BUREAU OF RECLAMATION

California Aqueduct - San Luis Canal Geotechnical Investigations Project

CGB-EA-2021-038

Draft Environmental Assessment/Initial Study and Mitigated Negative Declaration

U.S. Department of the Interior

July 2021

Mission Statements

The Department of the Interior (DOI) conserves and manages the Nation's natural resources and cultural heritage for the benefit and enjoyment of the American people, provides scientific and other information about natural resources and natural hazards to address societal challenges and create opportunities for the American people, and honors the Nation's trust responsibilities or special commitments to American Indians, Alaska Natives, and affiliated island communities to help them prosper.

The mission of the Bureau of Reclamation is to manage, develop, and protect water and related resources in an environmentally and economically sound manner in the interest of the American public.

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1 Introduction

This Environmental Assessment (EA)/Initial Study (IS) and Mitigated Negative Declaration (MND) was jointly prepared by the U.S. Department of Interior, Bureau of Reclamation (Reclamation) as the lead federal agency and the California Department of Water Resources (DWR) as the lead state agency to satisfy the requirements of both the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA). Reclamation and DWR are proposing to jointly implement the San Luis Canal (SLC) Geotechnical Investigations Project (hereinafter referred to as Proposed Action/Project), and have prepared this EA/IS pursuant to NEPA and CEQA to assess the potential effects of the Project. The Proposed Action is limited to conducting geotechnical investigations to collect soil samples to characterize and define the foundational requirements and potential borrow materials for raising the embankment, concrete liner, and bridges associated with Pools 17, 18, 20 and 21 of the SLC, a segment of the California Aqueduct (Aqueduct) that is jointly used by Reclamation and DWR. Throughout this document, Proposed Action and Proposed Project are used interchangeably and both terms reflect the Project as described below.

1.1 Background

Established in 1960 under Public Law 86-488, the SLC is a federal and State joint-use facility as part of the San Luis Unit (SLU) of the federal Central Valley Project (CVP). Reclamation was authorized to construct, operate, and maintain the SLU. The law also authorized Reclamation to enter in an agreement with the State of California for the construction and operation of the SLU, completed in the 1961 as the *Agreement between the United States of America and the Department of Water Resources of the State of California for the Construction and Operation of the Joint Use Facilities of the San Luis Unit.* The SLC was designed and constructed by Reclamation between 1963 and 1968, and is operated and maintained by DWR. As a joint-use facility, the SLC conveys water supplies for the CVP and the California State Water Project (SWP). In 1986, the *Agreement Between the United States of America and the State of California for Coordinated Operation of the Central Valley Project and the State Water Project* was executed to coordinate water deliveries. The SLC portion of the Aqueduct system is 102 miles in length, delivers CVP water supplies within the joint-use area, and transports water from the San Luis Reservoir to a point near Kettleman City where SWP water supplies continue for subsequent delivery in areas to the south and east. The principal purpose of the SLC is to deliver CVP irrigation water for approximately one million acres of prime farmland in California's San Joaquin Valley (Valley).

The SLC traverses portions of the Valley that have experienced subsidence[1]. Land subsidence in the Valley was first noted near the Delano area in 1935. Since that time, the Valley has undergone several periods of regional aquifer compaction as a result of groundwater extraction, largely for

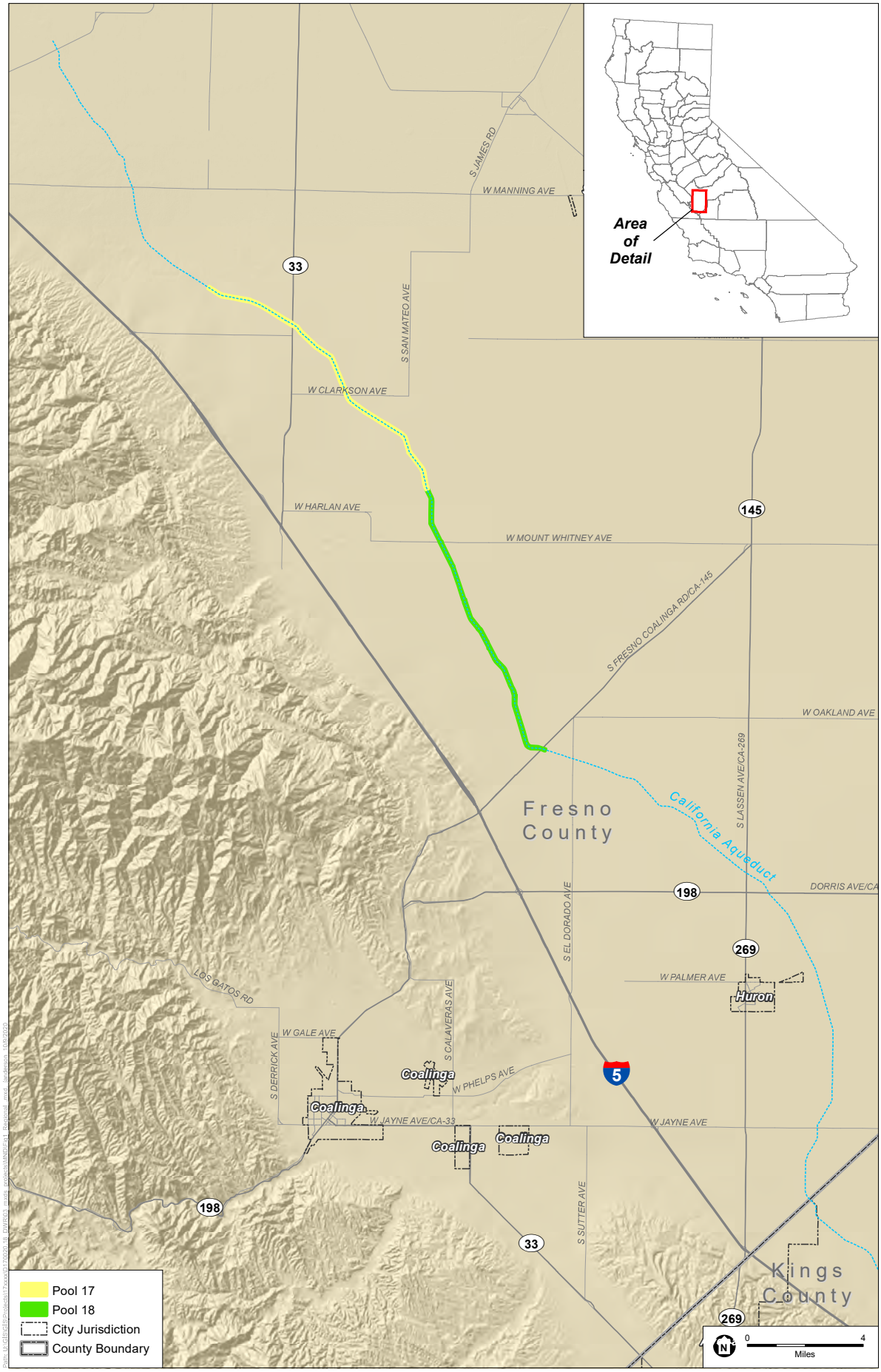
[1] Local or regional drop in ground surface elevation

agricultural uses. The resulting land subsidence has reduced the freeboard[2] and capacity of the Aqueduct system to transport floodwater and deliver irrigation water. The Aqueduct freeboard is used as a reservoir, storing water during low-cost high-pumping periods and drafting water for downstream delivery during high-cost low-pumping periods. The decrease in lined freeboard has decreased or eliminated the potential to store additional water in some Aqueduct pools. The reduced storage forces more pumping during expensive periods to meet direct downstream demand.

In June 2017, DWR prepared the California Aqueduct Subsidence Study, which summarized the magnitude, location, and effects of historic and current subsidence on the Aqueduct system. The study identified three significant subsidence "bowls" occurring within the SLC segment of the Aqueduct. The Aqueduct is divided into segments or "Pools" for operational purposes. The largest bowl, Panoche, is located in Pools 15 through 18; the second subsidence bowl, Los Gatos, is located in Pools 19 through 21; and Kern, the third bowl, is in Pools 23 through 25. The study determined that in order to maintain delivery capacity, portions of the Aqueduct that have experienced subsidence require retrofitting to extend the concrete liner within the Aqueduct prism to restore storage and conveyance capacity.

In coordination with Reclamation, DWR is proposing to perform geotechnical investigations along the SLC embankments of Pools 17, 18, 20 and 21, within adjacent borrow sites, near abandoned utility pipelines and specified bridges. The proposed geotechnical investigations would inform the design of SLC Embankment and Liner Raise Project, which would address subsidence by restoring the capacity of Pools 17, 18, 20 and 21 from Milepost (MP) 122 to MP 143 and MP 155 to MP 172 of the SLC portion of the Aqueduct in Fresno and Kings Counties (**Figure 1, Appendix A**).

[2] Vertical distance between the design water surface and the top of the concrete canal lining



SOURCE: DWR, 2020; ESA, 2020.

California Aqueduct Embankment and Liner Raise Project

Figure 1
Regional Location

ESA

1.2 Purpose and Need for the Proposed Action

The primary purpose of the Proposed Action/Project is to provide geologic information needed to inform engineering, design plans, and environmental review for: elevating the embankment, concrete liner and bridges along the SLC at Pools 17, 18, 20 and 21; and replacing check structures, irrigation, and utility crossings. The Proposed Project would:

- Characterize and evaluate the existing soil and subsurface conditions beneath the embankment, bridges, irrigation, and utility crossings.
- Evaluate the existing engineered embankment and liner foundation to determine appropriate excavation depths and the requirements for subsidence control measures.
- Evaluate soil composition and chemistry of the potential borrow sites[3] that would provide materials to raise the embankment.
- Evaluate soil for potential contaminants adjacent to abandoned under crossing pipelines.

2 Alternatives Including Proposed Action

This EA/IS-MND considers two possible actions: the No Action Alternative and the Proposed Action. The No Action Alternative reflects future conditions without the Proposed Action and serves as a basis of comparison for determining potential effects to the human environment.

2.1 No Action Alternative

Under the No Action Alternative, Reclamation and DWR would not conduct geotechnical investigations, and therefore, would not provide information to inform engineering and design plans for retrofitting Pools 17, 18, 20 and 21 of the SLC. Without the information provided by the geotechnical exploration the subsequent embankment raise project would not proceed or would proceed in an uninformed way that could increase the risk of embankment issues or failures by constructing facilities in a non-engineered manner.

2.2 Proposed Action

Under the Proposed Action, Reclamation would issue land use authorizations to DWR or its representative(s) for conducting geotechnical testing within Reclamation right-of-way. DWR or its representative(s) would conduct up to 520 geotechnical investigations (476 are currently planned with a max of 520), to characterize the foundational requirements and soil chemical properties within and adjacent to Pools 17, 18, 20 and 21 of the SLC. Most investigations would occur within

[3] A borrow site is an excavated area where material has been dug for use as fill material at another location.

the existing DWR/Reclamation right-of-way. A total of 10 geotechnical investigation locations may be located outside of DWR/Reclamation right-of-way and easements.

Investigation methods would be conducted using Cone Penetrometer Testing (CPT), Hollow Stem Auger (HSA), and Hand Auger (HA) drilling methods. HSA and CPT drilling would be completed by drilling contractors, while the HA drilling would be completed by engineering geologists using stainless-steel hand augers. CPTs would involve using a truck-mounted rig to push soil probes into 2.5-inch diameter hand-augured 3-foot-deep holes. HSA methods include rotating the HSA in previously hand augured 3-foot-deep holes to extract soil cuttings for logging and sampling purposes. All soil cuttings generated by HA or HSA drilling methods would be disposed of at either local landfills or spread on site. Soil cuttings that contain drilling fluid will not be spread on site. Soil cuttings are not generated using CPT drilling methods. Sample location adjustments may be made to avoid potential to impacts cultural and biological resources, and in response to observations made in the field during implementation. All geotechnical investigation samples would not be adjusted beyond the Project footprint identified in **Figures 1 through 12 in Appendix A**. Total depths of all geotechnical investigation samples may be adjusted by the engineering geologist, depending on observations made in the field. Samples would not be adjusted beyond the maximum drilling depth identified in **Table 1**. Table 1 summarizes the sample quantities by method, location and depth.

Table 1 Sample Quantities by Exploration Area

Exploration Area	Approximate Number	Maximum Drilling Depth (feet below ground surface)
Embankment Investigations		
Cone Penetrometer Testing	164	100
Hollow Stem Auger	57	100
Borrow Area Investigations		
Hollow Stem Auger	13	15
Hand Auger	110	3-10
Pipeline Area Investigations		
Hollow Stem Auger	12	15
Bridge Area Investigations		
Hollow Stem Auger	48	100
Irrigation Crossings		
Hollow Stem Auger	72	70

Drilling would include site preparation, mobilization of equipment, drilling, and backfilling the sample with cement grout. Boreholes would be backfilled with either soil cuttings, a cement-bentonite grout or completed as groundwater monitoring wells or inclinometers once drilling is complete. Each backfill material is determined by DWR, Reclamation or contractors based on the depth of the sample site. Backfilling and installation will be in accordance with Fresno and Kings Counties' Environmental Health Departments' well permit requirements. Boreholes would be

backfilled within 24 hours of completion. If significant groundwater is encountered, the boreholes would be backfilled using tremie pipe methods[4]

Gravel, sand, and bentonite would be sourced from West Sacramento and brought to the site by the drilling contractor. The drill rigs would be equipped with a truck-mounted drill rig and use hollow stem augers. CPTs are conducted using a truck-mounted rig equipped with probes and technical equipment. A support truck would supply the water required for the rotary wash samples. The amount of water used depends on the sample depth but could range from approximately 65 to 70 gallons if slumping is observed in the borehole.

All samples would be vertical. HSA drilling methods would be used to explore the soil conditions to targeted depth listed in **Table 1**. Cuttings would be logged as they are retrieved from the borehole in order to assess changes in stratigraphy between sample intervals and to determine proper sampler choice.

The number of holes drilled per day will be dependent on the maximum drilling depth and distance between holes. Approximately two to three 15 and 32 foot-holes and one 100-foot hole would be drilled per day. A few of the deeper samples may take multiple days to complete. For samples using the HA method, five to six holes would be sampled per day. Soil would be collected from each location for examination and laboratory testing. Continuous soil samples from the HSA and HA drill holes would be geologically logged by an engineering geologist in accordance with *ASTM Standard D5434, Standard Guide for Field Logging of Subsurface Explorations of Soil and Rock*. Drill holes specific to the geologic investigation at bridge approaches would be logged in accordance with the *2010 California Department of Transportation Soil and Rock Logging, Classification, and Presentation Manual.* The methodologies used to determine the proposed geotechnical investigations within the embankment, within borrow areas, near utility pipelines, and near bridges are further discussed below.

2.2.1 SLC Embankment Investigations

CPT and HSA drilling sampling would occur along the SLC embankment which is primarily composed of compacted mixtures of sediment and gravel derived from on- and off-site sources. Data from CPT samples within the embankment would assist in interpreting locations of HSAs to be drilled. Therefore, CPTs would be conducted first and HSA sample locations may be adjusted based on the CPT data. The embankment investigations would be evenly spaced at 1,250 feet apart for CPT samples and 5,000 feet apart for HSA. Between MP 122.0 and MP 128.7, the spacing would be decreased to 1,000 feet for CPT drilling and 2,500 feet for HSA drilling. The spacing of sample locations is consistent with recommendations found in the 2000 US Army Corps of Engineers *Design and Construction of Levees Engineering Manual.* Samples would not be conducted in areas where existing CPT or HSA data exists from previous geological investigations.

In total, approximately 164 CPTs samples and 57 HSA samples will be collected. HSA drilling is proposed to a target depth of 40 to 100 feet below the ground surface (bgs). Seismic cone testing is

[4] Tremie pipe method-Tremie pipe, which upper end connected to a hopper and lower end continuously submerged in fresh concrete, is used to place concrete at the exact location from a hopper at the surface. The reason to immerse the tremie pipe lower end is to prevent intermixing of both concrete and water.

proposed to 100 feet below ground surface at CPT samples locations on the embankment near priority bridges and near each check station. All other CPT samples are proposed to 40 feet bgs. HAS samples would have an outside diameter of 8.25 inches, while CPT samples would be 1.75 inches in diameter. Sample locations within the embankment will be backfilled with a cement-bentonite grout or completed as groundwater monitoring wells or inclinometers. Up to six sites adjacent to the SLC near Check Structure 17 could include monitoring wells or inclinometers.

2.2.2 Borrow Area Investigations

Five borrow areas are proposed for as source material to raise Pools 17 and 18 embankments. The five borrow areas range between 35 acres and 215 acres. To adequately characterize each borrow area, the proposed samples would be spaced evenly using 4-acre and 10-acre grids, with a minimum of four samples per borrow area, spaced approximately 400 to 600 feet apart. Borrow areas are highly disturbed areas adjacent to the right-of-way consisting of dirt access roads and agricultural lands.

HSA samples would be 15 feet bgs and submitted for geotechnical analysis as described in the *Soil and Laboratory Testing* section below. HA samples would be augured to a maximum depth of 10 feet bgs and have an outside diameter of 2.5 inches. Selected soil samples from each HSA drill hole would be consolidated with two or three adjacent HA samples and submitted for potential contaminants analysis. In total 123, samples are proposed in the borrow areas: 13 HSA samples and 110 HA samples. All sample locations in the borrow areas will be backfilled with soil cuttings.

2.2.3 Pipeline Investigations

Four samples would be drilled adjacent to each of the three abandoned pipelines to sample the soil for potential contaminants. Each sample would be drilled to an approximate depth of 15 feet bgs (5 feet below each pipeline depth). Sample depths would be adjusted if any signs of contamination are observed by the engineering geologist. A private utility locator would be hired to determine the exact location of each pipeline prior to drilling. In total, 12 samples are proposed near the abandoned pipelines. Pipeline investigations would occur within the right-of-way. Sample locations near the pipelines will be backfilled with a cement-bentonite grout.

2.2.4 Bridge Investigations

At each of the eight bridge crossings, 6 HSA samples would be taken parallel to the bridge alignment, three on each side of the SLC. The depths of each sample would decrease in distance as the sample gets farther from the SLC. Samples closest to the SLC would be 100 feet bgs, the pair of samples at the approach of each bridge would be 60 feet bgs, and the outermost samples furthest from the SLC would be 20 feet bgs. In total, 48 drill samples are proposed for bridge exploration. The bridge samples would primarily occur within the right-of-way. Sample locations near the bridges will be backfilled with a cement-bentonite grout or completed as groundwater monitoring wells or inclinometers.

2.2.5 Irrigation Crossings Investigations

At 36 irrigation crossings, 2 HSA samples would be taken 10-feet away from irrigation crossing on the left and right embankments. The depths of each sample would be 70 feet bgs to target 40 feet below the SLC invert. In total, 72 drill samples are proposed for exploration and will be within the

DWR right-of-way. Sample locations near the irrigation crossings will be backfilled with a cement-bentonite grout or completed as groundwater monitoring wells or inclinometers.

2.2.6 Soil and Laboratory Testing

Standard penetration tests would be completed at each HSA sample location during drilling. The Project's design engineer would assist in selecting samples to submit for further geotechnical testing. Lab testing is anticipated to include various soil attributes, such as soil moisture content and density. Actual soil testing performed would depend on soils and soil conditions encountered in the field.

In the borrow areas, soil samples would be sent to the laboratory for asbestos, heavy metals, pesticides and pH testing. In addition, soil samples adjacent to the existing pipelines would be tested for similar constituents, as well as gasoline chemical products. Other materials of concern may be tested if field conditions indicate the possible presence of additional contaminants being present.

2.3 Proposed Action Implementation

Activities associated with implementation of the geotechnical investigations would require a maximum of the following equipment to be used on-site: one or two drill rigs, a forklift, one water truck, one or two support trucks, and five pickup trucks. All equipment, with possible exception of the pickup trucks, would be diesel-powered and are anticipated to be used on-site for the duration of the geotechnical investigation activities. Different methods of geotechnical activities could occur at the same time in multiple locations. DWR, Reclamation, and its contractors would be required to adhere to all applicable best management practices identified in DWR's Climate Action Plan (DWR 2020), including but not limited to the following:

- Evaluate Project characteristics, including location, Project work flow, site conditions, and equipment performance requirements, to determine whether specifications of the use of equipment with repowered engines, electric drive trains, or other high efficiency technologies are appropriate and feasible for the Project or specific elements of the Project.
- Evaluate the feasibility and efficacy of performing on-site material hauling with trucks equipped with on-road engines.
- Ensure that all feasible avenues have been explored for providing an electrical service drop to the construction site for temporary construction power, if required. When generators must be used, use alternative fuels, such as propane or solar, to power generators to the maximum extent feasible.
- Limit deliveries of materials and equipment to the site to off peak traffic congestion hours.
- Minimize idling time by requiring that equipment be shut down after five minutes when not in use (as required by the state airborne toxics control measure, California Code of Regulations, Title 13, Section 2485). Provide clear signage that posts this requirement for workers at the entrances to the site and provide a plan for the enforcement of this requirement.
- Maintain all construction equipment in proper working condition and perform all preventative maintenance.

- Evaluate the feasibility of restricting all material hauling on public roadways to off-peak traffic congestion hours. During construction scheduling and execution minimize, to the extent possible, uses of public roadways that would increase traffic congestion.

Access to sample locations would be primarily through the use of existing access roads with the exception of borrow sites where drilling equipment would be driven overland to each point. Access roads adjacent to the SLC are comprised of heavily compacted materials for ease of travel for maintenance of the Aqueduct system. An average of 10 workers would be on-site to implement the Project. Workers would commute individually to the active site and park within designated staging areas. The initial staging areas would be located within the existing right-of-way along the SLC. As the geotechnical investigations move to new locations, equipment would move to new staging areas to provide closer material access. Staging areas would be located in previously disturbed areas that have been/are used for equipment storage and vehicular travel and parking. All equipment would be stored at a DWR operations and maintenance facility located at MP 142.2 and/or temporarily overnight in previously disturbed locations adjacent to the SLC. The average commute would be up to an approximate 50-mile round trip.

During the investigations, soil to be tested would be stored in appropriate bags and core boxes within a secured area in an on-site container. Cuttings that are not sent to the lab for testing would either be placed back downhole or be spread around the drill location. The site would be returned to preexisting conditions above ground once each exploration activity is completed. Each individual geotechnical sample is anticipated to be completed within one working day and would typically be backfilled on the same day.

All equipment and materials would be transported to the Project area on public highways and local roads using standard transport equipment. Primary access to the Project area would be provided along existing roads along the SLC from Interstate 5 (I-5). The equipment would be offloaded on-site within the staging areas and then mobilized to each drilling location. Traffic control is not anticipated to be required.

The geotechnical investigations would occur over an approximate 8-month period, currently anticipated to begin in the late summer of 2021. The schedule includes site preparation/staging, sampling, and site restoration. Site restoration includes backfilling of all boreholes and restoring the surface of all sites to original grade prior to sampling.

2.3.1 Environmental Commitments/Mitigation Measures

The DWR shall implement monitoring and Environmental Commitments (EC's)/Mitigation Measures (MMs) to avoid and/or reduce the impacts to the surrounding environment.

Environmental Commitments/Mitigation Measures

Biological Resources

Measure BIO 1 – Pre-Activity Surveys: A qualified biologist shall conduct pre-activity surveys of each drilling site and off-road access route within 30 days of initiation of project activities. The pre-

activity assessment surveys of the work area will identify and flag special-status wildlife resources including canid dens, special-status plants, and nesting birds for avoidance.

Prior to initiation of work activities in sensitive resources, the qualified biological monitor shall survey the drilling activity area for any wildlife to ensure individuals are allowed to move out of harm's way during the daily site activities. No nests or dens will be removed or otherwise affected.

Measure BIO 2 – Environmental Awareness Training: Prior to work beginning, a Worker Environmental Awareness Program (WEAP) training will be conducted for construction personnel by a qualified biologist. The WEAP training will focus on special-status resources known to occur within the AOI, as well as measures required to avoid impacts to these resources.

Measure BIO 3 – Bird Nest Avoidance: For areas where there are known raptor nests or burrowing owls within 250 feet of the drilling locations, work will be scheduled prior to the nesting season, as feasible.

If project-related activities are scheduled during the nesting season (typically February 1 to August 31), focused nest surveys of affected work areas shall be conducted by a qualified biologist within two weeks prior to the beginning of work activities for ground, canopy or man-made structure nesters. The qualified biologist shall survey the area for nests within a minimum of 250-foot radius around project activities.

If the survey identifies an active nest, the qualified biologist shall flag the location and coordinate with construction personnel to modify boring locations to an area outside of a buffer as determined by the qualified biologist in the field. The buffer shall be delineated and shall be in effect throughout construction (for each boring location this should be less that one day) or until the nest is no longer active (i.e., the young are no longer being fed by their parent(s)). The buffer(s) shall be determined based upon the life history of the individual species, including their sensitivity to noise, vibration, ambient levels of human activity and general disturbance, the current site conditions (screening vegetation, terrain, etc.) and the various project-related activities necessary to implement the project. The qualified biologist shall be onsite during the initiation of project activities and if there is a change in the level of activity (i.e., noise level, etc.) to monitor the nest. The buffer between the construction activities and the active nest will ensure that nesting activities are not interrupted.

If no active nests are found, project activities may proceed without modification.

Measure BIO 4 – Drilling Location Survey and Avoidance: During boring activities near sensitive resources, a qualified biological monitor will accompany drilling teams at each drilling location. If dens, burrows, or sensitive vegetation are present within the work area, the qualified biologist will coordinate with construction personnel to modify boring locations or-off road access routes to avoid these features. A buffer between potentially active canid dens or potential special-status small mammal burrows and the active work area shall be no less than 50 feet. The biological monitor shall have the authority to approve drilling locations and off-road access routes and to halt construction activities if special status species are present. The monitor will maintain an electronic log of survey results and drilling location modifications resulting from monitoring activities.

Measure BIO 5 – Vehicle Speed Limit: Except on Federal, State, or County roadways, work-related vehicles will adhere to a speed limit of 15 miles per hour. Vehicular traffic to and from the project site shall use existing routes of travel. Cross country vehicle and equipment use outside designated work areas shall be prohibited. Access roads that are planned for use during construction shall not extend beyond the planned impact area. All vehicle traffic shall be contained within the planned impact area or in previously disturbed areas.

Measure BIO 6 – Timing of Work: Nighttime work will be avoided to avoid active periods of species such as the San Joaquin kit fox.

Measure BIO 7 – Open Holes: Any unfilled holes that may need to be left overnight will be covered and weighted to prevent animals from becoming trapped inside.

Measure BIO 8 – Trash: Any food scraps or other trash items will be stored in wildlife-proof containers and removed offsite, as needed to avoid attracting any special-status species or their predators (i.e., common ravens, coyotes, or feral dogs) to the work areas.

Cultural Resources

CUL-1: Construction Worker Cultural Resources Sensitivity Training. Prior to the start of geotechnical investigations, DWR shall retain and direct a Qualified Archaeologist, defined as an archaeologist meeting the Secretary of the Interior's Professional Qualification Standards for Archaeology (36 CFR Part 61) with expertise in California archaeology, to prepare a cultural resources awareness and sensitivity training module for all personnel involved in field activities. The training module shall include a presentation that covers, at a minimum, the types of cultural resources that may be encountered, including tribal cultural resources, regulatory protections for cultural and tribal cultural resources, including confidentiality requirements for archaeological resource locations, and of the proper procedures to be enacted in the event of an inadvertent discovery of archaeological resources or human remains. Personnel shall acknowledge these requirements by signing a training attendance sheet. The Qualified Archaeologist, or an archaeologist working under their direct supervision, shall present the training at the initial kickoff or tailgate meeting. Subsequent trainings shall be given on an as-needed basis as new field personnel join the Project. DWR shall ensure that construction personnel are made available for and attend the training, and shall retain documentation demonstrating attendance.

CUL-2: Pre-Construction Cultural Resources Surveys. Prior to the start of geotechnical investigations on parcels that have not been surveyed, a Qualified Archaeologist meeting the Secretary of the Interior's Professional Qualifications Standards for archaeology, or an archaeologist working under their direct supervision, shall conduct a pre-construction cultural resources survey of the APE. The survey shall document cultural resources potentially qualifying as historic properties under Section 106 and/or historical resources, unique archaeological resources, and/or tribal cultural resources under CEQA. The Qualified Archaeologist shall document the results of the survey in a report addendum (or technical memorandum) and append Department of Parks and Recreation (DPR) 523 forms for resources encountered during the survey. The Qualified Archaeologist shall submit the report to DWR and Reclamation within 5 business days after completion of the survey. The Qualified Archaeologist shall submit the final documents to the

Southern San Joaquin Valley Information Center. In the event cultural resources potentially qualifying as historic properties under Section 106 and historical resources, unique archaeological resources, or tribal cultural resources under CEQA are identified during the survey, they shall be treated in accordance with Mitigation Measure CUL-3.

CUL-3: Avoidance of Cultural Resources. In the event that cultural resources potentially qualifying as historic properties under Section 106 and/or historical resources, unique archaeological resources, and/or tribal cultural resources under CEQA are encountered during pre-construction surveys, they shall be avoided and preserved in place. Any planned geotechnical investigation locations shall be moved to avoid identified cultural resources. Avoided cultural resources shall be designated Environmentally Sensitive Areas and demarcated as exclusion zones through the use of temporary flagging or fencing and signage. Archaeological resources shall not be marked as such in order to discourage unauthorized disturbance or collection of artifacts. The Qualified Archaeologist, or their designee, shall periodically inspect designated Environmentally Sensitive Areas for the duration of Project activities in the vicinity to ensure that flagging/fencing and signage remains intact and no incursions into exclusion zones have occurred. Upon completion of all Project-related activities in the vicinity of a designated Environmentally Sensitive Area, all temporary flagging/fencing and signage shall be removed.

CUL-4: Unanticipated Discovery Protocol for Cultural Resources. In the event of the unanticipated discovery of archaeological materials during the geotechnical investigations, DWR or its contractor shall immediately cease all work activities in the area (within approximately 100 feet) of the discovery until the Qualified Archaeologist has inspected the discovery and conferred with DWR and Reclamation on the potential significance of the resource. If the discovered materials are potential tribal cultural resources, affiliated Native American tribes will be notified and provided an opportunity to participate in the evaluation of the find.

If it is determined that a discovered archaeological resource constitutes a historic property under Section 106 and/or a historical resource, unique archaeological resource, and/or tribal cultural resource under CEQA, avoidance and preservation in place shall be the preferred manner of mitigation. If avoidance is feasible, the procedures outlined in Mitigation Measure CUL-3 shall be followed.

If avoidance and preservation in place is not feasible and data recovery through excavation is the only feasible mitigation available, a treatment plan shall be prepared and implemented by the Qualified Archaeologist in consultation with DWR and Reclamation. The treatment plan shall provide for the adequate recovery of the scientifically consequential information. DWR and Reclamation shall consult with appropriate Native American representatives in determining treatment for indigenous resources to ensure that cultural values ascribed to the resource, beyond those that are scientifically important, are considered. DWR and Reclamation shall also consult with appropriate consulting parties and the California SHPO during the development of treatment.

CUL-5 – Unanticipated Discovery Protocol for Human Remains: If human remains are discovered on Federal land during the geotechnical investigations, all work shall immediately halt within 100 feet of the find and the provisions of the Native American Graves Protection and

Repatriation Act shall be followed. If human remains are uncovered on State land or private land during the geotechnical investigations, all work shall immediately halt within 100 feet of the find and the procedures and protocols set forth in CEQA Guidelines Section 15064.5(e)(1), California Health and Safety Code Section 7050.5(c), and PRC Section 5097.98 shall be followed.

Geology and Soils

GEO-1 – Retention of a Qualified Paleontologist: Prior to the start of the geotechnical investigation, DWR shall retain a Qualified Paleontologist who meets the professional criteria established by the Society of Vertebrate Paleontology (SVP, 2010) to implement the paleontological resources mitigation measures for the Proposed Project.

GEO-2 – Paleontological Resources Sensitivity Training: Prior to the start of the geotechnical investigation, the Qualified Paleontologist, or their designee, shall conduct paleontological resources awareness training for onsite personnel. The training session shall focus on how to identify paleontological resources that may be encountered during the geotechnical investigation and the procedures to be followed in the event of their discovery. DWR shall ensure onsite personnel are made available for and attend the training and retain documentation demonstrating attendance.

GEO-3 – Paleontological Monitoring: Full-time paleontological resources monitoring shall be required for geotechnical investigations in areas mapped as early Pleistocene deposits (Qc) (between MP 142 and MP 143 and between MP 169 and MP 171). Part-time paleontological monitoring (or periodic spot checks) shall be required for geotechnical investigations in Late Pleistocene to Holocene alluvial deposits (Qa and Qf). Paleontological monitoring shall not be required for any geotechnical investigation methods that do not produce visible spoils that could contain identifiable fossils. Paleontological monitoring shall be conducted by a monitor who meets the professional criteria established by the Society of Vertebrate Paleontology (SVP, 2010) working under the direct supervision of the Qualified Paleontologist. Monitoring can be reduced, or ceased entirely, if determined adequate by the Qualified Paleontologist. The paleontological monitor shall collect any identifiable fossils encountered during the geotechnical investigation. If onsite personnel discover potential fossils during the geotechnical investigation when a paleontological monitor is not present, they shall set aside the fossil materials and notify the Qualified Paleontologist.

GEO-4 – Paleontological Resources Treatment and Disposition: Significant fossils (i.e., those that meet the paleontological resources significance criteria outlined in Shapiro and Clark [2021]) shall be prepared to the point of identification and cataloged. Significant fossils shall be curated at a public, non-profit institution with a research interest in the material and with retrievable storage, such as the LACM, if such an institution agrees to accept the fossils. If no institution accepts the fossil collection, then the fossils may be donated to a local museum, historical society, school, or other institution for educational purposes. Accompanying notes, reports, maps, and photographs shall also be filed with the final repository.

GEO-5 – Paleontological Resources Monitoring Report: Upon completion of the geotechnical investigation**,** the Qualified Paleontologist shall prepare a report summarizing the results of the monitoring efforts. The report shall be submitted to DWR and Reclamation to signify the satisfactory completion of required paleontological mitigation measures. If significant fossils are discovered, the report shall also be submitted to the appropriate repositories.

3 Affected Environment and Environmental Consequences

3.1 Federal Required Resources Disclosures

Department of Interior Regulations, Executive Orders, and Reclamation guidelines require a discussion of Native American Indian sacred sites, Indian Trust Assets, and Environmental Justice when preparing environmental documentation.

3.1.1 Indian Trust Assets

Indian Trust Assets are legal interests in assets that are held in trust by the U.S. for federally recognized Indian tribes or individuals. The nearest Indian Trust Asset a public domain allotment approximately 34 miles from the Proposed Action area.

3.1.2 Indian Sacred Sites

Executive Order 13007 (May 24, 1996) requires that federal agencies accommodate access to and ceremonial use of Indian sacred sites by Indian religious practitioners and avoids adversely affecting the physical integrity of such sacred sites. The Proposed Action would not limit access to and ceremonial use of Indian sacred sites on Federal lands by Indian religious practitioners or affect the physical integrity of such sacred sites. There would be no impacts to Indian sacred sites as a result of the Proposed Action.

3.1.3 Environmental Justice

Executive Order 12898 requires each federal agency to identify and address disproportionately high and adverse human health or environmental effects, including social and economic effects of its program, policies, and activities on minority populations and low-income populations. The Proposed Action would not cause dislocation, changes in employment, or increase flood, drought, or disease nor would it disproportionately impact economically disadvantaged or minority populations.

3.2 Evaluation of Environmental Impacts

To satisfy the requirement to consider the environmental impacts of the Project pursuant to both NEPA and CEQA, potential effects on resources were determined using the CEQA Appendix G Initial Study checklist. For each environmental resource area evaluated, a brief description of the Affected Environment/Environmental Setting is provided in the checklist and where there is a possibility for the Project to affect a specific resource, the context and intensity of the impact are discussed to satisfy the requirements of NEPA. There are no environmental factors that have an impact that is identified as a "Potentially Significant Impact" as all potential significant impacts can be reduced to less than significant with the incorporation of environmental commitments/ mitigation measures.

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial study under CEQA:

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

☒ I find that although the Proposed 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 Project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

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

☐ I find that the Proposed 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 Proposed 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 Proposed Project, nothing further is required.

Daniel Weisman — 6/29/2021

Signature — Date

Signature — Date

Under CEQA, there are four possible determinations of significance:

- **No Impact.** The Project will not have any measurable impact on the environment.
- **Less than Significant Impact.** The Project could have the potential to generate environmental impacts but impacts were determined to not have a significant effect on the environment.
- **Less than Significant with Mitigation Incorporated.** The Project could have the potential to generate environmental impacts that may have a significant effect on the environment. Mitigation is incorporated to reduce these impacts to levels that are less than significant.
- **Potentially Significant Impact.** The Project could have a potentially significant effect to the environment. Additional analysis is required to identify mitigation measures that could reduce potentially significant impacts to less than significant levels.

3.3 Initial Study Checklist

3.3.1 Aesthetics

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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 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?	☐	☐	☐	☒

SLC Pools 17 and 18 are located in the County of Fresno, while Pools 20 and 21 are located in the County of Kings. The Proposed Action/Project area in its entirety is characterized by: the concrete lined SLC; compacted soils that serve as access roads and the SLC embankment; bridge crossings over the SLC; and borrow areas, which are located adjacent to the SLC and consist of agricultural fields or undeveloped parcels of land.

a) Scenic vistas are defined as expansive views of distant landforms and aesthetic features from public vantage points, including areas designated as official scenic vistas along roadway corridors or otherwise designated by local jurisdictions. The Proposed Project area is not located in the immediate vicinity of an officially designated scenic vista or Scenic Highway by Fresno County (Caltrans 2020; County of Fresno 2000; County of Kings 2010). However, the Project area is adjacent to agricultural lands, which are considered scenic to Fresno County. Further, natural landforms such as surrounding hillsides may be seen in the far-off distance surrounding the SLC.

Activities associated with implementation of the Proposed Project would include site preparation/staging and sampling along the embankments and adjacent borrow sites. The Project area is remote and encompasses a 41-mile linear corridor composed of concrete structures, maintenance buildings, and compacted dirt embankments that also serve as access roads. It is unlikely that areas of disturbance and equipment located within the right-of-way

and adjacent to the SLC would be visible from public vantage points along local paved and dirt roadways. N**o impact** to scenic vistas would occur.

b) A scenic highway is officially designated as a State Scenic Highway when a local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives notification from Caltrans that the highway has been designated as an official Scenic Highway. Based on a review of the local General Plan and Caltrans List of Scenic Highways, the Project area is not located along a State Scenic Highway (Caltrans 2020). Therefore, the Proposed Project would not impact scenic resources, which include rock outcroppings, trees, or historic buildings within a designated State Scenic Highway corridor and **no impact** would occur.

c) Public views of the area are provided very briefly to motorists traveling along local roadways and recreational visitors who may fish within the area. Activities associated with the Proposed Project include equipment staging and material stockpiling within and immediately adjacent to Pools 17, 18, 20 and 21over an 8-month period. As such, the Proposed Project would not permanently or significantly impact the existing visual character and quality of public views of the Project site and immediate vicinity. Therefore, **no impact** would occur.

d) The Proposed Project would not install or add new permanent sources of light or glare to the Project vicinity. No nighttime work would occur. No new facilities would be built that would be considered to have reflective surfaces. There would be no new sources of glare to affect daytime or nighttime views. There would be **no impact**.

3.3.2 Agricultural Resources

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

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

The Proposed Project area is entirely within or directly adjacent to the SLC right-of-way and dominated by the concrete lined canal, canal levee, gravel access roads, local county roads, bridge crossings, and agricultural/undeveloped parcels of land.

a, e) The Proposed Project occurs entirely on land within or directly adjacent to the SLC. Pools 17, 18, 20 and 21 are surrounded by lands designated as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance. Some borrow areas and areas adjacent to bridges are located within land zoned for Agriculture or currently within agricultural use. Crop information for the Project's area shows that some borrow sites where sampling would occur are currently cultivating pistachios and or almonds; however, the majority of the borrow areas are within idle agricultural lands that have not been cultivated in the last three years. To the furthest extent possible, geotechnical investigation contractors, Reclamation, and DWR would avoid impacting active agricultural operations by selecting sample areas that may be fallow, inactive or otherwise less desirable in agricultural soil characteristics. Prior to any geotechnical investigation, Reclamation and DWR would obtain permission from landowners to access areas that are not within Reclamation or DWR jurisdiction for geotechnical investigation activities. Potential impacts to agricultural land would be temporary. Once geotechnical investigations are complete, sampling sites would be backfilled and surface soils within the Project areas would be returned to preexisting conditions. The Project does not involve any changes to current General Plan land use or zoning designations. The Proposed Project would not result in the permanent conversion of farmland to non-agricultural use. Impacts would be **less than significant**.

b,c,d) The Project area does not contain lands enrolled under the Williamson Act (County of Fresno 2020; County of Kings 2020). Furthermore, there are no forestry resources within the Proposed Project area. Therefore, there would be **no impact** since there would be no conflict with a Williamson Act Contract or existing zoning of forest land or cause rezoning of forest land, timberland, or timberland zoned for Timberland Production.

3.3.3 Air Quality

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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) adversely affecting a substantial number of people?	☐	☐	☒	☐
e) Substantially alter air movement, moisture, or temperature, or cause any substantial change in climate?	☐	☐	☐	☒

The proposed investigation sites are located along the SLC in Fresno and Kings Counties within the San Joaquin Valley Air Basin (SJVAB), which is under the jurisdiction of the San Joaquin Valley Air Pollution Control District (SJVAPCD).

a) The Clean Air Act (CAA) requires each state to prepare an air quality control plan, referred to as a State Implementation Plan (SIP). The SIP is a living document that is periodically modified to reflect the latest emission inventories, planning documents, and rules and regulations of air basins as reported by agencies with jurisdictions over them. The U.S. Environmental Protection Agency (EPA) has developed *de minimis* conformity thresholds to ensure that federal Projects conform to applicable SIPs so that they do not interfere with strategies to obtain National Ambient Air Quality Standards. **Table 2** summarizes the applicable U.S. EPA's *de minimis* conformity thresholds.

Table 2 Federal De Minimis Thresholds

Pollutant	Area Type	Tons/Year
Ozone (VOC or NOx)	Serious Nonattainment	50
	Severe Nonattainment	25
	Extreme Nonattainment	10
	Other nonattainment areas outside an ozone transport region	100
Other Ozone Nonattainment Areas Inside an Ozone Transport Region	VOC	50
	NOx	100

Table 2 Federal De Minimis Thresholds

Pollutant	Area Type	Tons/Year
Carbon monoxide, SO2, and NO2	All maintenance	100
PM10	Serious nonattainment	70
	Moderate nonattainment	100
PM2.5	Serious nonattainment	70
	Moderate nonattainment	100

SOURCE: U.S. EPA 2020b.

The SJVAPCD is responsible for implementing programs and regulations required by the CAA and the California CAA within the air basin. In this capacity, SJVAPCD has prepared plans to attain federal and state ambient air quality standards for which it has been designated as non-attainment. The air quality plans include emissions inventories that identify sources of air pollutants, evaluations for feasibility of implementing potential opportunities to reduce emissions, sophisticated computer modeling to estimate future levels of pollution, and a strategy for how air pollution would be further reduced.

In addition, the SJVAPCD has adopted a guidance document, *Guidance for Assessing and Mitigating Air Quality Impacts* (Guidance), to assist in the evaluation of air quality impacts of projects proposed within its jurisdiction (SJVAPCD 2015). The Guidance provides recommended procedures for evaluating potential air quality impacts during the environmental review process consistent with CEQA requirements and includes recommended thresholds of significance, mitigation measures, and background air quality information. It also includes recommended assessment methodologies for air toxics, odors, and greenhouse gas (GHG) emissions. **Table 3** presents the applicable SJVAPCD thresholds of significance. These thresholds are based on the SJVAPCD's New Source Review (NSR) offset requirements and are applied to evaluate regional impacts of Project-specific emissions of air pollutants and their impact on the regions ability to reach attainment (SJVAPCD 2015).

Table 3 SJVAPCD Criteria Air Pollutant Thresholds of Significance for Construction and Operation

		Operational Emissions	
Pollutant	Construction Emissions	Permitted Equipment and Activities	Non-Permitted Equipment and Activities
CO	100	100	100
NOx	10	10	10
ROG	10	10	10
Sox	27	27	27
PM10	15	15	15
PM2.5	15	15	15

SOURCE: SJVAPCD, 2015.

The SJVAPCD's attainment plans demonstrate that Project-specific emissions below the offset thresholds would have a less-than-significant impact on air quality (SJVAPCD 2015). Furthermore, the U.S. EPA's *de minimis* conformity thresholds were developed to ensure that federal projects conform to applicable SIPs. Therefore, projects with emissions below the U.S. EPA *de minimis* thresholds and the SJVAPCD thresholds of significance for criteria pollutants would be determined to not conflict or obstruct implementation of the SIP or the SJVAPCD's air quality plans.

The Project would have short-term air quality impacts due to equipment operation and vehicle emissions for the proposed geotechnical investigation activities. Geotechnical investigation activities' emissions were estimated using the California Emissions Estimator Model (CalEEMod), version 2016.3.2, and are presented in **Table 4**. Project-specific information was used for modeling when possible. CalEEMod assumptions and detailed output can be found in **Appendix B**. [5] The table shows the Project's annual emissions and compares them to the U.S. EPA's *de minimis* conformity thresholds and the SJVAPCD significance thresholds for construction.

Table 4 Project Geotechnical Investigation Activities' Emissions

	Estimated Annual Emissions (tons/year)					
Activity Year	**ROG**	**NO_X**	**CO**	**SO_x**	**PM_{10}**	**$PM_{2.5}$**
2021	0.40	3.53	2.48	<0.01	0.15	0.12
SJVAPCD Significance Threshold	10	10	100	27	15	15
Federal *de minimis* Threshold	10	10	N/A	N/A	N/A	100
Exceeds Threshold?	No	No	No	No	No	No

SOURCE: Data compiled by ESA 2020.

As shown in **Table 4**, annual emissions would not exceed the applicable federal *de minimis* thresholds or the SJVAPCD significance thresholds for construction.

As discussed earlier, based on the SJVAPCD's approach to air quality planning, as the Project's emissions would be below applicable federal *de minimis* thresholds and SJVAPCD thresholds, the Project would be considered to be consistent with the SIP and the region's air quality plans. As a result, the Proposed Project would result in a **less-than-significant** impact.

The Proposed Project would not result in operational (long-term) emissions as there are no proposed operational activities associated with this Project. Therefore, following the

5 It should be noted that the Project's anticipated duration was revised following CalEEMod modeling from six months to eight months. However, this change would not have a significant impact on emissions, as the amount of work to be conducted did not change. Although workers' commute trips and vendor trips would increase, this would not have a significant impact on emissions associated with geotechnical investigation activity and would not bring the Project's emissions above the SJVAPCD's thresholds.

geotechnical investigation, no new emissions would be generated, and there would be no conflict with or obstruction of implementation of the regional air quality plan.

b) CEQA defines cumulative impacts as two or more individual impacts which, when considered together, are either significant or "cumulatively considerable," meaning they add considerably to a significant environmental impact. An adequate cumulative impact analysis considers a project over time and in conjunction with other past, present, and reasonably foreseeable future projects whose impacts might compound those of the project being assessed.

By its very nature, air pollution is largely a cumulative impact. No single project would likely be sufficient in size, by itself, to result in non-attainment of the regional air quality standards. Instead, a project's emissions may be individually limited, but cumulatively considerable when taken in combination with past, present, and future development within the air basin. The non-attainment status of the air basin with respect to regional pollutants is a result of past and present development. Future attainment of state and federal ambient air quality standards is a function of successful implementation of SJVAPCD's attainment plans and the SIP. Consequently, the SJVAPCD's application of thresholds of significance for criteria pollutants and the U.S. EPA's application of *de minimis* thresholds is a relevant way to determine whether a project's individual emissions would have a cumulatively significant impact on air quality.

Per CEQA Guidelines Section 15064(h)(3), a Lead Agency may determine that a project's incremental contribution to a cumulative effect is not cumulatively considerable if the project will comply with the requirements in a previously approved plan or mitigation program, including, but not limited to an air quality attainment plan or maintenance plan that provides specific requirements that will avoid or substantially lessen the cumulative problem within the geographic area in which the project is located (SJVAPCD 2015). As discussed above, the SJVAPCD has established thresholds of significance for criteria pollutant emissions, which are based on NSR offset requirements for stationary sources. Emission reductions achieved through implementation of offset requirements are a major component of the SJVAPCD's air quality plans. Additionally, the federal *de minimis* conformity thresholds were developed by the U.S. EPA to ensure that federal projects conform to the applicable SIP and do not interfere with strategies to obtain the NAAQS. Thus, projects with emissions below the SJVAPCD's thresholds of significance for criteria pollutants and the federal *de minimis* thresholds would be determined to comply with the SJVAPCD's air quality plans and the SIP, respectively, (SJVAPCD 2015) and would not contribute a cumulatively considerable increase for these criteria pollutants.

As discussed under criterion a), Project emissions would be less than the SJVAPCD recommended thresholds of significance for construction emissions and the U.S. EPA's *de minimis* thresholds, and the Project would not generate operational emissions. Therefore, the Project would not result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is in non-attainment under an applicable federal or state

ambient air quality standard. The impact with respect to criteria air pollutant emissions would be **less than significant**.

c) Sensitive receptors are defined as facilities and land uses that include members of the population that are particularly sensitive to the effects of air pollutants, such as children, the elderly, and people with illnesses. Examples include schools, hospitals, and daycare centers. Residential areas are also considered sensitive to poor air quality because people usually stay home for extended periods of time, which results in greater exposure to ambient air quality.

The section of SLC in which the Project would occur primarily runs through agricultural fields and undeveloped land. The area is rural and predominately uninhabited, and there are no sensitive receptors within 1,000 feet of any of the proposed investigation sites. Additionally, the proposed investigations are transitory in nature and would not occur at any one site for an extended period of time. There is no operational component of the Project; thus, the Project would not generate operational emissions. If implemented, the Proposed Project would not expose sensitive receptors to substantial criteria pollutants due to the lack of receptors near the Project site and the short-term nature of the proposed activity. Therefore, the impact would be **less than significant.**

d) There is no operational component of the Project; thus, the Project would not generate operational emissions. Regarding the proposed geotechnical investigations, diesel-powered construction equipment can generate short-term, non-persistent odors due to engine exhaust, but these dissipate quickly and would likely not be noticeable beyond the work site. Additionally, as discussed above, the area surrounding the Project site is rural and uninhabited. Therefore, the Project would not create odors that could impact a substantial number of people, and the impact would be **less than significant**.

e) As discussed above, the proposed geotechnical investigations are anticipated to occur over an eight-month period, and there is no operational component of the Project. Additionally, the construction emissions estimated to result from the Project would fall below the applicable district and federal thresholds. The temporary nature of the Project and the absence of a significant finding with respect to applicable thresholds suggests that emissions resulting from Project construction would not be capable of substantially altering air movement, moisture, or temperature, or causing any substantial change in climate; there would be **no impact**.

3.3.4 Biological Resources

Would the Project:	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporation**	**Less than Significant Impact**	**No Impact**
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans,	☐	☒	☐	☐

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
policies, or regulations, or by the California Department of Fish and Game 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, regulations, or by the California Department of Fish and Game 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 native 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?	☐	☐	☐	☒

The following environmental setting is based on the Biological Resources Technical Report (BRTR) prepared by ESA and DWR (2021) in support of the Proposed Project (**Appendix C**). Biological resource information in the BRTR resulted from Project-specific surveys conducted by DWR biologists as well as environmental data collected in conjunction within biological surveys for ongoing maintenance projects since 2015, within the Project's biological study area, considered the Area of Influence (AOI) as depicted in Appendix C. The AOI consists of all proposed geotechnical investigations which would occur on both sides of the SLC and adjacent private properties, covering approximately 3,814 acres, though the direct area of impact is focused on the intermittent geotechnical boring locations within the AOI. Surveys conducted within the AOI include vegetation mapping, habitat suitability, and focused surveys for blunt-nosed leopard lizard (*Gambelia sila*), burrowing owl (*Athene cunicularia*), Swainson's hawk (*Buteo swainsoni*), and canid dens and burrows. A full list of surveys and associated projects are included in the BRTR (**Appendix C**).

a) Most investigations would occur within the existing DWR/Reclamation right-of-way. Given the short duration of the impact and the relatively small acreage of direct impact associated with the

borings (relative to the AOI), coupled with the proposed avoidance and minimization measures, the project is expected to have a less than significant impact with mitigation incorporated on special-status species as outlined below.

Special-Status Plants

Project-related activities have the potential to impact special-status plant species if present within the footprint of the geotechnical borings through the removal of plants and their habitat. Project-related activities have the potential to facilitate an increase in the disturbance and abundance of invasive plants by directly transporting invasive seed sources on site (and between sites) via equipment and by creating ideal seed beds through ground disturbance and resulting bare soils. However, the drilling equipment would largely remain on established roads, and the risk of propagation of invasive plant species is low and would be minimized or avoided through implementation of the mitigation program. Specifically, implementation of general measures and preconstruction surveys and biological monitoring required in **Mitigation Measures BIO-1** and **BIO-4** will ensure that special-status plant species are identified and avoided by the drilling operations. Therefore, it is not anticipated that any special-status plants or habitat would be affected and impacts on special-status plants would be **less than significant**.

Special-Status Invertebrates, Amphibians, and Reptiles

One western spadefoot and one San Joaquin coachwhip have been detected historically within the AOI, and the Crotch bumble bee has a medium potential to occur. These species may potentially be impacted as a result of geotechnical boring activities via direct mortality. However, the implementation of general measures, preconstruction surveys and biological monitoring as described in **Mitigation Measures BIO-1 and BIO-4** will ensure potential Crotch bumblebee, western spadefoot, and San Joaquin coachwhip that occur will be avoided by drilling operations. Therefore, it is not anticipated that special-status invertebrates, amphibians and reptiles would be affected and impacts on special-status amphibians would be **less than significant.**

Migratory and Nesting Birds

Native resident and migratory bird species protected in accordance with the Migratory Bird Treaty Act, Bald & Golden Eagle Protection Act, and Sections 3503.5, 3505, and 3511 of the California Fish and Game Code may nest within 250 feet of the geotechnical boring investigations. Bird nests located in or near the project site may be impacted by direct mortality or impacted indirectly from human presence or ground vibrations and noise generated by heavy equipment. Implementation of **Mitigation Measures BIO-1 through BIO-4** requires a preconstruction surveys and establishment of an avoidance buffer around active nests to prevent unintended impacts during project construction. These mitigation measures ensure that impacts to nesting birds would be reduced to **less than significant**.

Special-Status Birds

Project-related activities have the potential to impact 10 special-status birds (prairie falcon, long-billed curlew, Swainson's hawk, white-tailed kite, Northern harrier, burrowing owl, loggerhead shrike, California horned lark, and yellow-headed blackbird) and five additional species (merlin, tricolored blackbird, short-eared owl, golden eagle, and mountain plover) that have some potential to occur within the AOI. Breeding and nesting behavior may be impacted if nests are

located near geotechnical investigation-activities due to noise and equipment traffic (potentially causing direct mortality to adults sitting on nests, adult abandonment of the nest, eggs or young to be crushed, and/or reproductive failure). The nesting season extends from February 15 through September 1 (SHTAC 2000). Although no nest trees are anticipated to be removed within the proposed footprint for geotechnical borings, boring activities could disturb hawks nesting nearby. Any impacts to known nest locations will be avoided by conducting project activities outside of the nesting season as feasible. Implementation of **Mitigation Measures BIO-1**, **BIO-3**, and **BIO-4** would determine the presence of any nesting birds to avoid the nests by adjusting proposed boring locations. Geotechnical investigation activities could also temporarily disturb foraging habitat (e.g., annual and perennial grasslands, cropland). However, due to the limited time that activities would be conducted within foraging areas, impacts to foraging behavior are not expected. Additionally, implementation of **Mitigation Measures BIO-3 and BIO-4** would require that nesting bird surveys are conducted within the work areas prior to project activities. If bird nests are observed, the monitor would establish an appropriate buffer between the raptor nests and the work area. As a result, impacts to nesting raptors would be avoided.

Passerine birds and other special-status avian species that may nest in vegetation in close proximity to the geotechnical activities also may be affected. Implementation of **Mitigation Measures BIO-3 and BIO-4** would ensure that potential impacts would be minimized through the establishment of buffer areas.

Burrowing owls are common within the AOI. Project-related activities have the potential to impact occupied burrowing owl burrows. If any active burrows occur in the vicinity of the boring locations nesting behavior could be disturbed as a result of noise and traffic (potentially causing adult abandonment of the nest, eggs or young to be crushed, and/or reproductive failure) or by removing destroying burrows. Since the Project would only involve temporary work activity in the vicinity of habitat, long-term displacement or loss of habitat would not occur. **Mitigation Measures BIO-1 and BIO-3** would require pre-activity surveys of the work areas. Each drilling location would be modified by the biological monitor to ensure avoidance of burrowing owl burrows. As a result, impacts to burrowing owls would be avoided. With the implementation of preconstruction clearance surveys and avoidance/exclusion measures described in **Mitigation Measure BIO-3 and BIO-4,** the development and implementation of a WEAP as described in **Mitigation Measure BIO-2**, impacts to western burrowing owl would be reduced to **a less-than-significant** level.

Special-Status Mammals

No giant kangaroo rat, San Joaquin kit fox or American badger (including occupied burrows/ dens) were observed during surveys that have occurred throughout the AOI, including a Project-specific burrow/den search conducted in 2020. Canid dens and small mammal burrows have been observed within the AOI. Project-related activities have the potential to impact giant kangaroo rat, San Joaquin kit fox or American badger if they use the area as a corridor. Direct mortality via crushing of dens or burrows may occur as a result of the geotechnical boring; indirect impacts such as noise and equipment traffic may result in den or burrow abandonment. There is low potential for giant kangaroo rat to be present in the AOI associated with Pool 17,

though no occurrences have been documented within the AOI and no sign of giant kangaroo rat were detected at burrows during previous burrow and den surveys. Implementation of **Mitigation Measure BIO-1** would determine any occupied dens or burrows to be avoided. during pre-activity surveys. Per **Mitigation Measure BIO-4,** the location of each drilling site would be modified by the biological monitor to ensure avoidance of canid or small mammal burrows. Boring investigations would be halted if a special-status mammal is found. As a result, impacts to mammals are expected to be **less than significant with mitigation incorporated**. With implementation of **Mitigation Measures BIO-1 through BIO-4**, the Proposed Project would not have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status. Therefore, impacts would be **less than significant with mitigation incorporated**.

Potential indirect impacts to special-status amphibians, reptiles, birds, and mammals such as trash, vehicular collision with construction equipment between boring locations, nighttime lighting, and wildlife being trapped in open holes will be avoided and minimized with implementation of **Measures BIO-5 through BIO-8.**

b) No riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service occurs within the AOI. Therefore, **no impact** would occur.

c) Although a formal aquatic resources delineation was not conducted, the Aqueduct is not a federally or State regulated water body in accordance with the federal or state Clean Water Act or California Fish and Game Code (Sections 1600 through 1616), respectively. Adjacent wetlands or potentially regulated drainages may occur within or adjacent to the project footprint that could potentially be affected by the Proposed Project but would be avoided through implementation of BMPs as described **in Mitigation Measure BIO-1**. Thus, impacts would be **less than significant with mitigation incorporated**.

d) The Proposed Project is located within the Pacific Flyway, a major north-south route used by migratory birds. The Aqueduct supports a consistent, perennial source of fresh water that is utilized by birds for foraging and as a stop-over during spring and fall migration along the Pacific Flyway. Additionally, habitat located on the landside embankment of the Aqueduct provides foraging and breeding opportunities for a number of common terrestrial wildlife species; however, the Aqueduct presents a barrier for terrestrial wildlife to move/migrate in a west-to-east direction between large open space areas in the region.

It is possible that some migratory birds and common terrestrial wildlife species may temporarily avoid foraging or wading around or in the Aqueduct immediately adjacent to Project site during geotechnical boring activities, simply because of the mere presence of human activity and noises and vibrations that would be generated during construction activities. However, construction activities associated with the Proposed Project would not prevent avian or terrestrial species from using other portions of the Aqueduct for these purposes. As the nature of the geotechnical borings themselves are temporary and short-term, the Proposed Project would not impede wildlife movement in the region, nor would it prevent migratory birds or terrestrial wildlife from

using the Aqueduct. Although unlikely, geotechnical investigation activities could directly impact special-status or native wildlife through wildlife vehicle collisions. Geotechnical investigation and human-related trash could attract both special-status and common wildlife species to the area which could increase the probability of wildlife vehicle strikes. Implementation of **Mitigation Measures BIO-5 through BIO-8** would reduce the likelihood of wildlife vehicle collisions by requiring vehicles are operated at low speeds on the project site, allowing for increased visibility and reaction time during travel onsite. Implementation of **Mitigation Measures BIO-5 through BIO-8** would also reduce the attraction of food-related trash to wildlife in the area and reduce the chance of vehicle collisions. Any light generated by investigation activities at after dark could impact crepuscular and nocturnal wildlife movement and foraging in the work area. In addition, implementation of **Mitigation Measure BIO-6** would eliminate the need for lighting after dark by restricting work to daylight hours and avoid the active periods of species such as the San Joaquin kit fox. Implementation of **Mitigation Measure BIO-7** would require any unfilled holes that may need to be left overnight be covered and weighted to prevent animals from becoming trapped inside.

With implementation of **Mitigation Measures BIO-1 through BIO-8**, the Proposed Project would not have a substantial adverse effect on local or regional wildlife movement, nor would it present an impact to a wildlife movement corridor. Once a boring has been completed it will not be revisited again and each drilling activity is considered temporary in nature. As such, impacts to wildlife movement would be **less than significant with mitigation incorporated**.

e) To the extent feasible, implementation of the Proposed Project would comply with applicable adopted county ordinances protecting biological resources; however, State agencies such as DWR are not subject to local biological ordinances. Nonetheless, no city, county or other local policies or ordinances applicable to protecting biological resource within the Project area have been identified; therefore, **no impact** would occur.

f) The Area Southwest San Joaquin Valley Habitat Conservation Plan (HCP) and Natural Community Conservation Plan (NCCP) is currently in draft form. These documents have not yet been adopted and will not have an effect on the Proposed Project. No other proposed or existing HCP/NCCP extends into the Proposed Project site; therefore, **no impact** would occur.

3.3.5 Cultural Resources

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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?	☐	☒	☐	☐

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

This section relies on the information and findings presented in *California Department of Water Resources San Luis Canal Geotechnical Investigations Project, Kings and Fresno Counties, California: Cultural Resources Assessment Report* (Ehringer et al., 2021). That report details the results of the cultural resources study and includes: delineation of an Area of Potential Effects (APE); records searches conducted by the California Historical Resources Information System (CHRIS) Southern San Joaquin Valley Information Center (SSJVIC); Sacred Lands File (SLF) searches conducted by the California Native American Heritage Commission (NAHC); a review of historical topographic maps and aerial photographs; an assessment of subsurface archaeological sensitivity; and pedestrian field surveys. The cultural resources report is confidential and as such, is not available for public review.

Summary of Identified Cultural Resources

A total of 18 cultural resources were identified in the APE (**Table 5**). These include 16 built environment resources and two archaeological resources (the two archaeological resources are isolated artifacts that were not re-located). Of these resources, 4 are considered historic properties pursuant to Section 106 of the National Historic Preservation Act (NHPA) and historical resources pursuant to CEQA Guidelines Section 15064.5, and 10 are being treated as historic properties (i.e. eligible for listing in the National Register of Historic Places) for the purposes of the undertaking only.

Table 5 Summary of Identified Cultural Resources

Resource Identifier	Description	NR Eligibility	CR Eligibility	Historic Property/ Historical Resource
P-10-006207/ P-16-000266	California Aqueduct (CAAQ)	Eligible (D)	Eligible (D)	Yes/Yes
P-10-006209	Clarkson Avenue Bridge	Eligible (D) (contributor to CAAQ)	Eligible (D) (contributor to CAAQ)	Yes/Yes
P-10-006246	Mt Whitney Avenue Bridge	Eligible (D) (contributor to CAAQ)	Eligible (D) (contributor to CAAQ)	Yes/Yes
P-10-006343	Precontact mano fragment (not re-located)	Not Eligible (D)	Not eligible (R)	No/No
P-10-006344	W. Oakland Avenue	Not Eligible (D)	Not Eligible (R)	No/No
P-10-006345	W. Clarkson Avenue	Not Eligible (D)	Not Eligible (R)	No/No

Resource Identifier	Description	NR Eligibility	CR Eligibility	Historic Property/ Historical Resource
P-10-007160	Coalinga Operations & Maintenance Subcenter	Eligible (R)	Eligible (R)	Yes/Yes (treated as both for purposes of Proposed Project/Undertaking)
P-16-000265	Plymouth Avenue Bridge	Eligible (D) (contributor to CAAQ)	Eligible (D) (contributor to CAAQ)	Yes/Yes
JPB-ISO-2	Precontact CCS biface (not re-located)	Not Eligible (R)	Not Eligible (R)	No/No
-	San Diego Avenue Bridge	Eligible (R) (contributor to CAAQ	Eligible (R) (contributor to CAAQ)	Yes/Yes (treated as both for purposes of Proposed Project/Undertaking)
-	Highway 33 (Derrick Avenue) Bridge	Eligible (R) (contributor to CAAQ)	Eligible (R) (contributor to CAAQ)	Yes/Yes (treated as both for purposes of Proposed Project/Undertaking)
-	San Mateo Avenue Bridge	Eligible (R) (contributor to CAAQ)	Eligible (R) (contributor to CAAQ)	Yes/Yes (treated as both for purposes of Proposed Project/Undertaking)
-	Cerini Avenue Bridge	Eligible (R) (contributor to CAAQ)	Eligible (R) (contributor to CAAQ)	Yes/Yes (treated as both for purposes of Proposed Project/Undertaking)
-	Excelsior (Parkhurst) Avenue Bridge	Eligible (R) (contributor to CAAQ)	Eligible (R) (contributor to CAAQ)	Yes/Yes (treated as both for purposes of Proposed Project/Undertaking)
-	Jeffery Avenue Bridge	Eligible (R) (contributor to CAAQ)	Eligible (R) (contributor to CAAQ)	Yes/Yes (treated as both for purposes of Proposed Project/Undertaking)
-	Oakland Avenue Bridge	Eligible (R) (contributor to CAAQ)	Eligible (R) (contributor to CAAQ)	Yes/Yes (treated as both for purposes of Proposed Project/Undertaking)
-	Highway 145 (Fresno-Coalinga Road) Bridge	Eligible (R) (contributor to CAAQ)	Eligible (R) (contributor to CAAQ)	Yes/Yes (treated as both for purposes of Proposed Project/Undertaking)
ESA-LinerRaise-Built-001H	Two Quonset huts with a well pump/water tank	Eligible (U)	Eligible (U)	Yes/Yes (treated as both for purposes of Proposed Project/Undertaking)

Resource Identifier	Description	NR Eligibility	CR Eligibility	Historic Property/ Historical Resource
NR: National Register of Historic Places CR: California Register of Historical Resources D: Determined R: Recommended T: Unevaluated				

a) Fourteen historic properties/historical resources are within the APE: P-10-006207/P-16-000266, P-10-006209, P-10-006246, P-10-007160, P-16-000265, San Diego Avenue Bridge, Highway 33 (Derrick Avenue) Bridge, San Mateo Avenue Bridge, Cerini Avenue Bridge, Excelsior (Parkhurst) Avenue Bridge, Jeffery Avenue Bridge, Oakland Avenue Bridge, Highway 145 (Fresno-Coalinga Road) Bridge, and ESA-LinerRaise-Built-001H.

Under Section 106 of the NHPA, an adverse effect could occur if the Proposed Project resulted in the physical demolition or alteration of historic properties such that their integrity was diminished in a manner that disqualified them from inclusion in the National Register. The Proposed Project would not alter the use, character, or materials of any of the 14 historic properties in the APE. The Proposed Project does not include the introduction of visual, atmospheric, or audible elements that would diminish the integrity of any of the 14 historic properties in the APE, aside from the temporary visual and audible elements associated with geotechnical borings. The Proposed Project also does not include the transfer, sale, or lease of any of the 14 historic properties in the APE. Therefore, the Proposed Project would have no adverse effect on any of the 14 historic properties in the APE.

Under CEQA, a significant impact could occur if the Proposed Project resulted in a substantial adverse change in the significance of an historical resource; such a change includes physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of the historical resource is materially impaired. Material impairment includes demolition or alteration in an adverse manner to those physical characteristics of the historical resource that convey its historical significant and that justify its inclusion, or eligibility for inclusion, in the California Register. As noted in the previous paragraph, the Proposed Project does not include the physical alteration of any of the 14 historical resources in the APE. Any alterations to the immediate surroundings resulting from the geotechnical borings would be temporary since the Proposed Project does not include the construction of any new facilities. Therefore, the Proposed Project would have a **less than significant impact** to these 14 historical resources.

As discussed below under (b), no known archaeological resources would be affected or impacted by the Proposed Project. However, since the entirety of the APE could not be surveyed due to lack of landowner permission to access some areas (approximately 12 percent of the APE) and since the Project includes ground-disturbing activities, there remains potential that archaeological resources could be encountered, including those that may qualify as historic properties, pursuant to Section 106 of the NHPA or historical resources, pursuant to CEQA

Guidelines Section 15064.5. If archaeological resources are discovered, effects/impacts would be significant if Proposed Project activities result in an adverse effect to or cause a substantial adverse change in the significance of an archaeological resource that qualifies as a historic property/historical resource. **Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4** require worker training, pre-construction surveys, avoidance of resources, and treatment of inadvertent discoveries. Therefore, impacts to archaeological resources that may be historic properties or historical resources would be **less than significant impact with mitigation incorporated.**

b) The two archaeological resources previously recorded in the APE (P-10-006343, JPB-ISO-2) were not re-located, and no archaeological resources were identified within the APE, including those that qualify as historic properties, pursuant to Section 106 of the NHPA, historical resources, pursuant to CEQA Guidelines Section 15064.5, or unique archaeological resources, as defined in PRC Section 21083.2(g). The Proposed Project consists of small-diameter borings that could extend below the layers of previous disturbances. However, the majority of the APE has a low sensitivity for subsurface archaeological resources. It is unlikely that geotechnical borings would encounter intact significant archaeological deposits in low sensitivity areas. It is possible that geotechnical borings in the more sensitive areas of the APE (two southernmost portions of the APE) could encounter archaeological deposits; however, there are only four borings planned within the more sensitive areas and the chance of encountering archaeological resources is low. However, since the entirety of the APE could not be surveyed due to lack of landowner permission to access some areas (approximately 12 percent of the APE) and since the Project includes ground-disturbing activities, there remains potential that archaeological resources could be encountered. If archaeological resources are discovered, effects/impacts would be significant if Proposed Project activities result in an adverse effect to or cause a substantial adverse change in the significance of an archaeological resource. **Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4** require worker training, pre-construction surveys, avoidance of resources, and treatment of inadvertent discoveries. Therefore, impacts to archaeological resources would be **less than significant impact with mitigation incorporated**.

c) No human remains have been identified in the APE through archival research, field surveys, or Native American correspondence, including with the NAHC. Also, the land use designations for the APE do not include cemetery uses. Therefore, the Proposed Project is not anticipated to affect/impact any human remains. However, since the nature of the Proposed Project would involve ground-disturbing activities, it is possible that such actions could unearth, expose, or disturb previously unknown human remains. In the event that human remains are discovered during Proposed Project activities, effects/impacts on the human remains resulting from the Proposed Project would be significant if those remains are disturbed or damaged. **Mitigation Measure CUL-5** requires onsite personnel to cease work and follow appropriate Federal or State laws if human remains are discovered. Therefore, impacts to human remains would be **less than significant with mitigation incorporated.**

3.3.6 Energy

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

DWR has adopted the DWR Climate Action Plan-Phase I: Greenhouse Gas Emissions Reduction Plan (GGERP), which details DWR's efforts to reduce its GHG emissions consistent with Executive Order S-3-05 and the Global Warming Solutions Act of 2006 (Assembly Bill [AB] 32) (DWR 2012) (refer to Section 3.4.8, *Greenhouse Gas Emissions*). Section 12 of the GGERP outlines the steps that each DWR Project will take to demonstrate consistency with the GGERP. These steps include: (1) analysis of GHG emissions from construction of the Proposed Project (**Appendix B**), (2) determination that the construction emissions from the Project do not exceed the levels of construction emissions analyzed in the GGERP, (3) incorporation into the design of the Project DWR's Project level GHG emissions reduction strategies, (4) determination that the Project does not conflict with DWR's ability to implement any of the "Specific Action" GHG emissions reduction measures identified in the GGERP, and (5) determination that the Project would not add electricity demands to the SWP system that could alter DWR's emissions reduction trajectory in such a way as to impede its ability to meet its emissions reduction goals.

a) Equipment needed for the geotechnical investigations includes two drill rigs, a forklift, one water truck, one or two support trucks, and five pickup trucks. There would be an increase in fuel demand (gasoline and diesel) that would result from the use of construction tools and equipment, truck trips to haul backfill to the site, and vehicle trips generated from construction workers commuting to and from the site. DWR has prepared a GGERP to comply with Executive Order S-3-05 and AB 32 (DWR 2020). The GGERP Consistency Determination Checklist is a form to be used by DWR project managers to document a project is consistent with the goals and policies set forth in the GGERP when DWR is a Lead Agency and when contractors or outside labor and equipment are used to implement the project. A Consistency Determination Checklist documenting that the Project has met each of the required elements of the GGERP is included in Appendix B. DWR, Reclamation, and its contractors would be required to adhere to all applicable best management practices identified in DWR's Climate Action Plan (DWR 2020). Energy consumed during geotechnical investigation activities of the Proposed Project would not result in the wasteful, inefficient, and unnecessary consumption of energy. Therefore, impacts associated with construction of the Proposed Project would be **less than significant**.

Once the proposed investigations are complete, there would be no further activity and, thus, no operational component of the Project. Therefore, the Proposed Project would not result in an increase in operational energy use and would not result in the wasteful, inefficient, or unnecessary consumption of energy.

b) As discussed above, during construction the Proposed Project would be required to limit idling time of construction equipment to 5 minutes, in accordance with Title 13, Chapter 10 of the California Code of Regulations. In addition, the Proposed Project would comply with the DWR GGERP. There would be no operational component of the Project and, thus, no increase in energy demand following the temporary construction activity. Therefore, the Proposed Project would be consistent with applicable energy efficiency policies and standards and would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, the impact would be **less than significant**.

3.3.7 Geology and Soils

Would the Project:	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporation**	**Less than Significant Impact**	**No Impact**
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 most recently adopted	☐	☐	☐	☒

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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 waste water disposal systems where sewers are not available for the disposal of waste water?	☐	☐	☐	☒
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☒	☐	☐

Fresno and Kings Counties are located within the Great Valley geomorphic province of California. The geology of the Great Valley is typified by thick sequences of alluvial sediments derived primarily from erosion of the Sierra Nevada to the east, and to a lesser extent erosion of the Klamath Mountains and Cascade Range to the north (San Joaquin Valley Geology 2016). The Great Valley occupies a trough created by tectonic forces related to the collision of the Pacific and North American Plates. The trough is composed of fine-grained clay, sandy clay, stream, and lake deposits susceptible to compaction (U.S. Geological Society [USGS] 2020). Deep soils encountered during construction of the SLC within the Proposed Project area were predominately complex interbedded thin layers of light brown colored sand and clay. The analysis of paleontological resources relies on the information and findings presented in *San Luis Canal Geotechnical Investigations Project, Kings and Fresno Counties, California: Paleontological Resources Assessment Report* (Shapiro and Clark, 2021). That report details the results of the paleontological resources study, which examined the geological and paleontological background and potential of the Proposed Project area, and included records searches through the Natural History Museum of Los Angeles County (LACM) and University of California Museum of Paleontology (UCMP); a review of geologic maps; a review of pedestrian field survey results; and a subsurface sensitivity assessment.

The results of the LACM records search indicate that no known vertebrate fossil localities have been recorded within the Proposed Project area. However, the LACM indicates that fossil localities are found in the region from the same sedimentary deposits that occur in the Proposed Project area, either at surface or at depth (**Table 6**).

Table 6 LACM Fossil Localities

Locality No. (LACM)	Formation	Taxa	Depth	Approx. Distance from Project
VP 2720	Tulare Formation	Borophagine canid (*Hyaenognathus pachyodon*)	Unknown	50 mi S
VP CIT 117	Unknown formation (Plesitoce; blue shale)	Horse (*Equus*)	425 ft bgs	28 mi E

Locality No. (LACM)	Formation	Taxa	Depth	Approx. Distance from Project
VP 4087	Unknown formation (Pleistocent)	Mammoth (*Mammuthus*)	Unknown	90 mi SE
VP 6701	Unknown formation (plesitocene; green sand)	Mammoth (*Mammuthus*)	6 ft bgs	90 mi SE
VP 7844-7845	Unknown formation (Pelistocene; disocontinuous light grey silty sandstone	Deer (Cervidae cf. *Odocoileus*); and microvertebrate assemblage including lizards (Lacertilia), snakes (Serpentes), rodents (Rodentia), and rabbits/hares/pikas (Lagomorpha)	Unknown	40 mi SE
VP 7254	Unkonwn formation (Pelistocene, fan deposit, medium argillaceous sand with considerable ppbeble content)	Elephant family (Proboscidea)	Unknown	40 mi NE

VP: Vertebrate Paleontology
IP: Invertebrate Paleontology
Source: Bell 2021

A review of the UCMP records for Kings County yielded 864 records, which nearly all are marine or non-marine (e.g., the mussel *Gonidea*) invertebrates. Only three vertebrates are known from the Pleistocene, including one horse and two fish. A review of the UCMP records for Fresno County yielded 550 Holocene or Pleistocene specimens. A total of 168 of those records are from the Aera Oil Seep; however, the locations are unknown. A total of 162 vertebrate specimens representing mammals, birds, reptiles, and fish were recorded close to the surface in the town of Tranquility (located approximately 11 miles northeast of the Proposed Project area).

A review of geologic maps indicates that the majority of the Proposed Project area is mainly underlain by Quaternary alluvium (Qa) deposits. However, there are also small portions of the Proposed Project that are mapped as underlain by Great Valley Fan deposits (Qf) and Pleistocene non-marine deposits (Qc). Qa is described as alluvial gravel, sand, and clay of Holocene age. Qf is described as Great Valley Fan deposits of Holocene age. Qc is described as Pleistocene non-marine deposits.

Pedestrian field surveys of the Proposed Project area conducted between September 2020 and February 2021 yielded the identification of a number of fossils (including marine invertebrates) in over 30 locations.

The geologic mapping and LACM and UCMP results were used to assign paleontological sensitivity to the geologic units present in the Proposed Project following the guidelines of the Society of Vertebrate Paleontology (SVP, 2010) and are as follows:

Late Pleistocene to Holocene Deposits

- **Alluvium (Qa)** – unconsolidated clay, silt, sand, and gravel recently deposited parallel to localized stream valleys and/or spread more regionally onto alluvial flats of larger river valleys; sandy sediment generally more dominant than gravelly sediment. ***Low potential increasing with depth.***
- **Alluvian Fan (Qf)** – unconsolidated boulders, cobbles, gravel, sand, and silt recently deposited where a river or stream issues from a confined valley or canyon; sediment typically deposited in a fan-shaped cone; gravelly sediment generally more dominant tan sandy sediment. ***Low potential increasing with depth.***

Early Pleistocene Deposits

- **Non-marine (Qc) –** older alluvium, older fan deposits in the Great Valley. ***High potential at surface.***

a.i-iv) The Proposed Project area is not located within an earthquake fault zone or a liquefaction- or landslide-prone area (Fresno County 2000; Kings County 2010). In general, Southern California is seismically active, with most locations in proximity to faults that can produce detectable seismic ground shaking. The Proposed Project would likely be subject to strong seismic ground shaking during a substantial seismologic event. However, the Project area is remote and away from any occupied structures and the Project does not include building permanent structures that would create the risk of loss, injury, or death involving strong ground shaking. Therefore, impacts related to strong seismic ground shaking would not occur. The Project would not exacerbate seismic hazards or ground shaking in the area. **No impacts** would occur.

b) Existing soils along the SLC levee and construction can be characterized as highly disturbed, compacted mixtures of sediment and gravel derived from on- and off-site sources. Existing soils in borrow areas and other investigation sites outside of the SLC are indicative of agricultural soils largely consisting of different varietals of clay loams with smaller areas containing sandy loams (USDA 2021). Implementation of the Proposed Project would require ground-disturbing activities which would involve the disturbance and exposure of surface soils to rain and wind. During the investigations, soil to be tested would be stored in appropriate bags, and core boxes within a secured container on-site in a disturbed area. Boreholes would be backfilled at the end of the geotechnical exploration activities. Cuttings would be spread adjacent to the boreholes to match to preexisting grades. No substantial soil erosion or loss of topsoil is anticipated. Therefore, **no impact** associated with erosion of soils would occur.

c) Non-seismically-induced geologic hazards such as landslides, lateral spreading, settlement, and slope failure can be caused by unstable soils. Subsidence of the ground surface occurs under static conditions (i.e., due to consolidation settlement from overlying load or long-

term water or mineral extraction), but can also be accelerated and accentuated by earthquakes. The extraction of fluid resources from subsurface sedimentary layers (i.e., water or oil) can result in subsidence from the removal of supporting layers in the geologic formation. Settlement of loose, unconsolidated soils generally occurs slowly, but can cause significant structural damage if structures are not properly designed.

The Proposed Project would not involve the construction of any new structures that would be adversely affected by unstable soils. Similar to impacts described above for Questions 3.3.7(a)(ii) through 3.3.7(a)(iv), during implementation of Project investigation activities, unstable soils could expose persons working in the Project area to hazards while operating heavy equipment. Geotechnical investigation activities include sample sites and deeper borings that would remove small amounts of subsurface material from the bore holes. The bore holes would be backfilled with a cement mixture. The Project activities would not elicit lateral spreading, subsidence or collapse. Because the Project occurs in an area flat topography between zero to two percent slopes within agricultural areas, landslides are not expected to be a significant hazard within the Project area.

DWR, Reclamation, and its contractors would be required to adhere to all California Division of Occupational Safety and Health (CalOSHA) requirements for working within active work sites that would ensure the safety of all workers onsite. Therefore, relative to existing conditions, the Proposed Project would not expose people or structures to new potential substantial adverse effects related to unstable soils. **No impact** would occur.

d, e) Expansive soils are predominantly comprised of clays, which expand in volume when water is absorbed and shrink when the soil dries. Expansion is measured by shrink-swell potential, which is the volume change in soil with a gain in moisture. Soils with a moderate to high shrink-swell potential can cause damage to roads, buildings, and infrastructure (USDA 2021). The SLC geotechnical investigation activities would predominantly occur within the sloped, man-made levee embankment system where soils consist of compacted mixtures of disturbed sandy sediment and gravel. Proposed geotechnical investigations in areas surrounding the SLC structure would occur on lands with soils consisting of different varietals of clay to sandy loams. Therefore, the Project area and immediate vicinity may include expansive soil where clays are present. However, the Proposed Project would not involve the construction of any new structures or infrastructure. The Project's sampling activities would require the presence of an average of approximately 10 workers per day onsite, operating heavy equipment. Exposure of workers to expansive soils in an undeveloped area would not present risks to life or property. Therefore, relative to existing conditions, the Proposed Project would not expose people or structures to new potential substantial adverse effects related to expansive soils. There would be **no impact**.

The Proposed Project would not include the construction or operation of any septic tanks or alternative water disposal system. Therefore, **no impact** would occur.

f) While there are no known fossil localities in the Proposed Project area, a large number of vertebrate fossils have been previously recorded in relatively close proximity from the same sedimentary deposits that occur in the Proposed Project area. Many of these were

encountered at shallow depths close to the ground surface, which suggests that paleontological resources may be encountered at depth. The Late Pleistocene to Holocene deposits (Qa and Qf) within the Proposed Project area have a low paleontological sensitivity, though sensitivity increases with depth due to age. The early Pleistocene deposits (Qc) within the Proposed Project area have a high paleontological sensitivity.

Based on standard geological principles and similar encounters elsewhere in Kern and Fresno counties, there is a potential to encounter fossils at depth. Estimating the depth is difficult, but as fossil were recognized during the survey throughout the Proposed Project area's length, there is a potential to recover fossils near the surface. If any fossils were encountered during Proposed Project actions, and such fossils qualified as unique paleontological resources, effects/impacts on them would be significant if they were disturbed or damaged.

GEO-1, GEO-2, GEO-3, GEO-4, and **GEO-5** require retention of a Qualified Paleontologist, paleontological resources awareness training for onsite personnel, paleontological resources monitoring, treatment of significant fossils, and final reporting. Therefore, impacts to unique paleontological resources would be **less than significant with mitigation incorporated.**

3.3.8 Greenhouse Gas Emissions and Climate Change

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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?	☐	☐	☒	☐

GHG emissions worldwide cumulatively contribute to the significant adverse environmental impacts of global climate change. No single Project could generate sufficient GHG emissions on its own to noticeably change the global average temperature. The combination of GHG emissions from past, present, and future Projects in the San Joaquin Valley; the entire state of California; across the nation; and around the world contribute cumulatively to the phenomenon of global climate change and its associated environmental impacts.

a, b) The SJVAPCD does not recommend quantitative significance thresholds for the analysis of the impact of a project's GHG emissions on the environment. Instead, the SJVAPCD's approach relies on the application of performance-based standards to assess project-specific GHG emission impacts on global climate change. This is based on the principle that projects whose emissions have been reduced or mitigated consistent with Assembly Bill (AB) 32, the

California Global Warming Solutions Act of 2006, should be considered to have a less-than-significant impact on global climate change (SJVAPCD 2015).

In May 2012, DWR adopted the DWR GGERP, which details DWR's efforts to reduce its GHG emissions consistent with Executive Order S-3-05 and AB 32 (DWR 2012; DWR 2020). DWR also adopted the Initial Study/Negative Declaration prepared for the GGERP in accordance with the CEQA Guidelines review and public process. The GGERP provides estimates of historical (back to 1990), current, and future GHG emissions related to operations, construction, maintenance, and business practices (e.g., building-related energy use). The GGERP specifies aggressive 2020 and 2050 emission reduction goals and identifies a list of GHG emissions reduction measures to achieve these goals.

Section 12 of the GGERP outlines the steps that each DWR project will take to demonstrate consistency with the GGERP. These steps include: (1) analysis of GHG emissions from construction of the proposed project, (2) determination that the construction emissions from the project do not exceed the levels of construction emissions analyzed in the GGERP, (3) incorporation into the design of the project DWR's project level GHG emissions reduction strategies, (4) determination that the project does not conflict with DWR's ability to implement any of the "Specific Action" GHG emissions reduction measures identified in the GGERP, and (5) determination that the project would not add electricity demands to the SWP system that could alter DWR's emissions reduction trajectory in such a way as to impede its ability to meet its emissions reduction goals.

Consistent with these requirements, a GGERP Consistency Determination Checklist documenting that the Project has met each of the required elements is included in **Appendix B**. Based on the analysis provided in the GGERP and the demonstration that the Proposed Project is consistent with the GGERP and incorporation of all its' BMPs, the Project is compliant with the applicable GHG emission reduction plan, as is required by the SJVAPCD; therefore, the impact with respect to GHG emissions is **less than significant.**

3.3.9 Hazards and Hazardous Materials

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

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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 or excessive noise 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?	☐	☐	☐	☒

A hazardous material is any material that because of its quantity, concentration, or physical or chemical characteristics, poses a significant present or potential hazard to human health and safety or to the environment if released into the workplace or environment. State agencies regulating hazardous materials are the California Environmental Protection Agency (Cal/EPA) and the Office of Emergency Services (OES). Within the Cal/EPA, the DTSC has primary regulatory authority for hazardous materials regulation enforcement. State hazardous waste regulations are contained primarily in the California Code of Regulations (CCR) Title 22. California Division of Occupational Safety and Health (CalOSHA) has primary responsibility for developing and enforcing standards for safe workplaces and work practices in California in accordance with regulations specified in CCR Title 8. The Environmental Health Services Department and the Public Health Services Department enforces hazardous waste regulations and serves as the Certified Unified Program Agency (CUPA) for Fresno and Kings Counties, respectively.

a) The Proposed Project would require the use of small qualities of hazardous materials such as diesel fuel, gasoline, oils, grease, equipment fluids, cleaning solutions and solvents, lubricant oils, and adhesives. During the Project, DWR, Reclamation and contractors handling, storing or transporting hazardous materials or wastes would comply with numerous hazardous materials regulations such as those described above that would reduce the risk of accidental release and provide protocols and notification requirements should an accidental release occur. By complying with relevant federal, State, and local laws, the Proposed Project would not result in a significant hazard to the public or to the environment through the routine transport, use, or disposal of hazardous materials during implementation of the Proposed Project.

Further, the Project does not include the construction of facilities that would operate and/or require the use of hazardous materials, therefore, once the investigations are complete, no impacts regarding hazardous materials would occur. Therefore, impacts would be **less than significant**.

b) As discussed above in the response to Question 3.3.9(a), the Proposed Project would involve the routine use of hazardous materials during geotechnical investigation activities; the transport, use, storage and disposal of such hazardous materials would be required to comply with existing applicable federal, State and local regulations. Accidental spills of small amounts of these materials could occur during routine transport, use, storage or disposal, and could potentially injure workers, contaminate soil, and/or affect the groundwater within and around the Project area.

The small quantities of hazardous materials that would be used during geotechnical investigations would not be stored near the SLC. Any spills of these substances would be minimal and cleaned on-site. Contractors would be required impose stormwater BMPs for controlling site run-on and runoff. Therefore, potential impacts to the public or the environment related to reasonably foreseeable accident conditions involving hazardous materials would be **less than significant**.

c, d,e,f) There are no schools located within one-quarter mile of the Project area. There are no identified hazardous material sites located within the Project area (DTSC 2020a; DTSC 2020b; SWRCB 2020). The Proposed Project would not be located on a hazardous materials site.

The nearest airport to the Project area is the New Coalinga Municipal Airport, located approximately 11.5 miles southwest of Pool 18. The Proposed Project is not located within an airport land use plan or within two miles of a public airport or public use airport.

Proposed Project activities are not anticipated to physically interfere with emergency response access, adopted emergency response plan or evacuation plan as most activities would be within the right-of-way. No road closures would be required for the proposed investigation activities. **No impacts** would occur in these regards.

g) According to the California Department of Forestry and Fire Protection (CAL FIRE), Pools 17, 18, 20 and 21 are located within a Local Responsibility Area (LRAs) of Fresno and Kings Counties and are not designated as areas zoned for high fire severity (CAL FIRE 2020; 2007). The majority of investigation activities would occur within the right-of-way in paved/gravel areas and within existing maintained access roads, composed of compacted soils with no vegetation. The surrounding vegetation and active and idle agricultural land use types have a low potential for wildland fires. In addition, as a standard safety practice, all vehicles and equipment would have fire prevention equipment on-site, including fire extinguishers and shovels. Because the Proposed Project is not located within a very high fire hazard zone and not within or adjacent to uses prone to wildfires, the potential for wildfire impacts on people or structures due to Project implementation would be very low. **No impact** would occur.

3.3.10 Hydrology and Water Quality

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?	☐	☐	☒	☐
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that 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 off-site;	☐	☐	☒	☐
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;	☐	☐	☐	☒
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or	☐	☐	☒	☐
iv) impede or redirect flood flows?	☐	☐	☐	☒
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?	☐	☐	☐	☒

The Proposed Project area is within the South Valley Floor Watershed with Region 5 – Tulare Lake Hydrologic Basin (DWR 2020). Major cities in the Tulare Basin include Fresno, Bakersfield and Visalia. Major Geographic Features include Tulare Lake Basin, Kettleman Hills, Kings river, Kern river, Tule River, Tulare Lake, Kern Lake, and Buena Vista Lake. The Tulare Basin has mild winters and hot dry summers. Despite transient tule marsh areas, the area is predominantly dry and the valley summer heat is high. Less than five percent of the basin is urban in nature. The basin has been developed extensively for agriculture and petroleum extraction (USGS 2020a). The State Water

Resources Control Board (SWRCB) publishes updates to the Water Quality Control Plan for the Tulare Lake Basin (Basin Plan) to improve water quality and maintain beneficial uses in the drainage area of the San Joaquin Valley south of the San Joaquin River. The Basin Plan describes water quality concerns for the area that include agriculture, forestry, urban land uses, and stormwater runoff (RWQCB 2018).

a) The Proposed Project would involve minimal disturbance and exposure of surface soils. As described previously, soils in the area consist of clay and sandy loams of different varietals which have a higher likelihood of eroding with more sand content. As such, exposed soils could increase erosion and sedimentation in surface runoff during wind or storm events. In addition, activities would involve use of chemicals and solvents such as fuel and lubricating grease for motorized heavy equipment, which could accidentally spill and subsequently impact stormwater quality. During Project implementation, there is potential for stormwater to transport sediment and/or hazardous materials to the SLC. For proposed drilling activities outside the SLC, no potential exists for stormwater to transport sediment and/or hazardous materials downstream to other receiving waters.

Erosion control BMPs would be used to prevent the degradation of water quality in the SLC. Examples of erosion control BMPs are installing a silt fence, creating a sediment/ desilting basin, installing sediment traps, using fiber rolls, creating gravel bag berms, and creating sandbag or straw bale barriers. BMPs would also include practices for proper handling of chemicals, such as avoidance of fueling at the proposed geotechnical exploration sites and overtopping during fueling, and installation of containment pans. Further, implementation of the BMPs would begin with the commencement of the investigations and continue through the completion of the Project reduce intrusion of foreign materials into the SLC**.** Implementation of BMPs would avoid or reduce all erosion and sedimentation impacts to below a level of significance.

In addition, individual samples would be drilled to depths between 15 feet bgs and 100 feet bgs. The Proposed Project would therefore have the potential to encounter groundwater and interfere with groundwater quality. Samples would typically be completed in one working day, and would typically be filled within 24 hours of completion. For deeper samples that cannot be completed in one working day, DWR would require the contractor to cover the samples with a metal plate to secure the sample at the end of each workday. Further, sample activities would comply with Fresno/Kings County Environmental Health Department well permit requirements and DWR well completion standards so that surface waters and foreign materials are not allowed into the groundwater basin (See Section 2.3, *Proposed Action/Project Implementation*). As a result, impacts to groundwater quality would be **less than significant**.

b) As described above in Question 3.3.10 (a)the Proposed Project would have the potential to encounter groundwater and interfere with groundwater during drilling activities. Any groundwater discharged during sampling could be recycled back into the sample site during drilling/auguring or stored in tanks on-site for eventual discharge into a nearby storm drain under a permit from the Regional Water Quality Control Board. The Proposed Project would not introduce new impervious surfaces or other facilities that would interfere or

impede groundwater recharge, nor would it require the use of groundwater during geotechnical investigation activities. As a result, the Proposed Project would not substantially decrease groundwater supplies or interfere with recharge in a way that would impede sustainable groundwater management of the basin. Therefore, impacts to groundwater recharge would be **less than significant**.

c, i) The Proposed Project would not introduce impervious surfaces or structures that could substantially alter the existing drainage pattern of the Project site in a manner which would result in substantial erosion or siltation. Temporary earth-moving activities would slightly alter the topography of the Project area to facilitate the exploration activities. As discussed above in discussion (a), erosion control measures would be implemented to reduce the potential for stormwater-induced erosion or sedimentation offsite during Project activities. All sample sites would be backfilled and other disturbed areas would be restored to original grades once exploration activities are completed. Thus, the Proposed Project would not substantially alter the existing drainage pattern of the Project area in a way such that substantial erosion or siltation would occur on-site or off-site. Impacts would be **less than significant**.

c, ii) As stated above in discussion (c)(i), the Proposed Project would not substantially alter the local drainage pattern of the site. The Proposed Project does not include the construction of permanent structures or impervious surfaces that would change the rate or amount of surface runoff from the Project site. As such, the Proposed Project would not result in flooding on-site or off-site. There would be **no impact**.

c, iii) As mentioned in discussion (c)(ii), an increase in runoff would not occur as a result of the Project. As such, the Proposed Project would not contribute runoff water that would exceed the capacity of existing or planned stormwater drainage systems.

As discussed above in response to (a), the Proposed Project would require implementation of BMPs for erosion control and for proper handling of chemicals. As such, the Proposed Project would not provide substantial additional sources of polluted runoff. Impacts would be **less than significant**.

c,iv) No permanent facilities would be constructed as a result of geotechnical investigations, and the Proposed Project would not involve infrastructure or activities that could impede or redirect flows. **No impac**t would occur.

d) As stated above in (c)(iv), portions of the Proposed Project area are in a 100-year flood zone. As discussed above in the discussion for (a), BMPs would be implemented during the proposed geotechnical investigations to ensure proper handling of chemicals and avoid release of pollutants to the Project site. As such, impacts due to potential release of pollutants in a flood hazard area would be **less than significant**.

A seiche is a wave set up on a river, reservoir, pond, or lake when seismic waves from an earthquake pass through the area (USGS 2020b). The Proposed Project would take place immediately adjacent to and around the SLC; therefore, there would be no potential impacts associated with the risk of release of pollutants due to Project inundation from a seiche.

The Project area is located approximately 75 miles west from the nearest ocean, the Pacific, and therefore is not located within the tsunami risk zone. Therefore, the Proposed Project would not risk release of pollutants due to Project inundation from a tsunami.

e) The Proposed Project would not involve pumping or extraction of groundwater. Once the geotechnical investigation activities are completed, operations of the Project area would not change. **No impact** to water quality control plans or sustainable groundwater management plans would occur.

3.3.11 Land Use/Planning

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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?	☐	☐	☐	☒

The proposed geotechnical investigation areas span between SLC MP 122.0 and MP 142.2 in Pools 17 and 18 and MP 155 and 171 in Pools 20 and 21. The SLC and majority of existing access roads are within the Reclamation and DWR right-of-way. Sample locations near bridge areas would be within County-jurisdiction, while borrow areas would either be within DWR's jurisdiction, Reclamation jurisdiction, or private ownership within the county. Lands immediately surrounding the SLC are subject to Fresno and Kings Counties land use plans, policies, and regulations.

a) Cantua Creek, Huron, Coalinga and Kettleman City are communities located within 5 miles of the Project area. The physical division of an established community generally refers to the construction of a feature such as an interstate highway or railroad tracks, or removal of a means of access, such as a local road or bridge that would impact mobility within an existing community or between a community and outlying area. Given that the Proposed Project would not construct any permanent, aboveground physical structures along or adjacent to the SLC, the Proposed Project would result in **no impact** to the physical division of an established community.

b) The Project area is designated as Agricultural/Open Space and General Agriculture 40 ac and is zoned as Exclusive Agriculture (AE20) and AG40 (County of Fresno 2000; County of Fresno 2020; County of Kings 2020). The Proposed Project would not develop any permanent built facilities that would change the land use of the Project sites. As such, the Proposed Project would not conflict with the Fresno or Kings County General Plans, or Fresno or Kings County Zoning Codes. **No impact** would occur.

3.3.12 Mineral Resources

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

The Proposed Project sites are not included in Mineral Land Classification (MLC)/Surface Mining and Reclamation Act (SMARA) designated areas (California Department of Conservation 2020). Kings County and Fresno County planning documents do not identify mineral resources at the Proposed Project sites (Kings County 2010; Fresno County 2000).

a) The Proposed Project geotechnical investigation sites are not included on any California Geologic Survey (CGS) maps or reports identifying potentially important mineral resources. Kings County and Fresno County planning documents do not identify any valuable mineral resources in the Project area. Additionally, proposed site preparation, sampling and site restoration associated with geotechnical investigations would occur within existing rights-of-way. Therefore, **no impact** would occur.

b) Kings County and Fresno County planning documents do not delineate locally important mineral resources lands near the Proposed Project sites, and, as described in (a), proposed site preparation, sampling and site restoration associated with geotechnical investigations would occur within existing DWR, Caltrans, and Reclamation rights-of-way. Therefore, **no impact** to locally important mineral resources would occur.

3.3.13 Noise

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
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?	☐	☐	☒	☐

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

Sound is mechanical energy transmitted by pressure waves through a medium such as air. Noise is defined as unwanted sound. Sound is characterized by various parameters that include the rate of oscillation of sound waves (frequency), the speed of propagation, and the pressure level or energy content (amplitude). Sound pressure level is measured in decibels (dB), with zero dB corresponding roughly to the threshold of human hearing, and 120 to 140 dB corresponding to the threshold of pain.

Applicable Noise Regulations

Kings County. The Kings County Code does not address construction or operation related noise. However, the Noise Element of the Kings County General Plan describes fixed noise sources within the County. The General Plan requires that site-specific noise analyses should be performed where noise-generating activities are proposed in proximity to noise-sensitive land uses. The Project would occur within the existing DWR right-of-way, with the exception of various locations in borrow areas and around bridge areas. Adjacent land uses include agricultural uses and open spaces. The County's General Plan includes average and maximum noise level standards for various land uses. Average daytime noise level standards range from 55 to 60 dBA and maximum levels range from 75 to 80 dBA. Project construction would occur during daytime hours between 6:00 a.m. and 6:00 p.m. No residents or sensitive receptors are located near the Project area. The General Plan states the following:

> *N Policy B1.1.3: Noise associated with construction activities shall be considered temporary, but will still be required to adhere to applicable County Noise Element standards.*

There are no relevant goals or policies that would be applicable to the Proposed Project (County of Kings 2003).

Fresno County. The Health and Safety Element of the Fresno County General Plan provides a Noise Section including goals, policies, and implementation programs applicable to noise. The General Plan sets noise standards for various land uses and protects noise-sensitive uses from excessive noise, either through noise-reducing Project design features or by allowing noise-sensitive land uses to only locate in areas with ambient noise levels below specific thresholds. The General Plan states the following regarding construction-related noise:

> *Policy HS-G.6: The County shall regulate construction-related noise to reduce impacts on adjacent uses in accordance with the County's Noise Control Ordinance.*

The County Noise Control Ordinance includes maximum daytime exterior noise level standards that range from 50 dBA to 70 dBA. However, the Noise Code exempts the following activities that are applicable to the Proposed Project (Municode 2020):

> *The following activities shall be exempted from the provisions of this chapter [Noise Control Ordinance]:*
>
> - *Noise sources associated with construction, provided such activities do not take place before 6 a.m. or after 9 p.m.*
> - *Noise sources associated with work performed by public utilities in the maintenance of modification of its facilities.*

The Fresno County General Plan does not contain any goals are policies that are applicable to the Proposed Project because the Project area is not considered a sensitive land use, nor is the Project area located near sensitive land uses (Fresno County 2000).

a) Neither the Counties' codes nor the Counties' General Plans establish quantitative noise exposure standards that apply to construction activity. However, for the purposes of due diligence, resultant noise levels from simultaneous operations of all equipment were estimated, consistent with the general assessment methodology of the Federal Transit Administration (FTA 2018). Using the Federal Highway Administration's (FHWA) Roadway Construction Noise Model (RCNM) and conservatively assuming simultaneous operation of one or two drill rigs, one forklift, one water truck, one or two support trucks and five pickup trucks for site preparation, sample, and site restoration, it is estimated that the Project would result in noise levels of 83 dBA at a reference distance of 50 feet during construction (FHWA 2006). Accounting for distance attenuation, noise levels at 1,000 feet would be 57 dBA. As mentioned above, there are no sensitive receptors within 1,000 feet of the construction activity. Further, the closest sensitive receptors are Kettleman City residences located approximately 4,500 feet (0.8 mile) southeast of the southernmost geotechnical exploration site proposed in Pool 21. At this distance noise levels decrease to 44 dBA, and would be virtually imperceptible and indistinguishable from the local noise environment. Noise levels at all other sensitive receptors would be lower than 44 dBA and would be lower than Kings County's and Fresno County's noise standards of 55 dBA and 50 dBA, respectively. Additionally, all proposed investigation activities would occur between the allowable construction hours of 6:00 a.m. to 9:00 p.m. in Fresno County. Further, DWR and Reclamation as State and federal agencies are not subject to local ordinances. Therefore, the Proposed Project would not result in 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, impacts would be **less than significant**.

In addition, the Proposed Project would not include any permanent, long-term operational activities after the completion of proposed geotechnical exploration activities. Therefore, no impact to permanent ambient noise levels would occur during operation.

b) Activities associated with site preparation, sampling, and site restoration have the potential to generate low levels of groundborne vibration due to the operation of equipment (i.e. drill rigs, water trucks, support trucks). This type of equipment is not identified by Caltrans (2013) or the Federal Transit Administration (FTA 2018) as associated with generation of notable vibration. No high-impact activities, such as pile driving or blasting, would be used during geotechnical exploration activities. As described above in the discussion for (a), Project activities would not take place near any residences or other noise-sensitive land uses that could be exposed to vibration levels generated from Project activities. Vibration attenuates rapidly with distance and would be imperceptible at the distances to the closest structures and sensitive receptors. Therefore, the Proposed Project would result in **less than significant** impacts.

c) The Proposed Project would not establish new noise sensitive land uses that could be exposed to noise from local airports. The Project sites are located in a rural area that is distant from commercial or general aviation airports. The nearest public use airport is the New Coalinga Municipal Airport, located approximately 11 miles south of Pool 18. Therefore, there would be **no impact** in relation to airports and the Project exposing people residing or working in the Project area to excessive noise levels.

3.3.14 Population and Housing

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Induce substantial 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?	☐	☐	☐	☒

According to the U.S. Census Bureau's (Bureau) 2019 population estimates, Fresno County contains approximately 999,101 residents, while Kings County contains approximately 152,940 residents (Bureau 2020a; Bureau 2020b). Surrounding the Project area is extensive rural and agriculture areas. Based on the Bureau's 2010 through 2019 estimates, Fresno and Kings Counties' growth rates are 7.4 percent and zero percent, respectively. Most of the growth in Fresno County is from the city of Fresno, where nearly 60 percent of the population of the county is located (FCCG 2017), whereas Kings County has experienced much less growth and does not have a large city such as Fresno. As

of 2019, Fresno County contained 336,473 housing units with an owner-occupied housing unit rate of 52.8 percent, while Kings County contained 46,965 housing units with an owner-occupied housing unit rate of 52.3 percent (Bureau 2020a; Bureau 2020b).

a) Proposed geotechnical investigation activities would not involve the construction of new homes, businesses, extensions of roads, or other infrastructure. The Proposed Project is anticipated to begin in the summer of 2021 for up to eight months and have a maximum of 10 workers for investigation activities. Contractors employed for investigation activities are expected to come from the existing labor pool within the region. The local workers would be involved with the Project temporarily for the approximately 8-month geotechnical investigation period. Implementation of the Proposed Project would not directly induce substantial population growth because the Project does not involve the construction of new homes, businesses, extensions of roads or other infrastructure.

Furthermore, the Proposed Project would not remove an obstacle to growth, such as constraint on a required public service, such as roads, water supply or wastewater treatment capacity. The Proposed Project is not a water supply Project and would not provide any resources to support or accommodate population growth. The Proposed Project would not indirectly induce population growth. Therefore, **no impact** would occur.

b) There are no existing residences within the Project area that would be impacted by proposed geotechnical investigations. Further, no residences would be condemned or displaced by the Proposed Project. Therefore, the Proposed Project would not displace people or housing necessitating the construction of replacement housing elsewhere. Therefore, **no impact** would occur.

3.3.15 Public Services

Would the Project:	**Potentially Significant Impact**	**Less than Significant With Mitigation Incorporation**	**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 following public services:				
Fire protection?	☐	☐	☐	☒
Police protection?	☐	☐	☐	☒
Schools?	☐	☐	☐	☒
Parks?	☐	☐	☐	☒
Other public facilities?	☐	☐	☐	☒

The Fresno County Fire Protection District (FCFPD) serves all unincorporated areas of the County of Fresno. The FCFPD encompasses approximately 2,655 square miles and serves a population of more than 220,000 citizens (FCFPD 2020). The Fresno County Sheriff's Office (FCSO) provides law enforcement response to unincorporated territories of the County of Fresno. The FCSO patrols more than 6,000 square miles of Central California (FCSO 2020)

The Kings County Fire Department (KCFD) serves all unincorporated areas of the County of Kings. The KCFD encompasses approximately 1,392 square miles and serves a population of more than 153,000 citizens (KCFD 2020). The Kings County Sheriff's Office (KCSO) provides law enforcement response to unincorporated territories of the County of Kings (KCSO 2020).

The nearest school to the Project area is Cantua Elementary School, approximately 1 mile east of Pool 17. There are no parks or other public facilities such as libraries in close proximity to the Proposed Project area.

a.i, ii) Geotechnical investigations would entail delivery of fuel and fueling/maintenance of drill rigs and other trucks, in addition to temporary storage of equipment and materials at nearby staging areas. In the event of a fire or other emergency within the Proposed Project area, existing fire protection and police services in Fresno and Kings Counties would be able to sufficiently respond to emergency events with existing equipment and staffing capacities. The Proposed Project would not change existing demand for fire or police protection services because geotechnical investigation activities would not result in a permanent increase of employees or population to the Project area. Therefore, implementation of the Proposed Project would not require new fire or police facilities to maintain response ratios, service ratios, or other measures of performance. **No impacts** would occur.

a.iii) The Proposed Project would not result in an increase in population. As a result, the Proposed Project would not lead to the construction of new housing, which could prompt a need for additional school services. Therefore, the Proposed Project would have **no impact** related to school services.

a.iv) The Proposed Project would not result in an increase in population, and would not prompt the need for new parks. Therefore, the Proposed Project would have **no impact** related to parks.

a.v) The Proposed Project would not include new housing or bring new businesses to the area that would require any additional services or public facilities, including libraries. Therefore, the Proposed Project would have **no impact** related to other public facilities.

3.3.16 Recreation

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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?	☐	☐	☐	☒

There are no existing neighborhood or regional parks or other recreational facilities in close proximity to the Proposed Project area. DWR does however, allow recreational fishing along segments of the SLC.

a, b) Three designated fishing access sites would be temporarily closed during geotechnical investigations along the SLC, including the Three Rocks Site within the Pool 17 embankment, the Avenal Cutoff Site within the Pool 20 embankment, and the Kettleman City site within the Pool 21 embankment (DWR 2020). It is anticipated that recreational fishing within these portions of the SLC would not be available for the 8-month duration of the Proposed Project. However, the closures would be temporary in nature and the Proposed Project would not result in permanent increases to population that would have an adverse physical effect on the environment. Further, other DWR recreational fishing sites along the SLC have adequate capacity to serve a temporary influx of recreational visitors that would be redirected from interrupted sites. Thus, the Proposed Project would not increase the need to construct or expand recreational facilities. Therefore, **no impacts** would occur.

3.3.17 Transportation

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
a) Conflict with a program plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?	☐	☐	☐	☒
b) Would the Project conflict or be inconsistent with CEQA Guidelines Section 15064.3, subdivision (b)?	☐	☐	☐	☒

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☒
d) Result in inadequate emergency access?	☐	☐	☐	☒

Regional access to the Project area would be via I-5. Local access to the Proposed Project sites would occur from existing access roads or proposed temporary access roads, which are accessible from surrounding county roadways. To reach access roads along Pool 17, construction traffic would use nearby county roads and highways, such as SR-33, West Clarkson Avenue, West Kamm Avenue, West Mount Whitney Avenue, and/or unpaved agricultural roads. To access roads along Pool 18, construction traffic would use SR-145 and/or unpaved agricultural roads. Access roads along Pool 20 would be reached by construction vehicles using West Jayne Avenue, Avenal Cutoff Road, and/or unpaved agricultural roads. Similarly, Avenal Cutoff Road would be used to access roads along Pool 21, in addition to Plymouth Avenue, 30th Avenue, Quail Avenue, and/or unpaved agricultural roads. Construction equipment would be offloaded on-site to remain within the staging areas for the duration of the Project, and would be mobilized to each sample or drilling location.

a) Implementation of the Proposed Project could temporarily increase the number of vehicles on local roadways due to the transport and delivery of equipment, daily worker commute trips over an 8-month period, soil/testing material trips, and site restoration trips. All equipment and materials would be transported to the Proposed Project sites on public highways, local roads, and private driveways, using standard transport vehicles.

The delivery of vehicles and equipment to the sites is only expected to occur when the equipment is delivered to/from the sites (two one-way trips for all equipment). The majority of traffic impacts would occur from the daily arrival and departure of workers that would commute individually to the active site. An average of approximately 10 workers would be required at the site per day over an eight-month period. The addition of an average of 10 worker round trips (20 one-way trips) along local roads would not substantially affect the circulation capacity, and therefore, the trips would not substantially affect the capacity of the local roadways. Further, the Proposed Project would not conflict with adopted policies, plans, or programs related to public transit or alternative modes of transportation. The Project would not decrease the performance or safety of these facilities, which are sparse within the largely rural Project area. Project activities would not disrupt services along local public transit, bicycle, or pedestrian routes. **No impact** would occur.

b) "Vehicle miles traveled" refers to the amount and distance of automobile travel attributed to a Project. A maximum of 10 workers would be required during various Proposed Project activities. These trips would be temporary over the approximately eight-month geotechnical investigation period and would not result in any perceivable increase in vehicle miles traveled

that would exceed a County threshold of significance. There are no new permanent vehicle trips associated with the Proposed Project other than routine maintenance. As a result, the Proposed Project would be consistent with CEQA Guidelines Section 15064.3 subdivision (b), and **no impact** would occur.

c) The Proposed Project does not include the construction or design of any permanent roadway infrastructure that would cause a safety risk to vehicle operations. The Proposed Project would not adversely alter the physical configuration of the existing roadway network serving the area and would not introduce unsafe design features associated with large equipment transport. In addition, the Proposed Project would not introduce uses (types of vehicles) that are incompatible with existing uses already served by the area's road system. There would be **no impact**.

d) The Proposed Project would temporarily add vehicles to the local roadway and circulation system. However, no lane or road closures would be required. All Project-related activities would occur on-site. The Proposed Project would not interfere with emergency response access and there would be **no impact** to long-term emergency access.

3.3.18 Tribal Cultural Resources

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

The analysis in this section is based, in part, on the results of SLF searches conducted by the NAHC and tribal outreach conducted by DWR pursuant to Assembly Bill 52 (AB 52), the California Natural Resources Agency's *Final Tribal Consultation Policy*, and DWR's *Tribal Engagement Policy*, and consultation conducted by Reclamation under Section 106 of the NHPA...

Sacred Lands File Search

The NAHC was contacted on October 23, 2020 to request searches of the SLF. The NAHC responded to the requests in letters dated November 9, 2020. The results of the SLF search conducted by the NAHC returned negative results for the Proposed Project area. The NAHC reply also included a list of California Native American tribes who may have knowledge of cultural resources in the Proposed Project area.

Native American Outreach/Consultation

Pursuant to AB 52, DWR sent a notification letter to Leo Sisco, Chairperson of the Santa Rosa Rancheria Tachi Yokut Tribe on December 21, 2020. The letter included a description of the Proposed Project, provided figures depicting the Proposed Project location, and invited the Santa Rosa Rancheria Tachi Yokut Tribe to consult on the Proposed Project. The letter also indicated that if AB 52 consultation was not requested, DWR was still committed to working together with the tribe consistent with the California Natural Resources Agency's Tribal Engagement Policy and DWR's Tribal Engagement Policy. In addition, pursuant to DWR's Tribal Engagement Policy, DWR reached out to an additional 16 individuals representing 13 distinct tribal organizations listed on the NAHC contact list. Letters were sent via mail and email. In January 2021 and March 2021, follow-up correspondence consisting of subsequent emails and phone calls was conducted with non-Yokut tribes who did not respond to the initial letter. DWR's tribal outreach efforts and the results of consultation are summarized in **Table 7.**

Pursuant to the regulations at 36 CFR § 800.3(f)(2), Reclamation identified the Big Sandy Rancheria of Western Mono Indians, the Chicken Ranch Rancheria, the Cold Springs Rancheria of Mono Indians, the Picayune Rancheria of Chukchansi Indians, the Santa Rosa Rancheria Tachi Yokut Tribe, the Table Mountain Rancheria, and the Tule River Indian Tribe as Indian tribes who might attach religious and cultural significance to historic properties within the APE. Reclamation contacted these tribes regarding the Federal undertaking on June 14, 2021, inviting their assistance in identifying historic properties that may be affected by the proposed undertaking, pursuant to 36 CFR § 800.4(a)(4). Reclamation also sent a letter to the Amah Mutsun Tribal Band, the Dumna Wo-Wah Tribal Government, the Dunlap Band of Mono Indians, the Kings River Choinumni Farm Tribe, the Nashville-El Dorado Miwok, the North Fork Mono Tribe, the Traditional Choinumni Tribe, and the Wuksache Indian Tribe, Eshom Valley Band, who were identified as Native American individuals or organizations likely to have knowledge or concerns with cultural resources in the area. We contacted these organizations regarding our Federal undertaking to request their assistance in identifying historic properties of concern in the APE pursuant to 36 CFR § 800.4(a)(3). To date, no responses have been received and no historic properties have been identified through consultation with these tribes and Native American organizations.

Table 7 Summary of DWR's Native American Consultation

Tribe	Contact Name	Contact Title	Date Letter Sent	Date Email Sent	Date of Follow-Up Email	Date of Follow-Up Phone Call	Response
Big Sandy Rancheria of Western Mono Indians	Elizabeth D. Kipp	Chairperson	12/21/2020	12/21/2020	3/16/2021	3/10/2021	None
Chicken Ranch Rancheria of Me-Wuk Indians	Lloyd Mathiesen	Chairperson	12/21/2020	12/21/2020	N/A	3/10/2021	Project is out of tribe's area; defers to local tribes
Cold Springs Rancheria	Helena Alarcon	Chairperson	12/21/2020	12/21/2020	3/16/2021	3/10/2021	None
Dumna Wo-Wah Tribal Government	Robert Ledger Sr.	Chairperson	12/21/2020	12/21/2020	1/12/2021	1/19/2021 and 03/10/21	Dumna has no comments at this time
Dunlap Band of Mono Indians	Benjamin Charley Jr	Chairperson	12/21/2020	12/21/2020	1/12/2021	N/A	Project is out of tribe's area
Dunlap Band of Mono Indians	Dirk Charley	Tribal Secretary	12/21/2020	12/21/2020	1/12/2021	N/A	Project is out of tribe's area
Kings River Choinumni Farm Tribe	Stan Alec	N/A	12/21/2020	No email address	No email address	1/19/2021 and 03/10/21	None
Nashville Enterprise Miwok-Maidu-Nishinam Tribe	Cosme A. Valdez	Chairperson	12/21/2020	12/21/2020	3/16/2021	3/10/2021	None
North Fork Mono Tribe	Ron Goode	Chairperson	12/21/2020	12/21/2020	3/16/2021	3/10/2021	None
Picayune Rancheria of Chukchansi Indians	Claudia Gonzales	Chairperson	12/21/2020	12/21/2020	N/A	N/A	None

Tribe	Contact Name	Contact Title	Date Letter Sent	Date Email Sent	Date of Follow-Up Email	Date of Follow-Up Phone Call	Response
*Santa Rosa Rancheria Tachi Yokut Tribe	Leo Sisco	Chairperson	12/21/2020	12/21/2020	1/12/2021	1/22/2021	None
Table Mountain Rancheria	Bob Pennell	Cultural Resources Director	12/21/2020	12/21/2020	N/A	N/A	None
Table Mountain Rancheria	Brenda D. Lavell	Chairperson	12/21/2020	12/21/2020	N/A	N/A	None
Traditional Choinumni Tribe	Rick Osborne	Cultural Resources	12/21/2020	12/21/2020	1/12/2021	1/19/2021	Project is out of tribe's area; requested notification of cultural discoveries
Traditional Choinumni Tribe	David Alvarez	Chairperson	12/21/2020	12/21/2020	1/12/2021	See Osborne	Project is out of tribe's area; requested notification of cultural discoveries
Tule River Indian Tribe	Neil Peyron	Chairperson	12/21/2020	12/21/2020	N/A	N/A	None
Wuksache Indian Tribe/Eshom Valley Band	Kenneth Woodrow	Chairperson	12/21/2020	12/21/2020	3/16/2021	3/10/2021	None

*denotes tribe contacted pursuant to AB 52 (PRC Section 21080.3)

Summary of Identified Tribal Cultural Resources

Through background research, Native American consultation and correspondence, and field surveys conducted for the Proposed Project, no tribal cultural resources, including any indigenous archaeological resources that may be considered tribal cultural resources, were identified in the Proposed Project area. The two previously recorded indigenous archaeological resources (P-10-006343, JPB-ISO-2) were not re-located during field surveys, and no other indigenous archaeological resources were identified in the Proposed Project area as a result of research or field surveys.

a.i, a.ii) No tribal cultural resources, as defined in PRC Section 21074, have been identified in or near the Proposed Project area. However, since the entirety of the Proposed Project area could not be surveyed due to lack of landowner permission to access some areas (approximately 12 percent of the Proposed Project area) and since the Project includes ground-disturbing activities, there remains the potential that indigenous archaeological resources could be encountered, including those that meet the definition of tribal cultural resource. If encountered, tribal cultural resources may be eligible for listing in the California Register or in a local register as defined in PRC Section 5020.1(k), or may be 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 PRC Section 5024.1. Effects/impacts would be significant if Proposed Project activities cause a substantial adverse change in the significance of a tribal cultural resource. **Mitigation Measures CUL-1, CUL-2, CUL-3, and CUL-4** require worker training, pre-construction surveys, avoidance of resources, and treatment of inadvertent discoveries. Therefore, impacts to tribal cultural resources would be **less than significant impact with mitigation incorporated**.

3.3.19 Utilities and Service Systems

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

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
d) Generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?	☐	☐	☒	☐
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?	☐	☐	☒	☐

The Westlands Water District is the nearest water supplier in the vicinity of the Project area. The district is made up of more than 1,000 square miles of prime farmland in western Fresno and Kings Counties, and serves CVP water to farms through 1,034 miles of underground pipe and more than 2,924 water meters (Westlands Water District 2020). Other local water districts provide municipal water to surrounding areas via pump stations, pipelines, and other water storage and conveyance facilities.

Solid waste that is generated by proposed activities along Pools 17 and 18 would likely be sent to American Avenue Disposal Site, and solid waste that is generated by the proposed activities along Pools 20 and 21 would likely be sent to the Avenal Regional Landfill. Both facilities offer disposal services for construction/demolition wastes, industrial wastes, agricultural wastes, and other waste types that may be generated by the Proposed Project. According to most recent updates, these landfills have remaining capacities of 29,358,535 cubic yards and 30,300,000 cubic yards, respectively (CalRecycle 2020a; 2020b).

a) The Proposed Project would involve the employment of approximately 10 workers throughout the approximately eight-month geotechnical investigation schedule. The Proposed Project may require limited use of potable water during geotechnical investigation activities. Water required for rotary wash samples and cement backfilling would be obtained from a support truck. The amount of water used depends on the sample depth but could range from approximately 65 to 70 gallons. No water or wastewater treatment facilities would be installed as part of the Proposed Project. No improvements are planned to support geotechnical exploration activities that require new electric power, natural gas, or telecommunication facilities.

   The Proposed Project would not alter the local drainage pattern of the Project sites. The Proposed Project does not include the construction of permanent structures or impervious surfaces that would alter or change the rate or amount of surface runoff from the Project sites. Therefore, the Proposed Project would not require the construction or expansion of new storm water drainage facilities. There would be no construction of utility infrastructure associated with the Proposed Project; there would be **no impact**.

b) The Proposed Project is limited to geotechnical investigations and does not involve the implementation of structures requiring water service. Geotechnical investigations would not

create dust in quantities that would generate the need for dust suppression through the application of water. Therefore, there would be **no impact**.

c) The Proposed Project would result in the generation of wastewater associated with temporary use of portable toilets. During Project implementation, DWR or the contractor may have portable toilet facilities available on-site temporarily for use by workers. Given the relatively small workforce of up to a maximum of 10 workers on-site daily for the 8-month geotechnical investigation period, this amount of waste would be minimal. Once exploration activities are concluded, such portable facilities would be removed and the wastewater properly handled and disposed in accordance with all applicable laws and regulations. Therefore, the Proposed Project does not require a wastewater treatment provider to serve the Project. **No impact** would occur.

d) Implementation of the Proposed Project would result in nominal solid waste, limited to trash and other Project-related materials. Because the Proposed Project would not demolish existing facilities on-site or require building materials or infrastructure, there would be no construction debris to be disposed of or transported. During exploration activities, soil to be tested would be stored in appropriate bags, and core boxes within a secured container on-site in an undisturbed area. Once each exploration activity is completed, soil cuttings generated by drilling methods would either be disposed of at local landfills or spread on the surface to match preexisting conditions.

As described above, nearby disposal facilities have adequate capacities to service waste generated by the Proposed Project. Therefore, the Proposed Project would result in a **less-than-significant impact** related to local infrastructure capacity and would not impair attainment of solid waste reduction goals.

e) Implementation of the Proposed Project would result in nominal solid waste. Statewide policies regarding solid waste have become progressively more stringent, reflecting AB 939, which requires local government to develop waste reduction and recycling policies and meet mandated solid waste reduction targets. The Proposed Project would collect approximately 250 cubic feet of soil for testing. Soil samples would be tested and discarding appropriately by the laboratory facility in accordance with applicable state and federal laws. Impacts would be **less than significant.**

3.3.20 Wildfire

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

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	Less than Significant Impact	No Impact
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose Project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?	☐	☐	☐	☒
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?	☐	☐	☐	☒

The Project area is located within an LRA designated as unzoned by CAL FIRE (CAL FIRE 2020; 2007).

a) Implementation of the Proposed Project is not anticipated to substantially impair an adopted emergency response plan or evacuation plan because the majority of samples would take place within the boundaries of the SLC right-of-way, or within an area outside of county roadways. Implementation of the Proposed Project would not interfere with emergency response access to the Project vicinity and **no impact** would occur.

b) The Project area does not include slopes that surround the SLC that are susceptible to prevailing winds. Further, the surrounding vegetation and land use types have a low potential for fires. As a standard DWR safety practice, all vehicles and equipment would have fire prevention equipment on-site, including fire extinguishers and shovels. Therefore, geotechnical investigation activities proposed under the Project are not expected to expose Project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. Further, the Project does not involve operation of facilities that would exacerbate fire conditions within the area or require permanent workers or occupants at the sample sites. As a result, **no impact** would occur.

c) The Proposed Project includes geotechnical investigations and soil sampling. The Proposed Project would not require the installation or maintenance of infrastructure that would exacerbate wildfire risks. Therefore, there would be **no impact**.

d) As discussed in Section 3.3.7, *Geology and Soils*, Questions (a)(iv) and (c), and Section 3.3.10, *Hydrology and Water Quality,* discussions (c)(i) and (c)(ii) above, the Project would not result in increased drainage or runoff that could contribute to landslide or flooding impacts. **No impact** would occur.

3.3.21 CEQA Mandatory Findings of Significance

Would the Project:	Potentially Significant Impact	Less than Significant With Mitigation Incorporation	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 impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)?	☐	☒	☐	☐
c) Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☒	☐	☐

a) The Proposed Project would be temporary in nature and involve sample activities within and around the SLC Pools 17, 18, 20 and 21. The Proposed Project would not: substantially degrade the quality of the environment; substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; reduce or restrict the range of rare or endangered plants or animals; or, eliminate important examples of the major periods of California history or prehistory. As discussed in the analyses provided in this Initial Study, adherence to federal, State, and local regulations, and proposed **Environmental Commitments/ Mitigation Measures in Section 2.3.1** would reduce all potentially significant impacts to biological, cultural, GHG, energy, and geological resources as well as to other issue areas analyzed, to **less-than-significant levels with mitigation incorporated**.

b) As noted throughout this document, the potential impacts of the Proposed Project are primarily temporary and short-term impacts and are site-specific. As noted above, all of the potential direct and indirect impacts of the Proposed Project were determined to be fully avoided or reduced to less than significant with incorporation of **Environmental Commitments/Mitigation Measures in Section 2.3.1.** As a result, the potential impacts of the Proposed Project are not considered cumulatively considerable, and impacts would be **less than significant with mitigation incorporated**.

c) The potential impacts of the Proposed Project are temporary, short-term, and site-specific. These impacts are all localized to the Proposed Project area and include limited adverse effects on biological, cultural, GHG, energy and geological resources. However, the Proposed Project would not include any activities or uses that may cause substantial adverse effects on human beings, either directly or indirectly, or on the physical environment. Compliance with applicable local, State, and federal standards, as well as incorporation of Project mitigation measures, would result in **less-than-significant impacts with mitigation incorporated**.

4 Consultation and Coordination

4.1 Agencies and Persons Consulted

Reclamation and DWR consulted or coordinated with the following in the preparation of this EA/IS-MND:

- Big Sandy Rancheria of Western Mono Indians
- Chicken Ranch Rancheria
- Cold Springs Rancheria of Mono Indians
- Picayune Rancheria of Chukchansi Indians
- Santa Rosa Rancheria Tachi Yokut Tribe
- Table Mountain Rancheria
- Tule River Indian Tribe
- Amah Mutsun Tribal Band
- Dumna Wo-Wah Tribal Government
- Dunlap Band of Mono Indians
- Kings River Choinumni Farm Tribe
- Nashville-El Dorado Miwok
- North Fork Mono Tribe
- Traditional Choinumni Tribe
- Wuksache Indian Tribe, Eshom Valley BandState Historic Preservation Officer
- Westlands Water District
- California Department of Fish and Wildlife

4.2 Public Involvement

Reclamation and DWR intend to provide the public with an opportunity to comment on the Draft EA/IS-MND during a 30-day public review period.

4.3 Title 54 U.S.C. § 306108, Commonly Known as Section 106 of the National Historic Preservation Act

Title 54 U.S.C. § 306108, commonly known as Section 106 of the NHPA (formerly 16 U.S.C. 470 et seq.), requires Federal agencies to consider the effects of their undertakings on historic properties, properties determined eligible for inclusion in the National Register, and to afford the Advisory Council on Historic Preservation an opportunity to comment. Compliance with Section 106 follows a series of steps, identified in its implementing regulations found at 36 CFR Part 800, that include identifying consulting and interested parties, identifying historic properties within the area of potential effect, and assessing effects on any identified historic properties, through consultations with the SHPO, Indian tribes and other consulting parties.

Reclamation will submit and seek concurrence from the State Historic Preservation Officer (SHPO) prior to approval of the Final EA/IS-MND.

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