CEQA Initial Study
And Negative Declaration

Six-Month Operational Test of Well TW-E at Owens Lake

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Section 1
Project and Agency Information

1.1 PROJECT TITLE AND LEAD AGENCY

Project Title:	Six-Month Operational Test of Well TW-E at Owens Lake
Lead Agency Name:	Los Angeles Department of Water & Power
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Project Sponsor:	Same as Lead Agency

1.2 PROJECT BACKGROUND AND OBJECTIVES

The Los Angeles Department of Water and Power (LADWP) is a proprietary department of the City of Los Angeles that supplies water and power to the city's inhabitants pursuant to the Los Angeles City Charter. LADWP is proposing to conduct a 6-month operational test of Test Well-East (TW-E) at Owens Lake, Inyo County, California. As the lead agency for the project under the California Environmental Quality Act (CEQA), LADWP has prepared this Initial Study to address the environmental impacts of conducting the operational test.

LADWP owns water gathering, transmission, storage, treatment, and distribution facilities to provide safe and dependable water to the City of Los Angeles. A five-member Board of Water and Power Commissioners establishes policy for the LADWP. The Board members are appointed by the Mayor and confirmed by the City Council for 5-year terms. The Board is the decision-making body for consideration and implementation of the proposed operational test and monitoring plan, and for adoption of the CEQA document for the project.

This Initial Study has been prepared in accordance with CEQA, Public Resources Code Section 21000 et seq., and the State CEQA Guidelines, Title 14 California Code of Regulations (CCR) Section 15000 et seq. The Initial Study serves to identify the site-specific impacts, evaluate their potential significance, and determine the appropriate document needed to comply with CEQA. For this project, LADWP has determined (based on the information reviewed and contained herein) that the proposed operational test would not have a significant impact on the environment. Based on this Initial Study, a Negative Declaration is the appropriate CEQA document. Staff recommends that the City of Los Angeles Board of Water and Power Commissioners adopt this Initial Study/Negative Declaration for the proposed project.

1.2.1 Background

LADWP implements the Owens Lake Dust Mitigation Program (OLDMP) in order to reduce emissions of particulate matter less than or equal to 10 microns in diameter (PM_{10}). LADWP constructs and operates dust control measures (DCMs) on the lake in compliance with Orders from the Great Basin Unified Air Pollution Control District (GBUAPCD), lease agreements from the California State Lands Commission (CSLC), and other regulatory approvals. Dust emissions on approximately 48.6 square miles of the lakebed are controlled by DCMs, with annual water use of approximately 65,000 acre-feet. Existing water supplies for the DCMs are flows diverted from the Los Angeles Aqueduct (LAA) and water from the Lower Owens River Project (LORP) pump back station.

LADWP has been investigating the potential use of groundwater as a supplemental water source for the OLDMP since the late 1990s, and more recently since 2009. The effort has consisted of extensive data collection, field work, updating of the conceptual hydrogeologic model, and development of a numerical groundwater model for Owens Lake and surrounding area (Owens Lake Groundwater Model, OLGM). The numerical computer model of groundwater flow at Owens Lake was originally developed in 2012; updates to the model are on-going. LADWP has also been working with various regulatory entities, landowners, and stakeholders to establish guidelines for eventual utilization of groundwater for dust mitigation on Owens Lake.

OLGDP. The operational test of TW-E is part of the Owens Lake Groundwater Development Program (OLGDP), a component of the Owens Lake Master Project. Currently in development, the goal of the Master Project is to continue to meet the ambient air quality standards while maintaining wildlife habitat values on Owens Lake, protecting cultural resources and conserving water. The objective of the OLGDP is to optimize groundwater management at Owens Lake by implementing groundwater banking in and around Owens Lake when excess LAA supply is available, and to utilize water from underneath the lake to supply a portion of the water demand for dust mitigation. With groundwater banking, water is stored in available aquifer space in years when excess LAA supply is available. Banked water can then be pumped during years with low runoff and potentially supplement the water supply for dust mitigation in an environmentally sustainable manner.

The OLGDP is being implemented under an adaptive management strategy. Groundwater development would start at a small scale with extensive monitoring, and adjustments would be made to the program as more is learned about the hydrogeologic system through monitoring and modeling.

TW-E Installation. LADWP installed two testing wells at the northern portion of Owens Lake in 2018, designated as TW-E, and Testing Well West (TW-W). The wells were installed as part of an effort to improve the understanding of the Owens Lake area hydrogeology and to collect the data necessary to describe the lithology of the aquifer in the northern portion of Owens Lake in the vicinity of the Owens Valley and Owens River Fault zones. TW-E was also intended to be used primarily for conducting operational tests to improve the understanding of aquifer characteristics near the well and to evaluate the role of Owens Valley and Owens River fault zones as barriers to groundwater flow.

TW-E is 1,495 feet deep and is screened from 620 to 1,490 feet depth. The casing and screen are 12 inches in diameter, consisting of high strength, low alloy (HSLA) and stainless-steel material. **Appendix A** includes the geophysical log, lithological log, and as-built construction of the well. TW-E is an artesian well with approximately 50 feet of head above ground level. [Hydraulic head or piezometric head is a measurement of liquid pressure above a vertical datum.] The original installation of TW-E and TW-W was determined to be exempt from the requirements of CEQA pursuant to CCR, Title 14, §15061 as a categorically exempt project, Class 6, Information Collection; CCR, Title 2, §2905, subdivision (e)(3).

Previous Pumping Test. On April 2, 2019, LADWP performed a "step" test on TW-E consisting of pumping at an average rate of 402 gallons per minute (gpm) for a duration of 1.5 hours, followed by pumping at an average rate of 599 gpm for a duration of 1.5 hours, and average rate of 824 gpm for 1.5 hours. On April 3, 2019, a constant rate pumping test was performed, consisting of a constant rate of 800 gpm for 24 hours. Due to the low pumping rates and durations of the tests, aquifer response was not observed in the majority of monitoring wells. Although the tests provided data regarding the hydraulic characteristics near the TW-E wellbore, they did not provide larger-scale hydrogeological insight or data regarding fault characteristics. Because the effect of pumping during previous tests was localized, the effect of longer-term pumping at diverse groundwater-dependent resource locations could not be adequately evaluated. Therefore, LADWP is proposing longer-term operational testing.

As a conservative measure, LADWP plans to conduct a longer-term operational test on only one of the testing wells at a time. TW-E was selected for the longer-term operational test because the relatively lower pumping capacity at this location is more conservative and the groundwater quality is better. The operational test is proposed to be conducted for 6 months, starting in late September or early October 2021 and concluding by early 2022 (depending on actual start date). This time frame will allow water from the pump test to supply shallow flood dust control areas during the non-growing season.

1.2.2 Project Objective

The overall objective of the TW-E operational test is to collect data necessary to improve the understanding of the Owens Lake groundwater system and to develop robust measures to protect groundwater dependent resources. Project goals are to:

- Improve the understanding of hydrogeologic characteristics of the aquifers in the northern portion of Owens Lake
- Improve the understanding of how the Owens Valley and Owens River Fault Zones act as barriers of groundwater flow
- Improve the understanding of the effects of pumping from deeper aquifers, evaluate potential changes in shallow groundwater level and quality due to pumping deep aquifers
- Use data collected to update and recalibrate the OLGM

- Use the updated OLGM to simulate various pumping scenarios to forecast the changes in groundwater levels, gradient and discharge in and around Owens Lake
- Use model simulations to assess potential change in groundwater levels or discharge that supports groundwater-dependent resources

1.3 PROJECT LOCATION AND ENVIRONMENTAL SETTING

The Owens Valley is bounded by the eastern Sierra Nevada to the west and the Inyo Mountains to the east, with the Coso Range rising to the south. The 110-square mile Owens Lake is located in Inyo County, California, approximately 5 miles south of the community of Lone Pine and approximately 60 miles south of the city of Bishop (**Figure 1**). Other nearby communities include Swansea and Keeler to the east and Cartago and Olancha to the south. Owens Lake is bounded by State Route (SR) 136 to the north and east, SR 190 to the south, and U.S. Highway (U.S.) 395 to the west. Owens Lake is characterized by vast areas of unvegetated desert playa, limited areas of vegetation, mining operations, the brine pool (which fluctuates in size), and the existing system of dust control areas (DCAs) (bermed areas of shallow flooding, managed vegetation and gravel, and the internal roadway network).

Groundwater occurs in multiple aquifers beneath the lakebed surface. A discontinuous surficial aquifer is present on portions of the Owens Lake playa and delta area (MWH, 2011a). Groundwater level monitoring data indicate groundwater occurs at depths ranging from less than 2, to 15 feet below ground surface (ft bgs) (GBUAPCD, 2009). Shallow groundwater generally flows toward the brine pool, where it becomes an evaporative sink. The surficial aquifer is separated from the deeper aquifer, where TW-E will be screened, by a layer of approximately 100 feet of clay. The deeper aquifer system consists of up to five permeable zones (aquifers) at depths ranging from 65 to more than 1,500 ft bgs (MWH, 2011b). Monitoring data suggest that the water levels in these deep aquifers range from a depth of over 100 ft around the margins of the lake to a pressure head of more than 60 ft above ground surface on the lakebed (MWH, 2011b).

TW-E is located at Owens Lake on an access road at the intersection of existing Shallow Flood ponds T36-1W, T36-1E, T36-2W, and T36-2E (**Figure 2**). The T36 DCAs are located southeast of the Phase 8 Gravel Cover DCA and west of the brine pool transition area of the Owens River Delta. TW-E is located on the Dolomite 7.5 minute U. S. Geological Survey (USGS) quadrangle at latitude/longitude 36°30’23.0474”N/-117°58’30.9255’W (North American Datum 1983 UTM Zone 11N) on land administered by the CSLC. The immediate area of the well is the roadway and berm separating the DCAs, an area of compacted fill and gravel devoid of vegetation (**Figure 3**). TW-E is an artesian well with approximately 50 feet of head above ground level. TW-E penetrates a generally silty sand formation with varying silt proportion separated by silty clay and clay strata.

1.4 PROJECT DESCRIPTION

Construction of TW-E was completed in 2018. The proposed project includes equipping TW-E with a pump, conducting the operational test for 6 months, and implementing the monitoring and data collection program (Appendix A).

1.4.1 Construction

No earthwork or land modifications would be required for implementation of the operational test. Equipping the well with a (likely submersible) pump would entail installation of numerous 20-foot sections of 8- to 10-inch diameter steel pump column (about 580 feet in total). A flatbed truck and crane would be used for pump installation, which is estimated to take 1 to 2 days. The pump intake and pressure transducer would be installed in TW-E at depths of 580 and 560 ft bgs, respectively, to accommodate the expected drawdown inside the pumping well casing, which is estimated to result in up to 400 feet of drawdown in the pumping well after 6 months, or a depth to groundwater of 350 feet (because of the 50 foot of artesian pressure before the test). A 12-inch discharge hose would extend to the T-36 DCA with dissipater rocks.

1.4.2 Operational Test

To gather necessary hydrogeologic information, TW-E would be pumped continuously at an average rate of 3 cubic feet per second (cfs) (approximately 1,350 gallons per minute) for a period of 6 months. This planned rate and duration are based on the drawdown characteristics of the well and practicality of maintaining a constant pumping rate for a period of 6 months.

The 6-month duration of the test was selected to mimic the duration that potential future pumping for dust mitigation would occur. The pumping rate of 3 cfs was selected in order to pump at a high enough rate to observe and document effects, but not to cause excessive drawdown in the pumping well such that it approaches the top of the well screen. Based on extrapolation of data from the short-term pump test, and the drawdown during the initial 24-hour pumping test, approximately 300 feet of drawdown is expected during the initial portion of the test. Given an initial groundwater elevation of approximately 50 feet above ground level, this equates to a depth to groundwater of 250 feet. Drawdown may increase to approximately 400 feet after 6 months. With a pump intake setting at 580 feet depth, this would keep the groundwater level well above the pump intake. Should these estimations prove in error, or a boundary effect causes an increased rate of drawdown, then the pumping rate will be adjusted downward or the test will be terminated.

Pumping TW-E at 3 cfs for 6 months was simulated by the OLGM. Based on the model-forecasted aerial extent of potential drawdown at groundwater-dependent locations, 3 cfs for 6 months was identified as a pumping rate that could provide the data necessary to meet project goals while being conservatively protective of groundwater dependent resources. The model indicated no adverse effects on groundwater-dependent resources.

Discharge of Pumped Water. During the operational test, water pumped from TW-E would be discharged to T36-2W and/or T36-1W, and then flow to the adjacent T36-1E and T36-2E ponds. Discharge from the operational test would supplement the existing water supply for these Shallow Flood DCAs from the LAA and/or LORP pump back station flows.

1.4.3 Monitoring Plan

The monitoring plan for the 6-month operational test of TW-E is included in Appendix A, and summarized below. The monitoring program consists of measuring the groundwater pumping rate at TW-E as well as monitoring groundwater levels, surface water flows, meteorological data,

ground surface elevation, and vegetation conditions. Hydrologic measurement data would be collected at a total of 180 monitoring locations, including groundwater levels at 93 primary and 49 secondary location (see Figures 3 and 4 of Appendix A). After quality control review, data would be made available to a mailing list of interested parties and online (www.ladwp.com/olg). Data from the pumping test would be used to prepare groundwater level hydrographs (graphs of groundwater level with time).

Groundwater Pumping Monitoring. The pumping rate of TW-E would be monitored using a totalizing flow meter. Instantaneous flow measurements and the total amount of groundwater pumped would be recorded manually every 30 minutes for the first 4 hours of testing to adjust discharge rate and maintain consistent discharge. Manual readings of totalizer data and groundwater elevation would also be recorded daily for the first week of the operational test followed by weekly measurements until the end of the test.

Groundwater Level and Gradient Monitoring. Starting at a minimum of 30 days prior to the operational test, groundwater level data at 142 monitoring wells and at TW-E would be collected using mainly transducers to document background trends. The groundwater monitoring network includes 142 existing wells - 93 primary wells (northern wells most likely to exhibit effects of the operational test) and 49 secondary wells (additional wells that are part of LADWP's existing monitoring program). Wells are depicted on Figure 3 and described in Table 3 of Appendix A. At TW-E, groundwater level data would be collected every 4 to 6 hours prior to the start of the operational test, every minute for 4 hours at the start of the test, then every 10 minutes for 4 hours, every hour for 8 hours, and thereafter every 6 hours. The frequency of data collection is summarized in Table 2 of Appendix A. At the conclusion of the 6-month test, groundwater levels would continue to be collected using transducers every minute for 4 hours, every 10 minutes for 4 hours, hourly for 24 hours, and then every 4 to 6 hours for a minimum of 180 days after the conclusion of the operational test.

Table 4 and Figure 6 of Appendix A describe the wells that would be used for monitoring the groundwater gradient towards the springs around Owens Lake; Figure 10 illustrates the concept of groundwater gradients. A horizontal groundwater gradient is the slope of the geometric plane that represents the surface of the groundwater table. The vertical gradient indicates upward or downward flow in aquifers or flow between adjacent aquifer units.

For the operational test, the gradient between a monitoring well located upgradient of Owens Lake (generally on the adjacent alluvial fans) and a paired shallow piezometer or monitoring well near the margins of the lakebed would be monitored to measure the horizontal gradient. This is an indirect measurement of groundwater flow toward the springs at the margin of the lake; flow that supports habitat surrounding the lake.

The vertical gradient would be measured between two piezometers (shallow monitoring wells with short screens) located in the same borehole or next to each other but screened at different depths. LADWP has installed several monitoring sites surrounding Owens Lake in which there is a deeper piezometer (generally 30 feet deep), and a co-located shallow piezometer (generally 5 feet deep), termed a piezometer cluster. These are designated as "P" sites (as listed on Table 4 and shown on Figure 6 of Appendix A). There is also typically a 10-foot piezometer at the same location (which

is not used in the gradient calculation). Groundwater level measurements at these piezometers at different depths are used to calculate the vertical gradient (upward or downward). Monitoring change in vertical gradients can be simplified by monitoring a change in the difference between the groundwater levels in a deep and shallow piezometer at the same location.

Groundwater Quality Monitoring. Groundwater samples from 15 wells located near non-LADWP wells, spring and seep locations, and vegetated dune areas (VDAs) would be analyzed for field parameters (temperature, pH, specific conductance, dissolved oxygen), major cations, major anions, indicator constituents, stable isotopes and nutrients. The wells to be sampled and the constituents are detailed in Tables 8 and 9 of Appendix A. To compare groundwater quality pre- and post-operational test, samples would be collected about one week prior to the start of the test and once prior to the conclusion of the test.

Surface Water Monitoring. Surface water level measurements would be collected using transducers in 26 existing flumes on an hourly frequency, beginning at least 30 days prior to the start of the test and continuing on an hourly basis during the test. Data would then be collected every 4 to 6 hours for a minimum of 180 days after the test. Flume locations are noted on Figure 4 and described in Table 5 of Appendix A.

Meteorological Monitoring. Relative humidity, barometric pressure, temperature, precipitation, and evaporation would be collected hourly from seven existing meteorological stations. Data collection would start at least 30 days before the test begins, and then continue during, and for a minimum of 180 days after, the operational test. Meteorological stations are shown on Figure 4 and described in Table 6 of Appendix A.

Ground Elevation Monitoring. One month prior to the start of the operational test, ground elevation data would be collected at five stations. Data would again be collected 3 months after the start of the test, and then at the end of the 6-month test. If verified evidence of land subsidence is observed, ground elevation monitoring would be conducted 3 and 6 months after the end of the operational test. Groundwater elevation monitoring locations are described in Figure 7 and Table 7 of Appendix A.

Groundwater Dependent Vegetation Monitoring. Vegetation monitoring would be conducted at springs and associated alkali meadows, and at VDAs.

Springs and Alkali Meadows - From 2014 through 2018, LADWP worked with the Owens Lake Habitat Work Group (HWG) and the Groundwater Work Group (GWG) to develop the "Resource Protection Protocol for Springs and Associated Alkali Meadows at and around Owens Lake (RPP)" (Owens Lake Habitat Work Group, 2018). The RPP document was finalized by the HWG in 2018 and identifies criteria, protocols, and management actions to prevent significant impacts to springs and associated alkali meadow resources due to groundwater pumping. Appendix A of the RPP (Technical Approach) details the rationale, methods, and data analysis techniques used to monitor and identify changes in vegetation productivity (i.e., Leaf Area Index [LAI]) and acreage. Identified changes are then statistically compared to the historical range of variability (HRV) and used to trigger tiered management actions. Numerical triggers for the RPPs will be assigned during finalization of the Hydrologic Monitoring Management and Mitigation Plan (HMMMP) – a related

document in preparation by the GWG. Vegetation monitoring during the operational test would be conducted utilizing remote sensing methods, consistent with the methods outlined in Appendix A of the RPP.

Vegetated Dune Areas - LADWP, in collaboration with the HWG, GWG and GBUAPCD, is currently developing an RPP to protect VDAs from potential impacts due to groundwater pumping. In February 2020, a Workplan was prepared to develop an RPP for VDAs that describes data collection and analysis methods to 1) quantify baseline conditions to inform development of Resource Protection Criteria (RPC), 2) identify monitoring protocols to achieve the RPC, and 3) develop triggers for further resource evaluation or management actions.

LADWP has conducted an historical baseline data analysis of vegetative cover, actual evapotranspiration (ETa), and LAI on 15 VDAs, as well as detailed data collection, characterization, and monitoring on 4 VDAs. Additional characterization would be conducted on three VDAs on the southeast shore of Owens Lake playa. Data from aerial images was ground-truthed by the completion of field transects to document species present, number, height, diameter and conditions (erosion, deposition, flooding, surface characteristics, watershed and landform). These data are being used to develop a generalized conceptual model, identifying (to the extent possible) the major drivers influencing changes in vegetative cover within the VDAs. Factors affecting vegetative cover in VDAs include: species characteristics (e.g., root depth), successional change, precipitation, run-on flood flows, groundwater, soil layering (coarse–fine), perched groundwater, erosion (soil volume and nutrient loss), abrasion of shoots and roots, deposition (soil and litter), and disturbance (grazing, roads, etc.). The analysis would include quantifying the vulnerability to changes in groundwater levels as a result of groundwater pumping.

Implementation of the Workplan to develop an RPP for VDAs is anticipated to be complete prior to the start of the operational test. Vegetation monitoring as part of the operational test of TW-E is anticipated to include remote sensing-based methods for estimating LAI and ETa. Monitoring methods may be further refined based on results of workplan implementation.

Spinner Logging. The goal of spinner logging is to calculate the percentage of the pumped water that is extracted from each of the aquifers that contribute to water pumped from TW-E. If possible based on pump design, a spinner log would be performed during the operational test. A tool consisting of a small impeller at the end of a rod would be extended within a 1 or 2-inch polyvinyl chloride (PVC) pipe to below the pump intake (but above the well screen). Moving vertically at a constant rate, the impeller rotation measures fluid velocity from which aquifer properties (hydraulic conductivity), interflow between different aquifers, and contribution of each aquifer to the total well production can be calculated.

A spinner log was performed on TW-E after well construction under non-pumping (but artesian flow) conditions. Results from the initial log showed over 50 percent of the artesian flow is from the upper portion of the screen (around 700 feet bgs). Depths beyond 900 feet bgs provided negligible flow.

Protection of Groundwater-Dependent Resources. The monitoring program and definition of trigger values have been developed for the protection of groundwater-dependent resources.

Trigger Values. Based on the modeling conducted, changes to groundwater levels that would significantly impact groundwater quality, surface water flows, ground surface elevations, and vegetation from the 6-month operational test are not predicted. However, to ensure protection of groundwater-dependent resources independent of model results as an added level of precaution, a subset of the primary monitoring wells have been designated as trigger wells (Table 3A of Appendix A). If a confirmed measurement of a trigger level in any monitoring well, or trigger gradient toward springs, is reached during the test, then LADWP would cease operational test pumping of TW-E, start recovery data collection, and report to Inyo County Water Department (ICWD), CSLC and GBUAPCD within 24 hours of such determination and action. In this context, "confirmed" means a repeatable measurement that is not due to equipment malfunction or human error. The most recent hydrographs for the trigger wells will be reviewed about three weeks prior to the start of the operational test to verify pre-pumping groundwater levels for the trigger wells. LADWP will meet with ICWD, CSLC, GBUAPCD, and other responsible agencies to set the final trigger levels for the duration of the operational test.

Groundwater-Dependent Ecosystems. Protection of groundwater-dependent ecosystems would be ensured through monitoring of flow toward the springs as represented by groundwater gradients with the understanding that some reduction in flow is permissible, as long as a positive gradient toward ground surface is maintained. The trigger level for horizontal and vertical gradients is to maintain at least 50 percent of the pre-pumping flow to the springs. Trigger gradients have been identified to ensure that water is available to the root zones of the vegetation at the springs (Table 15 of Appendix A). A drawdown trigger of 2.3 and 3.2 feet at the shallowest piezometer at Northwest and Horse Pasture springs, respectively, would also be used (Table 16 of Appendix A). These values are the seasonally adjusted historical range of variation. In addition, the seasonal LAI and size of transmontane alkali meadow (TAM) area during the growing season would be documented before and after the test utilizing remote sensing techniques.

Production Capability at Non-LADWP Wells. The rationale for protection of pumping capability at non-LADWP wells is based on the concept that a certain amount of drawdown will not affect production capability, as long as the pumping groundwater level is above the well screen. Potential trigger levels for non-LADWP wells range from 5 to 54 feet of drawdown based on half the distance between the static water level and the top of the well screen for the most sensitive well in a cluster of non-LADWP wells. However, the most sensitive well trigger (5 feet) has been selected for all non-LADWP wells as a conservative measure (Tables 12 and 13 of Appendix A).

Vegetated Dune Areas. The trigger level of depth to water using 1 foot of drawdown in VDA wells (Table 14 of Appendix A) is set based on literature review that the type of vegetation on the dunes is capable of sustaining certain level of groundwater elevation decline temporarily without adverse effects. The 1-foot drawdown trigger would be utilized during the operational test as a conservative trigger.

Triggers, such as the depth to water under VDAs, to be used for the operational test are anticipated to be much more conservative than trigger levels that may be proposed during long-term operational pumping. Data from the operational test would enhance the ability of the model to replicate and predict field conditions, thereby providing valuable information regarding the trigger

levels identified in monitoring plan. Based on data analysis after the conclusion of the operational test, more realistic triggers for the potential long-term operation would be developed.

1.5 PLANS AND POLICIES

CSLC Lease. In 1999, the California State Lands Commission (Commission) issued Lease No. PRC 8079.9, a 20-year General Lease – Public Agency Use (Lease), to LADWP for the Owens Lake South Sand Sheet Air Quality and Sand Fence Effectiveness Monitoring System on Owens Lake. As of 2020, the Commission has authorized 24 amendments to the Lease for the construction, operation, and maintenance of additional components of dust control, including the use of Best Available Control Methods (BACM) to mitigate dust emissions on Owens Lake. Approved types of standard BACM include Shallow Flooding, Managed Vegetation, and Gravel Cover. Tillage (with BACM backup) and soil roughness elements are also permitted.

TW-E is located on land administered by CSLC, therefore the Commission is a responsible agency under CEQA. LADWP has filed an application for a permit to conduct the proposed 6-month operational test of TW-E. Submission of CEQA documentation will complete LADWP's application for consideration by CSLC.

1.6 PROJECT PERMITS AND NOTIFICATIONS

Through on-going meetings of the GWG and HWG and other coordination, LADWP will continue coordination with the CSLC, ICWD, California Department of Fish and Wildlife (CDFW), GBUAPCD, Lahontan Regional Water Quality Control Board (Regional Board) and other interested stakeholders such as tribal representatives for the operational test of TW-E.

As noted above, a Lease Amendment is required from the CSLC prior to the start of the operational test. Although not anticipated to be required, confirmation will be sought that a Streambed Alteration Agreement (or amendment) from CDFW is not applicable to the 6-month operational test of TW-E. Further, the proposed operational test of TW-E remains in compliance with the Revised Waste Discharge Requirements (WDRs) for the Owens Lake Dust Mitigation Program set forth by the Lahontan Regional Board, and therefore, no additional permitting from the Regional Board will be required.

1.7 CALIFORNIA NATIVE AMERICAN TRIBAL CONSULTATION

Consultation for the TW-E project included written communication to the tribes regarding the proposed project. On December 22, 2020, LADWP sent notification letters via certified mail and follow-up emails to the nine Native American contacts provided by the Native American Heritage Commission (NAHC), to request information regarding local knowledge about cultural resources, traditional gathering areas, or sacred lands in or near the project site. Discussions with tribal representatives regarding the level of environmental review and potential adverse impacts to tribal cultural resources are on-going. Confidentiality has been maintained pursuant to Public Resources Code 21092.3(c). See Section 2.3.18 for additional discussion.


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CALIFORNIA
Owens Lake
Project Vicinity Map
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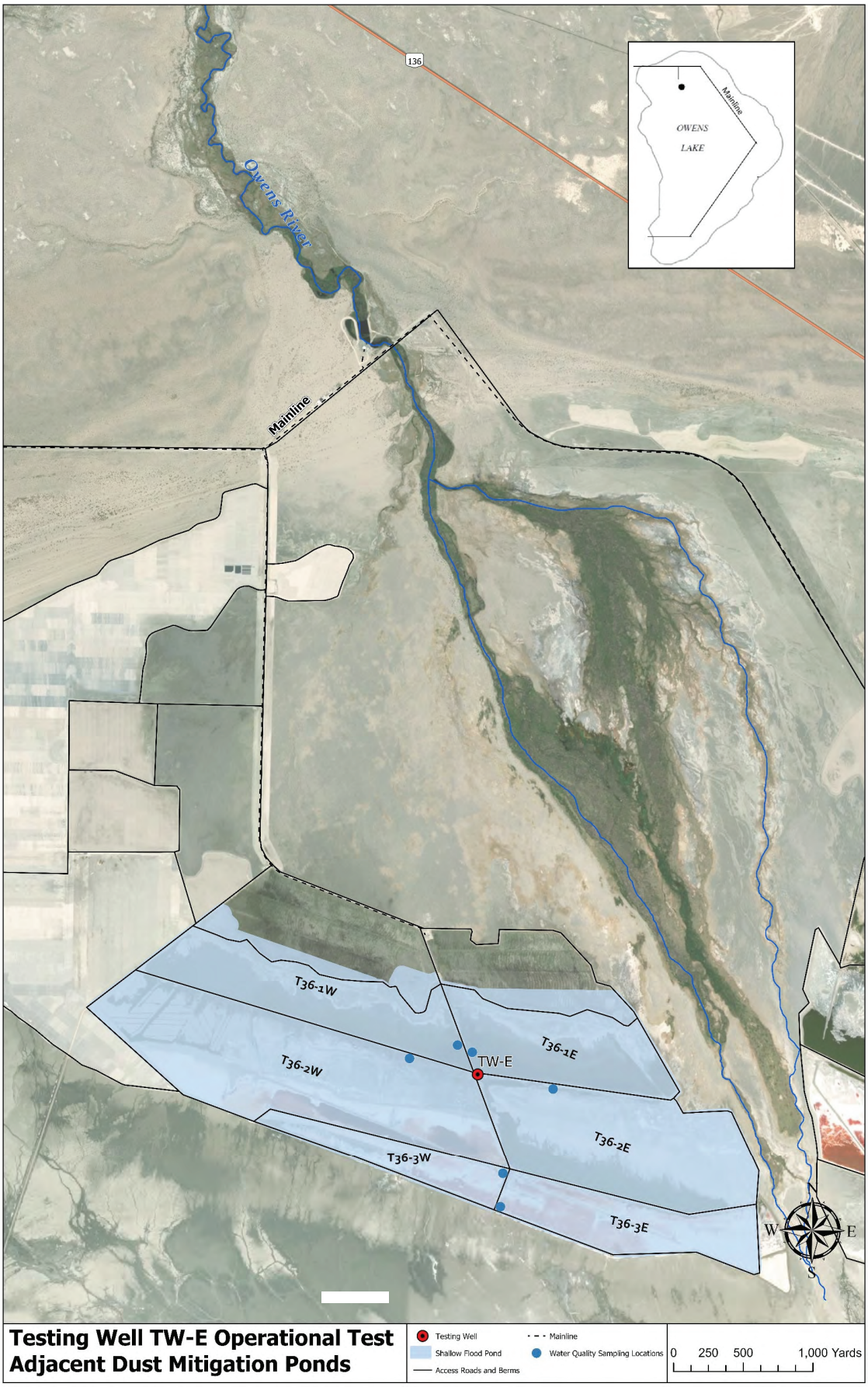

Figure 2
TW-E Location

Figure 3

Photographs of Project Facilities

Testing Well - East

Monitoring Well T902a

Monitoring Flume at Keeler Spring

Monitoring Flume at Bartlett

Section 2
Environmental Analysis

2.1 ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project.

☐ Aesthetics	☐ Greenhouse Gas Emissions	☐ Population and Housing
☐ Agricultural Resources	☐ Hazards and Hazardous Materials	☐ Public Services
☐ Air Quality	☒ Hydrology and Water Quality	☐ Recreation
☒ Biological Resources	☐ Land Use and Planning	☐ Transportation
☐ Cultural Resources, Tribal Resources	☐ Mineral Resources	☐ Utilities and Service Systems
☐ Energy	☐ Noise	☐ Wildfire

2.2 AGENCY DETERMINATION

On the basis of this initial evaluation:

☒ I find that the project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the applicant. A MITIGATED NEGATIVE DECLARATION will be prepared.

☐ I find that the project MAY have a significant effect on the environment, and an ENVIRONMENTAL IMPACT REPORT is required.

☐ I find that the project MAY have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR or NEGATIVE DECLARATION pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR or NEGATIVE DECLARATION, including revisions or mitigation measures that are imposed upon the project, nothing further is required.

Signature: Nadia Parker Digitally signed by Nadia Parker Date: 2021.02.11 18:49:29 -08'00' Title: Manager, Environmental Planning and Assessment

Printed Name: Charles C. Holloway Date: 02/17/2021

2.3 ENVIRONMENTAL CHECKLIST

2.3.1 Aesthetics

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☒	☐
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☒
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 a 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?	☐	☐	☒	☐
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?	☐	☐	☐	☒

Discussion:

a) and c) **Less than Significant Impact.** Located in a berm at the intersection of DCAs T36-1W, T36-1E, T36-2W and T36-2E, TW-E is located in the northwest section of Owens Lake on lands administered by the CSLC. Views from the well site are of the immediately adjacent DCAs, the Phase 8 DCA and the brine pool transition area (Figure 3). Aside from well installation (pump case installation and pump placement), no construction is required for the pumping test. Visual impacts would be limited to a few vehicles and workers over 1 to 2 days for pump installation; therefore, impacts on visual resources during construction would be less than significant. Thereafter, monitoring would require light duty trucks and workers visiting the monitoring sites (wells, flumes, meteorological stations, and ground elevation sites) before, during and after the 6-month operational test, similar to existing conditions on Owens Lake. Water from the operational test would flow to the adjacent DCAs and would have no visual impacts. Substantial lowering of groundwater levels with the potential to impact groundwater dependent ecosystems on and adjacent to the lake (seeps and springs, alkali meadows, and VDAs) is not predicted by project modeling (see Section 2.3.10). However, as a conservative measure, the project includes trigger values which would cease the operational test if reached. Triggers include 1 foot of drawdown at VDA wells and maintenance of at least 50 percent of the pre-pumping flow to springs. With implementation of the operational test monitoring plan (Appendix A) and adherence to project triggers, impacts on groundwater dependent ecosystems would be less than significant and no impacts on the visual landscape of Owens Lake would result. Overall, project-related impacts on visual resources would be less than significant.

b) **No Impact.** Scenic roadways are designated by the Bureau of Land Management (BLM), Inyo National Forest, Caltrans, and the Federal Highway Administration. Highway 395 is an officially designated State Scenic Highway from Independence to north of Tinemaha Reservoir (postmiles 76.5 to 96.9) (Caltrans, 2020). Highway 395 is eligible for designation in the portions north and south of that segment (Caltrans, 2020). The well site is east of Highway 395 in the eligible but not designated portion of the roadway. Since there is no construction disturbance associated with the project aside from pump installation, the project would have no impact on visual resources near a State scenic highway.

d) **No Impact**. TW-E does not have any lighting features and the proposed project does not include temporary or permanent installation of new sources of lighting. Monitoring would occur primarily during daylight hours, but some vehicle lights may be visible during later afternoon activities. This would be the same as on-going operations at Owens Lake. Therefore, the project would have no impact on day or nighttime views of the project area.

2.3.2 Agricultural and Forest Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☐	☒
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☒
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))?	☐	☐	☐	☒
d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion:

a) **No Impact.** The Farmland Mapping and Monitoring Program (FMMP) does not include Inyo County; therefore the proposed project would have no impact on conversion of FMMP designated Farmland (California Department of Conservation, 2018).

b) **No Impact.** Existing zoning by Inyo County of the project site is OS-40 (Open Space, 40-acre lot minimum) with a land use designation of SFL (State and Federal Lands) (Inyo County, 2020). Inyo County does not offer a Williamson Act program (California Department of Conservation, 2019a), therefore the proposed project would have no impact on agricultural zoning or Williamson Act contracts.

c) and d) **No Impact.** The project site is not zoned as forested land and the proposed project would not result in conversion of forest land to non-forest use. Public Resources Code Section 12220 (g) defines "Forest land" as land that can support 10-percent native tree cover of any species, including hardwoods, under natural conditions, and that allows for management of one or more forest resources, including timber, aesthetics, fish and wildlife, biodiversity, water quality, recreation, and other public benefits. Removal of trees is not proposed. Therefore, the proposed project would have no impact on forest lands.

e) **No Impact.** Active ranches are located near the lakebed – Horseshoe Livestock to the south and Islands and Delta Livestock, Lubkin Adjunct Livestock, and Mount Whitney Ranch north and west of the lake. The presence of livestock on the lake is limited to stray animals from adjacent leases. TW-E is located in a berm in the middle of several Shallow Flood DCAs, therefore no grazing occurs at the project site. Since the project does not include new fences or alter water distribution to the ranches, the operational test would have no impact on agricultural (grazing) operations in the general area.

2.3.3 Air Quality

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☐	☐	☒
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?	☐	☐	☒	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☐	☒
d) Result in other emissions (such as those leading to odors) affecting a substantial number of people?	☐	☐	☐	☒

Discussion:

The Owens Valley is located within the jurisdiction of the GBUAPCD. The valley has been designated by the State and Environmental Protection Agency (EPA) as a non-attainment area for the state and federal 24-hour average PM_{10} standards. Wind-blown dust from the dry bed of Owens Lake is the primary cause of the PM_{10} violations. With the exception of PM_{10}, air quality is considered excellent and the area has been designated as attainment or unclassified for all other ambient air quality standards. Large industrial sources of air pollutants are absent from the Owens Valley. The major sources of criteria pollutants, other than wind-blown dust, are woodstoves, fireplaces, vehicle tailpipe emissions, fugitive dust from travel on unpaved roads, prescribed burning, and gravel mining.

a) **No Impact.** The relevant air quality plan for the project area is the Final 2016 Owens Valley PM_{10} Planning Area Demonstration of Attainment State Implementation Plan (SIP) (GBUAPCD, 2016). The focus of this planning document is implementation of dust control measures at Owens Lake, the major particulate matter source in the Valley. The SIP demonstrates how the National Ambient Air Quality Standards (NAAQS) will be attained. The 6-month operational test of TW-E would not require any ground disturbance; therefore, the project would not generate dust from construction activity. Additionally, drawdown of the shallow groundwater aquifer is not anticipated to be significant during this 6-month test (see Section 2.3.10), therefore impacts related to groundwater level reductions on surface soil moisture and dust generation are not predicted. Therefore, the project would have no impact on the relevant air quality plan.

b) **Less than Significant Impact.** The GBUAPCD has not established specific quantitative thresholds of significance for air emissions for CEQA analyses. However, projects that violate the NAAQS for PM_{10} are deemed unacceptable (GBUAPCD, 2008a). Because no construction aside from pump installation is required to conduct the operational test, emissions from construction equipment or vehicles would be minor. The extensive monitoring program would require light duty truck travel for sample collection; emissions from these activities would be

similar to existing conditions on Owens Lake. Pumping of the deep aquifer for 6 months is not anticipated to significantly reduce groundwater levels (see Section 2.3.10). Therefore, substantial reductions in surface soil moisture that could increase dust generation are not predicted. Overall, the project would have a less than significant impact on air quality.

c) **No Impact.** Sensitive receptors include schools, day-care facilities, nursing homes, and residences. Because none are present in the project area, and construction is limited to pump installation, no sensitive receptors would be impacted by diesel fumes associated with construction equipment. The project would have no impact on sensitive receptors.

d) **No Impact.** Because construction would be limited to pump installation, no substantial odors related to diesel fumes would be generated. The project would have no impacts on odors.

2.3.4 Biological Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☒	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☒	☐
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?	☐	☐	☒	☐
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 wildlife nursery sites?	☐	☐	☐	☒
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion: Prior to implementation of the Dust Control Project in 2000, Owens Lake consisted of a large expanse of barren playa, a remnant hypersaline brine pool, and scattered springs and seeps along its shoreline. Sparse vegetation, including saltgrass and occasional shrubs, occurred on the playa within isolated spring mounds. Implementation of dust control measures has resulting in an increase in the use of Owens Lake by many wildlife species as water and vegetation resources are now present on much of the former barren playa. Shallow flooding has attracted large numbers of birds, primarily gulls, avocets, stilts and plovers (LADWP, 2010). Since implementation of the OLDMP, Owens Lake includes areas of:

- **Alkali Meadow.** Dry alkali meadow species include saltgrass (*Distichlis spicata*) (dominant species), Parry's saltbush (*Atriplex parryi*), and alkali pink (*Nitrophila occidentalis*).

- **Wet alkali meadow.** Prominent plant species include inland saltgrass, chairmakers bulrush (*Schoenoplectus americanus*), rabbitfoot grass (*Polypogon monspeliensis*), curly

dock (*Rumex crispus*), fivehorn smotherweed (*Bassia hyssopifolia*), alkali pink, Baltic rush (*Juncus balticus*), and common spikerush (*Eleocharis palustris*).

- **Saturated Playa.** This barren type comprises DCAs and buffers that are intermittently wetted by operation of dust control measures.

- **Barren Playa.** Vegetation is absent in this area.

- **Eolian.** Plant species include saltgrass, Parry saltbush (*Atriplex parryi*), and Mojave seablite (*Suaeda moquinii*), greasewood (*Sarcobatus vermiculatus*), and alkali pink.

- **Standing Water.** Vegetation is absent in this area.

- **Road.** Vegetation is absent in this area.

Vegetation Monitoring. Vegetation Monitoring would be conducted per the monitoring plan (Appendix A) and the RPP Workplans for both alkali meadow (Owens Lake Habitat Work Group, 2018) and VDAs (in preparation).

All personnel would participate in a lakebed worker education program. The training reviews special status plant and animals potentially present on Owens Lake, speed limits on the lake, locations and procedures near buffer areas, and reporting of observations.

a) **Less than Significant Impact.** Based on previous assessments for Owens Lake (as summarized in LADWP, 2015a), the following summarizes sensitive plant and animal species with potential to occur in the project area.

Sensitive Plant Species. One state endangered and 17 locally important plant species have the potential to be present in the project region:

- Owens Valley checkerbloom (*Sidalcea covillei)*
- Sanicle cymopterus *(Cymopterus ripleyi* var. *saniculoides)*
- Parish's popcorn-flower (*Plagiobothrys parishii)*
- Darwin rock cress (*Arabis pulchra* var. *munciensis)*
- Naked milk-vetch *(Astragalus serenoi* var. *shockleyi)*
- Horn's milk-vetch (*Astragalus hornii*)
- Inyo phacelia *(Phacelia inyoensis)*
- Creamy blazing star *(Mentzelia tridentata)*
- *Booth's evening primrose (Camissonia boothii ssp. boothii)*
- *Sagebrush loeflingia (Loeflingia squarrosa var. artemisiarum)*
- *Narrow-leaved cottonwood (Populus angustifolia)*
- *Nevada oryctes (Oryctes nevadensis)*
- *Inyo County star-tulip (Calochortus excavatus)*
- *Alkali cord grass (Spartina gracilis)*
- *Father Crowley's lupine (Lupinus dedeckerae)*
- *DeDecker's clover (Trifolium macilentum var. dedeckerae)*
- *Bald daisy (Erigeron calvus)*
- *July gold (Dedeckera eurekensis)*

There are records of Owens Valley checkerbloom at Willow Dip, and Parish's popcorn-flower at Willow Dip and Ash Creek spring. Because construction of the project would be limited to pump installation at the existing TW-E location, no direct impacts to sensitive plant species would occur. Located at the south end of Owens Lake, groundwater-related impacts from the operational test on Willow Dip or Ash Creek are not predicted. The highest simulated drawdown in any of the shallow piezometers surrounding the lake is 0.04 feet at P1 located west of TW-E. The predicted drawdown levels would not substantially alter shallow groundwater level or soil moisture in the root zone such that impacts to plants, including

sensitive plants such as Owens Valley checkerbloom, would occur. Also, the operational test would not be conducted during the growing season. Additionally, the project includes implementation of an extensive monitoring program (Appendix A) including monitoring at wells T923 (located at the base of the alluvial fan near Ash Creek, 9.4 miles from TW-E) and P3L and P3U (located at Ash Creek, 9.1 miles from TW-E). Based on the results of the monitoring, if a 50 percent reduction in groundwater gradient to seeps and springs occurs, pumping for the operational test would cease. Note that because the gradient would drop before shallow water levels, the groundwater gradient trigger is more conservative than a well drawdown threshold. With implementation of the monitoring plan and adherence to the groundwater gradient trigger, project-related impacts on sensitive plants would be less than significant.

Locally Important Invertebrates. Eight locally important invertebrate species have the potential to be present in the project region:

- Moth *(Tescalsia guilianata)*
- Monarch butterfly (*Danaus plexippus)*
- Alkali skipper *(Pseudocopae-odes eunus*
- Owens valley tiger beetle (*Cicindela tranquebarica inyo)*
- Alkali flats tiger beetle *(Cicindela willistoni pseudosenilis)*
- Slender-girdled tiger beetle *(Cicindla tenuicincta)*
- Owens dune weevil (*Trigonoscuta owensii)*
- Wong's springsnail (*Pyrgulopsis wongi*)

Of these species, Owens valley tiger beetle and spring snails have been observed. Owens Valley tiger beetle was observed in the Channel Area in 2007 (at the southern end of the lake). Records for Wong's springsnail are known from Northwest Spring (adjacent to Owens Lake); however, recent LADWP surveys have not found evidence of Wong's springsnail and they are considered extirpated from Owens Lake. CDFW notes springsnails at off-lake springs near Lone Pine. Because construction for the project is limited to pump installation, direct impacts to invertebrates would not occur. Based on predictive modeling, substantial impacts on surface water flows at seeps and springs are not predicted (see Section 2.3.10). Based on the results of monitoring during the test, if a 50 percent reduction in groundwater gradient to seeps and springs occurs, pumping for the operational test would cease. With implementation of the monitoring plan and adherence to the groundwater gradient trigger, project-related impacts on sensitive invertebrates would be less than significant.

Sensitive Fishes. Two endangered and two sensitive fish species have the potential to be present in the project region:

- Owens tui chub (*Gila bicolor snyderi*)
- Owens pupfish (*Cyprinodon radiosus)*
- Owens speckled dace *(Rhinichthys osculus ssp.)*
- Owens sucker *(*Catostomus *umeiventris)*

None of these fishes are known for Owens Lake; fish are not present in the Shallow Flooding ponds. Based on predictive modeling (see Section 2.3.10), the project would not substantially alter flow patterns to any off-site waterways that may contain these species. However, the monitoring plan includes surface water level measurements to confirm this assumption. The proposed project would have no impact on sensitive fishes.

Sensitive Reptiles and Amphibians. One threatened reptile, two sensitive amphibians, and one BLM sensitive reptile have the potential to be present in the project region:

- Desert tortoise (*Gopherus agassizii)*
- Sierra Nevada yellow-legged frog (*Rana sierrae*)
- Inyo Mountains slender salamander (*Batrachoseps campi*)
- Northern sagebrush lizard (*Sceloporus graciosus graciosus)*

An adult desert tortoise was observed east of Owens Lake over 20 years ago; this species has not been observed on the lake. The Sierra Nevada yellow-legged frog and Inyo Mountains slender salamander have not been documented on the valley floor and are not known to occur on the project site. Suitable habitat for northern sagebrush lizards is not present on the lake. Therefore, the project would have no impact on sensitive reptile or amphibian species.

Sensitive Bird Species. Three listed, nine sensitive and three locally important bird species have the potential to be present in the project region:

- Bald Eagle (*Haliaeetus leucocephalus)*
- Swainson's Hawk (*Buteo swainsoni)*
- Least Bell's Vireo (*Vireo bellii pusillus)*
- Western Least Bittern *(Ixobrychus exilis hesperis)*
- Northern Harrier (*Circus cyaneus)* (Nesting)
- Golden Eagle (*Aquila chrysaetos)* (Nesting and wintering)
- Snowy Plover (*Charadrius nivosus) (inland breeding population)*
- Mountain Plover *(Charadrius montanus)*
- Burrowing Owl (*Athene cunicularia)* (Burrow sites)
- Loggerhead Shrike *(Lanius ludovicianus)* (Nesting)
- Yellow Warbler (*Setophaga petechia brewsteri)* (Nesting)
- Yellow-breasted Chat *(Icteria virens)* (Nesting)
- Willet (*Catoptrop-horus semipalmatus)*
- Franklin's Gull *(Larus pipixcan)*
- Nuttall's Woodpecker (*Picoides nuttallii)*

Of these species, transient foraging by Bald Eagle or Swainson's Hawk is possible on the lake, and Northern Harriers are common. No suitable habitat for Western Least Bittern is present in the project areas. Mountain Plover is a possible fall migrant. Burrowing Owls have been observed on the lake. There is potentially suitable nesting habitat for Loggerhead Shrike in uplands adjacent to Owens Lake.

At Owens Lake, the breeding habitat of the Snowy Plover includes open, dry playa or gravel areas within 0.5 miles of springs, seeps, outflows, or Shallow Flooding that supports invertebrate production. Since 2001, approximately 1,300 Snowy Plover nests have been recorded on the lake. Snowy Plover are counted in an annual census on Owens Lake. Snowy Plover numbers have ranged from 360 to 730 from 2003 to 2014. The 13-year average (2002-2014) is 533 Snowy Plover.

With construction of the proposed project limited to pump installation, the project would have no direct impacts to sensitive bird species. Substantial impacts to habitat areas potentially used by sensitive bird species (including seeps and springs) are not predicted. With implementation of the monitoring plan (Appendix A) and adherence to trigger levels, impacts on sensitive bird species would be less than significant.

Sensitive Bat Species. Seven sensitive (California Species of Special Concern (CSC) and BLM sensitive) bat species have the potential to be present in project region:

- Pallid bat *(Antrozous pallidus)*
- Townsend's big-eared bat *(Corynorhinus townsendii)*
- Spotted bat *(Euderma maculatum)*
- Western small-footed myotis *(Myotis ciliolabrum)*
- Long-eared myotis *(Myotis evotis)*
- Long-legged myotis *(Myotis volans)*
- Yuma myotis (*Myotis yumanensis)*

All seven of these species may forage over existing Shallow Flood ponds. However, potential roosting habitat (rock crevices or hollow trees) is not present on the lakebed. Bats foraging in Shallow Flood areas near TW-E would not be expected to be directly impacted during pump installation for 1-2 days since construction activity would occur in the daytime. The operational test is not predicted to substantially alter surface water volumes on the lake (see Section 2.3.10), therefore the availability of forage for the bats would not be substantially impacted during the 6-month test. Additionally, surface water monitoring would be conducted to confirm this modeled prediction (Appendix A). Therefore, with implementation of the monitoring plan, project-related impacts on sensitive bat species would be less than significant.

Other Sensitive Mammals. One endangered, one threatened, and two sensitive mammal species other than bats have the potential to be present in the project region:

- Bighorn sheep (*Ovis canadensis sierrae*)
- Mohave ground squirrel (*Spermophilus mohavensis)*
- Owens Valley vole *(Microtus californicus vallicola)*
- American badger (*Taxidea taxus*)

Sierra Nevada bighorn sheep inhabit alpine meadows, grassy mountain slopes and foothill country near rocky cliffs and bluffs. They are rarely observed on the valley floor. Mojave ground squirrel has been observed south of, but not on, Owens Lake. Suitable habitat for American badger is not present on Owens Lake. Owens Valley vole, a subspecies of the

California vole, is known from wetlands, grasslands, and other grass-dominated sites and has been observed in Swedes Pasture and Dirty Socks Spring. With construction limited to pump installation for 1 to 2 days, impacts on other sensitive mammal species would be less than significant.

Summary. Construction for the project is limited to pump installation over 1-2 days in the immediate are of TW-E (DCA berm road), and the 6-month operational test is not predicted to substantially alter surface water levels, soil moisture or vegetation conditions on or adjacent to the lake. Overall, with implementation of the monitoring plan and adherence to groundwater trigger values (see Section 2.3.10), project-related impacts on sensitive species would be less than significant.

b) and c) **Less than Significant Impact**. Relevant to the proposed project, the identified sensitive natural communities on and adjacent to Owens Lake are dry Alkali Meadow, Alkali Seep, and VDAs. TW-E is located in a berm road with no vegetation. Therefore, issues related to groundwater withdrawals for the operational test at TW-E are:

- Absent precautionary measures, groundwater pumping from the operational test and resultant reductions in groundwater levels in the shallow aquifer may have the potential to 1) reduce flow to seeps or springs or 2) reduce soil moisture at the ground surface such that vegetation would be substantially impacted.

An analysis of groundwater impacts from the proposed pumping test was conducting using the existing OLGM (Stantec, 2020). As noted in Section 2.3.10, the proposed 6-month, 3 cfs pumping test from the deep aquifer would result in a modeled groundwater drawdown of 0.24 feet at the O'Dell well northwest of TW-E (largest simulated drawdown occurring at any non-LADWP well). The highest simulated drawdown in any of the shallow piezometers surrounding the lake is 0.04 feet at P1 located west of TW-E, while the highest simulated drawdown at any VDAs site is 0.03 feet at VDA05, located east of TW-E. These simulated drawdown values are shown in Figure 14 of Appendix A. Simulated drawdown due to the proposed pumping is limited to the northern portion of Owens Lake and the area immediately north of Owens Lake. Vegetation would be dormant during the operational test. Water levels in the deep aquifer would initially rise relatively rapidly after completion of the test. Based on predictive modeling, groundwater levels are expected to substantially recover to pre-testing conditions in approximately 18 months (depending on the well) (see Section 2.3.10).

Developed for a future longer-term pumping program, RPPs for springs and associated alkali meadows have been defined for Owens Lake (Owens Lake Habitat Work Group, 2018). Based on LAI and TAM acreage, the RPPs include tier 1 early warning triggers, tier 2 triggers to alter pumping regimes, and tier 3 triggers to halt groundwater pumping at wells that impact a spring or alkali meadow area.

Fifteen VDAs of interest have been identified around the north and east sides of Owens Lake. Survey results demonstrated that three shrub species were predominant on the VDAs with black greasewood (*Sarcobatus vermiculatus*) and bush seepweed (*Suaeda nigra*) present in all 15 and Parry's saltbush (*Atriplex parryi*) present in 14 VDAs. There were moderate

contributions by two other saltbushes (shadscale [*A. confertifolia*] and allscale [*A. polycarpa*] saltbush) and minor contributions by seven other shrub species. It was concluded that the distribution of dune vegetation across the VDAs was related to elevation, and to pre-historic and historic shorelines.

A VDA Workplan (Formation, 2020) was developed to guide development of RPPs to protect these vegetated areas around the lake from potential impacts from groundwater pumping. The VDAs likely include interbedded silt/clay, gravel and sand layers deposited by flood flows, and likely perched groundwater. As part of development of the VDA Workplan, literature on the relationship of shallow groundwater to soil moisture and maintenance of vegetation was reviewed: Bair et al., 1995, GBUAPCD Aquifer Test, Elmore et al., 2003, Devitt and Bird, 2016, Trent et al., 1997, Toft, 1995 and Toft and Fraizer, 2003. Based on the literature reviewed, a 1 foot change in shallow groundwater depth attributable to groundwater pumping was identified as a conservative early warning trigger. The trigger level for VDAs is based on the literature observations that the type of vegetation on the dunes is capable of sustaining certain level of groundwater elevation decline temporarily without adverse effects.

Groundwater pumping that substantially reduces groundwater levels has the potential to reduce surface soil moisture levels in the root zone, and therefore vegetation. The operational test would not cause a substantial drop in shallow groundwater levels due to the deep screened interval. Additionally, the project includes extensive monitoring and adherence to groundwater level triggers. Therefore, significant impacts to vegetation are not anticipated. With monitoring of groundwater levels and vegetation conditions, the impact on sensitive vegetation communities from groundwater withdrawals would be less than significant.

d) **No Impact.** There are no known or documented migration corridors for small terrestrial mammals or medium-sized mammals on Owens Lake (GBUAPCD, 2008b). Tule elk calving is known in the Owens River Delta. Owens Lake is an important site along the Pacific Flyway for migratory waterbirds. However, because no construction other than pump installation is required for the TW-E operational test, and because no fencing or other barriers are proposed, the project would have no impacts related to wildlife corridors.

e) **No Impact.** No tree ordinances apply to the project area and no trees would be removed for the operational test. The Inyo County General Plan Goals and Policies document (2001) includes two goals for biological resources issues: Maintain and enhance biological diversity and healthy ecosystems throughout the County, and provide a balanced approach to resource protection and recreation use of the natural environment (Goals BIO-1 and BIO-2). Substantial drawdown of the shallow groundwater and resultant surface vegetation impacts from the 6-month operational test are not expected to occur (see Section 2.3.10). Therefore, the project would not conflict with these goals. The project would have no impact on local policies or ordinances protecting biological resources.

f) **No Impact.** The project site is not within a Natural Community Conservation Plan area as defined by California Fish and Game Code §2800. However, since implementation of the OLDMP, several agreements, mitigation commitments and habitat plans have been developed by LADWP for the protection and enhancement of biological resources on the lake.

- T30-1 Wetland Mitigation Area - A 43.5-acre wetland mitigation area has been established in T30-1 as mitigation for impacts from construction of Phase 5 of the OLDMP. No earthwork or other construction activity would occur in T30-1 as part of the operational test and no interruption in the water supply to this area would result. The proposed project would have no impact on the T30-1 Wetland Mitigation Area.

- Western Snowy Plover – LADWP maintains habitat for the breeding population of Snowy Plover that occurs on Owens Lake. Located along the east side of the lake (east of T23 and T24), the habitat area is a mix of exposed sandy or gravelly substrate suitable for nesting in close proximity to standing water equal to or less than 12 inches in depth. The proposed operational test would include discharge of groundwater to the T36 ponds. LADWP also maintains a minimum of 1,000 acres of shorebird and Snowy Plover habitat in T23 and 145 acres of habitat shallow flood suitable for shorebird foraging in T4-3. These designated habitat areas would not be disturbed as part of the proposed project.

- Corvid Management Plan - LADWP implements a Corvid Management Plan in order to reduce potential direct and cumulative impacts to Snowy Plovers and other migratory shorebirds within the project area. Management measures include refuse management and roosting/nesting prevention (on structures, utility lines, and fences). The proposed operational test does not include new structures that could serve as perches for corvids; the data collection project would have no impact on this plan.

- Owens Lake Habitat Management Plan – The OLHMP for the OLDMP (LADWP, 2010), serves as a guide for compatibility between construction, maintenance, and operational needs of the Dust Mitigation Program, and the needs of resident and migratory wildlife resources utilizing the Owens Lake Dust Control Area. The overall goal of the OLHMP is to avoid direct and cumulative impacts to native wildlife communities that may result from the Dust Control Program. Implementation of operational test would be consistent with the resource management actions described in the OLHMP.

- Habitat Conservation Plan - LADWP prepared a Habitat Conservation Plan (HCP) for LADWP-owned lands in Inyo and Mono Counties (LADWP, 2015b). The HCP has been reviewed by the United States Fish and Wildlife Service (USFWS) and federal approval is pending. When approved, the seven species that will be federally covered under this HCP are Owens Pupfish, Owens Tui Chub, Owens/Long Valley Speckled Dace, bi-state population of Greater Sage-Grouse (*Centrocercus urophasinus*), Yellow-billed Cuckoo (*Coccyzus americanus*), Willow Flycatcher (*Empidonax traillii*), and Bell's Vireo. LADWP manages the activities on its lands such as habitat restoration, recreation, control of noxious and invasive weeds, fire suppression, infrastructure maintenance, and the management of water gathering and power production/distribution in a manner that is compatible with the

conservation of these seven species. TW-E is located on land administered by the CSLC, so the specific site of the well is not included in the HCP. LADWP-owned lands in the vicinity of the well to the north are included in the HCP. However, none of these covered species are known for Owens Lake. As described above, the operational test would allow data collection on the impacts of groundwater withdrawals on groundwater levels but is not predicted to adversely impact vegetation on or adjacent to Owens Lake. Therefore, the project would not impact HCP species and would have no impact on the provisions of the HCP.

Overall, the proposed 6-month operational test of TW-E would have no impacts on conservation planning.

2.3.5 Cultural Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in §15064.5?	☐	☐	☐	☒
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5?	☐	☐	☐	☒
c) Disturb any human remains, including those interred outside of dedicated cemeteries?	☐	☐	☐	☒

Discussion: Historical, archaeological and paleontological resources are known for Owens Lake and the surrounding area. A National Register District Nomination for Owens Lake is in preparation for submittal to the National Park Service. The TW-E site would be included in the National Register District, if the lake is designated in the future.

a) and b) **No Impact.** Although historic, archaeological and paleontological resources are present on Owens Lake, the proposed operational test would not require any earthwork or other substantial ground disturbance. As under existing conditions, monitoring of groundwater levels, surface water and vegetation would be conducted. These monitoring activities would require driving on existing roadways and walking across lakebed and VDA areas, the same as existing conditions. Monitors on Owens Lake receive training regarding the identification of cultural resources and measures to take if there are unexpected finds. Therefore, since no earthwork is proposed, the project would have no impact on historical or archaeological resources.

c) **No Impact.** Because earthwork or other site disturbance is not required for the operational test, the project would have no impact on human remains. As is the case with all LADWP operations on the lake, anytime LADWP personnel encountered human remains in the course of facility operations, the Inyo County Coroner would be contacted, the area of the find would be protected, and provisions of State CEQA Guidelines Section 15064.5 would be followed.

2.3.6 Energy

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?	☐	☐	☒	☐
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?	☐	☐	☐	☒

Discussion:

a) **Less Than Significant Impact.** Construction of the project would be limited to pump installation over 1 to 2 days. Project operation would require groundwater pumping, to be powered by an existing underground power line. The use of electric power and vehicle fuels for the purpose of data collection to improve the understanding of Owens Lake hydrogeology would not be wasteful or inefficient. Impacts on energy use would be less than significant.

b) **No Impact.** The Inyo County General Plan Conservation and Open Space Element includes a section on Energy Efficiency (Inyo County, 2001). The County has established the following energy policies:

- Policy EE-1.1 The County will work to reduce the overall energy usage at its facilities by 10% by 2016 (or 3.34% per year), as long as the reductions will also result in cost savings to the County.
- Policy EE-1.2 The County will continue to evaluate energy use and reduction targets as a way to promote energy efficiency throughout the county and as a means to reduce operating costs.
- Policy EE-1.3 The County will continue to implement the action items identified in the 2012 Energy Action Plan to meet its overall energy reduction goals as long as those actions will result in savings to the County from reduced energy usage.
- Policy EE-1.4 The County will consider adopting incentive programs for homeowners who exceed the State's requirements for new construction, remodels, and additions.
- Policy EE-1.5 The County will consider adopting recognition programs for homeowners who exceed the State's requirements for new construction, remodels, and additions.
- Policy EE-1.6 The County will consider adopting incentive programs for business owners and all other non-residential building owners who exceed the State's requirements for new construction, remodels, and additions.

- Policy EE-1.7 The County will consider adopting recognition programs for business owners and all other non-residential building owners who exceed the State's requirements for new construction, remodels, and additions.

Construction and operation of the project would require the minor consumption of fossil fuels for pump installation and monitoring, and electric power for pump operation. Overall, the project would not use energy in a wasteful manner and would be consistent with Inyo County policies for energy efficiency. The project would have no impact on energy planning.

2.3.7 Geology and Soils

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Directly or indirectly cause potential 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?	☐	☐	☐	☒
b) Result in substantial soil erosion or the loss of topsoil?	☐	☐	☐	☒
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?	☐	☐	☒	☐
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994) creating substantial risks to life or property?	☐	☐	☐	☒
e) Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems, where sewers are not available for the disposal of wastewater?	☐	☐	☐	☒
f) Directly or indirection destroy a unique paleontological resource or site or unique geologic feature?	☐	☐	☐	☒

Discussion:

The project area is located in eastern California, near the town of Lone Pine in the Owens Valley. The Owens Valley is a deep north-south trending basin, lying between the Sierra Nevada to the west and the White-Inyo Mountains to the east. The Owens Valley was formed as a fault block basin with the valley floor dropped down relative to the mountain blocks on either side.

The Owens Valley is the westernmost basin in a geologic province known as the Basin and Range, a region of fault-bounded, closed basins separated by parallel mountain ranges stretching from central Utah to the Sierra Nevada and encompassing all of the state of Nevada. Geological formations in the project areas are of Cenozoic age, chiefly Quaternary. The sediments in Owens Valley contain mostly Quaternary alluvial fan, basin-fill, fluvial, and volcanic deposits.

The soils in Owens Valley contain mostly Quaternary alluvial fan, basin-fill, and lacustrine deposits. On alluvial fans, the soils are mostly Xeric and Typic Torrifluvents, Xeric and Typic Torriorthents, and Xeric and Typic Haplargids. Soils on alluvial fans are well drained (Miles and Goudy, 1997).

TW-E is located in a generally silty sand formation with varying silt proportion separated by silty clay and clay strata (see lithologic log included as Figure 2 of Appendix A).

a)-i) and a)-ii) **Less Than Significant Impact.** The west side of the Basin is bounded by a north-south trending fault zone along the east side of the Sierra Nevada known as the Sierra Nevada Frontal Fault (Stone et. al., 2000). The east margin of the Basin is delineated by the Inyo Mountains Fault, which is a belt of west-side-down normal faults along the Inyo Mountains (Hollett et. al., 1991; Neponset, 1999). Roughly in the middle between the Inyo Mountains Fault and Owens Valley Fault is the Owens River Fault (Neponset and Aquila, 1997). To the south, a number of unnamed fault segments were mapped in front of the Coso Range (Stinson, 1977; Hollett et. al., 1991). Faults near TW-E are noted on Figure 6 of Appendix A.

TW-E is located on the Dolomite USGS quadrangle which does not include a designated Alquist-Priolo Special Studies Zone, although the neighboring quadrangles of Lone Pine (adjacent to the west) and Bartlett (to the southwest) are mapped with Alquist-Priolo Zones (California Department of Conservation, 2019b). The project area is in an active tectonic zone and surface rupture on local faults is also possible outside of the currently mapped active traces of these range-front faults. One of the goals of the project is to resolve data gaps associated with the role of faults in groundwater flow at Owens Lake, specifically the role of the Owens Valley and the Owens River fault zones as barriers to groundwater flow. However, since habitable structures would not be built as part of the proposed project, people would not be exposed to adverse effects involving seismic ground shaking. Damage to project facilities such as the well or pump would be repaired as necessary. Therefore, impacts related to seismic events would be less than significant.

a)-iii) **Less Than Significant Impact.** Shallow groundwater does occur on Owens Lake, but the project would not increase shallow groundwater resulting in an increased risk of liquefaction. Habitable structures would not be built as part of the proposed project; therefore, people would not be exposed to adverse effects involving liquefaction. Damage to project facilities such as the well or pump would be repaired as necessary. Therefore, impacts related to seismic-related ground failure such as liquefaction would be less than significant.

a)-iv) **No Impact**. The TW-E site is located well away from the mountain front, and would not be subject to impacts from landslides. Habitable structures would not be built as part of the proposed project; therefore, people would not be exposed to adverse effects involving landslides. The project would have no impacts related to landslides.

b) **No Impact**. Aside from pump installation, no construction or earthwork is required for the project, and therefore there would be no redistribution of soils or loss of topsoil. Water from

the pumping test would be conveyed to the adjacent T36 ponds, therefore there would be no soil erosion from overland flow. No impacts on soils would occur.

c) **Less than Significant Impact**. Lakebed soils in the project area can be unstable, but other than pump installation, the project does not include any construction or earthwork that would subject new facilities to unstable soils. However, because project operations are groundwater pumping over time, land elevations would be monitored. Land subsidence occurs when a large volume of groundwater is withdrawn over time and certain rock types (e.g., fine grained sediments) compact with reductions in pore water pressure. Based on the results of previous aquifer tests on Owens Lake (Mill and River sites, Jacobson et al., 1992), there was no measurable change in land surface. Therefore, it is predicted that the 6-month operational test would not pump at a high enough level for a long enough period to result in subsidence. In addition, the recovery cycle after the 6-month test allows for recovery of groundwater levels. Water levels in the deep aquifer are expected to initially rise relatively rapidly after completion of the test. Based on predictive modeling, groundwater levels are expected to substantially recover to pre-testing conditions in approximately 18 months (see Section 2.3.10). However, as part of the extensive data collection included in the monitoring plan (Appendix A), ground elevation would be monitored at five sites before and during the operational test (3 and 6 months after start of test). If verified evidence of land subsidence is observed, ground elevation monitoring would be conducted 3 and 6 months after the end of the operational test. Observable land subsidence related to the project is not anticipated, and with implementation of the monitoring plan, impacts from unstable soils would be less than significant.

d) **No Impact.** Habitable structures would not be built as part of the proposed project. Therefore, there would be no project-related impacts from expansive soils.

e) **No Impact.** Sanitation facilities are not present or proposed for the project site. There would be no impact on soils related to wastewater disposal.

f) **No Impact**. A fossil locality search was previously conducted (2010), using the Berkeley Natural History Museum (BNHM) online database, which includes data from the University of California, Museum of Paleontology (UCMP, 2010). The database search identified 733 fossil localities within Inyo County. They include 19 specimens from the Precambrian, 281 from the Cambrian, 146 from the Ordovician, 35 from the Silurian, 106 from the Carboniferous, 80 from the Permian, 35 from the Tertiary, 7 from the Quaternary, 14 of unknown age and 10 disputed fossils.

TW-E is within 1 mile of the regulatory shoreline, an area mapped as a paleontological monitoring area in the 2008 SIP SEIR (GBUAPCD, 2008b) and identified as paleontologically sensitive during investigations for the Phase 7a and Phase 8 dust mitigation projects. Therefore, paleontological resources may be present in the general well vicinity. However, no earthwork would be required for the project, and aside from pump installation, no construction would be required. As under existing conditions, monitors would visit established monitoring stations for data collection before, during and after the operational test. Workers on Owens Lake receive training regarding the presence of archaeological, historical and paleontological resources on the lake, including measures to take if any unexpected finds occur during

monitoring activities. Therefore, implementation of the 6-month operational test and associated monitoring plan (Appendix A) would have no impact on paleontological resources.

2.3.8 Greenhouse Gas Emissions

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	☐	☐	☒	☐
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	☐	☐	☐	☒

Discussion: Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. The most common GHGs emitted from natural processes and human activities include carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O). Examples of GHGs created and emitted primarily through human activities include fluorinated gases (hydrofluorocarbons and perfluorocarbons) and sulfur hexafluoride. Each GHG is assigned a global warming potential. The global warming potential is the ability of a gas or aerosol to trap heat in the atmosphere. The global warming potential rating system is standardized to CO_2, which has a value of one. For example, CH_4 has a global warming potential of 21, which means that it has a global warming effect 21 times greater than CO_2 on an equal-mass basis. Total GHG emissions from a source are often reported as a CO_2 equivalent (CO_2e). The CO_2e is calculated by multiplying the emission of each GHG by its global warming potential and adding the results together to produce a single, combined emission rate representing all GHGs. Several states have promulgated laws as a means to reduce statewide levels of GHG emissions. In particular, the California Global Warming Solutions Act of 2006 directs the State of California to reduce statewide GHG emissions to 1990 levels by the year 2020.

Assembly Bill (AB) 32, California Global Warming Solutions Act of 2006, was signed into law on September 27, 2006. AB 32 requires the California Air Resources Board (CARB), in coordination with State agencies as well as members of the private and academic communities, to adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this program. Under the provisions of the bill, by 2020, statewide greenhouse gas emissions would be limited to the equivalent emission levels in 1990. On December 12, 2008, CARB adopted its Climate Change Scoping Plan pursuant to AB 32 (CARB, 2008). The Scoping Plan was re-approved by CARB on August 24, 2011. The scoping plan indicates how these emission reductions will be achieved from significant greenhouse gas sources via regulations, market mechanisms and other actions.

The potential effects of proposed GHG emissions are by nature global, and have cumulative impacts. As individual sources, project GHG emissions are not large enough to have an appreciable effect on climate change. Therefore, the impact of proposed GHG emissions on climate change is discussed in the context of cumulative impacts.

As a power utility, the majority of LADWP's GHG emissions results from power generation. Other GHG emissions are a result of vehicle and equipment use for construction and operation of LADWP facilities. To reduce Department-wide GHG emissions, LADWP has instituted various programs including: increasing the use of renewable energy, early divestiture of coal generation, adopting an aggressive energy efficiency program, and use of electric fleet vehicles.

a) **Less than Significant Impact.** Construction of the project would be limited to pump installation involving a delivery truck (for the pump and pump case) and light duty trucks at the well site over 1 to 2 days. Operation of the project would require light duty trucks for monitoring (as under existing conditions) and electric power for pumping for 6-months. Because the Owens Valley is an area with substantial renewable energy resources, pollutants including GHGs generated to power the project would be minor and less than significant.

b) **No Impact.** The project would result in discharge of 3 cfs of groundwater to existing DCAs on Owens Lake for 6 months. This discharge would not interfere with hydropower generation along the Owens River, and could potentially increase power generation since a reduced volume of LAA water would be required for T36 ponds during the test. Therefore, the project would have no adverse impact on GHG policies and regulations.

2.3.9 Hazards and Hazardous Materials

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☐	☐	☒
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?	☐	☐	☐	☒
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
g) Expose people or structures, either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?	☐	☐	☐	☒

Discussion: Fuels, herbicides and other chemicals are used for the OLDMP but hazardous materials are not currently used or stored in the immediate area of TW-E.

a) and b) **No Impact.** The operational test would require the routine use of light duty trucks for groundwater, surface water, land elevation and vegetation monitoring. This use would be similar to existing conditions and would not pose a substantial risk of release of hazardous materials. Therefore, the project would have no impact on hazardous materials use, transport or storage.

Water from the test would be discharged to existing DCAs to augment flows from the LAA and LORP pump back station. The project would not increase the area of standing water and resultant increases in mosquito breeding habitat. There would be no project-related impacts on vectors.

c) **No Impact.** There are no schools within ¼ mile of TW-E, and the project does not require a substantial increase in the use of fuels or other hazardous materials. Therefore, the project would have no impact on schools from hazardous materials use, transport or storage.

d) **No Impact.** Section 65962.5 of the California Government Code requires the California Environmental Protection Agency (CalEPA) to update a list of known hazardous materials sites, which is also called the "Cortese List." The sites on the Cortese List are designated by the State Water Resources Control Board, the Integrated Waste Management Board, and the Department of Toxic Substances Control.

Based on a search of hazardous waste and substances sites listed in the Department of Toxic Substances Control (DTSC) "EnviroStor" database; a search of leaking underground storage tank (LUST) sites listed in the State Water Resources Control Board (SWRCB) "GeoTracker" database; and a search of solid waste disposal sites identified by the SWRCB with waste constituents above hazardous waste levels outside the waste management unit, there are no sites listed on or adjacent to the project site. Therefore, the project would have no impact related to hazardous waste sites.

e) **No Impact.** Seven public access airports and six private airstrips are located throughout Inyo County (Inyo County, 2001). The Lone Pine Airport is closest to the project site; it is located over 3 miles north of the lakebed. However, the project does not propose new tall structures and the project area is not located sufficiently near either a private airstrip or public airport to pose a safety risk. Therefore, there would be no project-related impacts on airport safety.

f) **No Impact.** The project would require 1 to 2 days for pump installation and on-going monitoring (similar to existing conditions). The project area is not designated as an emergency staging area. No road closures or other impacts to an emergency response plan or emergency evacuation plan would be required for the project. Therefore, there would be no impacts on emergency planning.

g) **No Impact.** TW-E is an existing well. The project does not include construction of any new structures that could be subject to wildland fires. Therefore, there would be no project-related impacts related to wildland fires.

2.3.10 Hydrology and Water Quality

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?	☐	☐	☒	☐
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such the project may impede sustainable groundwater management of the basin?	☐	☐	☒	☐
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 which would:				
i) Result in substantial erosion or siltation on- or offsite?	☐	☐	☐	☒
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 to 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?	☐	☐	☐	☒
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?	☐	☐	☐	☒
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?	☐	☐	☐	☒

Discussion: The elevation of the Owens Valley floor ranges from a low of approximately 3,550 feet above mean sea level (msl) on the Owens lakebed to the south to approximately 4,100 feet above msl near Bishop to the north. The bed of Owens Lake is relatively flat with only 50 feet of topographic relief from an elevation of 3,600 ft above msl to the lowest portion of the lakebed. The lakebed can be divided into two main areas: the brine pool (below an elevation of 3,553.53 ft msl) and the playa (the area between the brine pool and the shoreline at 3,600 ft msl). The playa generally consists of lacustrine and alluvial sediments ranging in size from fine gravels to clays and containing a high salt content. The brine pool is the remnant portion of the historic Owens Lake and contains a high accumulation of mineral salts. The brine pool is generally wet during part of the year, depending on the amount of precipitation and runoff from the surrounding mountains.

Surface runoff occurs from creeks and small intermountain watersheds emanating from precipitation on the Sierra Nevada and adjacent foothills. Some surface flows from major creeks

are captured by the LAA and exported to the City of Los Angeles. Runoff not intercepted by the LAA flows toward Owens Lake. Under normal conditions, these creek beds and washes are dry; however, surface flow may occur during periods of extremely high runoff or flash floods. As part of the LORP, minimum Owens River flows are released from the LORP pump back station (approximately 6 to 9 cfs on an annual average basis; minimum releases at any time are approximately 3 cfs) for discharge to the Owens River Delta and, depending on conditions, to an area of the lake known as the brine pool transition area. In addition, portions of the LORP seasonal habitat flows (up to approximately 200 cfs ramped up and down over approximately 14 days) are bypassed at the pump station and released towards the Owens River Delta.

Groundwater occurs in multiple aquifers beneath the lakebed surface. A discontinuous surficial aquifer is present on portions of the Owens Lake playa and delta area (MWH, 2011a). Beginning in 1992, GBUAPCD monitored an extensive network of shallow piezometers on the lakebed with depths of 4, 10 and 30 feet. The majority of this monitoring activity is now conducted by LADWP. Groundwater level monitoring data indicate "shallow" groundwater occurs at depths ranging from less than 2, to 15 ft bgs (GBUAPCD, 2009). Shallow groundwater generally flows toward the brine pool, where it becomes an evaporative sink. A deeper aquifer system consists of up to five permeable zones (aquifers) at depths ranging from 65 to more than 1,500 ft bgs (MWH, 2011b). Monitoring data suggest that the water levels in these deep aquifers range from a depth of over 100 ft around the margins of the lake to a pressure head of more than 60 ft above ground surface on the lakebed (MWH, 2011b). TW-E is an artesian well with approximately 50 feet of head above ground level. Due to sequences of silt and clay aquitards, the drawdown caused by pumping of TW-E would be greatest in the deeper aquifers, but muted in shallow surficial aquifers that support groundwater- dependent resources and non-LADWP wells.

Conservation Goal. On August 4, 2009, the LADWP Board of Water and Power Commissioners, which manages all water resources and facilities for the City of Los Angeles, passed a resolution requiring LADWP to implement water conservation measures on Owens Lake to reduce LAA diversions for existing and future Owens Lake dust control projects to below 95,000 acre-feet per year. Water conservation projects have been on-going as part of the OLDMP since 2009. Ultimately, conservation is anticipated to reduce water usage for dust mitigation purposes to between 40,000 and 50,000 acre-feet per year. The 6-month operational test of TW-E would supply data on lake hydrogeology and the response of groundwater levels near groundwater dependent resources (non-LADWP wells and ecosystems) from pumping from the deep aquifer. The operational test would further progress toward the goal of partially offsetting LAA water supplies with local groundwater for dust mitigation on Owens Lake.

a) **Less than Significant Impact**. Beneficial uses and water quality objectives are specified in the Water Quality Control Plan for the Lahontan Region (Basin Plan) prepared by the Lahontan Regional Board (Regional Board, 2005, amended through 2019). Beneficial uses designated for Owens Lake are summarized in **Table 1**. Waterbody-specific numeric objectives for the protection of these beneficial uses are not defined in the Basin Plan for Owens Lake. However, narrative and numeric water quality standards applicable to all surface waters (including wetlands) in the region are specified for: ammonia, coliform bacteria, biostimulatory substances, chemical constituents, total residual chlorine, color, dissolved oxygen, floating materials, oil and grease, non-degradation of aquatic

communities and populations, pesticides, pH, radioactivity, sediment, settleable materials, suspended materials, taste and odor, temperature, toxicity, and turbidity.

Discharges related to the project would be limited to water pumped from TW-E during the operational test. The 3 cfs flow would be discharged into adjacent DCAs T36-1W and T36-2W, and would subsequently flow to the connected T36-2E and T36-1E DCAs. The quality of water from TW-E and in the surrounding Shallow Flood ponds was analyzed in March 2020 (2018 for dissolved oxygen (DO) and aluminum); results are summarized in Table 10 of Appendix A. Based on these samples, TW-E water quality is similar, or better than, water quality in the T36 ponds for the parameters measured with the exceptions of DO (5.6 mg/L in TW-E) and barium (0.475 mg/L in TW-E). While the observed DO level from TW-E is less than the T36-1 and T36-2 ponds, DO in TW-E exceeds the 30-day mean water quality criteria for warm waters of 5.5 mg/L. Because well water would be discharged to the ponds over dissipater rocks, the discharge would not depress the T36 pond values below the 30-day mean water quality criteria for cold waters of 6.5 mg/L (Regional Board, 2005). Although a barium standard is not specified by the Regional Board for Owens Lake, barium levels in TW-E do not exceed drinking water standards (drinking water Maximum Contaminant Level of 2 mg/L), so TW-E discharge would not substantially degrade the quality of T36 pond water.

Construction for the project is limited to pump installation, no construction-related water quality impacts would occur from ground disturbances. When the test is initiated, minor sediments may be initially present in the discharge water. If present, these sediments would increase the turbidity of the discharge water for a few minutes. Overall, impacts on water quality from the 6-month operational test would be less than significant.

The existing DCAs are operated under Board Order No. R6V-2006-0036, Revised WDRs for the Southern Zones dust control project. Monitoring is conducted and reported semi-annually; the existing dust control project is in compliance with the adopted WDRs. The 6-month operational test of TW-E would be conducted in conformation with the existing permit. This would be confirmed with the Regional Board prior to initiation of the test. Sampling would be conducted within this shallow flooding area after discharge to confirm water quality remains in compliance with the WDRs.

Table 1
Beneficial Uses of Owens Lake

Surface water	MUN	ARG	GWR	REC-1	REC-2	COMM	WARM	COLD	SAL	WILD	WQE	FLD
Owens Lake				X	X	X	X	X	X	X		
Owens Lake Wetlands	X	X	X	X	X		X	X		X	X	X

MUN – municipal and domestic supply; AGR – agricultural supply; GWR – groundwater recharge, REC-1 – water contact recreation; REC-2 – noncontact water recreation; COMM – commercial and sportfishing; WARM – warm freshwater habitat; COLD – cold freshwater habitat, SAL – inland saline water habitat; WILD – wildlife habitat, WQE – water quality enhancement; FLD - flood peak attenuation/flood water storage.
Source: Regional Board, 2005, as amended.

b) Less Than Significant Impact. Key project issues related to potential groundwater level and volume reductions are: impacts to operability of non-LADWP wells, 2) impacts to groundwater dependent ecosystems, and 3) land surface elevation changes. Potential impacts on biological resources are discussed in Section 2.3.4, above. Groundwater level reductions that could increase the potential for subsidence at Owens Lake are discussed in Section 2.3.7, above.

Owens Lake Aquifers. Generally, groundwater-dependent resources of concern at Owens Lake utilize water from the shallow surficial aquifer. The surficial aquifer is separated from the confined aquifers underneath by a thick layer of clay (aquitard) varying from approximately 100 feet to 200 feet as shown schematically on Figure 9 of Appendix A. Multiple aquitards underlie TW-E. Aquitards have very low hydraulic conductivity and act as a relatively low-permeability barrier between aquifers. Therefore, there is minimal to no direct connection of the near surface resources to the deeper aquifers proposed to be pumped. Additionally, most of the groundwater-dependent resources are located to the east of the Owens River Fault or to the west of the Owens Valley Fault. Previous studies have shown these faults act as lateral groundwater flow barriers; therefore, the resources are protected to some degree by the faults from the effect of pumping in-between these faults (MWH, 2012, 2016). More recent groundwater level and water quality data from wells located across faults confirm this finding (Appendix A).

TW-E was constructed with solid casing from ground surface to 620 feet depth and screen from 620 feet to 1,490 feet bgs (Figure 2 of Appendix A). Due to the depth interval of the screen, TW-E extracts water from the deeper confined aquifers and not from the shallow surficial aquifer.

OLGM. The 2012 version of the OLGM was updated in 2020 (Stantec, 2020) and used to evaluate the potential shallow groundwater elevation decline (drawdown) due to pumping TW-E at 3 cfs for 6 months so that key locations can be identified as trigger locations to protect groundwater-dependent resources. This was accomplished in two steps: first by running the model for a period of 6 months beginning in October without simulation of pumping TW-E,

then repeating the same simulation with TW-E pumping at a rate of 3 cfs. The groundwater elevation difference between the two simulations represents the simulated drawdown due to pumping TW-E for 6 months.

Based on extrapolation of data from the short-term pump test, and the drawdown during the initial 24-hour pumping test, approximately 300 feet of drawdown is expected during the initial portion of the test. Given an initial groundwater elevation of approximately 50 feet above ground level, this equates to a depth to groundwater of 250 feet at TW-E. A maximum drawdown of 400 feet (350 feet below ground level) is estimated at the end of the 6-month operational test.

Non-LADWP Wells. The non-LADWP wells around Owens Lake are located either west of the Owens Valley Fault or east of the Owens River Fault (Figure 11 of Appendix A) and are protected by the barrier effect of the faults. Water level in non-LADWP wells cannot be measured directly because of access limitations. Instead, trigger wells are selected at a location between the TW-E and each non-LADWP well or group of wells. Figure 13 of Appendix A shows the general spatial relationship between TW-E, trigger wells, and the non-LADWP wells. For the protection of non-LADWP wells, a drawdown of 5 feet from the pre-pumping groundwater level in the trigger wells corresponds to a much smaller drawdown at non-LADWP wells and therefore is considered conservative. The rationale for the 5 feet of drawdown is based on the most sensitive non-LADWP well in the northern portion of the lake (Keeler Community Services District Well), but has been applied to all non-LADWP monitoring locations to apply a conservative level of protection and for simplicity.

Simulated Area of Influence. Based on the OLGM, the largest simulated drawdown occurring at any non-LADWP well is 0.24 feet at the O'Dell well northwest of TW-E. The highest simulated drawdown in any of the shallow piezometers surrounding the lake is 0.04 feet at P1 located west of TW-E, while the highest simulated drawdown at any VDA site is 0.03 feet at VDA05, located east of TW-E. These simulated drawdown values are shown in Figure 14 of Appendix A. Simulated drawdown due to the proposed pumping is limited to the northern portion of Owens Lake and the area immediately north of Owens Lake.

Groundwater Gradients. The groundwater gradient, also referred to as hydraulic gradient, is the slope of the water table or potentiometric surface, that is, the change in water level per unit of distance along the direction of groundwater flow. It is determined by measuring the water level in two or more wells. The water level in a well is usually expressed as feet above sea level. The groundwater (or hydraulic) gradient is the driving force that causes groundwater to move in the direction from high elevation to low elevation, much like surface water. Gradient is generally expressed in consistent units, such as feet per foot. For example, if the difference in water level in two wells 1,000 feet apart is 2 feet, then the gradient is 2/1,000 or 0.002.

In the unique case of routine or periodic monitoring of the gradient using the exact same two monitoring locations over time, the change in gradient can be simplified. This is because the distance between the two wells does not change; only the groundwater elevation in one or both of the wells may change. In these cases, the relative gradient can be expressed as a length, that is, the elevation difference between the two wells.

In the example above, change in gradient could be expressed as the change in the 2 feet difference. If the difference at a later date is 1 foot, the gradient has been reduced by 50 percent. At Owens Lake, the pre-pumping gradient (expressed as a length) can be compared to concurrent pumping or post-pumping gradient and is expressed as a change in either feet or percent, as in the example above.

The monitoring plan calls for two types of gradient monitoring using well pairs: horizontal gradients and vertical gradients. Gradient monitoring locations surrounding the lake are summarized in Table 4 of Appendix A. The locations with triggers are limited to the northern portion of the lake; trigger values are specific to each gradient pair.

Triggers. The purpose of the 6-month operational test is to collect data necessary to improve the understanding of the Owens Lake groundwater system and to develop robust measures to protect groundwater dependent resources. The highest simulated drawdown areas were used to focus development of triggers to be used during the 6-month operational test as early warning environmental protection values.

- A subset of the primary monitoring wells have been designated as trigger wells (Table 3A of Appendix A).
- Trigger gradients have been identified to ensure that water is available to the root zones of the vegetation at the springs (Table 15 of Appendix A). The trigger level for horizontal and vertical gradients is to maintain at least 50 percent of the pre-pumping flow to the springs.
- Drawdown triggers of 2.3 to 3.2 feet at the shallowest piezometer near the springs have been identified (Table 16 of Appendix A).

If a confirmed measurement of a trigger level in any monitoring well, or trigger gradient toward springs, is reached during the test, then LADWP would cease operational test pumping of TW-E, start recovery data collection, and report to parties within 24 hours of such determination and action.

Impact Summary. Based on predictive modeling, drawdown in non-LADWP wells would be below the conservative trigger value of 5 feet and well below the level of significant impact on the relevant wells. The project includes extensive monitoring of groundwater levels and gradients, with established trigger thresholds to conservatively protect resources. Therefore, groundwater impacts on the operability of non-LADWP wells would be less than significant. Additionally, water levels in the deep aquifer would initially rise relatively rapidly after completion of the test. Based on predictive modeling, groundwater levels are expected to substantially recover to pre-testing conditions in approximately 18 months. With implementation of the monitoring plan (Appendix A), including adherence to applicable trigger levels, impacts on groundwater from the 6-month operational test of TW-E would be less than significant.

c) i), ii) No Impact. TW-E is an existing well and construction for the project is limited to pump installation. Therefore, the project would have no construction-related impacts on drainage or flood flows.

Groundwater pumped during the operational test would be discharged to the immediately adjacent T36 DCAs to augment water supplies for dust mitigation. As part of the

monitoring plan (Appendix A), surface water flows would be monitored at 26 flumes. The 3 cfs discharge from TW-E can be accommodated by the T36 ponds, therefore the operational test is not predicted to impact the volume of surface water observed in the brine pool. The project would not alter the course of a channel or drainage area, or increase erosion of siltation in a channel. The project would have no impact on surface drainage or flooding.

c) **iii) No Impact**. TW-E is an existing well and construction for the project is limited to pump installation. Flows from the operational test would be discharged to the immediately adjacent T36 DCAs with adequate capacity to accommodate these flows. The operational test would not require any chemical use and would not introduce any other stormwater pollutants. Therefore, the operational test would have no impact on stormwater runoff or drainage.

c) **iv) No Impact**. The proposed operational test does not include the placement of housing or structures that would impede flows within the flood plain, or create levees or dams. Flows from the pumping test would be discharged to the immediately adjacent DCAs to augment dust control water supplies. Because TW-E is an already installed well, the levees that separate the DCAs would not be modified by the project. A 12-inch diameter discharge hose would extend to the adjacent pond with rocks to dissipate flows. The project would have no impact on housing or structures in a 100-year flood hazard area and would not result in erosion of adjacent soils.

d) **No Impact**. Based on project location, seiche, tsunami and mudflows are not relevant for the proposed project. The operational pumping test would not create conditions that would cause these conditions, nor include housing or structures that would be impacted by seiche, tsunami or mudflows. Flows from the operational test would be discharged to existing DCAs with adequate capacity to accommodate these flows. The pumping test would have no impact on seiche, tsunami or mudflows.

e) **No Impact**. As discussed above, the project would have no adverse impacts on water quality or otherwise impact the Basin Plan. Data collected under the proposed project could be used as part of Sustainable Groundwater Management Act (SGMA) planning. The project would have no adverse impacts on water resources planning.

2.3.11 Land Use and Planning

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Physically divide an established community?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion:

a) **No Impact.** TW-E is located on land under the management of the CSLC in an area zoned for open space (40 acre minimum) and with a General Plan designation of SFL (State and Local Resources) (Inyo County, GIS data accessed 2020). The closest community is Lone Pine, located approximately 5 miles to the north. Construction for the proposed project would be limited to pump installation over 1 to 2 days. The operational test would not divide or otherwise impact local communities.

b) **No Impact.** TW-E was installed in 2018. This water infrastructure is consistent with existing open space zoning and land use (grazing and natural resources) of the project site. The Conservation/Open Space Element of the Inyo County General Plan (2001) includes Policy REC-1.2 Recreational Opportunities on Federal, State, and LADWP Lands: Encourage the continued management of existing recreational areas and open space, and appropriate expansion of new recreational opportunities on federal, state, and LADWP lands. The operational test would not require substantial construction activity, or modification of the project parcel, therefore there would be no additional restrictions to public access to the lake over existing conditions. The project would therefore have no impacts on land use planning.

2.3.12 Mineral Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion: Mineral resources are defined as naturally occurring materials in the earth that can be utilized for commercial purposes (Inyo County, 2001). The Owens Lake Planning Area contains known mineral resources of statewide or regional importance. U.S. Borax (parent company Rio Tinto Mining) mines evaporite minerals from approximately 16,000 acres of leased land on the west side of the lake. Minerals mined include trona (hydrated sodium bicarbonate carbonate), burkeite (silicate) and halite (sodium chloride). Because minerals are mined from the surface, the facility is sensitive to surface water changes on the lake.

Other important mineral resources surrounding the Owens Lake area include gravel deposits associated with alluvial fans and sand deposits associated with the Owens River and local dunes.

Inyo County is the Lead Agency for the processing of surfacing mining reclamation plan applications on private lands; Inyo County's Road Department, City of Los Angeles, and California Department of Transportation borrow pits; and surface mining on federally administered lands. All surface mining operations that disturb greater than 1 acre or move more than 1,000 cubic yards are required to have an approved reclamation plan before the start of mining activity. Reclamation plans are required by the Surface Mining and Reclamation Act (SMARA) to assure that:

- Adverse environmental effects are prevented or minimized and mined lands are reclaimed to a useable condition readily adaptable for alternate land uses.
- Production and conservation of minerals are encouraged, while considering recreation, watershed, wildlife, aesthetic, range and forage values.
- Residual hazards to public health and safety are eliminated.

a) and b) **No Impact.** TW-E is approximately 4 miles north of the most northerly portion of the U.S. Borax mineral lease area on Owens Lake; over 9 miles north of active mining operations. Construction activity for the project would be limited to pump installation and would not occur on or near the active mining operations or within the U.S. Borax mineral lease area. The project would not increase the volume of stormwater or alter the direction of stormflows near the active mining operations. The project would not impact known mineral resources on Owens Lake.

2.3.13 Noise

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project result in:				
a) 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?	☐	☐	☒	☐
b) Generation of excessive groundborne vibration or groundborne noise levels?	☐	☐	☒	☐
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 2 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?	☐	☐	☐	☒

Discussion: Owens Lake is located in a remote area where the main sources of noise are the mining operations on the lakebed, construction and maintenance activities related to the DCMs, and roadway noise along U.S. 395, SR 190, and SR 136. Sensitive noise receptors in the Owens Lake area include residents in the communities of Boulder Creek, Lone Pine, Dolomite, Keeler, Olancha and Cartago.

Per the Public Safety Element of the Inyo County General Plan (2001), the normally acceptable noise level for residential properties ranges up to 60 Ldn and conditionally acceptable noise level ranges up to 70 Ldn. The term "Ldn" refers to the average sound exposure over a 24-hour period. Ldn values are calculated from hourly Leq values, with the Leq values for the nighttime period (10:00 p.m. to 7:00 a.m.) increased by 10 dB to reflect their greater disturbance potential.

a) and b) **Less Than Significant Impact.** The closest noise receptor to TW-E is a residence in Dolomite (located approximately 2.7 miles to the east). The closest school is in Lone Pine, over 5 miles north of Owens Lake. Based on the distance and since construction would be limited to pump installation for the operational test, no noise or groundborne vibration from construction equipment or vehicles would be noticeable to the nearest sensitive receptors. During the operational test, travel by monitors would be required, similar to existing conditions. Because the resultant noise would be substantially below Inyo County standards, the impact of the project on noise would be less than significant.

c) **No Impact.** Seven public access airports and six private airstrips are located throughout Inyo County (Inyo County, 2001). The Lone Pine Airport is closest to the project site; it is located over 3 miles north of the lakebed. Therefore, the project would not be located sufficiently near either a private airstrip or public airport to expose people residing or working in the area to excessive noise levels. There would be no project-related impacts on noise near an airport/airstrip.

2.3.14 Population and Housing

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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)?	☐	☐	☐	☒
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☒

Discussion:

a) and b) **No Impact.** No additional water delivery infrastructure is proposed that could potentially influence population growth. The project does not include demolition or construction of homes or businesses. Because only pump installation would be required for the operational test, no construction workers would require housing. The number of personnel required for monitoring groundwater, surface water, ground elevation and vegetation during the test would be similar to existing conditions. Therefore, the project would have no impact on population growth or housing.

2.3.15 Public Services

	Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Would the project 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:				
	i) Fire protection?	☐	☐	☐	☒
	ii) Police protection?	☐	☐	☐	☒
	iii) Schools?	☐	☐	☐	☒
	iv) Parks?	☐	☐	☐	☒
	v) Other public facilities?	☐	☐	☐	☒

Discussion:

i) – v) **No Impact.** No additional water delivery infrastructure is proposed that could potentially influence population growth. Therefore, the project would not create the need for new or expanded public services. Because only pump installation would be required for the operational test, construction workers would not require public services. There are no fire stations, police stations or schools in the immediate vicinity of TW-E. Therefore, the project would have no impacts on public services.

2.3.16 Recreation

	Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Would the project 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?	☐	☐	☐	☒
b)	Does the project include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?	☐	☐	☐	☒

Discussion:

a) **No Impact.** Habitable structures are not present on the project site and none are proposed as part of the project. The number of workers required to install the pump and pump case would not generate population growth or impact the use of parks in the project vicinity. The project would have no impact on neighborhood or regional parks or other recreational facilities.

b) **No Impact.** The project does not include the construction of recreational facilities or generate population growth that would require the construction or expansion of recreational facilities. Access to Owens Lake for recreation would not be altered by the project. Therefore, there would be no impact on recreational facilities.

2.3.17 Transportation and Traffic

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadways, bicycle and pedestrian facilities.	☐	☐	☐	☒
b) Would the project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☒	☐
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

Discussion:

a) **No Impact.** Construction for the operational test is limited to pump installation over 1 to 2 days. Before, during and after the test, monitoring personnel would travel throughout the area to collect groundwater, surface water, land elevation and vegetation monitoring data. Because these activities are on-going, the project would have no impact on the level of service of area roadways nor would the project conflict with any congestion management planning.

b) **Less than Significant Impact.** CEQA Guidelines Section 15064.3 describes considerations for evaluating the transportation impacts of projects and states that vehicle miles traveled (the amount and distance of automobile travel attributable to a project) is generally the most appropriate measure of transportation impacts. Construction for the project would be limited to 1-2 days for pump installation, including a flat bed truck for pump case delivery and light duty trucks. Monitoring before, during and after the test would require the use of light duty trucks, similar to existing conditions on the lake. The additional vehicle miles traveled attributable to the project would be minor and less than significant.

c) **No Impact.** Access to the project site is from Highway 395, Route 136 and Route 190. No modifications to the roadways are required or planned. Therefore, the project would have no impact related to new roadways or roadway hazards.

d) **No Impact.** The project would require 1 to 2 days for pump installation and on-going monitoring (as under existing conditions). The project area is not designated as an emergency staging area. No road closures or other impacts to an emergency response plan or emergency evacuation plan would be required for the project. Therefore, there would be no impacts on emergency access.

2.3.18 Tribal Cultural Resources

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a) Would the project 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 Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.	☐	☐	☐	☒

Discussion: On October 9, 2020, a search of the Sacred Lands File (SLF) from NAHC was requested. A response letter was received via email from the NAHC on October 23, 2020, stating that the results of the SLF search failed to indicate the presence of Native American cultural resources in the immediate project site; though they stated that negative results do not preclude the presence of Native American cultural resources within the project site. The NAHC also provided a list of nine Native American groups and individuals who are traditionally or culturally affiliated with the geographic area of the project, and may have direct knowledge of Native American cultural resources in the project site.

Consultation with Native American organizations and individuals was conducted to satisfy the requirements of AB 52. On December 22, 2020, LADWP sent notification letters via certified mail and follow-up emails to the nine Native American contacts provided by the NAHC, to request information regarding local knowledge about cultural resources, traditional gathering areas, or sacred lands in or near the project site. As of February 2021, consultation with tribal representatives is ongoing.

i) and ii) **No Impact.** Aside from pump installation, the proposed operational test would not require any construction or ground disturbance. As under existing conditions, monitoring of groundwater levels, surface water and vegetation would be conducted. These monitoring activities would require driving on existing roadways and walking across vegetated areas, the same as existing conditions. Therefore, since traditional cultural places are not identified for the project area, and since no site disturbance is proposed, the project would

have no impact on California Register of Historical Resources (CRHR) listed or eligible resources, or on resources significant to a California Native American tribe. Coordination with tribal representatives would be on-going through the GWG and HWG.

2.3.19 Utilities and Service Systems

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
Would the project:				
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?	☐	☐	☐	☒
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒
e) Comply with federal, state, and local management and reduction statues and regulations related to solid waste?	☐	☐	☐	☒

Discussion:

a) thru e) **No Impact.** TW-E is an existing well with an existing underground power supply. Water pumped from TW-E during the operational test would be discharged to existing adjacent Shallow Flood DCAs. No additional water delivery infrastructure is proposed and the operational test would not influence population growth. No wastewater or solid waste would be generated. Because no construction aside from pump installation would be required, no construction workers would require utilities or service systems. Similarly, no construction debris or other materials would require landfill disposal. No expanded utility systems would be required. Therefore, the project would have no impact on utilities or service systems.

2.3.20 Wildfire

Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
If located in or near state responsibility areas or lands as classified as very high fire hazard severity zones, would the project:				
a) Substantially impair an emergency response plan or emergency evacuation plan?	☐	☐	☐	☒
b) Due to slope, prevailing winds, or other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
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?	☐	☐	☐	☒
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?	☐	☐	☐	☒

Discussion: CalFire is required by state law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors. Owens Lake is mapped as CalFire State Responsibility Area (SRA) Moderate Fire Hazards Zone (CalFire, 2019).

a) **No Impact.** The project would require 1 to 2 days for pump installation and on-going monitoring (as under existing conditions). The project area is not designated as an emergency staging area. No road closures or other impacts to an emergency response plan or emergency evacuation plan would be required for the project. Therefore, there would be no impacts on emergency planning.

b) **No Impact.** Installation of the pump would not increase fire danger in the well area and no habitable structures or dry combustible fuels are located on or near the site. Groundwater pumping would occur at a rate of 3 cfs for 6 months. Substantial alteration of existing vegetation on or off the lake such that fire risk increased is not predicted. Therefore, the project would not expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of wildfire. There would be no project-related impacts on wildfire risk.

c) **No Impact**. The pump for the operational test would be powered from an existing underground power supply. No additional infrastructure that could exacerbate fire risk would be required. Therefore, there would be no project-related impacts on wildfire risk.

d) **No Impact**. Implementation of the operational test would include groundwater pumping from existing TW-E for 6 months. Habitable structures are not present on the project site and none are proposed as part of the project. Landslide and post-fire slope instability are not hazards identified for the project area. Therefore, the project would not expose people or structures to significant wildfire risks.

2.3.21 Mandatory Findings of Significance

	Issues and Supporting Information Sources	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
a)	Does the project have the potential to 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, 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?	☐	☐	☒	☐
b)	Does the project have the potential to achieve short-term, to the disadvantage of long-term, environmental goals?	☐	☐	☐	☒
c)	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, effects of other current projects, and the effects of probable future projects.)?	☐	☐	☒	☐
d)	Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☐	☐	☒

Discussion:

a) **Less Than Significant Impact.** Construction for the operational test is limited to pump installation over 1 to 2 days at TW-E, which is located adjacent to a berm/roadway devoid of vegetation. Therefore, temporary impacts related to construction on biological and cultural resources would not occur. Pumping of TW-E for 6 months in the winter is not predicted to adversely affect groundwater-dependent vegetation or wildlife dependent on surface water volumes. Therefore, impacts on biological resources, including sensitive species present on and adjacent to Owens Lake, would be less than significant.

b) **No Impact**. The goal of the project is to collect data on groundwater levels during withdrawals of water from the deep aquifer from TW-E. The data collected would aid in update of the existing groundwater model. The data would be used for the long-term benefit of managing water resources in the Owens Valley. There are no short-term goals related to the project that would be disadvantageous to this long-term goal.

c) **Less Than Significant Impact.** Groundwater withdrawals from TW-E would be cumulative with other on-going LADWP groundwater pumping, and the groundwater pumping of others. The proposed data collection project would be limited to 6 months in the winter. The testing program is not predicted to adversely affect shallow groundwater levels or groundwater-dependent vegetation. The information gathered would be used to update the OLGM and to assess cumulative groundwater impacts with other groundwater withdrawals. The cumulative impact of the 6-month operational test would be less than significant.

d) **No Impact.** The goal of the project is to collect data on groundwater levels during withdrawals of water from the deep aquifer from TW-E. Data collected would contribute to the long-term management of water resources in the Owens Valley – a beneficial impact on human beings. Since construction would be limited to pump installation over 1 to 2 days, substantial construction-related impacts on humans would not occur.

Section 3
References, Abbreviations and Report Preparation

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3.2 ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
AQMP	Air Quality Management Plan
BACM	Best Available Control Method
bgs	below ground surface
BLM	(United States) Bureau of Land Management
BNHM	Berkeley Natural History Museum
CalEPA	California Environmental Protection Agency
CalFire	California Department of Forestry and Fire Protection
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
cfs	cubic feet per second
CH_4	methane
CNDDB	California Natural Diversity Database
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalents
CRHR	California Register of Historical Resources
CSLC	California State Lands Commission
dB	decible
DCA	dust control area
DCM	dust control measure
DTSC	Department of Toxic Substances Control
EIR	Environmental Impact Report
EPA	(United States) Environmental Protection Agency
ETa	Evapotranspiration (actual)
Farmland	Prime Farmland, Unique Farmland, or Farmland of Statewide Importance
FMMP	Farmland Mapping and Monitoring Program
GBUAPCD	Great Basin Unified Air Pollution Control District
GHG	Greenhouse Gas

gpm	gallons per minute
GWG	Groundwater Work Group
HCP	Habitat Conservation Plan
HMMMP	Hydrologic Monitoring Management and Mitigation Plan
HRV	Historical Range of Variability
HSLA	high strength, low alloy
HWG	Habitat Work Group
ICWD	Inyo County Water Department
IS	Initial Study
LAA	Los Angeles Aqueduct
LADWP	(City of) Los Angeles Department of Water and Power
LAI	Leaf Area Index
LORP	Lower Owens River Project
LUST	Leaking Underground Storage Tank
msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
N_2O	nitrous oxide
ND	Negative Declaration
OLDMP	Owens Lake Dust Mitigation Program
OLGDP	Owens Lake Groundwater Development Program
OLGM	Owens Lake Groundwater Model
OLHMP	Owens Lake Habitat Management Plan
PM	particulate matter
PM_{10}	particulate matter 10 microns or less in diameter
PVC	polyvinyl chloride
RPC	Resource Protection Criteria
RPP	Resource Protection Protocol
SFL	State and Federal Land
SGMA	Sustainable Groundwater Management Act
SIP	State Implementation Plan
SMARA	Surface Mining and Reclamation Act

SR	State Route
SRA	State Responsibility Area
SWRCB	State Water Resources Control Board
TAM	transmontane alkali meadow
TW-E	Test Well-East
TW-W	Test Well-West
UCMP	University of California, Museum of Paleontology
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
VDA	Vegetated Dune Area
WDR	Waste Discharge Requirements

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