	SP	Split Spoon (5/6/7) (60%)
12	SAND, well graded, ~50% subangular, fine grained, ~20% subangular, medium grained, ~30% angular, very coarse grained, (~45% quartz, ~30% feldspathoid, ~25% mafic), yellowish brown (10YR 5/4)		
14			Cuttings
16		SW	
18			
20	CLAY, lean, yellowish brown (10YR 3/6), ~1 mm reduced black specs		Split Spoon (11/9/8) (55%)
22	~90% lean clay and gel, ~10% subrounded, coarse grained sand, light yellowish brown (10YR 6/4)		
24		CL	Cuttings
26			
28			
30	CLAY, fat, tight, high plasticity, dark yellowish brown (10YR 4/6), ~1 mm redox enclaves, ~1-5 mm vertically oriented lenses of fine sand	CH	Split Spoon (5/8/10) (100%)
32	SANDY CLAY, ~60% clay, ~40% subangular, coarse sand, light yellowish brown (10YR 6/4)		
34			Cuttings
36		CL	
38			
40	CLAY, fat, high plasticity, dark yellowish brown (10YR 4/6), isolated lenses of very fine sand (<1 mm in thickness)	CH	Split Spoon (4/6/11) (100%)
42	CLAY, ~90% lean clay, ~10% subrounded, coarse grained sand, yellowish brown (10YR 5/4)		
44			Cuttings
46		CL	
48			

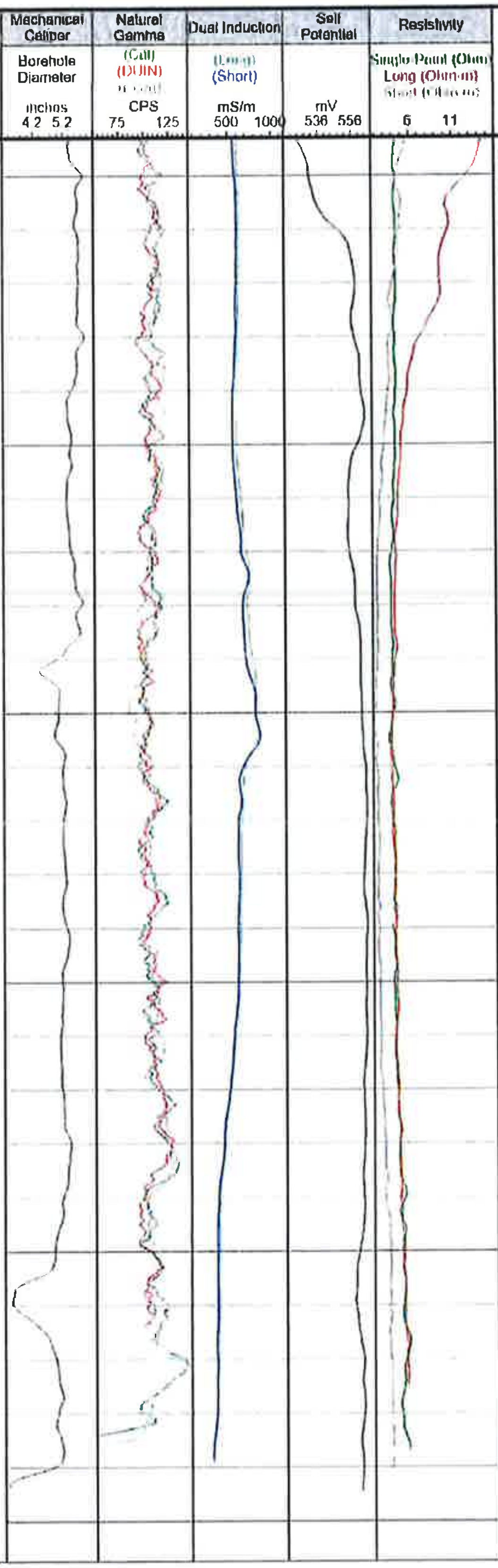


EEC ORIGINAL PKG

FORMATION
ENVIRONMENTAL

Log of Boring Completion: IID20200508_W12_CH_001_BH

Depth (feet)	Description	USCS	Sample Type (Blow Count) (% Recovery)	Backfill
50			Split Spoon (4/8/13) (66%)	Grout (Part II and V Portland Cement and CETCO Super Gel-X 10:0.5 ratio)
52	SAND, subangular, poorly graded, medium grained, (~55% quartz, ~30% feldspathoid, ~15% micaceous), unconsolidated, light yellowish brown (10YR 6/4)			
54	Coarse grained, (~55% quartz, ~25% feldspathoid, ~10% micaceous, ~10% 1-2 mm gastropod shells), yellowish brown (10YR 5/4)		Cuttings	
56		SP		
58				
60	CLAY, fat, tight, high plasticity, very dark grey (2.5Y 3/1), periodic <1 mm fine sand laminations		Split Spoon (5/6/11) (100%)	
62	Color change to brown (10YR 5/3)			
64		CH	Cuttings	
66				
68				
70	CLAY, lean, medium plasticity, dark grey (2.5Y 4/1), ~1-2 mm reduced enclaves		Split Spoon (0/6/8) (100%)	
72	<5% subangular, coarse grained sand, grey (2.5Y 5/1)			
74			Cuttings	
76				
78				
80	Color change to dark grey (2.5Y 4/1)	CL	Split Spoon (0/7/9) (100%)	
82	Color change to greyish brown (2.5Y 5/2)			
84			Cuttings	
86				
88				
90	CLAY, fat, tight, high plasticity, dark greyish brown (10YR 4/2), 2" sandy clay layers at ~90.3' and ~90.8' (~25% subangular, fine grained sand), dark grey (2.5Y 4/1), sparse ~1-2 mm reduced enclaves		Split Spoon (8/10/11) (100%)	
92				
94	Color change to grey (2.5Y 5/1)	CH	Cuttings	
96				
98				
100	SANDY CLAY, ~80% lean clay, ~20% fine grained sand, thin layers of silty sand	CL	Split Spoon (14/21/20) (100%)	



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.: Open 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

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
DIVISION OF WATER RESOURCES
P. O. BOX 1079
MENTO 5, CALIFORNIA

STATE OF CALIFORNIA
DEPARTMENT OF PUBLIC WORKS
DIVISION OF WATER RESOURCES

SHEET 1

Do Not Fill In
State Well No. 10S/10E-32J
Other Well No. ....
Region 7

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

1/4/6

(1) Driller:
Name F. L. Merrifield
Address Rt. 1, Box 255
Thermal, California
License No. 118658 Classification C 57

(2) Proposed use or uses *(check)*:
Domestic ☐ Municipal ☐
Irrigation ☐ Industrial ☐
Domestic and Irrigation ☒ Test well ☐
Other

(3) Equipment used *(check)*:
Rotary ☒
Cable ☐
Dug well ☐
Other

(4) Type of work *(check)*:
New well ☒ Reconditioning of well ☐
Deepening existing well ☐

(5) Well log:
Total depth of well 217 ft.

Give details of formations penetrated, such as silt, peat, muck, sand, gravel, clay, shale, sandstone, hardpan, rock. Include size of gravel (diameter) and sand (fine, medium, coarse), color of material, structure (loose, packed, cemented, soft, hard, brittle).

Depth From Ground Surface				
0	ft. to	75	ft.	Red clay
75	" "	190	"	Blue clay
190	" "	205	"	Shale, broken clay balls
205	" "	217	"	Blue clay

MICROFILMED

If additional space is required, continue on DWR Form No. 246—Supplement, and attach to respective report copies.

(6) Casing left in well:

LENGTH FT.	DIAMETER INCHES	SINGLE, DOUBLE, WELDED, OTHER	LBS. PER FOOT OR GAGE OF CASING	SEATING BELOW GROUND SURFACE, FT.
217	6"	Welded	10 gage	217

134

Type and size of shoe or well ring .... Welded joints—☒ Yes ☐ No

EEC ORIGINAL PKG

File Original, Duplicate and Triplicate with the
DIVISION OF WATER RESOURCES
P. O. BOX 1079
SACRAMENTO 5, CALIFORNIA

SHEET 2

Do Not Fill In

State Well No.
Other Well No.
Region 7

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

---

(7) Perforations: /

Type of perforator used Torch 12-60

Perforated 195 ft. to 217 ft. Hole size 1/8"x6" No. of holes 160 7

" " " " " " " "

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(8) Water levels:

Depth at which water first encountered ft.

Depth to water before perforating ft.

Depth to water after perforating 18 ft.

Note any change in water level while drilling

(9) Well pumping test:

Date of test 8-11-50 By whom Self

Depth to water when test started 18 ft.

G.P.M. at beginning of test Not known

Drawdown from standing level 140 ft.

G.P.M. at completion of test Approximately 10 min. per hr

Drawdown at completion of test Same ft.

Length of time tested 3 hrs

Temperature of water Not known

Was gas present in water? ☐ Yes ☒ No

---

(10) General:

Was well gravel packed? No 2 Size of rock / Thickness of pack

Was a surface sanitary seal provided? Yes

Were any strata sealed against pollution? ☐ Yes ☒ No If yes, attach detailed description. 2

Strata sealed

Was analysis made of water? ☐ Yes ☒ No If yes, attach copy.

Was electric log made of well? ☐ Yes ☐ No If yes, attach copy.

If well abandoned, was it plugged and sealed?

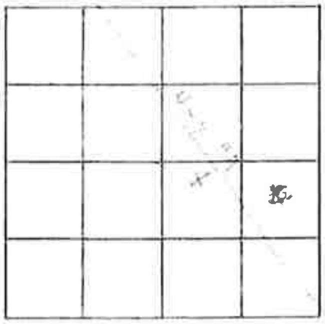
Method of plugging and sealing

MICROFILMED

---

(11) Location: Imperial Count, N½ NW¼ 32

North



1 MILE

Section No. 32

Township 10X S

Range 10E

Base & Meridian S.B.M.

Show location of well in Section, thus (X)

Distances to section lines from well, N or S 2640 ft.

and E or W 1825 ft.

Show location of nearest known well, thus (O)

Distance to nearest known well Not known ft.

(12) Time of work:

Work started date 7-17-50 Completed date 8-28-50

Date of this report 9-23-50

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

[SIGNED] E. L. Greenfield
Well Driller

By Mrs. E. L. Greenfield

License No. 118658 Classification C 57

Dated April 24, 1950 , 1950

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No. 7
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
Nº 27702
State Well No. 9S/9E
Other Well No.

(2) LOCATION OF WELL:

County Imperial   Owner's number, if any—

R. F. D. or Street No.

Sun Dial Beach   Highway 99
Legal Description - North 15 Acres
of the N.W. ¼ of Sect. 23 R 9
T 9 SBBM

(3) TYPE OF WORK (*check*):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From 0 ft. to 166 ft. 3" Diam. 1/4" Gage or Wall

If gravel packed

Diameter of Bore   from ft.   to ft.

Type and size of shoe or well ring None

Size of gravel:

Describe joint Threaded & Coupled

(7) PERFORATIONS:

Type of perforator used

Size of perforations 1/8" in., length, by 6" in.

From ft.	to ft.	Perf. per row	Rows per ft.
104'	166'	4	2

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 104' ft.

Were any strata sealed against pollution? ☒ Yes ☐ No If yes, note depth of strata

From 0' ft. to 104' ft.

Method of Sealing Clay and mixed cuttings

(9) WATER LEVELS:

Depth at which water was first found 6' ft.

Standing level before perforating Artesian ft.

Standing level after perforating Artesian ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No If yes, by whom?

Yield: gal./min. with ft. draw down after hrs.

Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 172 ft. ft. Depth of completed well 166 ft.

Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0'	22'	Surface(fine sand, grave mixed)
22'	67'	Clay with Gravel streak
67'	131'	In and out clay and fine sand.
131'	151'	Gravel and sand mixed with thin clay streaks
151'	172'	Fine and medium sand mixed with thin clay streaks.

MICROFILMED

Work started January 16 1957 Completed January 18 19 5

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME MOFFITT & WELLS
(Person, firm, or corporation) (Typed or printed)

Address Box 312
Thermal, California

[SIGNED] James H. Moffitt Partner
Well Driller

License No. 160605 Dated January 24, 1957

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No. 7
(Insert appropriate number)

WATER WELL DRILLERS RE[illegible]RT
(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
Nº 27705
State Well No.
Other Well No.

(2) LOCATION OF WELL:

County Imperal   Owner's number, if any—

R. F. D. or Street No. Well located 500' South of Helena Cafe y

(3) TYPE OF WORK (*check*):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From 0 ft. to 182 ft. Diam. 3" Gage or Wall std.

If gravel packed: Diameter of Bore / from ft. / to ft.

Type and size of shoe or well ring

Size of gravel:

Describe joint

(7) PERFORATIONS:

Type of perforator used Torch cut

Size of perforations 6" by 1/8" in., length, by in.

From 140 ft. to 182 ft. Perf. per row 4-1 Rows per ft.

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 140 ft.

Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata

From 140 ft. to ft.

Method of Sealing Cuttings & slurry

(9) WATER LEVELS:

Depth at which water was first found 6' ft.

Standing level before perforating ft.

[illegible]ding level after perforating A rtis ian ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?

Yield: gal./min. with ft. draw down after hrs.

Temperature of water   Was a chemical analysis made? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 204 ft. Depth of completed well 182 ft.

Formation: *Describe by color, character, size of material, and structure.*

0 ft. to	22 ft.	surface fine sand mixed with clay streaks
22	50	clay with medium sand streaks
50	104	clay with fine sand strea
104	115	fine sand
115	140	clay
140	182	fine sand with streaks
182	197	clay
197	203	fine sand
203	204	clay

MICROFILMED

Work started April 17 1957   Completed April 19 1957

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME MOFFITT & WELLS
(Person, firm, or corporation) (Typed or printed)

Address P.O.Box 312 Thermal California

[SIGNED] Lloyd W. Wells
Well Driller

License No. 160605   Dated May 9, 1957

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
Nº 27706
State Well No. 9S/9E-25
Other Well No.

(2) LOCATION OF WELL:

County Imperal Owner's number, if any—

R. F. D. or Street No.

Section 25, 1 ½ mi. east of hiway 99.
600 ft west & 300 ft South of the center point of Sec. 25, T 9 S R 9E

(3) TYPE OF WORK (*check*):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☐ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☒ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	244	3"	std.

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring

Size of gravel:

Describe joint

(7) PERFORATIONS:

Type of perforator used Torch cut

Size of perforations 1/8 in., length, by 6" in.

From ft. to # 1 ft. Perf. per row 4 Rows per ft.

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 160 ft.

Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata

From 0 ft. to 160 ft.

Method of Sealing Slurry and cuttings from well

(9) WATER LEVELS:

Depth at which water was first found Artes ian ft.

Standing level before perforating ft.

Standing level after perforating ft.

(10) WELL TESTS:

Was a pump test made? ☒ Yes ☐ No If yes, by whom?

Yield: gal./min. with ft. draw down after hrs.

Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

(11) WELL LOG:

Total depth 244 ft. Depth of completed well 2 44

Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0	42	Fine to corse sand mixed
42	60	Medium sand with clay stk
60	83	fine sand with clay stks.
83	160	Blue clay with fine sand stk
160	165	Shale
165	222	In and out clay and fine sand
222	224	sand stone
224	244	Clay and shale with fine sand streaks

MICROFILMED

Work started April 28 19 , Completed May 1. 19

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME MOFFITT & WELLS (Person, firm, or corporation) (Typed or printed)

Address Po Box 312 Thermal California

(SIGNED) James H. Moffitt

License No. 160605 Dated May 13, 19 57

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
Nº 27707
State Well No. 9S/9E-25
Other Well No.

(2) LOCATION OF WELL:

County: Imperial   Owner's number, if any—
R. F. D. or Street No. Section 25, 1½ mi. eas t of
hiway 99.
600 ft East and 300 ft north of
the center point of Sec 25, T 9 S, R 9 E.

(3) TYPE OF WORK (check):

New well ☒   Deepening ☐   Reconditioning ☐   Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒   Industrial ☐   Municipal ☐
Irrigation ☐   Test Well ☐   Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒   DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	213	9"	std.

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring
Size of gravel:
Describe Joint

(7) PERFORATIONS:

Type of perforator used Torch cut
Size of perforations 1/8 in., length, by 6" in.
From 1 ft. to ft. Perf. per row 4 Rows per ft.

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth ft.
Were any strata sealed against pollution? ☐ Yes ☐ No If yes, note depth of strata
From 0 ft. to 140 ft.
Method of Sealing Slurry and cuttings from well

(9) WATER LEVELS:

Depth at which water was first found Artesian ft.
Standing level before perforating ft.
Standing level after perforating ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water   Was a chemical analysis made? ☐ Yes ☐ No

(11) WELL LOG:

Total depth 237 ft. Depth of completed well 213 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0	22	Surface sand
22	64	Clay
82	85	Clay with sand streaks
85	128	Blue clay
128	134	Medium and fine sand mixed
134	145	Clay
145	160	Clay with fine streaks
160	184	IN and out clay medium and fine sand
184	200	Clay with fine medium sand and gravel mixed
200	224	Clay with gravel mixed
224	237	Clay and shale with gravel streaks

MICROFILMED

Work started May 13 19   Completed May 15 19

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Moffitt & Wells
(Person, firm, or corporation) (Typed or printed)
Address P.O. Box 312
Thermal California
[SIGNED] Lloyd W. Wells
Well Driller
License No. 160605   Dated May 16 1957

EEC ORIGINAL PKG

Formation ID 41

DUPLICATE

File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.________
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
Nº 27708

State Well No. 9S/9E-23

Other Well No.

(2) LOCATION OF WELL:

County Imperial

Owner's number, if any

R. F. D. or Street No.

Salton sea

Lot 24 Block 10, Unit 4 of Salton Sea Beach Estates subdivision in Sec 23, T9S R9E approx 1000 ft North of Brawley ave & fronting on Santa Rosa Ave.

(3) TYPE OF WORK (*check*):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage of Wall
0	186	3	[illegible]

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring

Size of gravel:

Describe joint Torch-cut- Threaded and coupled

(7) PERFORATIONS:

Type of perforator used Torch cut

Size of perforations 1/8 in., length, by 6" in.

From ft.	to ft.	Perf. per row	Rows per ft.
143	186	3	1

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☐ Yes ☐ No To what depth 138 ft.

Were any strata sealed against pollution? ☒ Yes ☐ No If yes, note depth of strata

From 0 ft. to 138 ft.

Method of Sealing slurry

(9) WATER LEVELS:

Depth at which water was first found ft.

Standing level before perforating 4 ft.

Standing level after perforating surface artesian ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No If yes, by whom?

Yield: gal./min. with ft. draw down after hrs.

Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 210 ft. Depth of completed well 200 ft.

Formation: *Describe by color, character, size of material, and structure.*

ft.	to ft.	
0	22	surface (course sand and gravel)
22	39	med. & course sand
39	65	clay with med sand str
65	76	clay
76	82	clay and gravel
82	119	soft clay with fine sand streaks
119	140	soft clay
140	144	fine sand to gravel
144	159	clay
159	164	med and fine sand
164	210	clay with thin gravel streaks

MICROFILMED

Work started June 5 1957 Completed June 7 19

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME moffitt and wells
(Person, firm, or corporation) (Typed or printed)

Address box 312 Thermal California

[SIGNED] Lloyd W. Wells
Well Driller

License No. [illegible] Dated June 11, 1957

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No. 7
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
Nº 27717
State Well No. 9S/11E-23
Other Well No.

(2) LOCATION OF WELL:

County Imperial   Owner's number, if any—
R. F. D. or Street No. Salton Sea Area

E ½ of 5 acres of 10 acres of
NW ¼ of NW¼ Sec.23 R 9E, T.9S

(3) TYPE OF WORK (*check*):

New well ☒   Deepening ☐   Reconditioning ☐   Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☒   Industrial ☐   Municipal ☐
Irrigation ☐   Test Well ☐   Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒   DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	194	2"	
3½"		std tubing	

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring
Size of gravel:
Describe joint Threaded

(7) PERFORATIONS:

Type of perforator used Acetylene Torch
Size of perforations in., length, by in.

From ft.	to ft.	Perf. per row	Rows per ft.
145	194	4	4

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☐ Yes ☐ No X   To what depth ft.
Were any strata sealed against pollution? ☐ Yes ☐ No   If yes, note depth of strata
From ft. to ft.

Method of Sealing Rotary mud

(9) WATER LEVELS:

Depth at which water was first found Flowing ft.
Standing level before perforating ft.
Standing level after perforating ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☐ No X   If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water   Was a chemical analysis made? ☐ Yes ☐ No

(11) WELL LOG:

Total depth 203 ft.   Depth of completed well 194 ft.

Formation: *Describe by color, character, size of material, and structure.*

ft.	to ft.	
0	43	Fine,med,course ~~m~~mix w/clay stk
43	63	Fine,med,course mix w/clay stk
63	83	Fine,med,course mix w/clay stk
83	103	Fine,med,course mix w/clay stk
103	123	Fine,med,course mix w/clay stk
123	143	Fine to med,corse mix
143	183	Fine,med to course mix w/clay
183	203	Fine,med to course mix w/clay

MICROFILMED

Work started 10/23/58 19   Completed 10/25/58 19

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Moffitt & Wells
(Person, firm, or corporation) (Typed or printed)

Address P.O.Box 312.
Thermal, Calif.

[SIGNED] Lloyd W. Wells
Well Driller

License No. 160605   Dated 12/2/58 19

EEC ORIGINAL PKG

[illegible]

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No. 7
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
№ 27721
State Well No. 9S/9E-9
Other Well No.

(2) LOCATION OF WELL:

County Imperial Owner's number, if any—
R. F. D. or Street No.
NW 1/4 of Sec 9 T. 9S R. 9E
S B B & M

(3) TYPE OF WORK (check):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (check):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
~~0xx318x~~			
0	118	8"	
118	318	6"	

Type and size of shoe or well ring
Describe joint Welded

If gravel packed

Diameter of Bore	from ft.	to ft.
15"		

Size of gravel: Pea

(7) PERFORATIONS:

Type of perforator used Torch cut
Size of perforations 1/8" in., length, by in.

From ft.	to ft.	Perf. per row	Rows per ft.
160	253		
291	318		

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth ft.
Were any strata sealed against pollution? ☒ Yes ☐ No If yes, note depth of strata
From ft. to ft.
Method of Sealing Cutting slurry

(9) WATER LEVELS:

Depth at which water was first found 44' ft.
Standing level before perforating ft.
[illegible]nding level after perforating ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☐ No

(11) WELL LOG:

Total depth 318 ft. Depth of completed well 318 ft.
Formation: *Describe by color, character, size of material, and structure:*

ft.	to ft.	
0	42	Surface sand
42	44	Clay
44	50	Fine sand
50	65	Clay
65	70	Med sand
70	91	Clay
91	155	Clay & fine sand
155	183	Course sand
183	204	Small gravel
204	253	Small gravel w/clay
253	291	Clay w/fine sand stk
291	316	Course sand
316	318	Clay

MICROFILMED

Work started 2/5 1959 Completed 2/7 19 5

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Moffitt & Wells
(Person, firm, or corporation) (Typed or printed)
Address P.O.Box 312
Thermal, Calif.
[SIGNED] James M Moffitt
Well Driller
License No. 160605 Dated 2/17, 1959

EEC ORIGINAL PKG

ORIGINAL
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No. 7
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
№ 29932
State Well No. 9S/1E - 27
Other Well No.

(2) LOCATION OF WELL:

County Imperial Owner's number, if any—

R. F. D. or Street No.

So. West corner of lot 10 in the Salton Sea Oasis Tract which is located so. one half of Sec.27 T9S R 9E.

(3) TYPE OF WORK (*check*):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From	ft. to	ft.	Diam.	Gage or Wall
0	200			10ga.

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring

Size of gravel:

Describe joint butt weld

(7) PERFORATIONS:

Type of perforator used Torch

Size of perforations 1/8 in., length, by 5 in.

From 120 ft. to 200 ft. 4 Perf. per row 2 Rows per ft.

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth ft.

Were any strata sealed against pollution? ☒ Yes ☐ No If yes, note depth of strata

From ft. to ft.

Method of Sealing CLAY SLURRY

(9) WATER LEVELS:

Depth at which water was first found 72' ft.

Standing level before perforating ft.

Standing level after perforating 72' ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?

Yield: gal./min. with ft. draw down after hrs.

Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

(11) WELL LOG:

Total depth ft. Depth of completed well

Formation: *Describe by color, character, size of material, and structure.*

0	ft. to	45	ft.	rocks and surfice sand
45	"	58	"	fine to coarse sand with clay streak
58	"	76	"	clay (red)
76	"	85	"	cemented sand
85	"	87	"	clay(red)sand
87	"		"	cemented sand
87	"	116	"	cemented sand
116	"	128	"	coarse (free)
128	"	135	"	fine to coarse sand with clay streak
135	"	160	"	fine to coarse
160	"	185	"	fine to coarse (tight some free
185	"	187	"	blue clay
187	"	204	"	blue fine to coarse sand.

MICROFILMED

Work started Sept. 26 1959. Completed Sept. 30. 19 5

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME Moffitt & Wells
(Person, firm, or corporation) (*Typed or printed*)

Address Box 312
Thermal, California

[SIGNED] Lloyd A. Wells
Well Driller

License No. 160605 Dated , 19

EEC ORIGINAL PKG

ORIGINAL
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.________
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
Nº 29947
State Well No. 9S/9E-27
Other Well No.________

(2) LOCATION OF WELL:

County Imperial Owner's number, if any—
R. F. D. or Street No.
Parcel 14 Sec. 27 T-9S R-9E
S.B.B.M.

(3) TYPE OF WORK (*check*):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐
If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
0	202	6 5/8	10

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring
Size of gravel:
Describe joint Welded

(7) PERFORATIONS:

Type of perforator used Torch Cut
Size of perforations 6" in., length, by 1/8" in.

From ft.	to ft.	Perf. per row	Rows per ft.
142	202	6	1

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 142 ft.
Were any strata sealed against pollution? ☒ Yes ☐ No If yes, note depth of strata
From 0 ft. to 142 ft.
Method of Sealing Slurry

(9) WATER LEVELS:

Depth at which water was first found 142 ft.
Standing level before perforating ft.
Standing level after perforating ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: gal./min. with ft. draw down after hrs.
Temperature of water Was a chemical analysis made? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 20 ft. Depth of completed well 202 ft.
Formation: *Describe by color, character, size of material, and structure.*

ft.	to ft.	
0	45	Boulders & Sand
45	67	Clay with rock nests
67	89	Rocks with thin clay stl
89	111	Cemented sand and
		conglomerated,mixed
111	133	Gravel & boulders, thin
		clay stk
133	155	Sand, gravel and rock,
		tight
155	177	Gravel & rock, tight
177	202	Rock & gravel, mixed,
		loose.

MICROFILMED

Work started Sept. 9 1960 Completed Sept. 20 1960

WELL DRILLER'S STATEMENT:
This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME MOFFITT & WELLS
(Person, firm, or corporation) *(Typed or printed)*
Address Box 312
Thermal, Calif.
[SIGNED] James W. Moffitt
Well Driller
License No. 160605 Dated 9/26, 1960

EEC ORIGINAL PKG

ORIGINAL
File with DWR

AUG 21 1969

WATER WELL DRILLERS REPORT

(Sections 7079, 7080, 7081, 7082, Water Code)

THE RESOURCES AGENCY OF CALIFORNIA
DEPARTMENT OF WATER RESOURCES

Do Not Fill In

No. 34721

State Well No.

Other Well No.

(2) LOCATION OF WELL:

County Imperial Owner's number, if any

Township, Range, and Section Twp. 9S Range 9E

Distance from cities, roads, railroads, etc. Sec. 27. S.B.B.M? NW¼ NE¼

(3) TYPE OF WORK (*check*):

New Well ☒ Deepening ☐ Reconditioning ☐ Destroying ☐

If destruction, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Other ☐

(6) CASING INSTALLED:

STEEL: OTHER:

SINGLE ☒ DOUBLE ☐

From ft.	To ft.	Diam.	Gage or Wall	If gravel packed: Diameter of Bore	From ft.	To ft.
0	220	6-5/8"		Gravel packed in area of perforations.		

Size of shoe or well ring: Size of gravel:

Describe joint

(7) PERFORATIONS OR SCREEN:

Type of perforation or name of screen

From ft.	To ft.	Perf. per row	Rows per ft.	Size in. x in.
110	220	6 rows x 1/8 x 2½		

(8) CONSTRUCTION:

Was a surface sanitary seal provided? Yes ☐ No ☒ To what depth ft.

Were any strata sealed against pollution? Yes ☒ No ☐ If yes, note depth of strata

From 0 ft. to 110 ft.

From ft. to ft.

Method of sealing Drilling mud

(9) WATER LEVELS:

Depth at which water was first found, if known Rotary ft.

Standing level before perforating, if known " ft.

Standing level after perforating and developing ft.

(10) WELL TESTS:

Was pump test made? Yes ☐ No ☐ If yes, by whom?

Yield: gal./min. with ft. drawdown after hrs.

Temperature of water Was a chemical analysis made? Yes ☐ No ☐

Was electric log made of well? Yes ☐ No ☒ If yes, attach copy

(11) WELL LOG:

Total depth 220 ft. Depth of completed well 220 ft.

Formation: *Describe by color, character, size of material, and structure*

Med. Sand 0 ft. to	Rock, clay sand	60 ft.
Rock clay sand	Coarse sand	90
Coarse sand	Coarse sand	100
Coarse sand	Boulders clay & coarse sand	160
Boulders clay &c	Rock patches course sand & clay	190
Rock patches &c	Coarse sand	220

Work started May 1 1969, Completed May 14 69

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME MANN BROS.
(Person, firm, or corporation) (Typed or printed)

Address P.O.Box 755, Thermal, Calif.

[SIGNED] F. Mandeville by
(Well Driller)

License No. 148880 C57 Dated Aug. 15, 1969

SKETCH LOCATION OF WELL ON REVERSE SIDE

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In

Nº 59077

State Well No. 9S/9E-23N

Other Well No.

(2) LOCATION OF WELL:

County IMPERIAL Owner's number, if any—

R. F. D. or Street No

SW¼ of SW¼ of SEC 23 T 9S
R 9E SBBM

(3) TYPE OF WORK (*check*):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft.	to ft.	Diam.	Gage or Wall
			1/4
0	216		

If gravel packed

Diameter of Bore	from ft.	to ft.

Type and size of shoe or well ring

Size of gravel:

Describe joint

(7) PERFORATIONS:

Type of perforator used split

Size of perforations 5/32 in., length, by 4 in.

From ft.	to ft.	Perf. per row	Rows per ft.
194	216		

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 194 ft.

Were any strata sealed against pollution? ☒ Yes ☐ No If yes, note depth of strata 194

From ft. to ft.

Method of Sealing clay

(9) WATER LEVELS:

Depth at which water was first found 4 ft.

Standing level before perforating flowing ft.

Standing level after perforating flowing ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?

Yield: 20 gal./min. with no ft. draw down after hrs.

Temperature of water 80° Was a chemical analysis made? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 216 ft. Depth of completed well 216 ft.

Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0	16	surf. sand
16	20	clay
20	41	fine to coarse sand
41	58	fine to coarse sand with blue clay
58	70	clay--red
70	160	sand & clay
160	172	fine sand with clay
172	190	med. to coarse sand
190	220	clay
220	241	med. sand

MICROFILMED

Work started 5/29 1960 Completed 5/31 1960

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME GAYLORD & GAYLORD WELL DRILLING
(Person, firm, or corporation) (Typed or printed)

Address P. O. BOX [illegible]656
THERMAL, CALIFORNIA

[SIGNED] *(Well Driller)*

License No. Dated 1960

EEC ORIGINAL PKG

DUPLICATE
File Original, Duplicate and Triplicate with the
REGIONAL WATER POLLUTION
CONTROL BOARD No.
(Insert appropriate number)

WATER WELL DRILLERS REPORT

(Sections 7076, 7077, 7078, Water Code)

STATE OF CALIFORNIA

Do Not Fill In
No. 59078
State Well No. 9S/9E-23D
Other Well No.

(2) LOCATION OF WELL:

County IMPERIAL Owner's number, if any—
R. F. D. or Street No.
NW¼ NW¼ OF SEC 23
T9S R9E SBBM

(3) TYPE OF WORK (*check*):

New well ☒ Deepening ☐ Reconditioning ☐ Abandon ☐

If abandonment, describe material and procedure in Item 11.

(4) PROPOSED USE (*check*):

Domestic ☒ Industrial ☐ Municipal ☐
Irrigation ☐ Test Well ☐ Other ☐

(5) EQUIPMENT:

Rotary ☒
Cable ☐
Dug Well ☐

(6) CASING INSTALLED:

SINGLE ☒ DOUBLE ☐

From ft. to	ft.	Diam.	Gage or Wall
0	202		1/4

If gravel packed

Diameter of Bore	from ft.	to ft.
8 7/8		

Type and size of shoe or well ring
Size of gravel:
Describe joint

(7) PERFORATIONS:

Type of perforator used split
Size of perforations 5/32 in., length, by 4 in.

From ft. to	ft.	Perf. per row	Rows per ft.
172	202	4	4

(8) CONSTRUCTION:

Was a surface sanitary seal provided? ☒ Yes ☐ No To what depth 172 ft.
Were any strata sealed against pollution? ☒ Yes ☐ No If yes, note depth of strata 172
From ft. to ft.
Method of Sealing clay

(9) WATER LEVELS:

Depth at which water was first found 4 ft.
Standing level before perforating Flowing ft.
[illegible]nding level after perforating Flowing ft.

(10) WELL TESTS:

Was a pump test made? ☐ Yes ☒ No If yes, by whom?
Yield: 20 gal./min. with no ft. draw down after hrs.
Temperature of water 80° Was a chemical analysis made? ☐ Yes ☒ No

(11) WELL LOG:

Total depth 202 ft., Depth of completed well 202 ft.

Formation: *Describe by color, character, size of material, and structure.*

ft. to	ft.	
0	60	sur. sand and clay
60	70	fine sand
70	82	med & med coarse
82	120	fine sand and clay
120	136	fine to med. coarse with clay
136	147	med to coarse sand with clay strk
147	157	clay
157	202	fine to coarse sand with clay strk

MICROFILMED

Work started 6/21 1960 Completed 6/8 1960

WELL DRILLER'S STATEMENT:

This well was drilled under my jurisdiction and this report is true to the best of my knowledge and belief.

NAME GAYLER & GAYLER WELL DRILLING CO.
(Person, firm, or corporation) (Typed or printed)
Address P. O. BOX 656
THERMAL, CALIFORNIA

[SIGNED] Harold E. Gayler
Well Driller

License No. 191670 Dated 6/28 1960

EEC ORIGINAL PKG

/ Formation ID 56

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR 09S09E21

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0111199

Page 1 of 1

Owner's Well Number #2

Date Work Began 03/25/2010 Date Work Ended 5/14/2010

Local Permit Agency Imperial County Planning and Building Department

Permit Number 52771 Permit Date 3/25/01

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ● Vertical ○ Horizontal ○ Angle Specify

Drilling Method Direct Rotary Drilling Fluid Bentonite mud

Depth from Surface Feet	to Feet	Description Describe material, grain size, color, etc
0	120	Coarse sand, gravel, few Cobbles
120	240	Coarse to med sand w/ streaks of gravel
240	365	Coarse med to fine sand w/ streaks of gravel
365	400	Clays with thin streak of med to fine sand

Total Depth of Boring 400 Feet

Total Depth of Completed Well 370 Feet

Well Location

Address 100 W Brawley Ave

City Salton Sea Beach County Imperial

Latitude Deg. Min. Sec. N Longitude Deg. Min. Sec. W

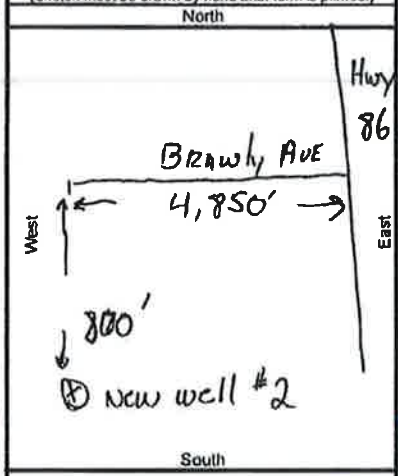
Datum Decimal Lat. Decimal Long.

APN Book Page Parcel 001-190-061

Township 9S Range 9E Section 6

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

● New Well
○ Modification/Repair
  ○ Deepen
  ○ Other
○ Destroy
Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

● Water Supply
  ☐ Domestic ☐ Public
  ☐ Irrigation ☑ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

Water Level and Yield of Completed Well

Depth to first water 170 (Feet below surface)

Depth to Static Water Level 175 (Feet) Date Measured 05/08/2010

Estimated Yield * 150 (GPM) Test Type Air Lift

Test Length 24.0 (Hours) Total Drawdown (Feet)

*May not be representative of a well's long term yield.

Casings

Depth from Surface Feet	to Feet	Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size If Any (Inches)
0	210	14 3/4	Blank	304 Stainless Steel	.250	8 5/8		
210	370	14 3/4	Screen	304 Stainless Steel		8 5/8	Wire Wrap	0.050

Annular Material

Depth from Surface Feet	to Feet	Fill	Description
0	25	Cement	10.3 Sack
25	370	Filter Pack	8X16

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Palm Springs Pump Inc.
Person, Firm or Corporation

83-651 Dr. Carreon Indio CA 92201
Address City State Zip

Signed C-57 Licensed Water Well Contractor 6/7/10 Date Signed 749713 C-57 License Number

DWR 188 REV. 1/2006

IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

06/14/10

EEC ORIGINAL PKG

*The free Adobe Reader may be used to view and complete this form. However, software must be purchased to complete, save, and reuse a saved form.

File Original with DWR 09S09E21

Page 1 of 1

Owner's Well Number #1

Date Work Began 05/26/2010 Date Work Ended 5/26/2010

Local Permit Agency Imperial County Planning and Building Department

Permit Number 52771 Permit Date 3/25/01

State of California

Well Completion Report

Refer to Instruction Pamphlet

No. e0111200

DWR Use Only – Do Not Fill In

State Well Number/Site Number

Latitude N Longitude W

APN/TRS/Other

Geologic Log

Orientation ● Vertical ○ Horizontal ○ Angle Specify

Drilling Method Direct Rotary Drilling Fluid Bentonite mud

Depth from Surface Feet to Feet		Description Describe material, grain size, color, etc
	1	Fill well from 360' to 25' below grade with 3/8"
		Pea Gravel
	2	Fill well from 25' below grade to 5' below grade
		w/ 3/8" Bentonite hole plug (Hydrate to seal)
	3	Cut casing and install Bentonite mushroom cap
	4	Backfill and compact with native soil from 5' below
		grade to surface

Total Depth of Boring Feet

Total Depth of Completed Well Feet

Well Location

Address 100 W Brawley Ave

City Salton Sea Beach County Imperial

Latitude Deg Min. Sec. N Longitude Deg. Min. Sec. W

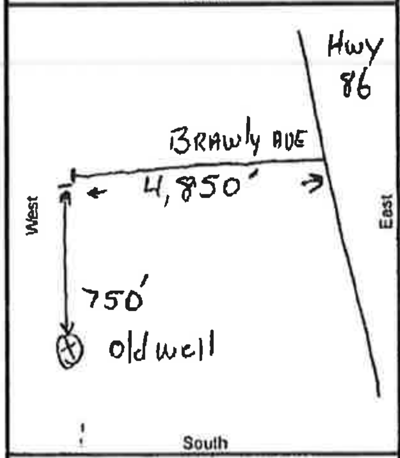
Datum Decimal Lat. Decimal Long.

APN Book Page Parcel 001-190-061

Township 9S Range 9E Section 61

Location Sketch

(Sketch must be drawn by hand after form is printed.)



Illustrate or describe distance of well from roads, buildings, fences, rivers, etc. and attach a map. Use additional paper if necessary. Please be accurate and complete.

Activity

○ New Well
○ Modification/Repair
  ○ Deepen
  ○ Other
● Destroy
  Describe procedures and materials under "GEOLOGIC LOG"

Planned Uses

● Water Supply
  ☐ Domestic ☐ Public
  ☐ Irrigation ☐ Industrial
○ Cathodic Protection
○ Dewatering
○ Heat Exchange
○ Injection
○ Monitoring
○ Remediation
○ Sparging
○ Test Well
○ Vapor Extraction
○ Other

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.

Casings

Depth from Surface Feet to Feet		Borehole Diameter (Inches)	Type	Material	Wall Thickness (Inches)	Outside Diameter (Inches)	Screen Type	Slot Size if Any (Inches)

Annular Material

Depth from Surface Feet to Feet		Fill	Description
0	5	Fill	Native
5	25	Bentonite	3/8" Hole Plug
25	360	Fill	3/8" Pea Gravel

Attachments

☐ Geologic Log
☐ Well Construction Diagram
☐ Geophysical Log(s)
☐ Soil/Water Chemical Analyses
☐ Other

Attach additional information, if it exists.

Certification Statement

I, the undersigned, certify that this report is complete and accurate to the best of my knowledge and belief

Name Palm Springs Pump Inc.
Person, Firm or Corporation

83-651 Dr. Carreon Indio CA 92201
Address City State Zip

Signed
C-57 Licensed Water Well Contractor

Date Signed

749713
C-57 License Number

DWR 188 REV. 1/2006

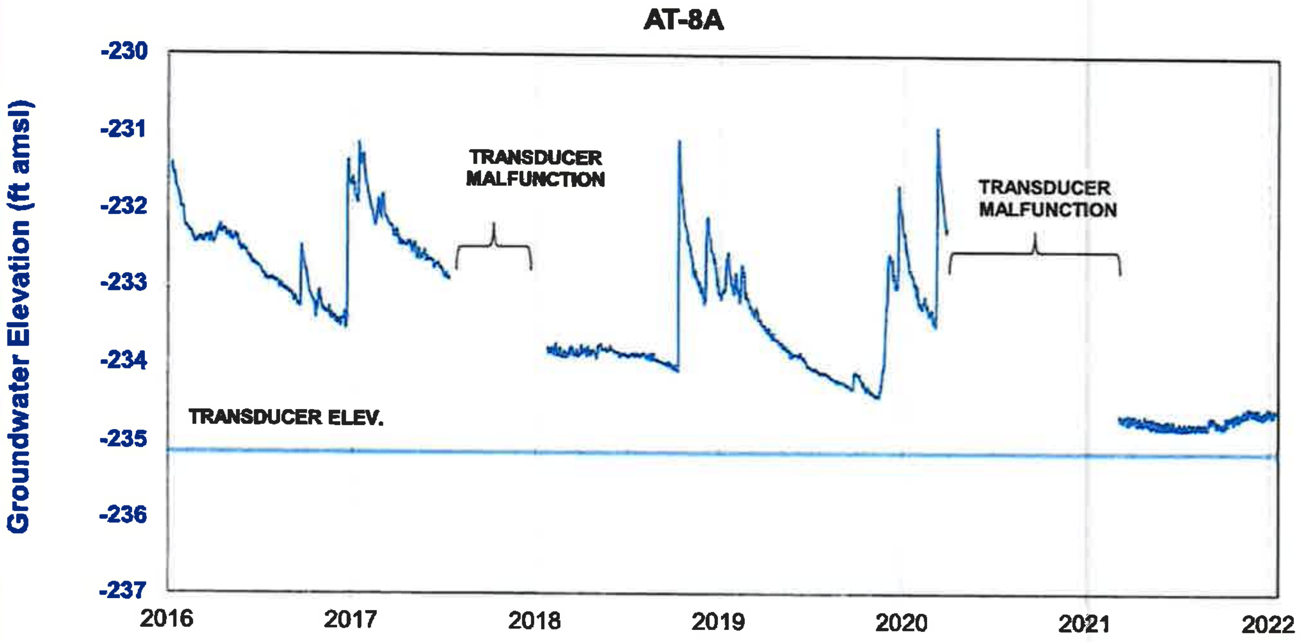
IF ADDITIONAL SPACE IS NEEDED, USE NEXT CONSECUTIVELY NUMBERED FORM

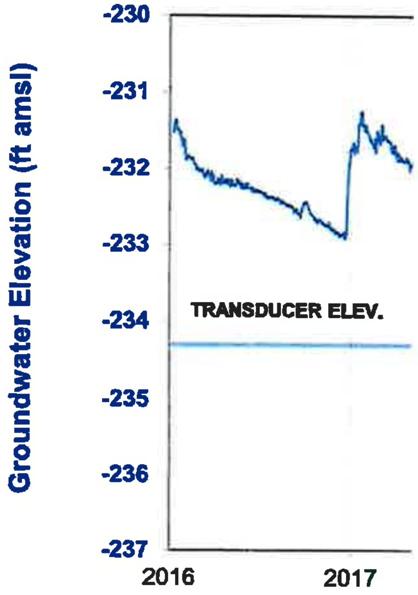
06/14/10

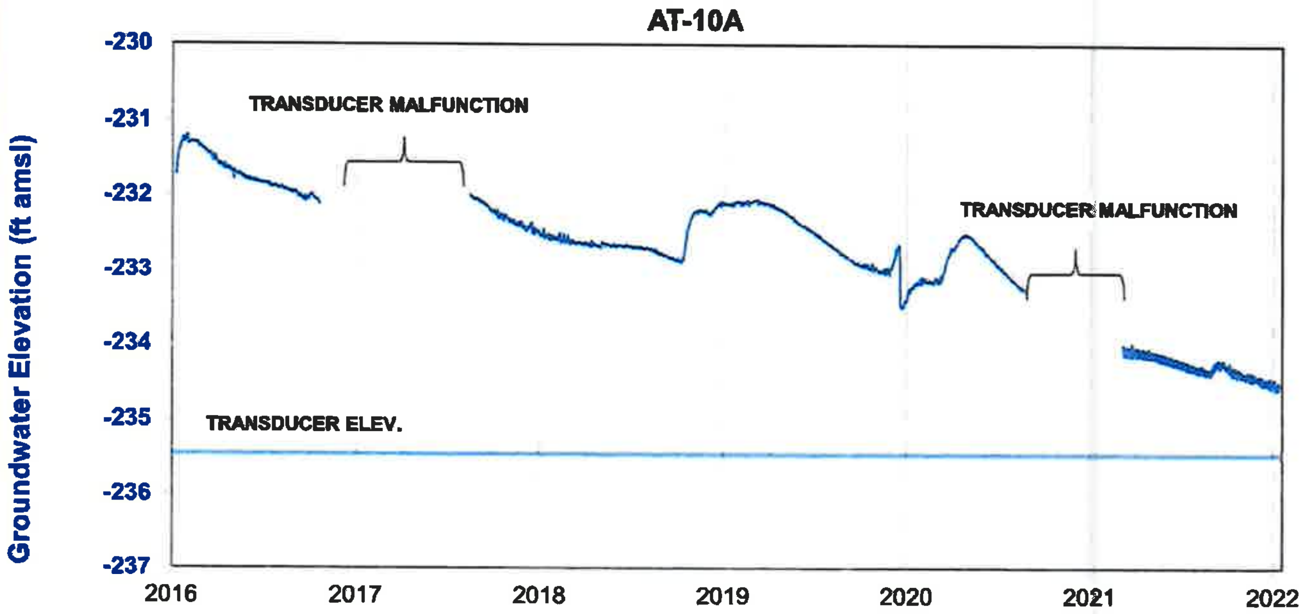
EEC ORIGINAL PKG

ATTACHMENT B – HYDROGRAPHS

EEC ORIGINAL PKG


AT-8A
Groundwater Elevation (ft amsl)
-230
-231
-232
-233
-234
-235
-236
-237
2016
2017
2018
2019
2020
2021
2022
TRANSDUCER MALFUNCTION
TRANSDUCER MALFUNCTION
TRANSDUCER ELEV.


Groundwater Elevation (ft amsl)
-230
-231
-232
-233
-234
-235
-236
-237
2016
2017
TRANSDUCER ELEV.


AT-10A
Groundwater Elevation (ft amsl)
-230
-231
-232
-233
-234
-235
-236
-237
2016
2017
2018
2019
2020
2021
2022
TRANSDUCER MALFUNCTION
TRANSDUCER MALFUNCTION
TRANSDUCER ELEV.

LEGEND

EEC ORIGINAL PKG

CONDITIONAL USE PERMIT

I.C. PLANNING & DEVELOPMENT SERVICES DEPT.
801 Main Street, El Centro, CA 92243 (760) 482-4236

- 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: Not applicable
CA. LICENSE NO.
EMAIL ADDRESS

5. MAILING ADDRESS (Street / P O Box, City, State)
ZIP CODE
PHONE NUMBER

6. ASSESSOR'S PARCEL NO.: 008-010-006
SIZE OF PROPERTY (in acres or square foot): 254 ac
ZONING (existing): S-1

7. PROPERTY (site) ADDRESS: 2902 Crystal Lake Ave. Thermal, CA 92274

8. GENERAL LOCATION (i.e. city, town, cross street): Site is located near Huron Ave and Crystal Lake Ave, Thermal, CA 92274

9. LEGAL DESCRIPTION: The NE1/4, the NE1/4 of the NW1/4, and the NE1/4 of the SE1/4 of Section 5, Township 10 South, Range 10.

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 four 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 approved construction permits. A full project description and CEQA analysis are attached.

11. DESCRIBE CURRENT USE OF PROPERTY: Not applicable

12. DESCRIBE PROPOSED SEWER SYSTEM: Not applicable

13. DESCRIBE PROPOSED WATER SYSTEM: Not applicable

14. DESCRIBE PROPOSED FIRE PROTECTION SYSTEM: Not applicable

15. IS PROPOSED USE A BUSINESS? ☐ Yes ☒ No
IF YES, HOW MANY EMPLOYEES WILL BE AT THIS SITE? Not applicable

I / WE THE LEGAL OWNER (S) OF THE ABOVE PROPERTY CERTIFY THAT THE INFORMATION SHOWN OR STATED HEREIN IS TRUE AND CORRECT.

Print Name: Jessica Humes
Date: 1/20/23
Signature: Jessica Humes

Print Name
Date
Signature

REQUIRED SUPPORT DOCUMENTS

A. SITE PLAN
B. FEE
C. OTHER
D. OTHER

APPLICATION RECEIVED BY: DATE: FEB/7/23
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 # 23-0002
IS23-0003

EEC ORIGINAL PKG

LIST OF ATTACHMENTS

ATTACHMENT A

Special-Status Species Searches

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad IS (Truckhaven (3311538) OR Oasis (3311641) OR Salton (3311548) OR Durmid (3311547) OR Seventeen Palms (3311631) OR Durmid SE (3311537) OR Shell Reef (3311621) OR Kane Spring NW (3311528) OR Kane Spring NE (3311527))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Abronia villosa var. aurita chaparral sand-verbena	PDNYC010P1	None	None	G5T2?	S2	1B.1
Active Desert Dunes Active Desert Dunes	CTT22100CA	None	None	G4	S2.2	
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Ardea herodias great blue heron	ABNGA04010	None	None	G5	S4	
Astragalus insularis var. harwoodii Harwood's milk-vetch	PDFAB0F491	None	None	G5T4	S2	2B.2
Astragalus sabulonum gravel milk-vetch	PDFAB0F7R0	None	None	G4G5	S2	2B.2
Astragalus tricarinatus triple-ribbed milk-vetch	PDFAB0F920	Endangered	None	G2	S2	1B.2
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Ayenia compacta California ayenia	PDSTE01020	None	None	G4	S3	2B.3
Chaenactis carphoclinia var. peirsonii Peirson's pincushion	PDAST20042	None	None	G5T2	S2	1B.3
Charadrius alexandrinus nivosus western snowy plover	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
Charadrius montanus mountain plover	ABNNB03100	None	None	G3	S2S3	SSC
Chylismia arenaria sand evening-primrose	PDONA03020	None	None	G4?	S2S3	2B.2
Cladium californicum California saw-grass	PMCYP04010	None	None	G4	S2	2B.2
Cyprinodon macularius desert pupfish	AFCNB02060	Endangered	Endangered	G1	S1	
Desert Fan Palm Oasis Woodland Desert Fan Palm Oasis Woodland	CTT62300CA	None	None	G3	S3.2	
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
Euphorbia abramsiana Abrams' spurge	PDEUP0D010	None	None	G4	S2	2B.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Falco mexicanus prairie falcon	ABNKD06090	None	None	G5	S4	WL
Gelochelidon nilotica gull-billed tern	ABNNM08010	None	None	G5	S1	SSC
Lasiurus xanthinus western yellow bat	AMACC05070	None	None	G5	S3	SSC
Laterallus jamaicensis coturniculus California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
Lycium parishii Parish's desert-thorn	PDSOL0G0D0	None	None	G4	S1	2B.3
Oliarces clara cheeseweed owlfly (cheeseweed moth lacewing)	IINEU04010	None	None	G1G3	S2	
Pelecanus occidentalis californicus California brown pelican	ABNFC01021	Delisted	Delisted	G4T3T4	S3	FP
Perognathus longimembris bangsi Palm Springs pocket mouse	AMAFD01043	None	None	G5T2	S2	SSC
Petalonyx linearis narrow-leaf sandpaper-plant	PDLOA04010	None	None	G4	S3?	2B.3
Phrynosoma mcallii flat-tailed horned lizard	ARACF12040	None	None	G3	S2	SSC
Pilostyles thurberi Thurber's pilostyles	PDRAF01010	None	None	G5	S4	4.3
Plegadis chihi white-faced ibis	ABNGE02020	None	None	G5	S3S4	WL
Rallus obsoletus yumanensis Yuma Ridgway's rail	ABNME0501A	Endangered	Threatened	G5T3	S1S2	FP
Salvia greatae Orocopia sage	PDLAM1S0P0	None	None	G2G3	S2S3	1B.3
Stabilized and Partially Stabilized Desert Dunes Stabilized and Partially Stabilized Desert Dunes	CTT22200CA	None	None	G4	S3.2	
Toxostoma lecontei Le Conte's thrasher	ABPBK06100	None	None	G4	S3	SSC
Uma notata Colorado Desert fringe-toed lizard	ARACF15020	None	None	G3	S2	SSC
Xantusia gracilis sandstone night lizard	ARACK01040	None	None	G1	S1	SSC
Xylorhiza orcuttii Orcutt's woody-aster	PDASTA1040	None	None	G3?	S2	1B.2
Xyrauchen texanus razorback sucker	AFCJC11010	Endangered	Endangered	G1	S1S2	FP

Record Count: 38

EEC ORIGINAL PKG

- An Upper Lacustrine Unit that contains very salty water that will not be used,
- An Intermediate Lacustrine Unit encountered between approximately 105 and 185 feet bgs that will be used by four irrigation wells screened in this formation, and
- A Lower Lacustrine Unit encountered between approximately 210 and 320 feet bgs that will be used by one irrigation well screened in this formation.

As shown on Figure 3, the deeper irrigation well is screened in both the Intermediate and Lower Lacustrine Units.

IID evaluated the plot study, including installation and operation of the wells, under the California Environmental Quality Act (CEQA) in an Addendum to IID's Water Conservation and Transfer Project Final Environmental Impact Statement / Environmental Impact Water Transfer Project EIS/EIR (IID 2021). The Addendum is included as Attachment A. An initial Groundwater Resources Impact Assessment (GRIA) was prepared to support the CEQA evaluation (IID 2021a). The initial GRIA evaluated a conservative pumping rate of approximately 30 acre-feet per year. After the deep test well investigation, the groundwater model used to inform the GRIA was updated with site-specific data to more accurately predict the drawdown effects from groundwater pumping. The updated GRIA documents the refined modeling, sustainable well yields, and impact conclusions. No significant impacts were identified. Based upon the results of the updated GRIA, the pumping rate was refined to be up to 63 acre-feet per year (IID 2022). The updated GRIA is included as Attachment B.

2 PROJECT DESCRIPTION

The Clubhouse Plot Study Area is located off Highway 86, immediately east and north of Salton City, on IID-owned land (Accessor's Parcel Number 008-010-006) (Figure 2). The plot study includes one deep well and up to three shallow wells, as described below. All wells and associated equipment (i.e., solar pump, fence compounds) have been (or will be) constructed under approved Imperial County permits and in accordance with State of California well standards (Department of Water Resources Bulletin 74-90). Extracted groundwater will be used to irrigate the plot study, as well as potential future areas as the Salton Sea recedes and more playa is exposed.

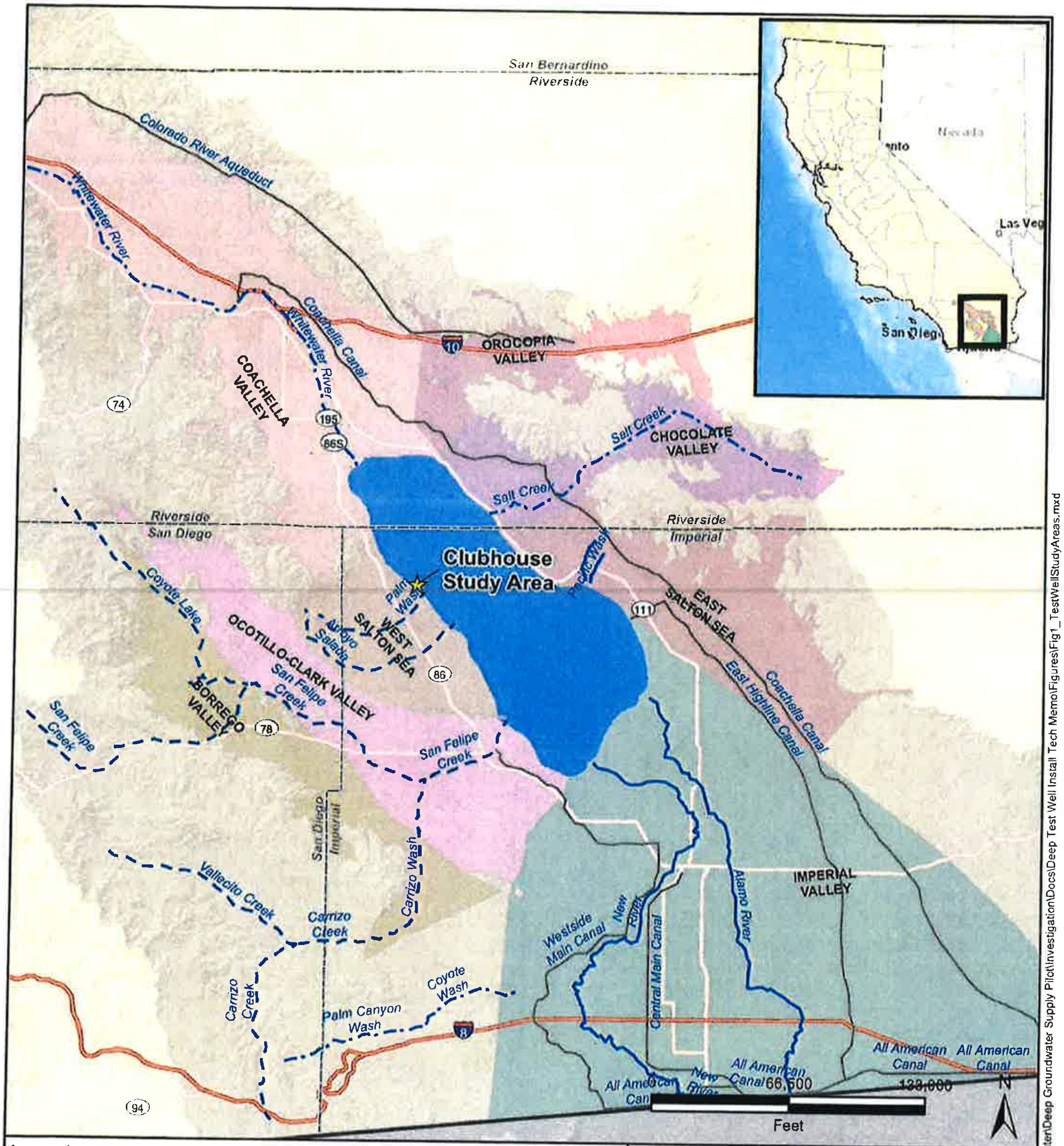
- **Deep Well**. The deep well was installed in March 2022. In October 2022, a solar-powered submersible pump, solar panel array, and accessories were installed for the deep test well. A discharge rate of approximately 55 gpm was observed following pump installation. A security fence compound measuring 60 by 80 feet was also constructed. The fence compound is designed to secure the wellhead, submersible solar powered pump (installed in the well), six panel solar array and pump controllers, high density polyethylene (HDPE) water storage tanks for up to 60,000-gallons of water storage, and connecting pipes, valves, pressure pumps and other equipment. The inside of the compound will be surfaced with crushed rock. The fence compound layout is shown in Figure 4.

- **Shallow Wells**. Installation of the three shallow wells is anticipated to commence in December 2022 (Figure 2). Following installation of the shallow test wells, solar-powered submersible pumps, solar panel arrays/accessories, and security fence compounds will be installed at each of the three well heads. The security fence compounds will measure approximately 30 by 40 feet. Each compound will contain one shallow well wellhead, submersible solar powered pump (installed in the well), and six panel solar array and pump controllers. The inside of the compound will be surfaced with crushed rock. The fence compound layout is shown in Figure 5.

Dirt access roads will be developed for each well site from the nearest existing improved paved or unpaved road. The roads will be constructed using track dozers, motor-graders, compactors and water trucks, or other similar equipment as appropriate. The access roads will be approximately 8 to 12 feet wide and will be graded along the land contour and track rolled for compaction. "Arizona Crossings" will be utilized to cross any ephemeral washes to maintain the natural drainage, and water bars may be constructed to pass surface runoff at intervals. If unstable soils are encountered, they may be stabilized using geotextile and native or imported soil as deemed appropriate. Unstable areas may be compacted using vibratory rollers and moisture conditioned using water trucks, as appropriate. It is anticipated that access roads may require periodic maintenance to flatten ruts, restore stability or repair washouts. Maintenance will be conducted using similar equipment as construction.

After the completion of wellhead construction activities, the ground surface in any areas surrounding the well compounds that have become disturbed by vehicle traffic and construction activities will be decompacted by scarifying the area to a depth of approximately 6 inches. Native seeds will be broadcast on the decompacted area.

Upon conversion to production wells, the wells will be operated to support irrigation and establishment of *Allenrolfea occidentalis* (ALOC). ALOC is native, drought-resistant, and salt tolerant. Seeding will occur on approximately 60 acres (Figure 2). All the irrigation water demand will be met by extracting groundwater from the Intermediate and Lower Lacustrine Units (Figure 3). Groundwater extraction will be performed with solar-powered submersible well pumps operated during daylight hours. The groundwater extraction rate for each well is estimated to range between 20 gallons per minute (gpm) for the shallow test wells and 45 (gpm) for the deep test well for an average of 9 hours per day. For all wells combined, this corresponds to a long-term average extraction volume of approximately 57,200 gallons per day or 63 acre-feet/year.



Legend

▭ State Boundary

┆ Counties

Groundwater Basins

🟨 Borrego Valley

🟪 Chocolate Valley

▨ Coachella Valley

▨ East Salton Sea

🟦 Imperial Valley

▨ Ocotillo-Clark Valley

▨ Orocopia Valley

West Salton Sea

Salton Sea Watershed

Rivers and Streams

—— Stream; Braided Stream

- - - Ephemeral Stream

-·-· Stream Intermittent

—— Canal; Aqueduct; Intracoastal Waterway

CLUBHOUSE STUDY AREA

SALTON SEA

FIGURE 1

CLUBHOUSE STUDY AREA

DATE: JUN 27, 2022

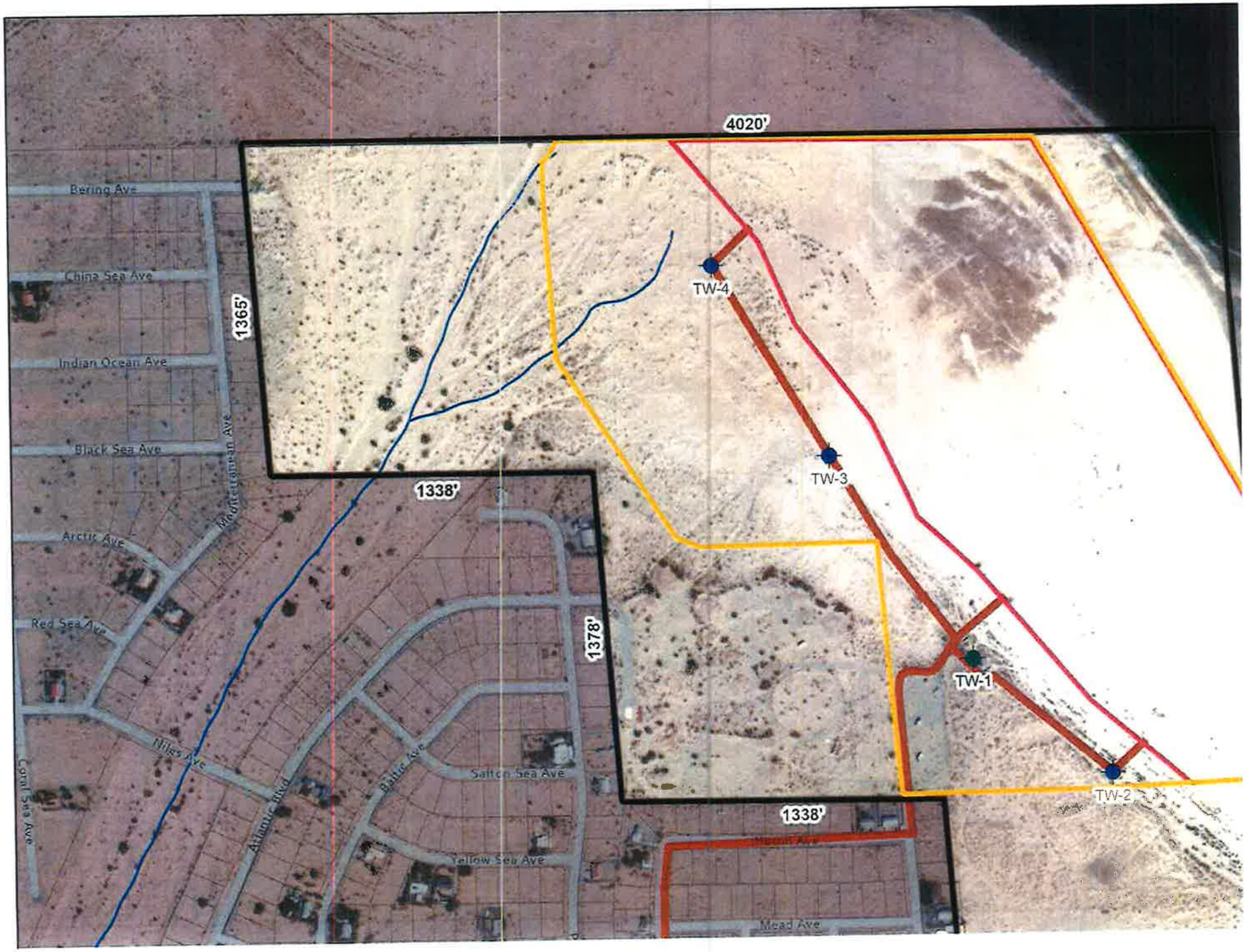
BY: DKG

FOR: NBB

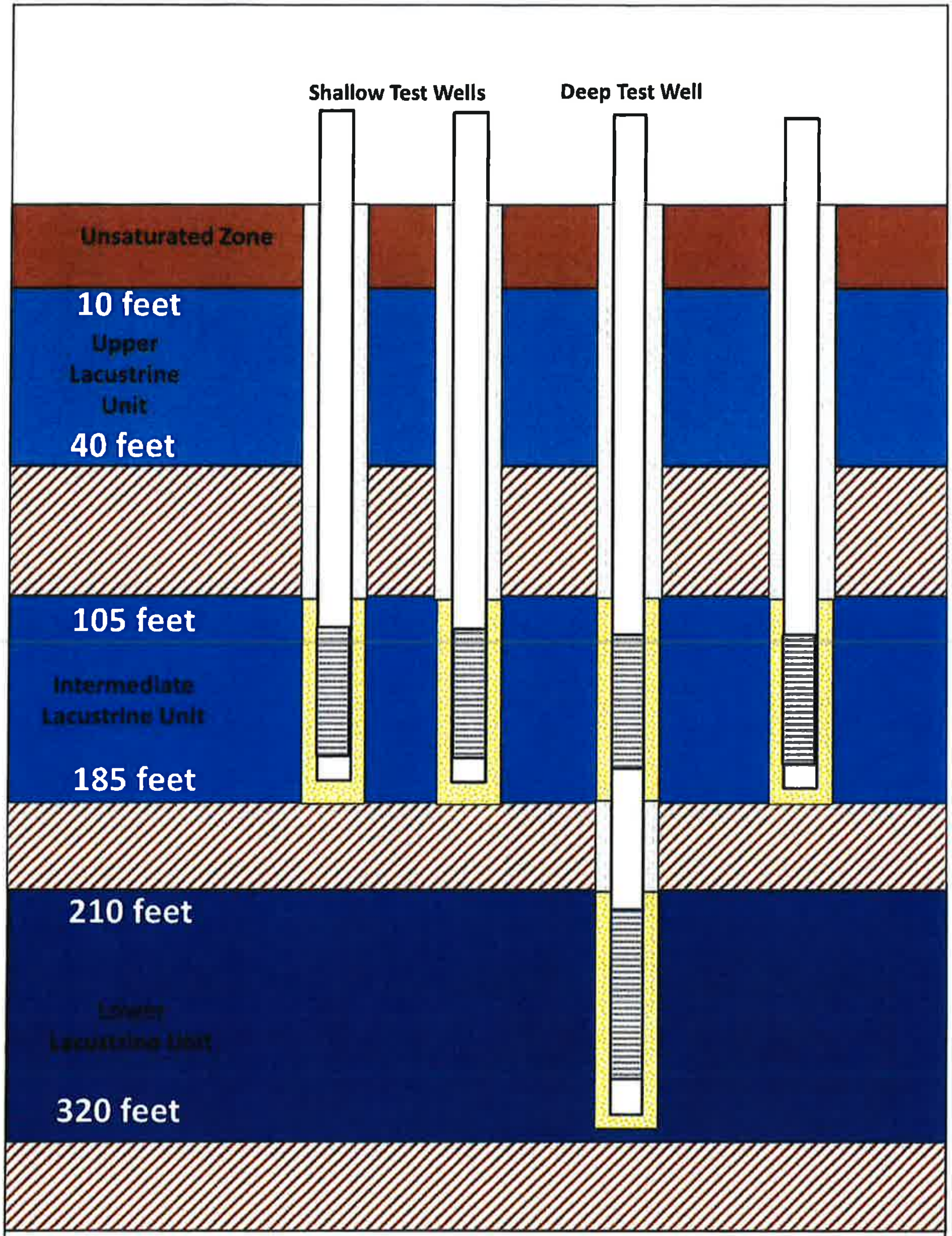
FORMATION ENVIRONMENTAL

K:\IID_SaltonSea\Tasks\WaterSupply\Groundwater\Deep Groundwater Supply Pilot\Investigation\Docs\Deep Test Well Install Tech Memo\Figures\Fig1_TestWellStudyAreas.mxd

EEC ORIGINAL PKG



EEC ORIGINAL PKG



NOT TO SCALE

LEGEND

▨ Aquitard

▤ Well Screen

🟨 Gravel Pack

☐ Annular Seal

CLUBHOUSE STUDY AREA
SALTON SEA

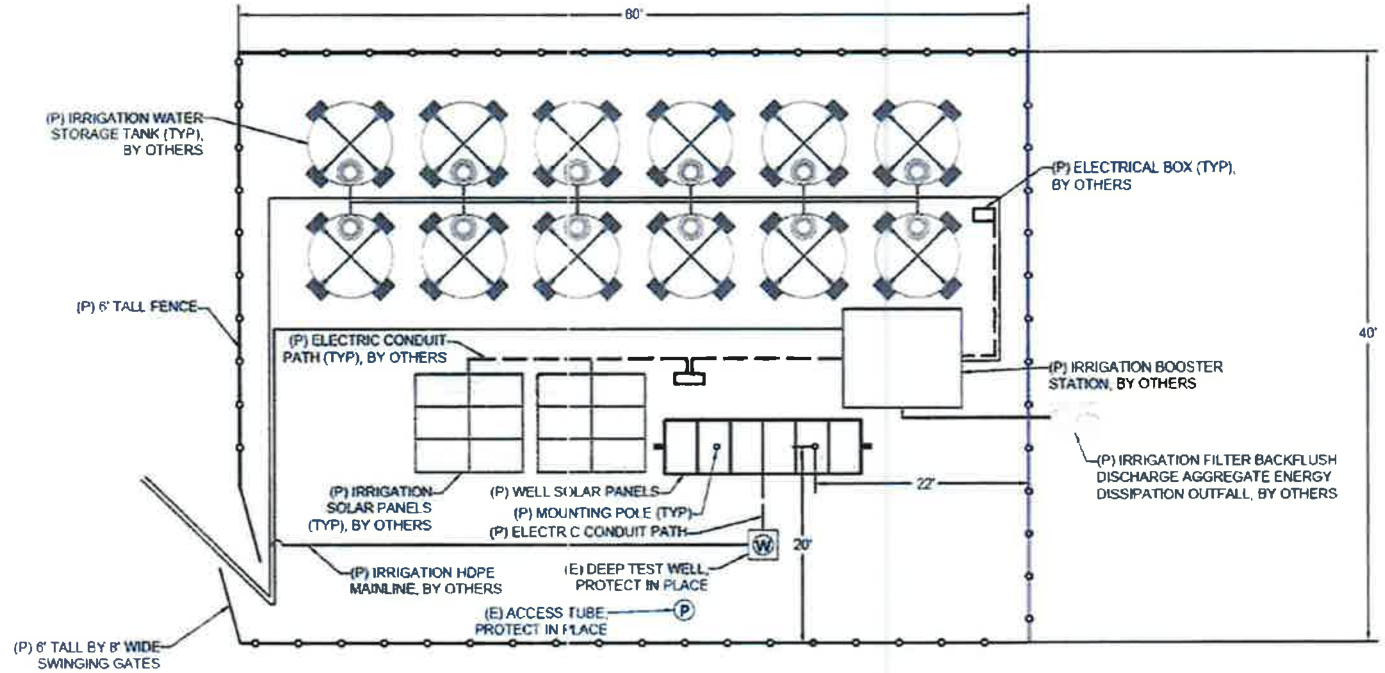
FIGURE 3

Hydrostratigraphy

DATE: JUNE 2022
BY: NBB
FOR: MT

FORMATION ENVIRONMENTAL

EEC ORIGINAL PKG



NOTES:

1 LOCATION AND DIMENSIONS OF COMPONENTS MARKED "BY OTHERS" SUBJECT TO CHANGE.
2 SOLAR PANEL DIMENSIONS SHOWN ARE TO THE CENTER OF THE EASTERN MOUNTING POLE. THERE SHALL BE TWO MOUNTING POLES, SPACED 10' CENTER-TO-CENTER.
3 THE SOUTHERN EDGE OF THE SOLAR PANELS SHALL BE LOCATED, AT MINIMUM, 17'-6" NORTH OF THE SOUTHERN FENCE SEGMENT
4 THE OUTER EDGES OF THE SOLAR PANELS SHALL BE LOCATED, AT MINIMUM, 16'-9" FROM THE EDGE OF THE EASTERN FENCE SEGMENT.

CLUBHOUSE STUDY AREA

SALTON SEA

FIGURE 4

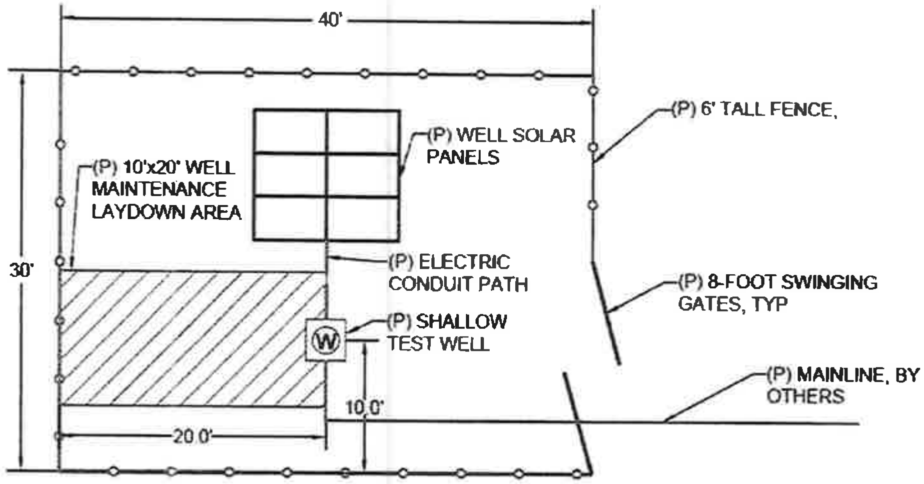
Central Compound Fence Layout at Deep Test Well Location

DATE: December 2022

BY: NBB FOR:MT

FORMATION
ENVIRONMENTAL

EEC ORIGINAL PKG



SCALE: 1"=10'
VERIFY SCALE BAR IS 1"

SHALLOW WELL SITE PLAN
A
-
1" = 10'

CLUBHOUSE STUDY AREA
SALTON SEA

FIGURE 5

Fence Layout at Shallow Test Well Locations

DATE: December 2022
BY: NBB
FOR:MT

FORMATION ENVIRONMENTAL

EEC ORIGINAL PKG

3 REFERENCES

Imperial Irrigation District. 2021. Final Addendum to Environmental Impact Report, Clubhouse Plot Study. Prepared for Imperial Irrigation District. Prepared by ECORP Consulting, Inc. Dated August.

Imperial Irrigation District. 2021a. Groundwater Resources Impact Assessment, Clubhouse Study Area, Imperial County, California. Prepared by Formation Environmental. Dated April 27.

Imperial Irrigation District. 2022. Groundwater Resources Impact Assessment, Clubhouse Plot Study Area, Imperial County, California. Prepared by Formation Environmental. Dated October.

COMMENT LETTERS

CALIFORNIA STATE TRANSPORTATION AGENCY GAVIN NEWSOM, GOVERNOR

California Department of Transportation

DISTRICT 11
4050 TAYLOR STREET, MS-240
SAN DIEGO, CA 92110
(619) 709-5152 | FAX (619) 688-4299 TTY 711
www.dot.ca.gov

March 20, 2023

11-IMP-86
PM 58.693
Clubhouse Plot Study
Addendum to Imperial Irrigation District (IID) Water
Conservation & Transfer EIR (CUP #23-0002/IS #23-0003)

Mr. David Black
Imperial County - Planning & Development Services
801 Main Street
El Centro, CA 92243

Dear Mr. Black:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the Addendum to IID's Water Conservation & Transfer EIR (CUP #23-0002/IS #23-0003) for the Clubhouse Plot Study Project located near State Route 86 (SR-86). The mission of Caltrans is to provide a safe and reliable transportation network that serves all people and respects the environment. The Local Development Review (LDR) Program reviews land use projects and plans to ensure consistency with our mission and state planning priorities.

Caltrans is committed to prioritizing projects that are equitable and provide meaningful benefits to historically underserved communities, to ultimately improve transportation accessibility and quality of life for people in the communities we serve.

Caltrans has the following comments:

Hauling

Caltrans has discretionary authority with respect to highways under its jurisdiction and may, upon application and if good cause appears, issue a special permit to operate or move a vehicle or combination of vehicles or special mobile equipment of a size or weight of vehicle or load exceeding the maximum limitations specified in the California Vehicle Code. The Caltrans Transportation Permits Branch is responsible for the issuance of these special transportation permits for oversize/overweight vehicles on the State Highway network. Additional information is provided online at: http://www.dot.ca.gov/trafficops/permits/index.html

If you have any questions or concerns, please contact Charlie Lecourtois, LDR Coordinator, at (619) 985-4766 or by e-mail sent to Charlie.Lecourtois@dot.ca.gov

Sincerely,

Maurice A. Eaton

MAURICE EATON
Branch Chief
Local Development Review

c: Jim Minnick, Planning & Development Services Director

Melina Rizo

From: Lecourtois, Charlie@DOT <Charlie.Lecourtois@dot.ca.gov>
Sent: Monday, March 20, 2023 2:02 PM
To: David Black
Cc: Eaton, Maurice A@DOT; Jim Minnick
Subject: Clubhouse Plot Study - Imperial County - Request for Comments CUP23-0002/IS23 -0003/Addendum to an EIR - SR-86
Attachments: Caltrans Comment Letter_Clubhouse Plot Study 03-20-2023_SR-86.pdf

Good Afternoon David,

Thank you for the opportunity to review the Request for Comments Packet on CUP23-0002/IS23 -0003 for the Clubhouse Plot Study Project, located in Imperial County near SR-86. Please see the Caltrans comment letter attached for your reference.

Feel free to contact me if you have any questions.

Respectfully,

Charlie Lecourtois
Associate Transportation Planner
Caltrans District 11 LDR Branch
4050 Taylor Street., MS 240
San Diego, CA 92110
Charlie.Lecourtois@dot.ca.gov
Cell: (619) 985-4766
Caltrans
CALIFORNIA DEPARTMENT OF TRANSPORTATION

EEC ORIGINAL PKG

Imperial County Planning & Development Services
Planning / Building

Jim Minnick
DIRECTOR

February 28, 2023
REQUEST FOR REVIEW AND COMMENTS

The attached project and materials are being sent to you for your review and as an early notification that the following project is being requested and being processed by the County's Planning & Development Services Department. Please review the proposed project based on your agency/department area of interest, expertise, and/or jurisdiction.

To: County Agencies

☒ County Executive Office –Miguel Figueroa
☒ APCD – Monica Soucier/Belen Leon
☒ EHS – Jeff Lamoure/Mario Salinas
☒ Public Works – Guillermo Mendoza/John Gay
☒ Assessors – Robert Menvielle
☒ Ag. Commissioner – Ana L Gomez/ Sandra Mendivil/ Carlos Ortiz

State Agencies/Other

☒ IC Sheriff's Office – Robert Benavidez
☒ Board of Supervisors – Ryan E. Kelley - District #4/ Luis Plancarte District #2
☒ Central Union High School District – Dr. Ward Andrus
☒ State Historic Preservation Office – Julianne Polanco
☒ BLM – Carrie Sahagun

Cities/Other

☒ CA Native Plant Society- San Diego Chapter – Carolyn Martus
☒ IC Fire/OES Office – Alfredo Estrada/Robert Malek
☒ IID – Donald Vargas
☒ Naval Air Facility – Marybeth Dreusike
☒ Heber Union Elementary School District – Juan Cruz
☒ Caltrans District 11- Roger Sanchez

From:	David Black, Planner IV - (442) 265-1736 or davidblack@co.imperial.ca.us
Project ID:	IID - Conditional Use Permit #23-0002/ Initial Study #23-0003
Project Location:	2902 Crystal Lake Ave., Salton Sea, CA 92274 APN 008-010-006
Project Description:	The purpose use includes converting four (4) test water wells into water supply wells for irrigation of vegetation-based dust control.
Applicants:	IID
Comments due by:	**March 20th 2023 at 5:00PM**

COMMENTS: *(attach a separate sheet if necessary)* (if no comments, please state below and mail, fax, or e-mail this sheet to Case Planner)

No Comments

Name: Ana Gomez Signature: Title: Ag Biologist

Date: 3/10/2023 Telephone No.: 442265 1500 E-mail: analgomez@co.imperial.ca.us

DB/AT\S:\AllUsers\APN\008\010\006\CUP23-0002\CUP23-0002 Request for Comments 2.28.23 .docx

RECEIVED

MAR 10 2023

IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

150 SOUTH NINTH STREET
EL CENTRO, CA 92243-2850

TELEPHONE: (442) 265-1800
FAX: (442) 265-1799

1907

AIR POLLUTION CONTROL DISTRICT

RECEIVED

MAR 20 2023

IMPERIAL COUNTY
PLANNING & DEVELOPMENT SERVICES

March 17, 2023

Jim Minnick
Planning & Development Services Director
801 Main Street
El Centro, CA 92243

SUBJECT: Conditional Use Permit (CUP) 23-0002 – IID Water Supply Vegetation Dust Control

Dear Mr. Minnick:

The Imperial County Air Pollution Control District ("Air District") appreciates the opportunity to review and comment on Condition Use Permit ("CUP") 23-0002("Project") that would allow the conversion of four (4) test water wells into water supply wells for irrigation. The project is located at 2902 Crystal Lake Ave., Salton Sea also identified with Assessor's Parcel 008-010-006.

The Air District reminds the applicant the project must comply with all Air District rules and regulations and would emphasize Regulation VII – Fugitive Dust Rules, a collection of rules designed to maintain fugitive dust emissions below 20% visual opacity.

Given the description of **solar** pumping equipment, an Air District permit would not be required to operate this equipment. However, should any equipment change or additional/emergency equipment be utilized, such as an emergency generator or combustion-powered pumps, an Air District permit may be required. The applicant would need to submit a permit application to the Air District for review by a permitting engineer.

The Air District's rules and regulations can be found online for your review at https://apcd.imperialcounty.org/rules-and-regulations/. Should you have any questions please feel free to contact the Air District for assistance at (442) 265-1800.

Respectfully,

Ismael Garcia
Ismael Garcia
Environmental Coordinator I

Monica N. Soucier
APC Division Manager

Melina Rizo

From: Melina Rizo
Sent: Monday, March 20, 2023 9:38 AM
To: David Black
Cc: Michael Abraham; Aimee Trujillo; Allison Galindo; John Robb; Kamika Mitchell; Laryssa Alvarado; Maria Scoville; Melina Rizo; Rosa Soto; Valerie Grijalva
Subject: CUP23-0002 APCD Comments
Attachments: CUP23-0002 APCD Comment received 03 20 23.pdf

Good Morning Dave,

Attached please find APCD's Comment letter regarding **CUP23-0002**. Comment Letter has been scanned and saved under the following pathway:

S:\AllUsers\APN\008\010\006\CUP23-0002 Comments

Thank you,

Melina Rizo
Account Clerk III
Imperial County Planning & Development Services
801 Main St.
El Centro, CA 92243
(442)265-1736

EEC ORIGINAL PKG

Laryssa Alvarado

From: Jill McCormick <historicpreservation@quechantribe.com>
Sent: Wednesday, March 8, 2023 9:29 AM
To: Laryssa Alvarado
Cc: ICPDSCommentLetters
Subject: RE: [EXTERNAL]:CUP23-0002 AB52 Letter

This email is to inform you that we do not wish to comment on this project.

RECEIVED

MAR 08 2023

IMPERIAL COUNTY
PLANNING DEVELOPMENT SERVICES

Thank you,
H. Jill McCormick, M.A.

Quechan Indian Tribe
Historic Preservation Officer
P.O. Box 1899
Yuma, AZ 85366-1899
Office: 760-572-2423
Cell: 928-261-0254
E-mail: historicpreservation@quechantribe.com

From: Laryssa Alvarado <laryssaalvarado@co.imperial.ca.us>
Sent: Thursday, March 02, 2023 10:47 AM
To: Jill McCormick <historicpreservation@quechantribe.com>; Jim Minnick <JimMinnick@co.imperial.ca.us>; Michael Abraham <MichaelAbraham@co.imperial.ca.us>
Cc: Diana Robinson <DianaRobinson@co.imperial.ca.us>; David Black <DavidBlack@co.imperial.ca.us>; Aimee Trujillo <aimeetrujillo@co.imperial.ca.us>; Allison Galindo <allisongalindo@co.imperial.ca.us>; John Robb <JohnRobb@co.imperial.ca.us>; Kamika Mitchell <kamikamitchell@co.imperial.ca.us>; Laryssa Alvarado <laryssaalvarado@co.imperial.ca.us>; Maria Scoville <mariascoville@co.imperial.ca.us>; Melina Rizo <melinarizo@co.imperial.ca.us>; Rosa Soto <RosaSoto@co.imperial.ca.us>; Valerie Grijalva <ValerieGrijalva@co.imperial.ca.us>
Subject: [EXTERNAL]:CUP23-0002 AB52 Letter

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To: Laryssa Alvarado
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Subject: RE: [EXTERNAL]:CUP23-0002 AB52 Letter

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Thank you,
H. Jill McCormick, M.A.

Quechan Indian Tribe
Historic Preservation Officer
P.O. Box 1899
Yuma, AZ 85366-1899
Office: 760-572-2423
Cell: 928-261-0254
E-mail: historicpreservation@quechantribe.com

From: Laryssa Alvarado <laryssaalvarado@co.imperial.ca.us>
Sent: Thursday, March 02, 2023 10:47 AM
To: Jill McCormick <historicpreservation@quechantribe.com>; Jim Minnick <JimMinnick@co.imperial.ca.us>; Michael Abraham <MichaelAbraham@co.imperial.ca.us>
Cc: Diana Robinson <DianaRobinson@co.imperial.ca.us>; David Black <DavidBlack@co.imperial.ca.us>; Aimee Trujillo <aimeetrujillo@co.imperial.ca.us>; Allison Galindo <allisongalindo@co.imperial.ca.us>; John Robb <JohnRobb@co.imperial.ca.us>; Kamika Mitchell <kamikamitchell@co.imperial.ca.us>; Laryssa Alvarado <laryssaalvarado@co.imperial.ca.us>; Maria Scoville <mariascoville@co.imperial.ca.us>; Melina Rizo <melinarizo@co.imperial.ca.us>; Rosa Soto <RosaSoto@co.imperial.ca.us>; Valerie Grijalva <ValerieGrijalva@co.imperial.ca.us>
Subject: [EXTERNAL]:CUP23-0002 AB52 Letter

Melina Rizo

From:	Ana L Gomez
Sent:	Friday, March 10, 2023 4:23 PM
To:	David Black; ICPDSCommentLetters
Cc:	Margo Sanchez; Sandra Mendivil
Subject:	IID - CUP23-0002
Attachments:	CUP23-0002_IS23-0003 No Comments.pdf

Good Afternoon David,

Our office does not have any comments on this project.

Thank you,

Ana Gomez
Agricultural Biologist/Standards Specialist
Special Projects Division
Imperial County Agricultural Commissioner
Sealer of Weights and Measures
(442) 265-1500
analgomez@co.imperial.ca.us