DEE JASPAR & ASSOCIATES, INC.
Consulting Civil Engineers

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May 11, 2020

See Attached Mailing List

Re: NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL INTIAL STUDY / MITIGATED NEGATIVE DECLARATION (SCH #)

Allensworth Community Services District (ACSD), as Lead Agency has determined that the preparation of an Initial Study / Mitigated Negative Declaration is necessary pursuant to California Environmental Quality Act (CEQA). The ACSD requests your agency review and comment on the attached Environmental Documentation as it relates to your agency. In accordance with the limits mandated by State Law your response must be received by **June 30, 2020** and shall be submitted to Curtis Skaggs at Dee Jaspar & Associates, Inc., 2730 Unicorn Road, Bldg. A, Bakersfield, CA 93308.

PROJECT TITLE: Allensworth Community Services District – Water System Improvement Project (SCH#)

PROJECT LOCATION & DESCRIPTION: The project includes the drilling, constructing, and development of a water supply well; the equipping of this well with a pump, motor, discharge piping, and electrical; connection of the well to the existing well lateral with 6" underground PVC piping; the construction of a 0.5MG AWWA D100 welded steel storage tank and booster pumping station; and the associated underground PVC piping to connect the tank inlet and the booster pumping station to the existing water distribution system. The well site is located in Section 13 of T24S, R24E, M.D.B.&M. The 0.5-acre property is APN 333-252-020 in Tulare County. The tank site is located in Section 9 of T24S, R24E, M.D.B.&M. The 1-acre property is located at 3300 Road 84, #A in Allensworth, CA in Tulare County. These project components are discussed in greater detail below.

Water Well Site

The Project will involve the drilling of a 24-inch diameter well hole to a depth of approximately 245 feet (74.7 meters) using a single drill rig and drilling using the reverse-rotary method. The well will be cased with 12-inch diameter by ¼" wall thickness steel casing to a depth of 225 feet. The perforated interval will be from approximately 110 feet to 215 feet below ground surface. Gravel filter material will be installed from the bottom of hole up to approximately 85 feet and then a cement annular seal installed from 85 feet up to ground surface. At select water bearing formations water quality samples will be collected to ensure the completed well will provide water that meets current drinking water standards.

Upon completion of the well construction, the well site will be prepared to install the underground PVC electrical conduits and the well pad and electrical equipment concrete foundations. The area beneath the concrete foundations will be over-excavated 18-inches to 5-ft beyond the limits of the foundation and compacted to 90% relative compaction.

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A concrete foundation for the well pad will be formed, reinforcement steel installed, and the concrete well foundation constructed. A vertical turbine pump will be installed in the well and set to an approximate depth of 210-ft. The pumping capacity is approximately 300 gpm with an approximate 50 hp motor.

The well pump will discharge through 6-inch fusion bonded epoxy lined and coated steel piping above ground with a check valve, dresser coupling, flow meter, gate valve, air release valves, and miscellaneous appurtenances. The steel piping will transition below ground surface to 6-inch PVC pipe with approximately 36-inches of earth cover and be installed out of the well site onto the existing dirt road and be installed in a westerly direction approximately 660 feet to connect to the existing 6-inch PVC well piping.

A 6-inch thick reinforced concrete foundation will be constructed near the well foundation for the site electrical and controls. The electrical equipment will be pad or backboard mounted and installed beneath a 10-ft tall shade structure. Underground electrical conduits and wire will be installed to the well pump motor, pressure gauges, flow meter, and controls. Electrical conduits will be PVC and galvanized or PVC coated steel piping and be installed approximately 36-inches below ground surface.

The final site development will include fine grading, placement of ¾-inch Class II aggregate base site ground cover, installation of site fencing with vinyl slats and personnel and drive access gates, installation of an 80 kW emergency standby diesel generator and final project clean-up and testing.

Conveyance Pipelines

From the Water Well Site described above, a 6-inch PVC pipeline will be installed extending approximately 660 ft. west of the well to tie into an existing ACSD well lateral.

From the Tank Site described below, a 6-inch PVC pipeline will be installed extending approximately 500 ft. north of the tank site to connect to the existing ACSD well lateral.

In addition, a 12-inch PVC underground pipeline will be installed from the booster pump station to the road right-of-way for Road 84 and connect to the existing ACSD distribution system piping. The pipeline will be installed with a minimum of 36-inches of earth cover. Pipeline excavation and backfill will be performed in accordance with County of Tulare standards and be compacted to a minimum 90% relative compaction.

Storage Tank

The storage tank and booster pumping plant facility will include a 500,000 gallon AWWA D100 welded steel storage tank that has a diameter of 60 feet and a height of 24 feet and the booster pump station will have three 250 gpm horizontal centrifugal booster pumps with 25 hp motors.

The construction work will involve site grading and subgrade preparation beneath the storage tank, the booster pump foundations, the hydropneumatic tank footings, and the electrical equipment foundation. The subgrade preparation will involve over-excavating 18-inches beneath the foundations and re-compacting to 90% relative compaction. The site

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grading work will also involve demolition and removal of debris from the tank site including portions of an old concrete foundation from the previous house that was located on the site.

A 61-ft diameter reinforced concrete ringwall foundation will be constructed for the foundation of the storage tank. This will include excavation, formwork installation, reinforcement steel, and concrete placement. Within the concrete ringwall, a 6-inch thick layer of Class II aggregate base will be installed and compacted and then a 4-inch layer of oiled sand installed on top of the aggregate base flush with the top of the concrete ringwall foundation for support of the tank.

The materials for the storage tank will then be delivered to the site and the tank erected. The floor sheets will be laid, cut, and welded in place. The side shell sheets will be installed with a crane, set and tack welded, and then fully welded in place. The roof structure columns, rafters, and roof plates will be installed with a crane and bolted and welded in place. The tank appurtenances will be installed and the tank prepared for coating and painting. The tank interior and exterior will be coated with an epoxy paint, stainless steel screens installed on tank roof openings, and a cathodic protection anode system installed inside the tank.

Underground electrical conduits will be trenched and installed from the electrical equipment pad location to the storage tank, the booster pump station facility, and the site lighting. The underground electrical conduits will be PVC and PVC coated steel pipe and will be installed approximately 30-inches to 36-inches below finish grade. The concrete foundations for the pumps, motors, hydropneumatic tank, electrical equipment, and miscellaneous pads will be formed, reinforcement steel installed, and the concrete placed and cured. The equipment will then be installed, set in place, and anchored to the concrete foundations. The fusion bonded epoxy lined and coated steel piping, valves, and appurtenances will be installed for the suction manifold from the tank to the booster pumps, for the discharge manifold from the pumps to the hydropneumatic tank, and for the conveyance piping from the hydropneumatic tank to its transition below ground to 12-inch PVC piping to Road 84 where it will connect to the existing ACSD distribution piping. All above ground steel piping, valves, and appurtenances will be painted.

The well supply line to fill the storage tank will be modified and re-routed to the new storage tank location on Road 84. The existing piping at the intersection of Avenue 32 and Road 84 will be severed and re-routed south approximately 500-ft to the connection at the new storage tank. The piping will be 6-inch C900 DR18 PVC pipe, installed with approximately 36-inches to 48-inches of cover, and be installed within the Road 84 road right-of-way and then enter the tank site property on the west side of Road 84. The tank inlet piping will include pipe supports, fill control valve, flow meter, and chlorine injection. A 125 gallon polyethylene chemical tank will be installed with secondary containment and a chemical feed pump to inject 12.5% Sodium Hypochlorite for disinfection at the inlet piping to the tank.

The electrical equipment and shade structure will be installed on the electrical equipment foundation. Instrumentation and controls will be installed including high pressure switches, level transducers, pressure transducers, flow meters, level floats, etc. Wiring for power and signal will be installed and terminated and site lighting completed. The site lighting will be a maximum height of 20-ft, will be turned down and inward to the site to reduce glare, and the light bulbs will be LED.

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The final site development will include fine grading, placement of ¾-inch Class II aggregate base site ground cover, placement of AC drive approaches to the site from Road 84, installation of site fencing with vinyl slats and personnel and drive access gates, installation of a 100 kW emergency standby diesel generator, and final project clean-up and testing.

Sincerely,

Curtis Skaggs

Curtis Skaggs

San Joaquin Valley Air Pollution Control District 34946 Flyover Court Bakersfield, CA 93308	State Office of Historical Preservation Attn: Susan Stratton P.O. Box 942896 Sacramento, CA 95296
California Highway Patrol 9855 Compagnoni Street Bakersfield, CA 93313	California Department of Parks and Recreation 1416 9th Street Sacramento, CA 95814
Caltrans District 6 1352 W. Olive Ave. Fresno, CA 93728	California Regional Water Quality Board / Central Valley Region 1685 E Street Fresno, CA 93706
California Department of Fish & Game Region 4 1234 East Shaw Ave. Fresno, CA 93710	State Water Resources Control Board Division of Drinking Water Attn: Jesse Dhaliwal, Sr. Sanitary Engr. 4925 Commerce Dr., Suite 120 Bakersfield, CA 93309
State Department of Food & Agriculture 1220 N Street Sacramento, CA 95814	State Department of Water Resources San Joaquin Dis 3374 East Shields Ave. Fresno, CA 93726
California Native American Heritage Commission Capitol Mall, Room 364 Sacramento, CA 95814	Central Valley Flood Protection Board 3310 El Camino Ave, Suite 170 Sacramento, CA 95821
County of Tulare – County Clerk 2800 West Burrel Ave. Visalia, CA 93291	

INITIAL STUDY / MITIGATED NEGATIVE DECLARATION FOR THE ALLENSWORTH COMMUNITY SERVICES DISTRICT

WATER SYSTEM IMPROVEMENT PROJECT

MAY 2020

STATE WATER RESOURCES CONTROL BOARD
SAFE DRINKING WATER STATE REVOLVING FUND
PROJECT NO. 5400544-001P

DEE JASPAR & ASSOCIATES, INC.
CONSULTING CIVIL ENGINEERS

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INITIAL STUDY / MITIGATED NEGATIVE DECLARATION

ALLENSWORTH COMMUNITY SERVICES DISTRICT

Pursuant to the California Environmental Quality Act of 1970 (CEQA) and the State CEQA Guidelines, the Allensworth Community Services District has made an initial study of possible environmental impacts of the following described project:

APPLICANT: Allensworth Community Services District
336 Road 84
Allensworth, CA 93219

PROJECT TITLE: Allensworth Community Service District - Water System Improvement Project

PROJECT LOCATION & DESCRIPTION:

The project includes the drilling, constructing, and development of a water supply well; the equipping of this well with a pump, motor, discharge piping, and electrical; connection of the well to the existing well lateral with 6" underground PVC piping; the construction of a 0.5MG AWWA D100 welded steel storage tank and booster pumping station; and the associated underground PVC piping to connect the tank inlet and the booster pumping station to the existing water distribution system. These project components are discussed in greater detail below.

<u>Water Well Site</u>

The Project will involve the drilling of a 24-inch diameter well hole to a depth of approximately 245 feet (74.7 meters) using a single drill rig and drilling using the reverse-rotary method. The approximate footprint of this equipment is 30 feet by 60 feet (9 meters by 18 meters) and then also a pipe trailer that is approximately 15 feet by 40 feet (4.6 meters by 12 meters). The well will be cased with 12-inch diameter by ¼" wall thickness steel casing to a depth of 225 feet. The perforated interval will be from approximately 110 feet to 215 feet below ground surface. Gravel filter material will be installed from the bottom of hole up to approximately 85 feet and then a cement annular seal installed from 85 feet up to ground surface. Approximately 27 cubic yards (21 cubic meters) of earth material or drill cuttings will be removed during the Project. This material will be discharged to above-ground tanks and then removed and spread on the ground in a stockpile to be removed at the completion of the Project once dried. As water bearing formations are encountered and water quality samples collected, the pumped water will be discharged to above-ground tanks. During well development the pumped water will be directed to above-ground storage tanks to settle out any sediment and then drained to an existing irrigation water ditch. The construction equipment will include a drilling rig, pipe trailer, above ground mud pits, backhoe, forklift, loader, welding truck, and support vehicles. The well drilling work is anticipated to involve 4 weeks to 8 weeks.

Upon completion of the well construction, the well site will be prepared to install the underground PVC electrical conduits and the well pad and electrical equipment concrete foundations. The area beneath the concrete foundations will be over-excavated 18-inches to 5-ft beyond the limits of the foundation and compacted to 90% relative compaction.

A concrete foundation for the well pad will be formed, reinforcement steel installed, and the concrete well foundation constructed. A vertical turbine pump will be installed in the well and set to an approximate depth of 210-ft. The pumping capacity is approximately 300 gpm with an approximate 50 hp motor.

The well pump will discharge through 6-inch fusion bonded epoxy lined and coated steel piping above ground with a check valve, dresser coupling, flow meter, gate valve, air release valves, and miscellaneous appurtenances. The steel piping will transition below ground surface to 6-inch PVC pipe with approximately 36-inches of earth cover and be installed out of the well site onto the existing dirt road and be installed in a westerly direction approximately 660 feet to connect to the existing 6-inch PVC well piping.

A 6-inch thick reinforced concrete foundation will be constructed near the well foundation for the site electrical and controls and emergency generator. The electrical equipment will be pad or backboard mounted and installed beneath a 10-ft tall shade structure. Underground electrical conduits and wire will be installed to the well pump motor, pressure gauges, flow meter, and controls. Electrical conduits will be PVC and galvanized or PVC coated steel piping and be installed approximately 36-inches below ground surface. A 80 kW emergency standby diesel generator will be installed for back-up power supply.

In addition, the well site will be secured with 6-ft tall chain link fencing with vinyl slats and a concrete mow strip. Access gates will be installed for personnel access and pump rig access. The well site is approximately 104-ft by 208-ft for 0.50 acres.

The construction equipment to be utilized during construction will include a backhoe, loader, excavator, pump rig, hand operated equipment such as whacker packers, power tools, and support vehicles. The temporary and permanent disturbance will be confined to the permanent well site which is 0.50 acres and the dirt access road to the site. The construction duration for equipping the well site is anticipated to be approximately six to eight months.

Conveyance Pipelines

From the Water Well Site described above, a 6-inch PVC pipeline will be installed extending approximately 660 ft. west of the well to tie into an existing ACSD well lateral. Pipeline excavation and backfill will be performed in the existing dirt roadway and completed using a backhoe or excavator for excavation and whacker packers for compaction. The construction equipment will include support vehicles, hydrocrane/hydraulic truck crane, loader, excavator, and backhoe. One week is anticipated for this installation.

From the Tank Site described below, a 6-inch PVC pipeline will be installed extending approximately 500 ft. north of the tank site to connect to the existing ACSD well lateral. Pipeline excavation and backfill will be performed in the existing roadway/shoulder of Road 84 and completed using an excavator or backhoe for excavation and whacker packers for compaction. The construction equipment will include support vehicles, hydrocrane/hydraulic truck crane, loader, excavator, and backhoe. One week is anticipated for this installation.

In addition, a 12-inch PVC underground pipeline will be installed from the booster pump station to the road right-of-way for Road 84 and connect to the existing ACSD distribution system piping. The pipeline will be installed with a minimum of 36-inches of earth cover. Pipeline excavation and backfill will be performed with an excavator or backhoe for excavation and whacker packers for compaction. The construction equipment will include support vehicles, hydrocrane/hydraulic truck crane, excavator, loader, and backhoe. One week is anticipated for this installation.

Storage Tank

The storage tank and booster pumping plant facility will include a 500,000 gallon AWWA D100 welded steel storage tank that has a diameter of 60 feet and a height of 24 feet and the booster pump station will have three 250 gpm horizontal centrifugal booster pumps with 25 hp motors.

The construction work will involve site grading and subgrade preparation beneath the storage tank, the booster pump foundations, the hydropneumatic tank footings, the emergency generator, and the electrical equipment foundation. The subgrade preparation will involve over-excavating 18-inches beneath the foundations and re-compacting to 90% relative compaction. The site grading work will also involve demolition and removal of debris from the tank site including portions of an old concrete foundation from the previous house that was located on the site. This work will involve a loader, skip and drag, scraper, and support vehicles and is anticipated to involve one to two weeks.

A 61-ft diameter reinforced concrete ringwall foundation will be constructed for the foundation of the storage tank. This will include excavation, formwork installation, reinforcement steel, and concrete placement. Within the concrete ringwall, a 6-inch thick layer of Class II aggregate base will be installed and compacted and then a 4-inch layer of oiled sand installed on top of the aggregate base flush with the top of the concrete ringwall foundation for support of the tank. This work will involve a backhoe, loader, concrete pumper, smooth drum roller or wheel roller, whacker packers, and support vehicles. The tank foundation is anticipated to be constructed in approximately four to five weeks.

The materials for the storage tank will then be delivered to the site and the tank erected. The floor sheets will be laid, cut, and welded in place. The side shell sheets will be installed with a crane, set and tack welded, and then fully welded in place. The roof structure columns, rafters, and roof plates will be installed with a crane and bolted and welded in place. The tank appurtenances will be installed and the tank prepared for coating and painting. The tank interior and exterior will be coated with an epoxy paint, stainless steel screens installed on tank roof openings, and a cathodic protection anode system installed inside the tank. The tank construction work will include a crane, scaffolding, power tools, diesel generator, painting equipment, and support vehicles. The tank erection work is anticipated to take five to six weeks and the tank coating work is anticipated to take approximately five to seven weeks.

Underground electrical conduits will be trenched and installed from the electrical equipment pad location to the storage tank, the booster pump station facility, and the site lighting. The underground electrical conduits will be PVC and PVC coated steel pipe and will be installed approximately 30-inches to 36-inches below finish grade. All trenches will be backfilled and compacted with whacker packers to 90% relative compaction. The concrete foundations for the pumps, motors, hydropneumatic tank, electrical equipment, emergency generator, and miscellaneous pads will be formed, reinforcement steel installed, and the concrete placed and cured. The equipment will then be installed, set in place, and anchored to the concrete foundations. The fusion bonded epoxy lined and coated steel piping, valves, and appurtenances will be installed for the suction manifold from the tank to the booster pumps, for the discharge manifold from the pumps to the hydropneumatic tank, and for the conveyance piping from the hydropneumatic tank to its transition below ground to 12-inch PVC piping to Road 84 where it will connect to the existing ACSD distribution piping. All above ground steel piping, valves, and appurtenances will be painted. This work will include a backhoe, whacker packers, power tools, crane, and support vehicles. The work is anticipated to involve six to eight weeks.

The well supply line to fill the storage tank will be modified and re-routed to the new storage tank location on Road 84. The existing piping at the intersection of Avenue 32 and Road 84 will be severed and re-routed south approximately 500-ft to the connection at the new storage tank. The piping will be 6-inch C900 DR18 PVC pipe, installed with approximately 36-inches to 48-inches of cover, and be installed within the Road 84 road right-of-way and then enter the tank site property on the west side of Road 84. The tank inlet piping will include pipe supports, fill control valve, flow meter, and chlorine injection. A 125 gallon polyethylene chemical tank will be installed with secondary containment and a chemical feed pump to inject 12.5% Sodium Hypochlorite for disinfection at the inlet piping to the tank. The construction equipment will include excavator, backhoe, loader, whacker packers, and support vehicles. The work is anticipated to involve approximately one to two weeks.

The electrical equipment and shade structure will be installed on the electrical equipment foundation. Instrumentation and controls will be installed including high pressure switches, level transducers, pressure transducers, flow meters, level floats, etc. Wiring for power and signal will be installed and terminated and site lighting completed. The site lighting will be a maximum height of 20-ft, will be turned down and inward to the site to reduce glare, and the light bulbs will be LED. A 100 kW emergency standby diesel generator will be installed for back-up power supply. The construction equipment will involve power tools and support vehicles and the work is anticipated to involve approximately three weeks to four weeks.

The final site development will include fine grading, placement of ¾-inch Class II aggregate base site ground cover, placement of AC drive approaches to the site from Road 84, installation of site fencing with vinyl slats and personnel and drive access gates, and final project clean-up and testing. The construction equipment will include a backhoe, loader, whacker packers, and support vehicles. This work will involve approximately one to two weeks.

COMMENT PERIOD BEGINS: May 29, 2020

COMMENT PERIOD ENDS: June 30, 2020

MITIGATED MEASURES: (included in the proposed project to avoid potentially significant effects, if required):

I. AIR QUALITY MITIGATION MEASURES

1. Water will be applied to the project site during grading, trenching, and backfilling operations to control dust and keep the project area clean.

2. The contract documents will require the Contractor to obtain and comply with a San Joaquin Air Pollution Control District Dust Control Plan.

3. Authority to Construct and Authorization to Operate permits will be obtained from the San Joaquin Valley Air Pollution Control District for the emergency generators.

II. BIOLOGICAL RESOURCES MITIGATION MEASURES

Laurendine Biological Consulting, LLC's Biological Report and associated Avoidance Plans propose the biological recommendations to ensure the project will not have a substantial adverse effect on any species identified as a candidate, sensitive, or special status species during construction activities.

1. **<u>San Joaquin Kit Fox:</u>**

- *Pre-construction surveys of the Project Site will be conducted to ensure no kit foxes have migrated into the area prior to beginning ground disturbance. The purpose of the survey will be to identify potential dens, known dens, and natal dens. Any dens identified will be treated in accordance with the 2011 U.S. Fish and Wildlife Service Standardized Recommendations for the Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011, Appendix F) or current agency protocols and/or requirements.*

- *A buffer of 100 feet shall be established around all known dens discovered during the pre-construction survey. A buffer of 500 feet shall be established around any occupied natal den discovered during the pre-construction survey. Known or natal dens or buffer zones that cannot be avoided shall remain undisturbed until appropriate guidance and "take" authorization has been obtained from CDFW and USFWS.*

- *A biological monitor shall be present while ground-disturbing activities are occurring. A biologist shall be available to aid crews in satisfying take avoidance criteria and implementing project mitigation measures. The biologist will document all pertinent information concerning project effects on sensitive species and assist in minimizing the adverse effects of the project.*

- *All active work sites/construction areas should be clearly marked with flagged stakes, rope, cord, or fencing delineating the work area. Work areas should be limited to the area identified prior to preconstruction surveys.*

- *All trenches or holes greater than 2 feet (0.6 meters) deep left open overnight (not backfilled prior to the end of the work day) should be covered so as to preclude entry by wildlife, or escape ramps should be provided at no greater than 100-foot (31-meter) intervals to ensure no entrapment of animals. Escape ramps should be installed at an angle of no greater than 45 degrees.*

- *All pipes or hoses smaller than 12 inches (30 centimeters) should be covered to exclude wildlife from entry. If this is not possible, they will be inspected daily, before moving and before closing. Any pipes of this size that cannot be seen through completely must be covered at all times when work is not active. If functioning as a culvert, any pipe smaller than 12 inches (30 centimeters) will be treated as a potential den for construction activities within 50 feet (15 meters).*

- *All active work sites/construction areas should be clearly marked with flagged stakes, rope, cord, or fencing delineating the work area. Work areas should be limited to the area identified prior to preconstruction surveys.*

2. **<u>Burrowing Owl:</u>**

- *Pre-construction surveys for burrowing owl should be conducted no more than 30 days prior to initiation of ground disturbance of potential habitat within 250 feet (152 meters), in compliance with currently accepted agency protocols.*

- *If occupied burrowing owl burrows are located during non-breeding season (September 1 through January 31), then a passive relocations effort (i.e. blocking burrow with one-way doors and leaving them in place for a minimum of three days) may be conducted to ensure owls are not harmed or injured during construction.*

- *If occupied burrowing owl burrows are located during breeding season (February 1 through August 31), a construction-free buffer of 250-feet should be established around all active owl nests, following standard guidelines (CDFG 2012). Buffers shall remain in place until a qualified biologist establishes, through non-invasive methods, that either all chicks have fledged or are independent of their parents.*

3. **<u>Tipton's Kangaroo Rat</u>**

- *The Tipton's Kangaroo Rat is a small, fossorial mammal. Burrow avoidance per the Avoidance Plan and ITP being pursued for this project will reduce the impact to a less than significant level.*

4. **<u>American Badger</u>**

- *Pre-construction surveys conducted for burrowing owls should be used to determine the presence or absence of badgers in the project area. If an active badger den is identified during pre-construction survey within or immediately adjacent to the work area, a construction-free buffer of up to 300 feet should be established around the den. During construction a biological monitor should be present to ensure the buffer is adequate to avoid direct impact to individuals or nest abandonment. The monitor should remain on site until it is determined that young are of an independent age and construction activities would not harm individual badgers.*

5. **<u>Nesting Raptors:</u>**

- Pre-construction nesting raptor surveys of the project area should be conducted if construction activities will occur during breeding season (February 1 through August 31). The survey should be conducted no more than 14 days prior to initiation of demolition/construction activities during the early part of breeding season (February through April) and no more than 30 days prior to initiation of these activities during the later part of breeding season (May through August). If nesting birds are present a suitable construction-free buffer zone should be established (minimum 150-feet and maximum of 500-feet). Buffer zones should remain in place for the duration of the breeding season or until it has been confirmed by a qualified biologist that all chicks have fledged and are independent of their parents.

- Activities on existing roads shall not be restricted as a result of implementation of this measure, unless those activities may result in direct impacts to nesting birds.

- All determinations regarding protection of nesting birds included in this measure should be made by a qualified biologist.

6. <u>Blunt-Nosed Leopard Lizard and Coastal Horned Lizard:</u>

- *Blunt-nosed leopard lizard protocol level surveys (adult) determined that the site and surrounding vicinity is utilized by this species. The blunt-nose leopard lizard is a California protected species and as such, the California Department of Fish and Wildlife cannot usually authorize take of this species. Due to the socioeconomics of Allensworth and their lack of adequate water conveyance and storage, a request to remove the "fully protected status" was made to the State Senate. On April 5, 2018 Senate Bill No, 495 was amended, allowing CDFW to authorize, under the California Endangered Species Act, the take or possession of the blunt-nosed leopard lizard resulting from impacts attributable to or otherwise related to the Allensworth Community Service District Safe Drinking Water Project to drill a new water well for the community of Allensworth and Colonel Allensworth State Historic Park, if specific conditions are met. Under Senate Bill No. 495 the "fully protected status" has been rescinded for the construction of this project alone and allow for an Incidental Take Permit allowing for take of the species.*

7. <u>General Measures:</u>

a. Biological monitors shall have "stop work authority" if take avoidance and/or mitigation measures are violated. ACSD will be notified of all violations and will require corrective action by the contractor prior to resuming work.

b. Traffic restraints and signs should be established to minimize temporary disturbances during construction. All construction traffic should be restricted to designated access roads and routes, project site storage areas, and staging and parking areas. Off-road traffic outside designated project boundaries will be prohibited. A 20 mile-per-hour (32 kilometer-per-hour) speed limit should be observed in all project construction areas, except as otherwise posted on county roads and state and federal highways.

c. *All equipment storage and parking during construction activities should be confined to the designated construction area or to previously disturbed off-site areas that are not habitat for listed species.*

d. *All project construction activities involving excavation or surface disturbance should be limited to daylight hours.*

e. *Trenches should be inspected for entrapped wildlife each morning, prior to the onset of construction. Before such holes or trenches are filled, they should be thoroughly inspected for entrapped animals. Any animals so discovered shall be allowed to escape voluntarily, without harassment, before construction activities resume, or be removed from the trench or hole by a qualified biologist and allowed to escape unimpeded.*

f. *All construction pipes, pipes, poles, culverts, hoses or similar structures stored at the construction site for one or more overnight periods should be capped or the ends covered in a way that prevents wildlife entrapment. Unburied pipes laid in trenches overnight should be capped. If a kit fox or other listed species is discovered inside a pipe, that section of pipe will not be moved until the animal leaves on its own, or the USFWS and the CDFW have been consulted.*

g. *All food-related trash items such as wrappers, cans, bottles and food scraps generated by project activities shall be disposed of in closed containers and removed at least once each week from the site. Deliberate feeding of wildlife is prohibited.*

h. *To prevent harassment of special-status species, construction personnel should not be allowed to have firearms or pets on the project site.*

i. *All equipment and work-related materials shall be contained in closed containers either in the work area or in vehicles. Loose items (e.g. rags, hose, etc.) should be stored within closed containers or enclosed in vehicles when on the work site.*

j. *All liquids should be in closed, covered containers. Any spills of hazardous liquids should not be left unattended until cleanup has been completed.*

k. *Use of rodenticides and herbicides on the project site should be prohibited unless approved by the USFWS and the CDFW. This is necessary to prevent primary or secondary poisoning of special-status species using adjacent habitats, and to avoid the depletion of prey upon which they depend. Label restrictions and other restrictions imposed by the U.S. Environmental Protection Agency (EPA), the California Department of Food and Agriculture (CDFA), and other state and federal legislation shall be implemented. If* *rodent control must be conducted, zinc phosphide shall be used because of its proven lower risk to kit foxes.*

l. *Any contractor, employee(s), or other personnel who inadvertently kills or injures a threatened or endangered species shall report the incident immediately to a designated site representative (e.g. foreman, project manager, environmental inspector, etc.). The representative shall contact the ACSD representative and if feasible, a qualified biologist. ACSD will contact CDFW immediately in the case of dead, injured, or entrapped listed species. The CDFW contact for immediate assistance is State Dispatch at (916) 445-0045. State Dispatch will contact the local warden or biologist. The qualified biologist will also document all circumstances of death, injury, or entrapment of sensitive species. The biologist will 1) take all reasonable steps to enable the individual animal to escape should it be entrapped, 2) contact CDFW or other appropriate authorities to identify an approved rehabilitation center and appropriate capture and transport techniques should the animal be injured, 3) document circumstances of death in writing and if possible photographing dead animal in situ prior to moving.*

m. *USFWS and CDFW shall be notified in writing within three (3) working days in the event of an accidental death or injury of a San Joaquin kit fox or other threatened or endangered species. Notification shall include the date, time, and location of the incident or of the finding of a dead or injured animal, and any other pertinent information. The USFWS contact for this information is Endanger Species, Program Office, 2800 Cottage Way, Room W-2605, Sacramento, CA 95825, (916) 414-6600. The CDFG contact information is 1416 9th Street, Sacramento, CA 95814, (916) 654-4262. Any dead or injured kit fox or other threatened or endangered species shall be turned over to the CDFW Environmental Services Division, Fresno Regional Headquarters at (559) 243-4017 at the agency's request. The dead threatened or endangered animal can be transported to California State University at Bakersfield or the Endangered Species Recovery Team in Bakersfield for storage*

n. *In the case of dead animal(s) that are listed as threatened or endangered, the USFWS and the CDFW shall be immediately (within 24 hours) notified by phone or in person and shall document the initial notification in writing within 2 working days of the findings of any such animal(s). Notification shall include the date, time, location and circumstances of the incident.*

o. *Prior to commencement of construction on any phase of work, work areas should be clearly marked with fencing, stakes with rope or cord, or other means of delineating the work-area boundaries.*

p. *All personnel entering the project site should attend a worker orientation program. The worker orientation program will present measures required to avoid, minimize, and mitigate impacts to biological resources and will* *include, at a minimum, the following: a summary of FESA, CESA, and the MBTA; biological survey results for the current construction area; life history information for the species of concern; biological resource avoidance, minimization, and mitigation requirements; consequences for failure to successfully implement requirements; and procedures to be followed if dead or injured wildlife are located during project activities. Upon completion of the orientation, employees should sign a form stating that they attended the program and understand all biological resource mitigation measures and receive a hard hat sticker or other means of identifying that they have attended the worker orientation. Forms verifying worker attendance should be filed at the applicant's office and be accessible to county, USFWS and CDFW staff. No untrained personnel will be allowed to work onsite with the exception of delivery trucks that are only onsite for 1 day or less, and are under the supervision of a trained employee.*

III. CULTURAL RESOURCES MITIGATION MEASURES

1. In the event that prehistoric or historic subsurface cultural resources are discovered during ground-disturbing activities, all work within 50-ft of the resources will be halted and Allensworth CSD will consult with a qualified archaeologist to assess the significance of the find according to CEQA Guidelines Section 15064.5. If any find is determined to be significant, then the Allensworth CSD and the archaeologist will meet to determine the appropriate avoidance measures or other appropriate mitigation. Allensworth CSD will make the final determination. All significant cultural materials recovered will be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards.

2. In the event that paleontological resources are discovered, Allensworth CSD will notify a qualified paleontologist. The paleontologist will document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. If fossil or fossil bearing deposits are discovered during construction, excavations within 50-feet of the find will be temporarily halted or diverted until the discovery is examined by a qualified paleontologist. The paleontologist will notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the Allensworth CSD determines that avoidance is not feasible, the paleontologist will prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important. The plan will be submitted to the Allensworth CSD for review and approval prior to implementation.

3. If human remains are uncovered during project construction, Allensworth CSD shall immediately halt work, contact the Tulare County Coroner to

evaluate the remains, and follow the procedures and protocols set forth in Section 15064.4(e)(1) of the CEQA Guidelines. If the Coroner determines the remains are Native American in origin, the Coroner shall contact the Native American Heritage Commission (NAHC). As provided in Public Resources Code Section 5097.98, the NAHC shall identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent shall be afforded the opportunity to provide recommendations concerning the future disposition of the remains and any associated grave goods as provided in PRC 5097.98.

IV. HYDROLOGY AND WATER QUALITY

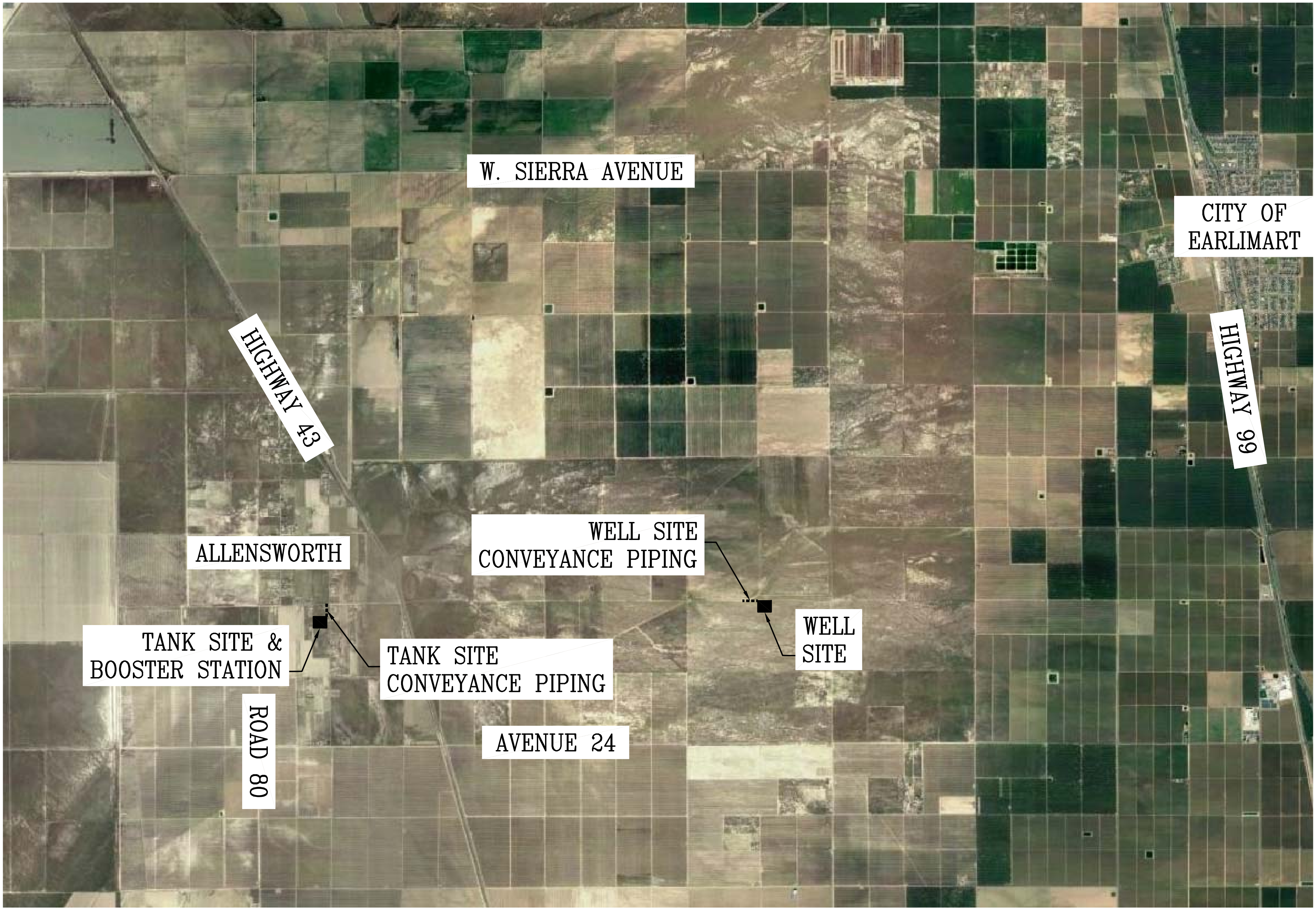
1. ACSD will regularly monitor the groundwater levels in their wells in order to ensure the wells are not excessively lowering groundwater levels in the area.

2. The well concrete foundation will be constructed a minimum of 2-ft above the surrounding grade as a result of being in the floodplain.

V. NOISE IMPACT MITIGATION MEASURES

Noise levels during construction will be mitigated by limiting construction hours to normal work hours during weekdays only from 7:00 am to 5:00 pm except for drilling and a portion of development of the water well.

For more information, please contact Dee Jaspar & Associates, Inc, District Engineer, 2730 Unicorn Road, Bldg A, Bakersfield, CA 93308 (661) 393-4796.



AERIAL MAP

WATER SUPPLY IMPROVEMENT PROJECT

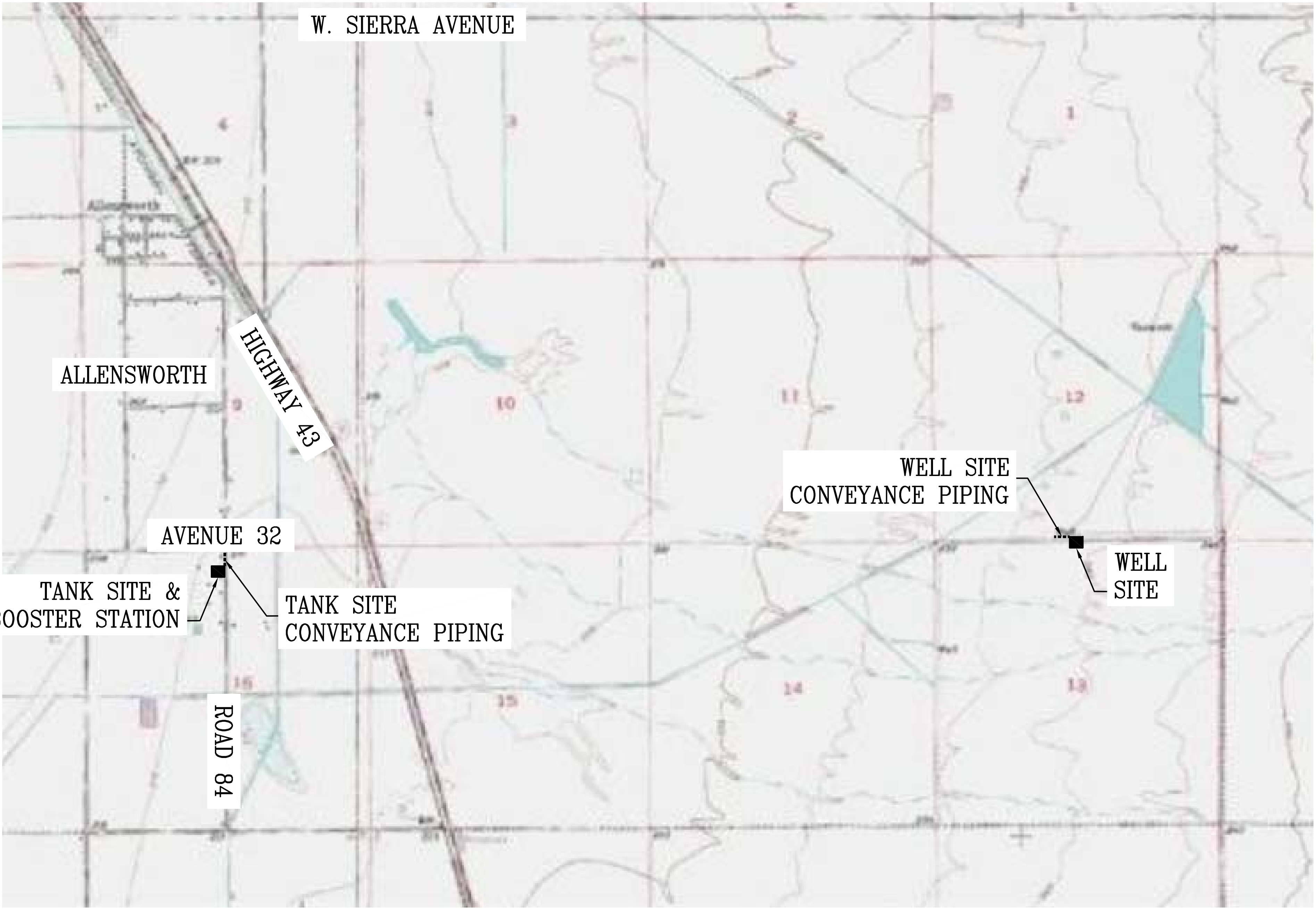
ALLENSWORTH COMMUNITY SERVICES DISTRICT

N

0' 5,000'

SCALE: 1"= 5,000'
DATE: APRIL 25, 2020

DEE JASPAR & ASSOCIATES, INC.
CIVIL • ENGINEERS
PORTERVILLE, CALIFORNIA PHONE 559 791-9286
BAKERSFIELD, CALIFORNIA PHONE 661 393-4796



TOPOGRAPHIC MAP

WATER SUPPLY IMPROVEMENT PROJECT

ALLENSWORTH COMMUNITY SERVICES DISTRICT

N

0' 1,000'

SCALE: 1"= 2,500'
DATE: APRIL 25, 2020

DEE JASPAR & ASSOCIATES, INC.
CIVIL • ENGINEERS
PORTERVILLE, CALIFORNIA PHONE 559 791-9286
BAKERSFIELD, CALIFORNIA PHONE 661 393-4796

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH #

Project Title: Water System Improvement Project

Lead Agency: Allensworth Community Services District — Contact Person: Curtis M. Skaggs
Mailing Address: 336 Road 84 — Phone: (661) 393-4796
City: Allensworth — Zip: 93219 — County: Tulare

Project Location: County: Tulare — City/Nearest Community: Allensworth
Cross Streets: Highway 43 — Zip Code: 93219
Longitude/Latitude (degrees, minutes and seconds): 35 ° 50 ′ 53.71″ N / 119 ° 19 ′ 50.56″ W — Total Acres: 2.0
Assessor's Parcel No.: 333-252-020 — Section: 13 — Twp.: 24 — Range: 24 — Base: MDM
Within 2 Miles: State Hwy #: 43 — Waterways: NA
Airports: NA — Railways: NA — Schools: Allensworth Elementry S

Document Type:

CEQA: [ ] NOP [ ] Early Cons [ ] Neg Dec [x] Mit Neg Dec [ ] Draft EIR [ ] Supplement/Subsequent EIR (Prior SCH No.) ______ Other: ______

NEPA: [ ] NOI [ ] EA [ ] Draft EIS [ ] FONSI

Other: [ ] Joint Document [ ] Final Document [ ] Other: ______

Local Action Type:

- [ ] General Plan Update
- [ ] General Plan Amendment
- [ ] General Plan Element
- [ ] Community Plan
- [ ] Specific Plan
- [ ] Master Plan
- [ ] Planned Unit Development
- [ ] Site Plan
- [ ] Rezone
- [ ] Prezone
- [ ] Use Permit
- [ ] Land Division (Subdivision, etc.)
- [ ] Annexation
- [ ] Redevelopment
- [ ] Coastal Permit
- [x] Other: Water System Im

Development Type:

- [ ] Residential: Units ______ Acres ______
- [ ] Office: Sq.ft. ______ Acres ______ Employees ______
- [ ] Commercial: Sq.ft. ______ Acres ______ Employees ______
- [ ] Industrial: Sq.ft. ______ Acres ______ Employees ______
- [ ] Educational: ______
- [ ] Recreational: ______
- [x] Water Facilities: Type Water Well & Tan MGD ______
- [ ] Transportation: Type ______
- [ ] Mining: Mineral ______
- [ ] Power: Type ______ MW ______
- [ ] Waste Treatment: Type ______ MGD ______
- [ ] Hazardous Waste: Type ______
- [ ] Other: ______

Project Issues Discussed in Document:

- [x] Aesthetic/Visual
- [x] Agricultural Land
- [x] Air Quality
- [x] Archeological/Historical
- [x] Biological Resources
- [ ] Coastal Zone
- [x] Drainage/Absorption
- [ ] Economic/Jobs
- [ ] Fiscal
- [x] Flood Plain/Flooding
- [x] Forest Land/Fire Hazard
- [x] Geologic/Seismic
- [x] Minerals
- [x] Noise
- [x] Population/Housing Balance
- [x] Public Services/Facilities
- [x] Recreation/Parks
- [x] Schools/Universities
- [x] Septic Systems
- [ ] Sewer Capacity
- [x] Soil Erosion/Compaction/Grading
- [x] Solid Waste
- [x] Toxic/Hazardous
- [x] Traffic/Circulation
- [x] Vegetation
- [x] Water Quality
- [x] Water Supply/Groundwater
- [x] Wetland/Riparian
- [x] Growth Inducement
- [x] Land Use
- [x] Cumulative Effects
- [ ] Other: ______

Present Land Use/Zoning/General Plan Designation:

The present land use for the well site is zoned agriculture and present land use for the tank site is zoned C-2MU as part of a ge

Project Description: *(please use a separate page if necessary)*

The proposed project involves drilling and equipping a new municipal water well and connecting it to the existing ACSD distribution system. The project also involves the installation of a new steel water storage tank, booster station, and connecting them to the existing ACSD distribution system.

See attached.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Reviewing Agencies Checklist

Lead Agencies may recommend State Clearinghouse distribution by marking agencies below with and "**X**".
If you have already sent your document to the agency please denote that with an "**S**".

X Air Resources Board
___ Boating & Waterways, Department of
___ California Emergency Management Agency
X California Highway Patrol
X Caltrans District # 6
___ Caltrans Division of Aeronautics
___ Caltrans Planning
X Central Valley Flood Protection Board
___ Coachella Valley Mtns. Conservancy
___ Coastal Commission
___ Colorado River Board
X Conservation, Department of
___ Corrections, Department of
___ Delta Protection Commission
___ Education, Department of
___ Energy Commission
X Fish & Game Region # 4
X Food & Agriculture, Department of
___ Forestry and Fire Protection, Department of
___ General Services, Department of
___ Health Services, Department of
___ Housing & Community Development
X Native American Heritage Commission

X Office of Historic Preservation
___ Office of Public School Construction
X Parks & Recreation, Department of
___ Pesticide Regulation, Department of
___ Public Utilities Commission
X Regional WQCB # 5
X Resources Agency
___ Resources Recycling and Recovery, Department of
___ S.F. Bay Conservation & Development Comm.
___ San Gabriel & Lower L.A. Rivers & Mtns. Conservancy
___ San Joaquin River Conservancy
___ Santa Monica Mtns. Conservancy
___ State Lands Commission
___ SWRCB: Clean Water Grants
X SWRCB: Water Quality
X SWRCB: Water Rights
___ Tahoe Regional Planning Agency
___ Toxic Substances Control, Department of
X Water Resources, Department of

X Other: County of Tulare
___ Other: ___

Local Public Review Period (to be filled in by lead agency)

Starting Date May 29, 2020 Ending Date June 30, 2020

Lead Agency (Complete if applicable):

Consulting Firm: Dee Jaspar & Associates, Inc.
Address: 2730 Unicorn Road, Bldg A
City/State/Zip: Bakersfield/CA/93308
Contact: Curtis M. Skaggs, PE
Phone: (661) 393-4796

Applicant: Allensworth Community Services District
Address: 336 Road 84
City/State/Zip: Allensworth/CA/93219
Phone: (661) 849-3894

Signature of Lead Agency Representative: Curtis Skaggs **Date:** 5-29-20

Authority cited: Section 21083, Public Resources Code. Reference: Section 21161, Public Resources Code.

ALLENSWORTH COMMUNITY SERVICES DISTRICT
WATER SYSTEM IMPROVEMENT PROJECT

PROJECT LOCATION & DESCRIPTION:

The project includes the drilling, constructing, and development of a water supply well; the equipping of this well with a pump, motor, discharge piping, and electrical; connection of the well to the existing well lateral with 6" underground PVC piping; the construction of a 0.5MG AWWA D100 welded steel storage tank and booster pumping station; and the associated underground PVC piping to connect the tank inlet and the booster pumping station to the existing water distribution system. These project components are discussed in greater detail below.

Water Well Site

The Project will involve the drilling of a 24-inch diameter well hole to a depth of approximately 245 feet (74.7 meters) using a single drill rig and drilling using the reverse-rotary method. The approximate footprint of this equipment is 30 feet by 60 feet (9 meters by 18 meters) and then also a pipe trailer that is approximately 15 feet by 40 feet (4.6 meters by 12 meters). The well will be cased with 12-inch diameter by ¼" wall thickness steel casing to a depth of 225 feet. The perforated interval will be from approximately 110 feet to 215 feet below ground surface. Gravel filter material will be installed from the bottom of hole up to approximately 85 feet and then a cement annular seal installed from 85 feet up to ground surface. Approximately 27 cubic yards (21 cubic meters) of earth material or drill cuttings will be removed during the Project. This material will be discharged to above-ground tanks and then removed and spread on the ground in a stockpile to be removed at the completion of the Project once dried. As water bearing formations are encountered and water quality samples collected, the pumped water will be discharged to above-ground tanks. During well development the pumped water will be directed to above-ground storage tanks to settle out any sediment and then drained to an existing irrigation water ditch. The construction equipment will include a drilling rig, pipe trailer, above ground mud pits, backhoe, forklift, loader, welding truck, and support vehicles. The well drilling work is anticipated to involve 4 weeks to 8 weeks.

Upon completion of the well construction, the well site will be prepared to install the underground PVC electrical conduits and the well pad and electrical equipment concrete foundations. The area beneath the concrete foundations will be over-excavated 18-inches to 5-ft beyond the limits of the foundation and compacted to 90% relative compaction.

A concrete foundation for the well pad will be formed, reinforcement steel installed, and the concrete well foundation constructed. A vertical turbine pump will be installed in the well and set to an approximate depth of 210-ft. The pumping capacity is approximately 300 gpm with an approximate 50 hp motor.

The well pump will discharge through 6-inch fusion bonded epoxy lined and coated steel piping above ground with a check valve, dresser coupling, flow meter, gate valve, air release valves, and miscellaneous appurtenances. The steel piping will transition below ground surface to 6-inch PVC pipe with approximately 36-inches of earth cover and be installed out of the well site onto the existing dirt road and be installed in a westerly direction approximately 660 feet to connect to the existing 6-inch PVC well piping.

A 6-inch thick reinforced concrete foundation will be constructed near the well foundation for the site electrical and controls and emergency generator. The electrical equipment will be pad or backboard mounted and installed beneath a 10-ft tall shade structure. Underground electrical conduits and wire will be installed to the well pump motor, pressure gauges, flow meter, and controls. Electrical conduits will be PVC and galvanized or PVC coated steel piping and be installed approximately 36-inches below ground surface. A 80 kW emergency standby diesel generator will be installed for back-up power supply.

In addition, the well site will be secured with 6-ft tall chain link fencing with vinyl slats and a concrete mow strip. Access gates will be installed for personnel access and pump rig access. The well site is approximately 104-ft by 208-ft for 0.50 acres.

The construction equipment to be utilized during construction will include a backhoe, loader, excavator, pump rig, hand operated equipment such as whacker packers, power tools, and support vehicles. The temporary and permanent disturbance will be confined to the permanent well site which is 0.50 acres and the dirt access road to the site. The construction duration for equipping the well site is anticipated to be approximately six to eight months.

Conveyance Pipelines

From the Water Well Site described above, a 6-inch PVC pipeline will be installed extending approximately 660 ft. west of the well to tie into an existing ACSD well lateral. Pipeline excavation and backfill will be performed in the existing dirt roadway and completed using a backhoe or excavator for excavation and whacker packers for compaction. The construction equipment will include support vehicles, hydrocrane/hydraulic truck crane, loader, excavator, and backhoe. One week is anticipated for this installation.

From the Tank Site described below, a 6-inch PVC pipeline will be installed extending approximately 500 ft. north of the tank site to connect to the existing ACSD well lateral. Pipeline excavation and backfill will be performed in the existing roadway/shoulder of Road 84 and completed using an excavator or backhoe for excavation and whacker packers for compaction. The construction equipment will include support vehicles, hydrocrane/hydraulic truck crane, loader, excavator, and backhoe. One week is anticipated for this installation.

In addition, a 12-inch PVC underground pipeline will be installed from the booster pump station to the road right-of-way for Road 84 and connect to the existing ACSD distribution system piping. The pipeline will be installed with a minimum of 36-inches of earth cover. Pipeline excavation and backfill will be performed with an excavator or backhoe for excavation and whacker packers for compaction. The construction equipment will include support vehicles, hydrocrane/hydraulic truck crane, excavator, loader, and backhoe. One week is anticipated for this installation.

Storage Tank

The storage tank and booster pumping plant facility will include a 500,000 gallon AWWA D100 welded steel storage tank that has a diameter of 60 feet and a height of 24 feet and the booster pump station will have three 250 gpm horizontal centrifugal booster pumps with 25 hp motors.

The construction work will involve site grading and subgrade preparation beneath the storage tank, the booster pump foundations, the hydropneumatic tank footings, the emergency generator, and the electrical equipment foundation. The subgrade preparation will involve over-excavating 18-inches beneath the foundations and re-compacting to 90% relative compaction. The site grading work will also involve demolition and removal of debris from the tank site including portions of an old concrete foundation from the previous house that was located on the site. This work will involve a loader, skip and drag, scraper, and support vehicles and is anticipated to involve one to two weeks.

A 61-ft diameter reinforced concrete ringwall foundation will be constructed for the foundation of the storage tank. This will include excavation, formwork installation, reinforcement steel, and concrete placement. Within the concrete ringwall, a 6-inch thick layer of Class II aggregate base will be installed and compacted and then a 4-inch layer of oiled sand installed on top of the aggregate base flush with the top of the concrete ringwall foundation for support of the tank. This work will involve a backhoe, loader, concrete pumper, smooth drum roller or wheel roller, whacker packers, and support vehicles. The tank foundation is anticipated to be constructed in approximately four to five weeks.

The materials for the storage tank will then be delivered to the site and the tank erected. The floor sheets will be laid, cut, and welded in place. The side shell sheets will be installed with a crane, set and tack welded, and then fully welded in place. The roof structure columns, rafters, and roof plates will be installed with a crane and bolted and welded in place. The tank appurtenances will be installed and the tank prepared for coating and painting. The tank interior and exterior will be coated with an epoxy paint, stainless steel screens installed on tank roof openings, and a cathodic protection anode system installed inside the tank. The tank construction work will include a crane, scaffolding, power tools, diesel generator, painting equipment, and support vehicles. The tank erection work is anticipated to take five to six weeks and the tank coating work is anticipated to take approximately five to seven weeks.

Underground electrical conduits will be trenched and installed from the electrical equipment pad location to the storage tank, the booster pump station facility, and the site lighting. The underground electrical conduits will be PVC and PVC coated steel pipe and will be installed approximately 30-inches to 36-inches below finish grade. All trenches will be backfilled and compacted with whacker packers to 90% relative compaction. The concrete foundations for the pumps, motors, hydropneumatic tank, electrical equipment, emergency generator, and miscellaneous pads will be formed, reinforcement steel installed, and the concrete placed and cured. The equipment will then be installed, set in place, and anchored to the concrete foundations. The fusion bonded epoxy lined and coated steel piping, valves, and appurtenances will be installed for the suction manifold from the tank to the booster pumps, for the discharge manifold from the pumps to the hydropneumatic tank, and for the conveyance piping from the hydropneumatic tank to its transition below ground to 12-inch PVC piping to Road 84 where it will connect to the existing ACSD distribution piping. All above ground steel piping, valves, and appurtenances will be painted. This work will include a backhoe, whacker packers, power tools, crane, and support vehicles. The work is anticipated to involve six to eight weeks.

The well supply line to fill the storage tank will be modified and re-routed to the new storage tank location on Road 84. The existing piping at the intersection of Avenue 32 and Road 84 will be severed and re-routed south approximately 500-ft to the connection at the new storage tank. The piping will be 6-inch C900 DR18 PVC pipe, installed with approximately 36-inches to 48-inches of cover, and be installed within the Road 84 road right-of-way and then enter the tank site property on the west side of Road 84. The tank inlet piping will include pipe supports, fill control valve, flow meter, and chlorine injection. A 125 gallon polyethylene chemical tank will be installed with secondary containment and a chemical feed pump to inject 12.5% Sodium Hypochlorite for disinfection at the inlet piping to the tank. The construction equipment will include excavator, backhoe, loader, whacker packers, and support vehicles. The work is anticipated to involve approximately one to two weeks.

The electrical equipment and shade structure will be installed on the electrical equipment foundation. Instrumentation and controls will be installed including high pressure switches, level transducers, pressure transducers, flow meters, level floats, etc. Wiring for power and signal will be installed and terminated and site lighting completed. The site lighting will be a maximum height of 20-ft, will be turned down and inward to the site to reduce glare, and the light bulbs will be LED. A 100 kW emergency standby diesel generator will be installed for back-up power supply. The construction equipment will involve power tools and support vehicles and the work is anticipated to involve approximately three weeks to four weeks.

The final site development will include fine grading, placement of ¾-inch Class II aggregate base site ground cover, placement of AC drive approaches to the site from Road 84, installation of site fencing with vinyl slats and personnel and drive access gates, and final project clean-up and testing. The construction equipment will include a backhoe, loader, whacker packers, and support vehicles. This work will involve approximately one to two weeks.

APPENDIX G

Environmental Checklist Form

1. Project title: *Allensworth Community Services District*
   Water System Improvement Project

2. Lead agency name and address: *Allensworth Community Services District*
   336 Rd 84,
   Allensworth, CA 93219

3. Contact person and phone number: Curtis Skaggs, *Senior Engineer (Dee Jaspar & Associates)*
   (661) 332-6347

4. Project location: *In the community of Allensworth, approximately 2 miles west of Highway 43 along the alignment of Road 88. The tank site is located in Section 9 of T24S, R24E, M.D.B.&M. The 1-acre property is located at 3300 Road 84, #A in Allensworth, CA in Tulare County.*

5. Project sponsor's name and address:

6. General plan designation*: 8.1, Intensive Agriculture*

7. Zoning*: A, Exclusive Agriculture & C-2-MU General Commercial w/ Mixed Use*

8. The project includes the drilling, constructing, and development of a water supply well; the equipping of this well with a pump, motor, discharge piping, and electrical; connection of the well to the existing well lateral with 6" underground PVC piping; the construction of a 0.5MG AWWA D100 welded steel storage tank and booster pumping station; and the associated underground PVC piping to connect the tank inlet and the booster pumping station to the existing water distribution system. These project components are discussed in greater detail below.

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   The Project will involve the drilling of a 24-inch diameter well hole to a depth of approximately 245 feet (74.7 meters) using a single drill rig and drilling using the reverse-rotary method. The approximate footprint of this equipment is 30 feet by 60 feet (9 meters by 18 meters) and then also a pipe trailer that is approximately 15 feet by 40 feet (4.6 meters by 12 meters). The well will be cased with 12-inch diameter by ¼" wall thickness steel casing to a depth of 225 feet. The perforated interval will be from approximately 110 feet to 215 feet below ground surface. Gravel filter material will be installed from the bottom of hole up to approximately 85 feet and then a cement annular seal installed from 85 feet up to ground surface. Approximately 27 cubic yards (21 cubic meters) of earth material or drill cuttings will be removed during the Project. This material will be discharged to above-ground tanks and then removed and spread on the ground in a stockpile to be removed at the completion of the Project once dried. As water bearing formations are encountered and water quality samples collected, the pumped water will be discharged to above-ground tanks. During well development the pumped water will be directed to above-ground storage tanks to settle out any sediment and then drained to an existing irrigation water ditch. The construction equipment will include a drilling rig, pipe trailer, above ground mud pits, backhoe, forklift, loader, welding truck, and support vehicles. The well drilling work is anticipated to involve 4 weeks to 8 weeks.

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A concrete foundation for the well pad will be formed, reinforcement steel installed, and the concrete well foundation constructed. A vertical turbine pump will be installed in the well and set to an approximate depth of 210-ft. The pumping capacity is approximately 300 gpm with an approximate 50 hp motor.

The well pump will discharge through 6-inch fusion bonded epoxy lined and coated steel piping above ground with a check valve, dresser coupling, flow meter, gate valve, air release valves, and miscellaneous appurtenances. The steel piping will transition below ground surface to 6-inch PVC pipe with approximately 36-inches of earth cover and be installed out of the well site onto the existing dirt road and be installed in a westerly direction approximately 660 feet to connect to the existing 6-inch PVC well piping.

A 6-inch thick reinforced concrete foundation will be constructed near the well foundation for the site electrical and controls and emergency generator. The electrical equipment will be pad or backboard mounted and installed beneath a 10-ft tall shade structure. Underground electrical conduits and wire will be installed to the well pump motor, pressure gauges, flow meter, and controls. Electrical conduits will be PVC and galvanized or PVC coated steel piping and be installed approximately 36-inches below ground surface. A 80 kW emergency standby diesel generator will be installed for back-up power supply.

In addition, the well site will be secured with 6-ft tall chain link fencing with vinyl slats and a concrete mow strip. Access gates will be installed for personnel access and pump rig access. The well site is approximately 104-ft by 208-ft for 0.50 acres.

The construction equipment to be utilized during construction will include a backhoe, loader, excavator, pump rig, hand operated equipment such as whacker packers, power tools, and support vehicles. The temporary and permanent disturbance will be confined to the permanent well site which is 0.50 acres and the dirt access road to the site. The construction duration for equipping the well site is anticipated to be approximately six to eight months.

<u>Conveyance Pipelines</u>

From the Water Well Site described above, a 6-inch PVC pipeline will be installed extending approximately 660 ft. west of the well to tie into an existing ACSD well lateral. Pipeline excavation and backfill will be performed in the existing dirt roadway and completed using a backhoe or excavator for excavation and whacker packers for compaction. The construction equipment will include support vehicles, hydrocrane/hydraulic truck crane, loader, excavator, and backhoe. One week is anticipated for this installation.

From the Tank Site described below, a 6-inch PVC pipeline will be installed extending approximately 500 ft. north of the tank site to connect to the existing ACSD well lateral. Pipeline excavation and backfill will be performed in the existing roadway/shoulder of Road 84 and completed using an excavator or backhoe for excavation and whacker packers for compaction. The construction equipment will include support vehicles, hydrocrane/hydraulic truck crane, loader, excavator, and backhoe. One week is anticipated for this installation.

In addition, a 12-inch PVC underground pipeline will be installed from the booster pump station to the road right-of-way for Road 84 and connect to the existing ACSD distribution system piping. The pipeline will be installed with a minimum of 36-inches of earth cover. Pipeline excavation and backfill will be performed with an excavator or backhoe for excavation and whacker packers for compaction. The construction equipment will include support vehicles, hydrocrane/hydraulic truck crane, excavator, loader, and backhoe. One week is anticipated for this installation.

Storage Tank

The storage tank and booster pumping plant facility will include a 500,000 gallon AWWA D100 welded steel storage tank that has a diameter of 60 feet and a height of 24 feet and the booster pump station will have three 250 gpm horizontal centrifugal booster pumps with 25 hp motors.

The construction work will involve site grading and subgrade preparation beneath the storage tank, the booster pump foundations, the hydropneumatic tank footings, the emergency generator, and the electrical equipment foundation. The subgrade preparation will involve over-excavating 18-inches beneath the foundations and re-compacting to 90% relative compaction. The site grading work will also involve demolition and removal of debris from the tank site including portions of an old concrete foundation from the previous house that was located on the site. This work will involve a loader, skip and drag, scraper, and support vehicles and is anticipated to involve one to two weeks.

A 61-ft diameter reinforced concrete ringwall foundation will be constructed for the foundation of the storage tank. This will include excavation, formwork installation, reinforcement steel, and concrete placement. Within the concrete ringwall, a 6-inch thick layer of Class II aggregate base will be installed and compacted and then a 4-inch layer of oiled sand installed on top of the aggregate base flush with the top of the concrete ringwall foundation for support of the tank. This work will involve a backhoe, loader, concrete pumper, smooth drum roller or wheel roller, whacker packers, and support vehicles. The tank foundation is anticipated to be constructed in approximately four to five weeks.

The materials for the storage tank will then be delivered to the site and the tank erected. The floor sheets will be laid, cut, and welded in place. The side shell sheets will be installed with a crane, set and tack welded, and then fully welded in place. The roof structure columns, rafters, and roof plates will be installed with a crane and bolted and welded in place. The tank appurtenances will be installed and the tank prepared for coating and painting. The tank interior and exterior will be coated with an epoxy paint, stainless steel screens installed on tank roof openings, and a cathodic protection anode system installed inside the tank. The tank construction work will include a crane, scaffolding, power tools, diesel generator, painting equipment, and support vehicles. The tank erection work is anticipated to take five to six weeks and the tank coating work is anticipated to take approximately five to seven weeks.

Underground electrical conduits will be trenched and installed from the electrical equipment pad location to the storage tank, the booster pump station facility, and the site lighting. The underground electrical conduits will be PVC and PVC coated steel pipe and will be installed approximately 30-inches to 36-inches below finish grade. All trenches will be backfilled and compacted with whacker packers to 90% relative compaction. The concrete foundations for the pumps, motors, hydropneumatic tank, electrical equipment, emergency generator, and miscellaneous pads will be formed, reinforcement steel installed, and the concrete placed and cured. The equipment will then be installed, set in place, and anchored to the concrete foundations. The fusion bonded epoxy lined and coated steel piping, valves, and appurtenances will be installed for the suction manifold from the tank to the booster pumps, for the discharge manifold from the pumps to the hydropneumatic tank, and for the conveyance piping from the hydropneumatic tank to its transition below ground to 12-inch PVC piping to Road 84 where it will connect to the existing ACSD distribution piping. All above ground steel piping, valves, and appurtenances will be painted. This work will include a backhoe, whacker packers, power tools, crane, and support vehicles. The work is anticipated to involve six to eight weeks.

The well supply line to fill the storage tank will be modified and re-routed to the new storage tank location on Road 84. The existing piping at the intersection of Avenue 32 and Road 84 will be severed and re-routed south approximately 500-ft to the connection at the new storage tank. The piping will be 6-inch C900 DR18 PVC pipe, installed with approximately 36-inches to 48-inches of cover, and be installed within the Road 84 road right-of-way and then enter the tank site property on the west side of Road 84. The tank inlet piping will include pipe supports, fill control valve, flow meter, and chlorine injection. A 125 gallon polyethylene chemical tank will be installed with secondary containment and a chemical feed pump to inject 12.5% Sodium Hypochlorite for disinfection at the inlet piping to the tank. The construction equipment will include excavator, backhoe, loader, whacker packers, and support vehicles. The work is anticipated to involve approximately one to two weeks.

The electrical equipment and shade structure will be installed on the electrical equipment foundation. Instrumentation and controls will be installed including high pressure switches, level transducers, pressure transducers, flow meters, level floats, etc. Wiring for power and signal will be installed and terminated and site lighting completed. The site lighting will be a maximum height of 20-ft, will be turned down and inward to the site to reduce glare, and the light bulbs will be LED. A 100 kW emergency standby diesel generator will be installed for back-up power supply. The construction equipment will involve power tools and support vehicles and the work is anticipated to involve approximately three weeks to four weeks.

The final site development will include fine grading, placement of ¾-inch Class II aggregate base site ground cover, placement of AC drive approaches to the site from Road 84, installation of site fencing with vinyl slats and personnel and drive access gates, and final project clean-up and testing. The construction equipment will include a backhoe, loader, whacker packers, and support vehicles. This work will involve approximately one to two weeks.

9. Surrounding land uses and setting: Briefly describe the project's surroundings:

The land around the well site is primarily agricultural lands and dirt roadways along with lands of the Department of Fish and Wildlife utilized for the ecological preserve. The land around the tank site is residential.

10. Other public agencies whose approval is required (e.g., permits, financing approval, or participation agreement.)

The project is dependent upon the approval of funding from the State Water Boards through the Safe Drinking Water State Revolving Fund. A County of Tulare Well Drilling Permit will also be required.

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED:

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the checklist on the following pages.

Aesthetics	Agriculture Resources	Air Quality
Biological Resources	Cultural Resources	Geology /Soils
Hazards & Hazardous Materials	Hydrology / Water Quality	Land Use / Planning
Mineral Resources	Noise	Population / Housing
Public Services	Recreation	_____ Transportation/Traffic
Utilities / Service Systems	Mandatory Findings of Significance	

DETERMINATION: (To be completed by the Lead Agency)

On the basis of this initial evaluation:

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

X 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.

Signature	Date
Signature	Date

EVALUATION OF ENVIRONMENTAL IMPACTS:

1) A brief explanation is required for all answers except "No Impact" answers that are adequately supported by the information sources a lead agency cites in the parentheses following each question. A "No Impact" answer is adequately supported if the referenced information sources show that the impact simply does not apply to projects like the one involved (e.g., the project falls outside a fault rupture zone). A "No Impact" answer should be explained where it is based on project-specific factors as well as general standards (e.g., the project will not expose sensitive receptors to pollutants, based on a project-specific screening analysis).

2) All answers must take account of the whole action involved, including off-site as well as on-site, cumulative as well as project-level, indirect as well as direct, and construction as well as operational impacts.

3) Once the lead agency has determined that a particular physical impact may occur, then the checklist answers must indicate whether the impact is potentially significant, less than significant with mitigation, or less than significant. "Potentially Significant Impact" is appropriate if there is substantial evidence that an effect may be significant. If there are one or more "Potentially Significant Impact" entries when the determination is made, an EIR is required.

4) "Negative Declaration: Less Than Significant With Mitigation Incorporated" applies where the incorporation of mitigation measures has reduced an effect from "Potentially Significant Impact" to a "Less Than Significant Impact." The lead agency must describe the mitigation measures, and briefly explain how they reduce the effect to a less than significant level (mitigation measures from Section XVII, "Earlier Analyses," may be cross-referenced).

5) Earlier analyses may be used where, pursuant to the tiering, program EIR, or other CEQA process, an effect has been adequately analyzed in an earlier EIR or negative declaration. Section 15063(c)(3)(D). In this case, a brief discussion should identify the following:

a) Earlier Analysis Used. Identify and state where they are available for review.
b) Impacts Adequately Addressed. Identify which effects from the above checklist were within the scope of and adequately analyzed in an earlier document pursuant to applicable legal standards, and state whether such effects were addressed by mitigation measures based on the earlier analysis.
c) Mitigation Measures. For effects that are "Less than Significant with Mitigation Measures Incorporated," describe the mitigation measures which were incorporated or refined from the earlier document and the extent to which they address site-specific conditions for the project.

6) Lead agencies are encouraged to incorporate into the checklist references to information sources for potential impacts (e.g., general plans, zoning ordinances). Reference to a previously prepared or outside document should, where appropriate, include a reference to the page or pages where the statement is substantiated.

7) Supporting Information Sources: A source list should be attached, and other sources used or individuals contacted should be cited in the discussion.

8) This is only a suggested form, and lead agencies are free to use different formats; however, lead agencies should normally address the questions from this checklist that are relevant to a project's environmental effects in whatever format is selected.

9) The explanation of each issue should identify:
   a) the significance criteria or threshold, if any, used to evaluate each question; and
   b) the mitigation measure identified, if any, to reduce the impact to less than significance

SAMPLE QUESTION

Issues:

	Potentially Significant Impact	**Less Than Significant with Mitigation Incorporation**	**Less Than Significant Impact**	**No Impact**
I. AESTHETICS -- Would the project:				
a) Have a substantial adverse effect on a scenic vista?				**X**
b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				**X**
c) Substantially degrade the existing visual character or quality of the site and its surroundings?				**X**
d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?				**X**

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
II. AGRICULTURE RESOURCES: In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Dept. of Conservation as an optional model to use in assessing impacts on agriculture and farmland. Would the project:				
a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use?				X
III. AIR QUALITY -- Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?				X
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?				X
c) 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 (including releasing emissions which exceed quantitative thresholds for ozone precursors)?				X
d) Expose sensitive receptors to substantial pollutant concentrations?				X
e) Create objectionable odors affecting a substantial number of people?				X

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
IV. BIOLOGICAL RESOURCES -- Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?		X		
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 US Fish and Wildlife Service?			X	
c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?				X
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?			X	
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?		X		
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?		X		
V. CULTURAL RESOURCES -- Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in '15064.5?		X		
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to '15064.5?		X		

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		
d) Disturb any human remains, including those interred outside of formal cemeteries?		X		
VI. GEOLOGY AND SOILS -- Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				X
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.				X
ii) Strong seismic ground shaking?				X
iii) Seismic-related ground failure, including liquefaction?				X
iv) Landslides?				X
b) Result in substantial soil erosion or the loss of topsoil?				X
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?				X
d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?				X
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?				X

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
VII. HAZARDS AND HAZARDOUS MATERIALS - Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?				X
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?				X
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?				X
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?				X
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?				X
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?				X
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?				X
h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
VIII. HYDROLOGY AND WATER QUALITY -- Would the project:				
a) Violate any water quality standards or waste discharge requirements?				X
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?		X		
c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?				X
d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?				X
e) 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?				X
f) Otherwise substantially degrade water quality?				X
g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h) Place within a 100-year flood hazard area structures which would impede or redirect flood flows?				X
i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?				X

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
j) Inundation by seiche, tsunami, or mudflow?				X
IX. LAND USE AND PLANNING - Would the project:				
a) Physically divide an established community?				X
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?				X
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?				X
X. MINERAL RESOURCES -- Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
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?				X
XI. NOISE - Would the project result in:				
a) Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?				X
b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?				X
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?				X
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?			X	

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?				X
f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?				X
XII. POPULATION AND HOUSING -- Would the project:				
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)?				X
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X
XIII. PUBLIC SERVICES				
a) Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				X
Fire protection?				X
Police protection?				X
Schools?				X
Parks?				X
Other public facilities?				X

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XIV. RECREATION --				
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?				X
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?				X
XV. TRANSPORTATION/TRAFFIC -- Would the project:				
a) Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections)?				X
b) Exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways?				X
c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e) Result in inadequate emergency access?				X
f) Result in inadequate parking capacity?				X
g) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?				X

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
XVI. UTILITIES AND SERVICE SYSTEMS - Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?				X
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?				X
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e) 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?				X
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?				X
g) Comply with federal, state, and local statutes and regulations related to solid waste?				X
XVII. MANDATORY FINDINGS OF SIGNIFICANCE --				
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?				X

	Potentially Significant Impact	Less Than Significant with Mitigation Incorporation	Less Than Significant Impact	No Impact
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)?				**X**
c) Does the project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?				**X**

Allensworth Community Service District
Water System Improvement Project
Environmental Impacts

I. AESTHETICS:

a. The project will include the drilling and equipping of a new domestic water well and below ground conveyance piping. The project will also include the construction of a water storage tank, booster station, above ground piping, and below ground conveyance piping. The above ground appurtenances will be painted an aesthetically pleasing color to blend with the surrounding environment.

b. The well site and well conveyance piping are located in fallow field and along a dirt road. The tank site is located on an existing dirt lot and the conveyance piping will be installed in the dirt shoulder along a paved road. No heritage trees, rock outcroppings, or historic buildings will be disturbed as part of this project.

c. The well site and well conveyance piping are located in fallow field and along a dirt road. The tank site is located on an existing dirt lot and the conveyance piping will be installed in the dirt shoulder along a paved road. The above ground appurtenances will be painted an aesthetically pleasing color to blend with the surrounding environment.

d. Site lighting at each of the sites will be adjusted to remain within the site perimeter. The above ground piping will also be painted to eliminate any substantial glare.

II. AGRICULTURE RESOURCES:

a. The project sites will not require the conversion of farmland to non-agricultural use. The size of the site is limited to what is necessary for the project.

b. The project sites are not under the Williamson Act or any other contracts.

c. The well site is not existing agricultural land. The project will not require farmland to be converted for non-agricultural use. The size of the site is limited to what is necessary for the project.

III. AIR QUALITY:

a. The project will not involve any conflicts or issues with the applicable air quality plan. Construction activities such as excavation and backfill for a foundation preparation and pipeline installation will require the use of water truck for dust suppression and compliance with the Contractor's dust control permit. The construction phase of the project was evaluated for the construction emissions using the Road Construction Emissions Model, Version 9.0.0. The results are attached as Exhibit C. Construction emission estimates were generated in tons for the duration of the project. These included nitrogen oxides, carbon dioxide, PM 10, and PM 2.5. During the 365 day construction period total construction emissions are estimated to equate to 0.1 tons for Nitrogen oxides (NOx) and 129.26 tons for Carbon Dioxides. While volatile organic carbons and particulate matter are not shown in tons, there will be emissions of these pollutants during construction. These will be mitigated by the application of water to keep dust down. For construction activities, the District has established the threshold criteria shown below in tons per year. The thresholds and calculated emissions are outlined below:

ROG	Threshold = 10 tons/yr,	Estimate = 0.01 tons/yr
NO_x	Threshold = 10 tons/yr,	Estimate = 0.08 tons/yr
CO	Threshold = N/A,	Estimate = 0.67 tons/yr
SO_2	Threshold = N/A,	Estimate = 0.00 lbs/day
PM_{10}	Threshold = N/A,	Estimate = 0.05 tons/yr
$PM_{2.5}$	Threshold = N/A,	Estimate = 0.01 tons/yr

Footnote:

1- Annual emission estimates based on construction period outlined in report, i.e. tons/yr = (lb per day output x construction days (variable for each phase) x 22 working days/month)/2,000 lbs per ton.

2- Project results in a significant impact if activities contribute to an exceedance of State or Federal ambient CO standards.

3- The District does not have a significance threshold for SO_2.

4- Complying with District Regulations for controlling fugitive dust emissions during construction reduces potential impacts to less than significant.

The well and booster pumps will be equipped with a more efficient pump and premium efficient motor. Booster pump will also have variable frequency drives (VFD) that will lower electrical use and thus result in lower greenhouse gas emissions.

b. The project includes the construction of above ground and below ground piping, drilling and equipping of a new water well, construction of a new steel water storage tank, booster station, installation of new electrical and controls, fencing, and installation of site ground cover. Construction of the project will temporarily generate greenhouse gases from gas or diesel driven equipment. The project will not violate air quality standards or contribute to an existing air quality violation. The project will comply with all necessary permits required by the San Joaquin Air Pollution Control District.

c. The project will not involve the release of any criteria pollutant into the air other than those noted in Exhibit C during the construction phase of the project. Water will be applied to the project site during grading and backfilling operations to control dust and keep the project area clean and for dust control

d. The project will not involve chemicals or emissions that would expose sensitive receptors to substantial pollutant concentrations with respect to air quality.

e. The project will not create objectionable odors that would affect a substantial number of people.

MITIGATIONS:

Water will be applied to the project site during grading, trenching, and backfilling operations to control dust and keep the project area clean.

The contract documents will require the Contractor to obtain and comply with a San Joaquin Air Pollution Control District Dust Control Plan.

IV. BIOLOGICAL RESOURCES:

a. Laurendine Biological Consulting, LLC performed a biological survey of the project area and their biological report is attached as Exhibit D. In addition, Appendix E of Exhibit D includes an Avoidance Plan dated October 13th, 2016. They found that the project can avoid habitat or sensitive species through the implementation of recommended measures outlined in the biological survey report.

b. The project site has been surveyed by a Biologist who determined the project can avoid any known riparian habitats or other sensitive natural communities as evidenced by the site evaluation performed by Laurendine Biological Consulting, LLC.

c. The project site has been surveyed by a Biologist who determined there are no known wetlands or coastal areas in the vicinity of the project or any known indirect effects to these particular areas as a result of the project.

d. The project site has been surveyed by a Biologist who determined the project will not interfere with the movement of wildlife species or other migratory species as evidenced by the site evaluation performed by Laurendine Biological Consulting, LLC.

e. The project will not conflict with any local policies or ordinances protecting biological resources as evidenced by the site evaluation performed by Laurendine Biological Consulting, LLC.

f. The project will not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

MITIGATIONS:

Laurendine Biological Consulting, LLC's Biological Report and associated Avoidance Plans propose the biological recommendations to ensure the project will not have a substantial adverse effect on any species identified as a candidate, sensitive, or special status species during construction activities.

1. **San Joaquin Kit Fox:**

- *Pre-construction surveys of the Project Site will be conducted to ensure no kit foxes have migrated into the area prior to beginning ground disturbance. The purpose of the survey will be to identify potential dens, known dens, and natal dens. Any dens identified will be treated in accordance with the 2011 U.S. Fish and Wildlife Service Standardized Recommendations for the Protection of the San Joaquin Kit Fox Prior to or During Ground Disturbance (USFWS 2011, Appendix F) or current agency protocols and/or requirements.*

- *A buffer of 100 feet shall be established around all known dens discovered during the pre-construction survey. A buffer of 500 feet shall be established around any occupied natal den discovered during the pre-construction survey. Known or natal dens or buffer zones that cannot be avoided shall remain undisturbed until appropriate guidance and "take" authorization has been obtained from CDFW and USFWS.*

- *A biological monitor shall be present while ground-disturbing activities are occurring. A biologist shall be available to aid crews in satisfying take avoidance criteria and implementing project mitigation measures. The biologist will document all pertinent information concerning project effects on sensitive species and assist in minimizing the adverse effects of the project.*

- *All active work sites/construction areas should be clearly marked with flagged stakes, rope, cord, or fencing delineating the work area. Work areas should be limited to the area identified prior to preconstruction surveys.*

- *All trenches or holes greater than 2 feet (0.6 meters) deep left open overnight (not backfilled prior to the end of the work day) should be covered so as to preclude entry by wildlife, or escape ramps should be provided at no greater* *than 100-foot (31-meter) intervals to ensure no entrapment of animals. Escape ramps should be installed at an angle of no greater than 45 degrees.*

- *All pipes or hoses smaller than 12 inches (30 centimeters) should be covered to exclude wildlife from entry. If this is not possible, they will be inspected daily, before moving and before closing. Any pipes of this size that cannot be seen through completely must be covered at all times when work is not active. If functioning as a culvert, any pipe smaller than 12 inches (30 centimeters) will be treated as a potential den for construction activities within 50 feet (15 meters).*

- *All active work sites/construction areas should be clearly marked with flagged stakes, rope, cord, or fencing delineating the work area. Work areas should be limited to the area identified prior to preconstruction surveys.*

2. **Burrowing Owl:**

- *Pre-construction surveys for burrowing owl should be conducted no more than 30 days prior to initiation of ground disturbance of potential habitat within 250 feet (152 meters), in compliance with currently accepted agency protocols.*

- *If occupied burrowing owl burrows are located during non-breeding season (September 1 through January 31), then a passive relocations effort (i.e. blocking burrow with one-way doors and leaving them in place for a minimum of three days) may be conducted to ensure owls are not harmed or injured during construction.*

- *If occupied burrowing owl burrows are located during breeding season (February 1 through August 31), a construction-free buffer of 250-feet should be established around all active owl nests, following standard guidelines (CDFG 2012). Buffers shall remain in place until a qualified biologist establishes, through non-invasive methods, that either all chicks have fledged or are independent of their parents.*

3. **Tipton's Kangaroo Rat**

- *The Tipton's Kangaroo Rat is a small, fossorial mammal. Burrow avoidance per the Avoidance Plan and ITP being pursued for this project will reduce the impact to a less than significant level.*

4. **American Badger**

- *Pre-construction surveys conducted for burrowing owls should be used to determine the presence or absence of badgers in the project area. If an active badger den is identified during pre-construction survey within or immediately* *adjacent to the work area, a construction-free buffer of up to 300 feet should be established around the den. During construction a biological monitor should be present to ensure the buffer is adequate to avoid direct impact to individuals or nest abandonment. The monitor should remain on site until it is determined that young are of an independent age and construction activities would not harm individual badgers.*

5. **Nesting Raptors:**

- *Pre-construction nesting raptor surveys of the project area should be conducted if construction activities will occur during breeding season (February 1 through August 31). The survey should be conducted no more than 14 days prior to initiation of demolition/construction activities during the early part of breeding season (February through April) and no more than 30 days prior to initiation of these activities during the later part of breeding season (May through August). If nesting birds are present a suitable construction-free buffer zone should be established (minimum 150-feet and maximum of 500-feet). Buffer zones should remain in place for the duration of the breeding season or until it has been confirmed by a qualified biologist that all chicks have fledged and are independent of their parents.*

- *Activities on existing roads shall not be restricted as a result of implementation of this measure, unless those activities may result in direct impacts to nesting birds.*

- *All determinations regarding protection of nesting birds included in this measure should be made by a qualified biologist.*

6. **Blunt-Nosed Leopard Lizard and Coastal Horned Lizard:**

- *Blunt-nosed leopard lizard protocol level surveys (adult) determined that the site and surrounding vicinity is utilized by this species. The blunt-nose leopard lizard is a California protected species and as such, the California Department of Fish and Wildlife cannot usually authorize take of this species. Due to the socioeconomics of Allensworth and their lack of adequate water conveyance and storage, a request to remove the "fully protected status" was made to the State Senate. On April 5, 2018 Senate Bill No, 495 was amended, allowing CDFW to authorize, under the California Endangered Species Act, the take or possession of the blunt-nosed leopard lizard resulting from impacts attributable to or otherwise related to the Allensworth Community Service District Safe Drinking Water Project to drill a new water well for the community of Allensworth and Colonel Allensworth State Historic Park, if specific conditions are met. Under Senate Bill No. 495 the "fully protected status" has been rescinded for the construction of this project alone and allow for an Incidental Take Permit allowing for take of the species.*

7. **General Measures:**

a. *Biological monitors shall have "stop work authority" if take avoidance and/or mitigation measures are violated. ACSD will be notified of all violations and will require corrective action by the contractor prior to resuming work.*

b. *Traffic restraints and signs should be established to minimize temporary disturbances during construction. All construction traffic should be restricted to designated access roads and routes, project site storage areas, and staging and parking areas. Off-road traffic outside designated project boundaries will be prohibited. A 20 mile-per-hour (32 kilometer-per-hour) speed limit should be observed in all project construction areas, except as otherwise posted on county roads and state and federal highways.*

c. *All equipment storage and parking during construction activities should be confined to the designated construction area or to previously disturbed off-site areas that are not habitat for listed species.*

d. *All project construction activities involving excavation or surface disturbance should be limited to daylight hours.*

e. *Trenches should be inspected for entrapped wildlife each morning, prior to the onset of construction. Before such holes or trenches are filled, they should be thoroughly inspected for entrapped animals. Any animals so discovered shall be allowed to escape voluntarily, without harassment, before construction activities resume, or removed from the trench or hole by a qualified biologist and allowed to escape unimpeded.*

f. *All construction pipes, pipes, poles, culverts, hoses or similar structures stored at the construction site for one or more overnight periods should be capped or the ends covered in a way that prevents wildlife entrapment. Unburied pipes laid in trenches overnight should be capped. If a kit fox or other listed species is discovered inside a pipe, that section of pipe will not be moved until the animal leaves on its own, or the USFWS and the CDFW have been consulted.*

g. *All food-related trash items such as wrappers, cans, bottles and food scraps generated by project activities shall be disposed of in closed containers and removed at least once each week from the site. Deliberate feeding of wildlife is prohibited.*

h. *To prevent harassment of special-status species, construction personnel should not be allowed to have firearms or pets on the project site.*

i. *All equipment and work-related materials shall be contained in closed containers either in the work area or in vehicles. Loose items (e.g. rags, hose,* *etc.) should be stored within closed containers or enclosed in vehicles when on the work site.*

j. All liquids should be in closed, covered containers. Any spills of hazardous liquids should not be left unattended until cleanup has been completed.

k. Use of rodenticides and herbicides on the project site should be prohibited unless approved by the USFWS and the CDFW. This is necessary to prevent primary or secondary poisoning of special-status species using adjacent habitats, and to avoid the depletion of prey upon which they depend. Label restrictions and other restrictions imposed by the U.S. Environmental Protection Agency (EPA), the California Department of Food and Agriculture (CDFA), and other state and federal legislation shall be implemented. If rodent control must be conducted, zinc phosphide shall be used because of its proven lower risk to kit foxes.

l. Any contractor, employee(s), or other personnel who inadvertently kills or injures a threatened or endangered species shall report the incident immediately to a designated site representative (e.g. foreman, project manager, environmental inspector, etc.). The representative shall contact the ACSD representative and if feasible, a qualified biologist. ACSD will contact CDFW immediately in the case of dead, injured, or entrapped listed species. The CDFW contact for immediate assistance is State Dispatch at (916) 445-0045. State Dispatch will contact the local warden or biologist. The qualified biologist will also document all circumstances of death, injury, or entrapment of sensitive species. The biologist will 1) take all reasonable steps to enable the individual animal to escape should it be entrapped, 2) contact CDFW or other appropriate authorities to identify an approved rehabilitation center and appropriate capture and transport techniques should the animal be injured, 3) document circumstances of death in writing and if possible photographing dead animal in situ prior to moving.

m. USFWS and CDFW shall be notified in writing within three (3) working days in the event of an accidental death or injury of a San Joaquin kit fox or other threatened or endangered species. Notification shall include the date, time, and location of the incident or of the finding of a dead or injured animal, and any other pertinent information. The USFWS contact for this information is Endanger Species, Program Office, 2800 Cottage Way, Room W-2605, Sacramento, CA 95825, (916) 414-6600. The CDFG contact information is 1416 9th Street, Sacramento, CA 95814, (916) 654-4262. Any dead or injured kit fox or other threatened or endangered species shall be turned over to the CDFW Environmental Services Division, Fresno Regional Headquarters at (559) 243-4017 at the agency's request. The dead threatened or endangered animal can be transported to California State University at Bakersfield or the Endangered Species Recovery Team in Bakersfield for storage

n. *In the case of dead animal(s) that are listed as threatened or endangered, the USFWS and the CDFW shall be immediately (within 24 hours) notified by phone or in person and shall document the initial notification in writing within 2 working days of the findings of any such animal(s). Notification shall include the date, time, location and circumstances of the incident.*

o. *Prior to commencement of construction on any phase of work, work areas should be clearly marked with fencing, stakes with rope or cord, or other means of delineating the work-area boundaries.*

p. *All personnel entering the project site should attend a worker orientation program. The worker orientation program will present measures required to avoid, minimize, and mitigate impacts to biological resources and will include, at a minimum, the following: a summary of FESA, CESA, and the MBTA; biological survey results for the current construction area; life history information for the species of concern; biological resource avoidance, minimization, and mitigation requirements; consequences for failure to successfully implement requirements; and procedures to be followed if dead or injured wildlife are located during project activities. Upon completion of the orientation, employees should sign a form stating that they attended the program and understand all biological resource mitigation measures and receive a hard hat sticker or other means of identifying that they have attended the worker orientation. Forms verifying worker attendance should be filed at the applicant's office and be accessible to county, USFWS and CDFW staff. No untrained personnel will be allowed to work onsite with the exception of delivery trucks that are only onsite for 1 day or less, and are under the supervision of a trained employee.*

V. <u>CULTURAL RESOURCES:</u>

a. The project involves the construction of a new water well site and a new tank site. According to the California Historical Resources Information Systems regional information center there is no known or recorded cultural resources within the project area and the one-half mile radius. It is anticipated that the proposed project will not cause a substantial change in the significance of a historical resource. Mitigations will be put in place in the event that cultural resources are encountered during construction.

b. The project involves the construction of a new water well site and a new tank site. It is anticipated that it will not cause a substantial change in the significance of an archaeological resource. A record search of the sacred land file did not indicate the presence of Native American cultural resources in the immediate project area. Letters explaining the project were mailed to Native American individuals/organizations who may have knowledge of cultural resources in the project area, however no responses were received. Mitigations will be put in place in the event that archaeological or Native American artifacts are encountered.

c. The project involves the construction of a new water well site and a new tank site. It is anticipated that it will not destroy a unique paleontological resource or site or unique geologic feature. Mitigations will be put in place in the event that paleontological resources are encountered.

d. The project involves the construction of a new water well site and a new tank. It is anticipated that it will not disturb any human remains. Mitigations will be put in place in the event that human remains are encountered.

MITIGATIONS:

1. *In the event that prehistoric or historic subsurface cultural resources are discovered during ground-disturbing activities, all work within 50-ft of the resources will be halted and Allensworth CSD will consult with a qualified archaeologist to assess the significance of the find according to CEQA Guidelines Section 15064.5. If any find is determined to be significant, then the Allensworth CSD and the archaeologist will meet to determine the appropriate avoidance measures or other appropriate mitigation. Allensworth CSD will make the final determination. All significant cultural materials recovered will be, as necessary and at the discretion of the consulting archaeologist, subject to scientific analysis, professional museum curation, and documentation according to current professional standards.*

2. *In the event that paleontological resources are discovered, Allensworth CSD will notify a qualified paleontologist. The paleontologist will document the discovery as needed, evaluate the potential resource, and assess the significance of the find under the criteria set forth in CEQA Guidelines Section 15064.5. If fossil or fossil bearing deposits are discovered during construction, excavations within 50-feet of the find will be temporarily halted or diverted until the discovery is examined by a qualified paleontologist. The paleontologist will notify the appropriate agencies to determine procedures that would be followed before construction is allowed to resume at the location of the find. If the Allensworth CSD determines that avoidance is not feasible, the paleontologist will prepare an excavation plan for mitigating the effect of the project on the qualities that make the resource important. The plan will be submitted to the Allensworth CSD for review and approval prior to implementation.*

3. *If human remains are uncovered during project construction, Allensworth CSD shall immediately halt work, contact the Tulare County Coroner to evaluate the remains, and follow the procedures and protocols set forth in*

Section 15064.4(e)(1) of the CEQA Guidelines. If the Coroner determines the remains are Native American in origin, the Coroner shall contact the Native American Heritage Commission (NAHC). As provided in Public Resources Code Section 5097.98, the NAHC shall identify the person or persons believed to be most likely descended from the deceased Native American. The most likely descendent shall be afforded the opportunity to provide recommendations concerning the future disposition of the remains and any associated grave goods as provided in PRC 5097.98.

VI. GEOLOGY AND SOILS:

a. The project involves the construction of a water well site and a new tank site. The project will not adversely affect the people in the area.

i) Based on the above noted information the risks of injury in the event of an earthquake are less than significant. The project site is not located in an Alquist-Priolo Earthquake Fault Zone, as defined by Special Publication 42 (revised 2007) published by the California Geologic Survey (CGS).

ii) The seismic design for all structures will be based upon CBC 2019 or AWWA D100. The seismic design criteria are also included in the Soils Report by Krazan & Associates, Inc. in Exhibit G. Based on the above noted information the risks of injury in the event of strong seismic ground shaking are less than significant.

iii) Based on the above noted information, the risks of injury in the event of seismic related ground failure are less than significant.

iv) The topography of the project site and surrounding area is flat. Landslides are not considered a concern.

b. The project involves the construction of a new water well site and a new tank site. The well and tank sites will have an aggregate base ground cover and the pipeline alignments will be returned to the pre-project conditions. The project will not result in substantial soil erosion or loss of topsoil.

c. Based on the Geotechnical Engineering Investigation and Report prepared by Krazan & Associates, Inc. the geologic conditions of the site are stable. The project will not result in unstable geologic conditions or other unsatisfactory soil collapse. Based on the existing grade of the surrounding topography, landslides will not be an issue, and neither will lateral spreading, subsidence, liquefaction or collapse. See attached Geotechnical Investigation Report in Exhibit G. Also attached is a copy of a Soil Survey Map provided by the National

Cooperative Soil Survey and a flood insurance rate map (FIRM) for the project area in Exhibits H and I respectively. The water well will have a concrete foundation constructed a minimum of 2-ft above the surrounding grade to protect it from flooding. A search was also conducted online using the US Fish and Wildlife Service Wetlands Mapper and a map of the project area has been attached hereto as Exhibit J. No current wetlands are located within 500’ of the project area. Any unsuitable soil encountered during site grading and excavation will be replaced with suitable engineered fill.

d. Soils in the area are not expansive according to the Geotechnical Engineering Investigation Report prepared by Krazan & Associates, Inc. and attached hereto as Exhibit G.

e. Septic tanks and seepage pits will not be a part of this project. The project will not include any requirements for the disposal of wastewater on-site.

VII. <u>HAZARDS AND HAZARDOUS MATERIALS:</u>

The project involves the construction of a new water well site and new tank site. The project will not involve the use of hazardous materials.

a. The project involves the construction of a new water well site and new tank site. The project will not involve the use of hazardous materials.

b. The project involves the construction of a new water well site and new tank site. The project will not involve the use of hazardous materials. Therefore, it will not create a significant hazard to the public or to the environment.

c. The project will not emit any hazardous emissions and is not located within a quarter mile of any schools. A map showing the project site in relation to the nearest schools has been provided and is attached hereto as Exhibit K.

d. The project site is not included on a list of hazardous materials sites. The current list of hazardous materials sites pulled from the California Dept. of Toxic Substances Control is attached hereto for reference as Exhibit L.

e. There is not a public airport or planned airport land use plan in the project area.

f. There is not a private airstrip in the vicinity of the project and this project would not present any hazards.

g. This project will not impair or interfere with an adopted emergency response plan or emergency evacuation plan.

h. The project will not expose people or structures to wildland fires. The well facility will be covered with gravel rock ground cover upon completion.

VIII. HYDROLOGY AND WATER QUALITY:

a. The project involves the construction of a new water well site and new tank site. During drilling of the new water well, zone sampling will be conducted in the pilot hole to ensure compliance with drinking water standards upon completion of the well.

b. The project includes the construction of a new water well that will supply groundwater. The groundwater basin is not an adjudicated basing. ACSD will regularly monitor the groundwater level in the District wells in order to ensure the wells are not excessively lowering groundwater levels in the area.

c. The well site will involve altering the natural ground surface. The well site will be graded to provide adequate drainage on and around the site. The tank site is an existing residential lot that has already disturbed the natural ground surface. The tank site will be graded to provide adequate drainage on and around the site. All existing drainage patterns will be restored and will not result in substantial erosion or siltation.

d. The well site will involve altering the natural ground surface. The well site will be graded to provide adequate drainage on and around the site. The tank site is an existing residential lot that has already disturbed the natural ground surface. The tank site will be graded to provide adequate drainage on and around the site. All existing drainage patterns will be restored and will not result in substantial erosion or siltation.

e. The project will not create or contribute to additional runoff water which would exceed the capacity of existing stormwater systems or create polluted runoff.

f. The project will not degrade water quality and will conform to State of California drinking water standards.

g. The project does not involve any housing being placed in the 100-year flood plain.

h. The project will place a water supply well within a 100-year floodplain. The well concrete foundation will be constructed a minimum of 2-ft above the surrounding grade as required by the County of Tulare.

i. The project will not expose people or structures to a risk of flooding.

j. The project will not create nor contribute to a seiche, tsunami, or mudflow.

Mitigation

ACSD will regularly monitor the groundwater levels in their wells in order to ensure the wells are not excessively lowering groundwater levels in the area.

The well concrete foundation will be constructed a minimum of 2-ft above the surrounding grade as a result of being in the floodplain.

IX. LAND USE AND PLANNING:

a. The project involves the construction of a new water well site and new tank site. It will not divide an established community.

b. The project involves the construction of a new water well site and new tank site. The well site location is currently zoned agricultural and will not require re-zoning. The tank site is zoned C-2MU as part of a general commercial district with mixed-use overly combining zone and will not require re-zoning.

c. The project will not conflict with any applicable habitat or natural community conservation plan.

X. MINERAL RESOURCES:

a. The project involves the construction of a new water well site and new tank site. The project will not result in the loss or availability of a known mineral resource that would be of value to the region and residents of the state.

b. The project will not result in the loss or availability of a locally important mineral resource recovery site.

XI. NOISE:

a. The project involves the construction of a new water well site and new tank site. Minimal additional noise will be generated during operation of the well and booster station. Noise levels during construction will be mitigated by limiting construction hours to daylight hours and weekdays only, except for well construction and a portion of the well development. Well construction and a portion of the well development will be continuous (24 hour per day).

b. The project involves the construction of a new water well site and new tank site. The project will not expose persons to or generate excessive ground borne vibration or noise levels. Noise levels will be increased temporarily during construction but will be mitigated as described above by limiting work to daylight hours and weekdays only, except for well construction and a portion of the well development. Well construction and a portion of the well development will be continuous (24 hour per day).

c. The project involves the construction of a new water well site and new tank site. Noise levels at the project site will not be significantly increased by the installation of the well pump, booster pumps, motor, electrical, transmission and conveyance piping, and appurtenances.

d. The project involves the construction of a new water well site and new tank site. Noise levels at the project site will be increased temporarily during construction; however these activities will be limited to normal work hours of 7:00 am to 5:00 pm only, except for well construction and a portion of the well development. Well construction and a portion of the well development will be continuous (24 hour per day). The temporary increase in noise levels is considered less than significant.

e. The project is not located within an airport land use plan or public airport.

f. The project is not in the vicinity of a private airstrip.

MITIGATIONS:

Noise levels during construction will be mitigated by limiting construction hours to normal work hours during weekdays only from 7:00 am to 5:00 pm except for drilling and a portion of development of the water well.

XII. POPULATION AND HOUSING:

a. The project involves the construction of a new water well site and new tank site. The project will not induce substantial population growth.

b. The project involves the construction of a new water well site and new tank site. This project will not displace any existing housing or residents.

c. The project involves the construction of a new water well site and new tank site. This project will not displace any existing housing or residents.

XIII. <u>PUBLIC SERVICES:</u>

a. The project will not result in substantial adverse physical impacts to or involving governmental facilities such as fire protection, police protection, schools, parks, or other public facilities.

XIV. <u>RECREATION:</u>

a. The project will not increase the use of existing neighborhood and regional parks or other recreational facilities.

b. The project does not involve any recreational facilities or require modifications to such.

XV. <u>TRANSPORTATION/TRAFFIC:</u>

a. The project involves the construction of a new water well site and new tank site. Daily visits will be made to the well and tank site by District staff to monitor the facilities performance and perform routine maintenance. A substantial increase in traffic is not anticipated as a result of this project. During construction there will be more traffic as a result of material deliveries and construction crews, however construction signage will be provided to alert and direct people around the construction activities as necessary.

b. The project will not exceed a level of service standard established by the county congestion management agency for designated roads or highways.

c. The project will not result in a change in air traffic patterns.

d. The project will not involve any design features that would impact traffic or farm equipment.

e. The project will not result in inadequate emergency access.

f. The project will not necessitate more parking capacity for construction or operation of the water system and therefore will not result in inadequate parking capacity.

g. The project will not conflict with adopted policies, plans, or programs supporting alternative transportation.

XVI. UTILITIES AND SERVICE SYSTEMS:

a. The project involves the construction of a new water well site and new tank site. The project will not exceed any requirements of the applicable Regional Water Quality Control Board.

b. The project involves the construction of a new water well site and new tank site. The project will not cause significant environmental effects as noted herein.

c. The project involves the construction of a new water well site and new tank site. The well site will be graded to maintain the natural drainage which will not cause environmental effects. The tank site will be graded to contain all storm water on the site.

d. The project involves the construction of a new water well site and new tank site.

e. The project does not involve any wastewater that will require the service of the wastewater treatment provider for the area.

f. The project involves the construction of a new water well site and new tank site. During construction, solid waste will be generated and disposed of at County landfills. During operation of the facilities solid waste will not be generated.

g. The project complies with federal, state, and local statutes and regulations related to the solid waste that will be generated by the water facilities during its operation.

XVII. MANDATORY FINDINGS OF SIGNIFICANCE:

a. The project will not degrade the quality of the environment or detrimentally effect fish, wildlife, animals, plants or other important examples of California history or prehistory. A copy of a US Fish and Wildlife Wetlands map for the project area has been attached hereto in Exhibit J showing there are not wetland areas within 500-ft of the project area.

b. The project does not have impacts that are individually limited but cumulatively considerable.

c. The project does not have environmental effects which will cause substantial adverse effects on human beings directly or indirectly. The project will be a direct benefit to human beings as it provides them with safe, reliable drinking water and fire protection.

EXHIBIT A
"PROJECT SITE PLAN"

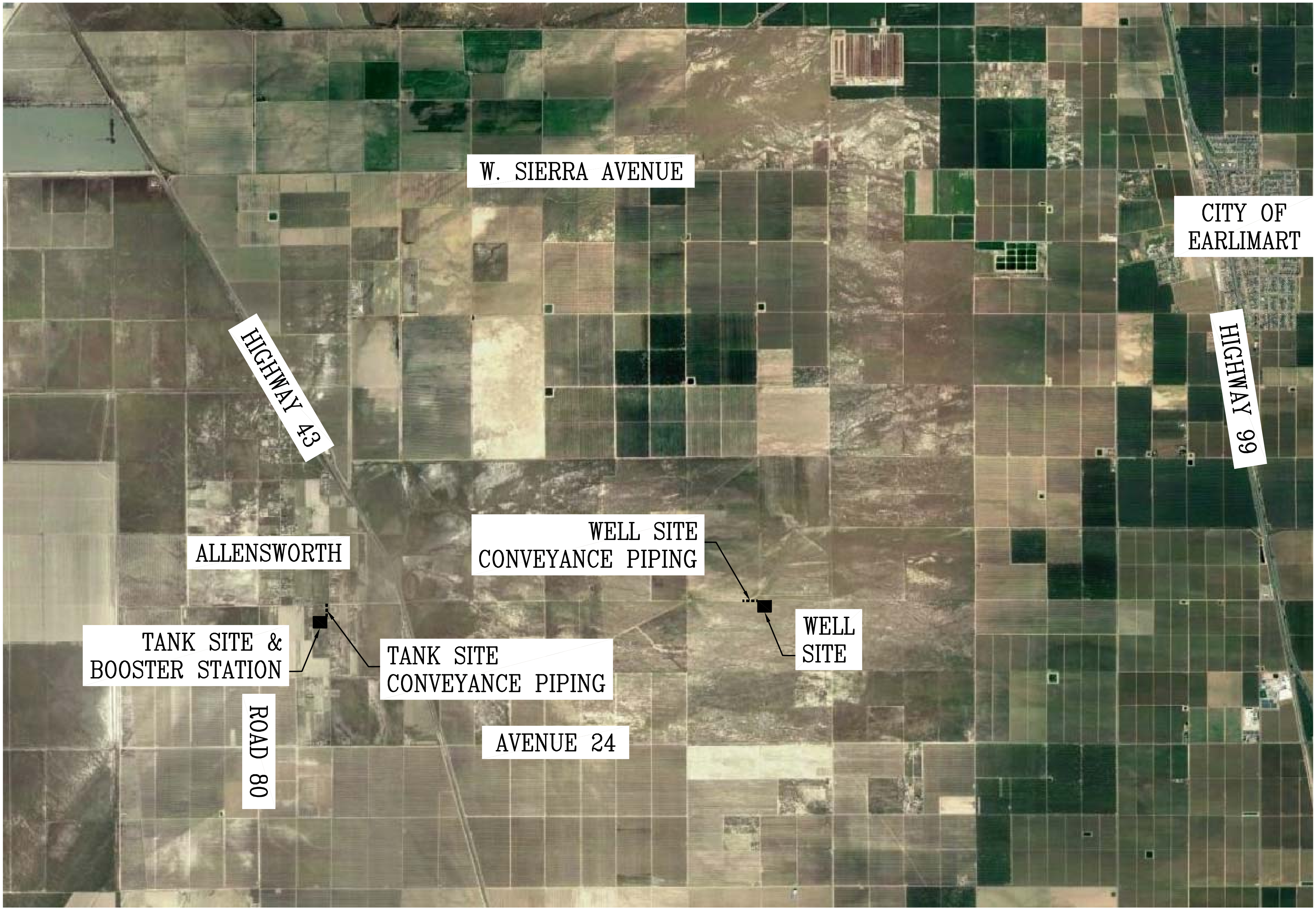

EXHIBIT A

WATER SUPPLY IMPROVEMENT PROJECT

ALLENSWORTH COMMUNITY SERVICES DISTRICT

N

0' 5,000'

SCALE: 1"= 5,000'
DATE: APRIL 25, 2020

DEE JASPAR & ASSOCIATES, INC.
CIVIL • ENGINEERS
PORTERVILLE, CALIFORNIA PHONE 559 791-9286
BAKERSFIELD, CALIFORNIA PHONE 661 393-4796

EXHIBIT B
"PROJECT DESCRIPTION"

ALLENSWORTH COMMUNITY SERVICES DISTRICT
WATER SYSTEM IMPROVEMENT PROJECT

PROJECT LOCATION & DESCRIPTION:

The project includes the drilling, constructing, and development of a water supply well; the equipping of this well with a pump, motor, discharge piping, and electrical; connection of the well to the existing well lateral with 6" underground PVC piping; the construction of a 0.5MG AWWA D100 welded steel storage tank and booster pumping station; and the associated underground PVC piping to connect the tank inlet and the booster pumping station to the existing water distribution system. These project components are discussed in greater detail below.

Water Well Site

The Project will involve the drilling of a 24-inch diameter well hole to a depth of approximately 245 feet (74.7 meters) using a single drill rig and drilling using the reverse-rotary method. The approximate footprint of this equipment is 30 feet by 60 feet (9 meters by 18 meters) and then also a pipe trailer that is approximately 15 feet by 40 feet (4.6 meters by 12 meters). The well will be cased with 12-inch diameter by ¼" wall thickness steel casing to a depth of 225 feet. The perforated interval will be from approximately 110 feet to 215 feet below ground surface. Gravel filter material will be installed from the bottom of hole up to approximately 85 feet and then a cement annular seal installed from 85 feet up to ground surface. Approximately 27 cubic yards (21 cubic meters) of earth material or drill cuttings will be removed during the Project. This material will be discharged to above-ground tanks and then removed and spread on the ground in a stockpile to be removed at the completion of the Project once dried. As water bearing formations are encountered and water quality samples collected, the pumped water will be discharged to above-ground tanks. During well development the pumped water will be directed to above-ground storage tanks to settle out any sediment and then drained to an existing irrigation water ditch. The construction equipment will include a drilling rig, pipe trailer, above ground mud pits, backhoe, forklift, loader, welding truck, and support vehicles. The well drilling work is anticipated to involve 4 weeks to 8 weeks.

Upon completion of the well construction, the well site will be prepared to install the underground PVC electrical conduits and the well pad and electrical equipment concrete foundations. The area beneath the concrete foundations will be over-excavated 18-inches to 5-ft beyond the limits of the foundation and compacted to 90% relative compaction.

A concrete foundation for the well pad will be formed, reinforcement steel installed, and the concrete well foundation constructed. A vertical turbine pump will be installed in the well and set to an approximate depth of 210-ft. The pumping capacity is approximately 300 gpm with an approximate 50 hp motor.

The well pump will discharge through 6-inch fusion bonded epoxy lined and coated steel piping above ground with a check valve, dresser coupling, flow meter, gate valve, air release valves, and miscellaneous appurtenances. The steel piping will transition below ground surface to 6-inch PVC pipe with approximately 36-inches of earth cover and be installed out of the well site onto the existing dirt road and be installed in a westerly direction approximately 660 feet to connect to the existing 6-inch PVC well piping.

A 6-inch thick reinforced concrete foundation will be constructed near the well foundation for the site electrical and controls and emergency generator. The electrical equipment will be pad or backboard mounted and installed beneath a 10-ft tall shade structure. Underground electrical conduits and wire will be installed to the well pump motor, pressure gauges, flow meter, and controls. Electrical conduits will be PVC and galvanized or PVC coated steel piping and be installed approximately 36-inches below ground surface. A 80 kW emergency standby diesel generator will be installed for back-up power supply.

In addition, the well site will be secured with 6-ft tall chain link fencing with vinyl slats and a concrete mow strip. Access gates will be installed for personnel access and pump rig access. The well site is approximately 104-ft by 208-ft for 0.50 acres.

The construction equipment to be utilized during construction will include a backhoe, loader, excavator, pump rig, hand operated equipment such as whacker packers, power tools, and support vehicles. The temporary and permanent disturbance will be confined to the permanent well site which is 0.50 acres and the dirt access road to the site. The construction duration for equipping the well site is anticipated to be approximately six to eight months.

Conveyance Pipelines

From the Water Well Site described above, a 6-inch PVC pipeline will be installed extending approximately 660 ft. west of the well to tie into an existing ACSD well lateral. Pipeline excavation and backfill will be performed in the existing dirt roadway and completed using a backhoe or excavator for excavation and whacker packers for compaction. The construction equipment will include support vehicles, hydrocrane/hydraulic truck crane, loader, excavator, and backhoe. One week is anticipated for this installation.

From the Tank Site described below, a 6-inch PVC pipeline will be installed extending approximately 500 ft. north of the tank site to connect to the existing ACSD well lateral. Pipeline excavation and backfill will be performed in the existing roadway/shoulder of Road 84 and completed using an excavator or backhoe for excavation and whacker packers for compaction. The construction equipment will include support vehicles, hydrocrane/hydraulic truck crane, loader, excavator, and backhoe. One week is anticipated for this installation.

In addition, a 12-inch PVC underground pipeline will be installed from the booster pump station to the road right-of-way for Road 84 and connect to the existing ACSD distribution system piping. The pipeline will be installed with a minimum of 36-inches of earth cover. Pipeline excavation and backfill will be performed with an excavator or backhoe for excavation and whacker packers for compaction. The construction equipment will include support vehicles, hydrocrane/hydraulic truck crane, excavator, loader, and backhoe. One week is anticipated for this installation.

<u>Storage Tank</u>

The storage tank and booster pumping plant facility will include a 500,000 gallon AWWA D100 welded steel storage tank that has a diameter of 60 feet and a height of 24 feet and the booster pump station will have three 250 gpm horizontal centrifugal booster pumps with 25 hp motors.

The construction work will involve site grading and subgrade preparation beneath the storage tank, the booster pump foundations, the hydropneumatic tank footings, the emergency generator, and the electrical equipment foundation. The subgrade preparation will involve over-excavating 18-inches beneath the foundations and re-compacting to 90% relative compaction. The site grading work will also involve demolition and removal of debris from the tank site including portions of an old concrete foundation from the previous house that was located on the site. This work will involve a loader, skip and drag, scraper, and support vehicles and is anticipated to involve one to two weeks.

A 61-ft diameter reinforced concrete ringwall foundation will be constructed for the foundation of the storage tank. This will include excavation, formwork installation, reinforcement steel, and concrete placement. Within the concrete ringwall, a 6-inch thick layer of Class II aggregate base will be installed and compacted and then a 4-inch layer of oiled sand installed on top of the aggregate base flush with the top of the concrete ringwall foundation for support of the tank. This work will involve a backhoe, loader, concrete pumper, smooth drum roller or wheel roller, whacker packers, and support vehicles. The tank foundation is anticipated to be constructed in approximately four to five weeks.

The materials for the storage tank will then be delivered to the site and the tank erected. The floor sheets will be laid, cut, and welded in place. The side shell sheets will be installed with a crane, set and tack welded, and then fully welded in place. The roof structure columns, rafters, and roof plates will be installed with a crane and bolted and welded in place. The tank appurtenances will be installed and the tank prepared for coating and painting. The tank interior and exterior will be coated with an epoxy paint, stainless steel screens installed on tank roof openings, and a cathodic protection anode system installed inside the tank. The tank construction work will include a crane, scaffolding, power tools, diesel generator, painting equipment, and support vehicles. The tank erection work is anticipated to take five to six weeks and the tank coating work is anticipated to take approximately five to seven weeks.

Underground electrical conduits will be trenched and installed from the electrical equipment pad location to the storage tank, the booster pump station facility, and the site lighting. The underground electrical conduits will be PVC and PVC coated steel pipe and will be installed approximately 30-inches to 36-inches below finish grade. All trenches will be backfilled and compacted with whacker packers to 90% relative compaction. The concrete foundations for the pumps, motors, hydropneumatic tank, electrical equipment, emergency generator, and miscellaneous pads will be formed, reinforcement steel installed, and the concrete placed and cured. The equipment will then be installed, set in place, and anchored to the concrete foundations. The fusion bonded epoxy lined and coated steel piping, valves, and appurtenances will be installed for the suction manifold from the tank to the booster pumps, for the discharge manifold from the pumps to the hydropneumatic tank, and for the conveyance piping from the hydropneumatic tank to its transition below ground to 12-inch PVC piping to Road 84 where it will connect to the existing ACSD distribution piping. All above ground steel piping, valves, and appurtenances will be painted. This work will include a backhoe, whacker packers, power tools, crane, and support vehicles. The work is anticipated to involve six to eight weeks.

The well supply line to fill the storage tank will be modified and re-routed to the new storage tank location on Road 84. The existing piping at the intersection of Avenue 32 and Road 84 will be severed and re-routed south approximately 500-ft to the connection at the new storage tank. The piping will be 6-inch C900 DR18 PVC pipe, installed with approximately 36-inches to 48-inches of cover, and be installed within the Road 84 road right-of-way and then enter the tank site property on the west side of Road 84. The tank inlet piping will include pipe supports, fill control valve, flow meter, and chlorine injection. A 125 gallon polyethylene chemical tank will be installed with secondary containment and a chemical feed pump to inject 12.5% Sodium Hypochlorite for disinfection at the inlet piping to the tank. The construction equipment will include excavator, backhoe, loader, whacker packers, and support vehicles. The work is anticipated to involve approximately one to two weeks.

The electrical equipment and shade structure will be installed on the electrical equipment foundation. Instrumentation and controls will be installed including high pressure switches, level transducers, pressure transducers, flow meters, level floats, etc. Wiring for power and signal will be installed and terminated and site lighting completed. The site lighting will be a maximum height of 20-ft, will be turned down and inward to the site to reduce glare, and the light bulbs will be LED. A 100 kW emergency standby diesel generator will be installed for back-up power supply. The construction equipment will involve power tools and support vehicles and the work is anticipated to involve approximately three weeks to four weeks.

The final site development will include fine grading, placement of ¾-inch Class II aggregate base site ground cover, placement of AC drive approaches to the site from Road 84, installation of site fencing with vinyl slats and personnel and drive access gates, and final project clean-up and testing. The construction equipment will include a backhoe, loader, whacker packers, and support vehicles. This work will involve approximately one to two weeks.

(PROJECT NO. 5400544-001P
SRF12P110)

EXHIBIT C
“CONSTRUCTION PHASE – AIR EMISSIONS DATA”

ALLENSWORTH COMMUNITY SERVICES DISTRICT
WATER SYSTEM IMPROVEMENT PROJECT

ACSD Water System Improvement Project
Air Pollutant Emissions During Construction
Based on Emfac 2017 Data

Item	Project Phase Description	Project Pollutants (tons)					
		ROG	NOx	CO	Pm10	Pm2.5	CO2
Well Facilities							
1	Well Drilling	0.01	0.03	0.29	0.02	0.01	49.07
2	Well Development	0.00	0.01	0.09	0.00	0.00	14.54
3	Well Site Grading	0.00	0.00	0.00	0.00	0.00	0.79
4	Well Site Fencing	0.00	0.00	0.01	0.00	0.00	1.54
5	Well Site Underground Electrical Installation	0.00	0.00	0.00	0.00	0.00	0.65
6	Well Site Concrete Foundations	0.00	0.00	0.01	0.00	0.00	2.50
7	Well Site Pump and Motor Installation	0.00	0.00	0.00	0.00	0.00	0.79
8	Well Site Above Ground Piping	0.00	0.00	0.01	0.00	0.00	1.34
9	Well Site Electrical Equipment Installation	0.00	0.00	0.01	0.00	0.00	1.87
10	Well Site Painting	0.00	0.00	0.00	0.00	0.00	0.79
11	Well Site Ground Cover	0.00	0.00	0.01	0.00	0.00	4.86
	Well Site Total:	0.01	0.04	0.43	0.02	0.01	78.74
Tank Facilities							
12	Tank Site Grading	0.00	0.00	0.01	0.01	0.00	2.17
13	Tank Site Concrete Foundations	0.00	0.00	0.04	0.00	0.00	7.65
14	Construction of Steel Storage Tank	0.00	0.02	0.06	0.00	0.00	11.27
15	Coating of Steel Strorage Tank	0.00	0.01	0.05	0.00	0.00	9.57
16	Tank Site Underground Electrical Installation	0.00	0.00	0.00	0.00	0.00	1.41
17	Tank Site Above Ground Piping	0.00	0.00	0.02	0.00	0.00	3.35
18	Tank Site Electrical Equipment Installation	0.00	0.00	0.01	0.00	0.00	2.80
19	Tank Site Ground Cover	0.00	0.01	0.01	0.00	0.00	4.99
20	Tank Site Fencing	0.00	0.00	0.01	0.00	0.00	1.54
21	Tank Site Painting	0.00	0.00	0.01	0.00	0.00	2.37
	Tank Facility Total:	0.00	0.04	0.22	0.01	0.00	47.1
Pipelines							
22	Well Site Conveyance Piping Installation	0.00	0.00	0.01	0.01	0.00	1.70
23	Tank Site Conveyance Piping Installation	0.00	0.00	0.01	0.01	0.00	1.70
	Pipelines Total:	0.00	0.00	0.02	0.02	0.00	3.40
	Totals	**0.01**	**0.08**	**0.67**	**0.05**	**0.01**	**129.26**

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Well Drilling

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.11	2.89	0.26	3.05	0.05	3.00	0.65	0.02	0.62	0.01	540.32	0.08	0.01	545.61
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	1.73	36.86	3.50	3.23	0.23	3.00	0.80	0.18	0.62	0.06	6,172.77	1.10	0.06	6,218.38
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	1.73	36.86	3.50	3.23	0.23	3.00	0.80	0.18	0.62	0.06	6,172.77	1.10	0.06	6,218.38
Total (tons/construction project)	0.01	0.29	0.03	0.03	0.00	0.02	0.01	0.00	0.01	0.00	49.07	0.01	0.00	49.43

Notes: Project Start Year -> 2020
Project Length (months) -> 1
Total Project Area (acres) -> 0
Maximum Area Disturbed/Day (acres) -> 0
Water Truck Used? -> Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	400	1
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	600	1
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Well Drilling

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.18	0.00	0.00	0.16
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.01	0.29	0.03	0.03	0.00	0.02	0.01	0.00	0.00	0.00	48.89	0.01	0.00	44.68
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.01	0.29	0.03	0.03	0.00	0.02	0.01	0.00	0.00	0.00	48.89	0.01	0.00	44.68
Total (tons/construction project)	0.01	0.29	0.03	0.03	0.00	0.02	0.01	0.00	0.01	0.00	49.07	0.01	0.00	44.84

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Well Development

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.69	17.09	1.39	0.08	0.08	0.00	0.07	0.07	0.00	0.03	2,643.85	0.17	0.02	2,654.46
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.69	17.09	1.39	0.08	0.08	0.00	0.07	0.07	0.00	0.03	2,643.85	0.17	0.02	2,654.46
Total (tons/construction project)	0.00	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.54	0.00	0.00	14.60

Notes:
Project Start Year -> 2020
Project Length (months) -> 1
Total Project Area (acres) -> 0
Maximum Area Disturbed/Day (acres) -> 0
Water Truck Used? -> No

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	100	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Well Development

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.54	0.00	0.00	13.24
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.54	0.00	0.00	13.24
Total (tons/construction project)	0.00	0.09	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	14.54	0.00	0.00	13.24

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Well Site Grading

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.18	3.78	0.40	2.05	0.05	2.00	0.44	0.03	0.42	0.01	712.76	0.16	0.01	720.22
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.18	3.78	0.40	2.05	0.05	2.00	0.44	0.03	0.42	0.01	712.76	0.16	0.01	720.22
Total (tons/construction project)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.79

Notes: Project Start Year -> 2020
Project Length (months) -> 0
Total Project Area (acres) -> 0
Maximum Area Disturbed/Day (acres) -> 0
Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	300	2
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Well Site Grading

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.72
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.72
Total (tons/construction project)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.00	0.72

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Well Site Fencing				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Pounds)	**ROG (lbs/day)**	**CO (lbs/day)**	**NOx (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM10 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**PM2.5 (lbs/day)**	**SOx (lbs/day)**	**CO2 (lbs/day)**	**CH4 (lbs/day)**	**N2O (lbs/day)**	**CO2e (lbs/day)**
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.12	3.03	0.36	0.04	0.04	0.00	0.02	0.02	0.00	0.00	466.43	0.10	0.01	471.05
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.12	3.03	0.36	0.04	0.04	0.00	0.02	0.02	0.00	0.00	466.43	0.10	0.01	471.05
Total (tons/construction project)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54	0.00	0.00	1.55

Notes:	
Project Start Year ->	2020
Project Length (months) ->	0
Total Project Area (acres) ->	0
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	200	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Well Site Fencing				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	**ROG (tons/phase)**	**CO (tons/phase)**	**NOx (tons/phase)**	**PM10 (tons/phase)**	**PM10 (tons/phase)**	**PM10 (tons/phase)**	**PM2.5 (tons/phase)**	**PM2.5 (tons/phase)**	**PM2.5 (tons/phase)**	**SOx (tons/phase)**	**CO2 (tons/phase)**	**CH4 (tons/phase)**	**N2O (tons/phase)**	**CO2e (MT/phase)**
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54	0.00	0.00	1.41
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54	0.00	0.00	1.41
Total (tons/construction project)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54	0.00	0.00	1.41

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Well Site Underground Electrical Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.02	0.59	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.03	0.85	0.09	0.03	0.03	0.00	0.01	0.01	0.00	0.00	237.05	0.00	0.01	239.24
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.06	1.44	0.14	0.03	0.03	0.00	0.02	0.02	0.00	0.00	237.05	0.00	0.01	239.24
Total (tons/construction project)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.00	0.66

Notes: Project Start Year -> 2020
Project Length (months) -> 0
Total Project Area (acres) -> 0
Maximum Area Disturbed/Day (acres) -> 0
Water Truck Used? -> Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	300	1
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Well Site Underground Electrical Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.00	0.60
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.00	0.60
Total (tons/construction project)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.65	0.00	0.00	0.60

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Well Site Concrete Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.20	4.99	0.43	0.06	0.06	0.00	0.03	0.03	0.00	0.01	907.40	0.04	0.01	912.53
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.20	4.99	0.43	0.06	0.06	0.00	0.03	0.03	0.00	0.01	907.40	0.04	0.01	912.53
Total (tons/construction project)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.50	0.00	0.00	2.51

Notes: Project Start Year -> 2020
Project Length (months) -> 0
Total Project Area (acres) -> 0
Maximum Area Disturbed/Day (acres) -> 0
Water Truck Used? -> Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	400	1
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Well Site Concrete Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.50	0.00	0.00	2.28
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.50	0.00	0.00	2.28
Total (tons/construction project)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.50	0.00	0.00	2.28

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Well Site Pump Installation

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.20	3.64	0.41	0.04	0.04	0.00	0.02	0.02	0.00	0.01	714.17	0.18	0.01	721.54
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.20	3.64	0.41	0.04	0.04	0.00	0.02	0.02	0.00	0.01	714.17	0.18	0.01	721.54
Total (tons/construction project)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.79

Notes: Project Start Year -> 2020
Project Length (months) -> 0
Total Project Area (acres) -> 0
Maximum Area Disturbed/Day (acres) -> 0
Water Truck Used? -> No

Phase	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	200	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Well Site Pump Installation

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.72
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.72
Total (tons/construction project)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.72

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Well Site Above Ground Piping

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.14	3.53	0.30	0.04	0.04	0.00	0.02	0.02	0.00	0.01	608.69	0.08	0.01	613.50
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.14	3.53	0.30	0.04	0.04	0.00	0.02	0.02	0.00	0.01	608.69	0.08	0.01	613.50
Total (tons/construction project)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.34	0.00	0.00	1.35

Notes:

Project Start Year ->	2020
Project Length (months) ->	0
Total Project Area (acres) ->	0
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	No

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	300	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Well Site Above Ground Piping

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.34	0.00	0.00	1.22
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.34	0.00	0.00	1.22
Total (tons/construction project)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.34	0.00	0.00	1.22

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Well Site Electrical Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.07	1.52	0.15	0.03	0.03	0.00	0.02	0.02	0.00	0.00	339.93	0.04	0.01	343.09
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.07	1.52	0.15	0.03	0.03	0.00	0.02	0.02	0.00	0.00	339.93	0.04	0.01	343.09
Total (tons/construction project)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87	0.00	0.00	1.89

Notes: Project Start Year -> 2020
Project Length (months) -> 1
Total Project Area (acres) -> 0
Maximum Area Disturbed/Day (acres) -> 0
Water Truck Used? -> Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	300	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Well Site Electrical Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87	0.00	0.00	1.71
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87	0.00	0.00	1.71
Total (tons/construction project)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.87	0.00	0.00	1.71

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Well Site Painting

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.08	2.12	0.17	0.02	0.02	0.00	0.01	0.01	0.00	0.00	359.14	0.02	0.00	360.98
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.08	2.12	0.17	0.02	0.02	0.00	0.01	0.01	0.00	0.00	359.14	0.02	0.00	360.98
Total (tons/construction project)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.79

Notes:
Project Start Year -> 2020
Project Length (months) -> 0
Total Project Area (acres) -> 1
Maximum Area Disturbed/Day (acres) -> 0
Water Truck Used? -> Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	100	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Well Site Painting

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.72
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.72
Total (tons/construction project)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00	0.72

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Well Site Ground Cover

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.29	6.08	2.61	2.14	0.14	2.00	0.49	0.07	0.42	0.02	2,208.39	0.23	0.20	2,274.95
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.29	6.08	2.61	2.14	0.14	2.00	0.49	0.07	0.42	0.02	2,208.39	0.23	0.20	2,274.95
Total (tons/construction project)	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.86	0.00	0.00	5.00

Notes: Project Start Year -> 2020
Project Length (months) -> 0
Total Project Area (acres) -> 0
Maximum Area Disturbed/Day (acres) -> 0
Water Truck Used? -> Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	60	0	300	0	400	3
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Well Site Ground Cover

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.86	0.00	0.00	4.54
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.86	0.00	0.00	4.54
Total (tons/construction project)	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.86	0.00	0.00	4.54

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Tank Site Grading Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.26	5.25	0.62	5.06	0.06	5.00	1.07	0.03	1.04	0.01	988.36	0.23	0.02	1,000.22
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.26	5.25	0.62	5.06	0.06	5.00	1.07	0.03	1.04	0.01	988.36	0.23	0.02	1,000.22
Total (tons/construction project)	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	2.17	0.00	0.00	2.20

Notes:

Project Start Year ->	2020
Project Length (months) ->	0
Total Project Area (acres) ->	1
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	300	12
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Tank Site Grading Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	2.17	0.00	0.00	2.00
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	2.17	0.00	0.00	2.00
Total (tons/construction project)	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	2.17	0.00	0.00	2.00

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Tank Site Concrete				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.20	5.00	0.47	0.06	0.06	0.00	0.03	0.03	0.00	0.01	927.27	0.04	0.02	933.32
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.20	5.00	0.47	0.06	0.06	0.00	0.03	0.03	0.00	0.01	927.27	0.04	0.02	933.32
Total (tons/construction project)	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.65	0.00	0.00	7.70

Notes:

Project Start Year ->	2020
Project Length (months) ->	1
Total Project Area (acres) ->	1
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	400	6
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Tank Site Concrete				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.65	0.00	0.00	6.99
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.65	0.00	0.00	6.99
Total (tons/construction project)	0.00	0.04	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	7.65	0.00	0.00	6.99

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Tank Site Tank Fabrication				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.21	4.37	1.24	0.06	0.06	0.00	0.03	0.03	0.00	0.01	819.79	0.14	0.01	827.23
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.21	4.37	1.24	0.06	0.06	0.00	0.03	0.03	0.00	0.01	819.79	0.14	0.01	827.23
Total (tons/construction project)	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.27	0.00	0.00	11.37

Notes:

Project Start Year ->	2020
Project Length (months) ->	1
Total Project Area (acres) ->	1
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	400	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Tank Site Tank Fabrication				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.27	0.00	0.00	10.32
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.27	0.00	0.00	10.32
Total (tons/construction project)	0.00	0.06	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	11.27	0.00	0.00	10.32

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Tank Site Tank Coating

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.25	5.98	1.55	0.10	0.10	0.00	0.05	0.05	0.00	0.01	1,159.42	0.09	0.02	1,168.09
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.25	5.98	1.55	0.10	0.10	0.00	0.05	0.05	0.00	0.01	1,159.42	0.09	0.02	1,168.09
Total (tons/construction project)	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.57	0.00	0.00	9.64

Notes:
Project Start Year -> 2020
Project Length (months) -> 1
Total Project Area (acres) -> 1
Maximum Area Disturbed/Day (acres) -> 0
Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd^3/day): Soil	Asphalt	Daily VMT (miles/day): Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	800	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Tank Site Tank Coating

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.57	0.00	0.00	8.74
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.57	0.00	0.00	8.74
Total (tons/construction project)	0.00	0.05	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	9.57	0.00	0.00	8.74

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.
Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.
CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.
The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Tank Site Underground Electrical				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.02	0.59	0.05	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.03	0.85	0.13	0.03	0.03	0.00	0.01	0.01	0.00	0.00	256.91	0.00	0.01	260.03
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.06	1.44	0.17	0.03	0.03	0.00	0.02	0.02	0.00	0.00	256.91	0.00	0.01	260.03
Total (tons/construction project)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00	0.00	1.43

Notes: Project Start Year -> 2020

Project Length (months) -> 1

Total Project Area (acres) -> 1

Maximum Area Disturbed/Day (acres) -> 0

Water Truck Used? -> Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	300	6
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Tank Site Underground Electrical				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00	0.00	1.30
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00	0.00	1.30
Total (tons/construction project)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.41	0.00	0.00	1.30

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

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Daily Emission Estimates for -> Tank Site Above Ground Piping				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.14	3.53	0.30	0.04	0.04	0.00	0.02	0.02	0.00	0.01	608.69	0.08	0.01	613.50
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.14	3.53	0.30	0.04	0.04	0.00	0.02	0.02	0.00	0.01	608.69	0.08	0.01	613.50
Total (tons/construction project)	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.35	0.00	0.00	3.37

Notes:
- Project Start Year -> 2020
- Project Length (months) -> 1
- Total Project Area (acres) -> 1
- Maximum Area Disturbed/Day (acres) -> 0
- Water Truck Used? -> No

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	300	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Tank Site Above Ground Piping				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.35	0.00	0.00	3.06
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.35	0.00	0.00	3.06
Total (tons/construction project)	0.00	0.02	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	3.35	0.00	0.00	3.06

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Tank Site Electrical Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.07	1.52	0.15	0.03	0.03	0.00	0.02	0.02	0.00	0.00	339.93	0.04	0.01	343.09
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.07	1.52	0.15	0.03	0.03	0.00	0.02	0.02	0.00	0.00	339.93	0.04	0.01	343.09
Total (tons/construction project)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.80	0.00	0.00	2.83

Notes:
Project Start Year -> 2020
Project Length (months) -> 1
Total Project Area (acres) -> 1
Maximum Area Disturbed/Day (acres) -> 0
Water Truck Used? -> Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	300	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Tank Site Electrical Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.80	0.00	0.00	2.57
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.80	0.00	0.00	2.57
Total (tons/construction project)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.80	0.00	0.00	2.57

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Tank Site Ground Cover

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.29	6.09	2.71	2.14	0.14	2.00	0.49	0.07	0.42	0.02	2,267.98	0.23	0.21	2,337.33
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.29	6.09	2.71	2.14	0.14	2.00	0.49	0.07	0.42	0.02	2,267.98	0.23	0.21	2,337.33
Total (tons/construction project)	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.00	0.00	5.14

Notes:

Project Start Year ->	2020
Project Length (months) ->	0
Total Project Area (acres) ->	1
Maximum Area Disturbed/Day (acres) ->	1
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	60	0	300	0	400	18
Drainage/Utilities/Sub-Grade	0	0	0	0	0	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Tank Site Ground Cover

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.00	0.00	4.66
Drainage/Utilities/Sub-Grade	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.00	0.00	4.66
Total (tons/construction project)	0.00	0.01	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	4.99	0.00	0.00	4.66

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Tank Site Fencing

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.12	3.03	0.36	0.04	0.04	0.00	0.02	0.02	0.00	0.00	466.43	0.10	0.01	471.05
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.12	3.03	0.36	0.04	0.04	0.00	0.02	0.02	0.00	0.00	466.43	0.10	0.01	471.05
Total (tons/construction project)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54	0.00	0.00	1.55

Notes:

Project Start Year ->	2020
Project Length (months) ->	0
Total Project Area (acres) ->	1
Maximum Area Disturbed/Day (acres) ->	0
Water Truck Used? ->	Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	200	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Tank Site Fencing

Project Phases (**Tons for all except CO2e. Metric tonnes for CO2e**)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54	0.00	0.00	1.41
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54	0.00	0.00	1.41
Total (tons/construction project)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.54	0.00	0.00	1.41

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

Road Construction Emissions Model, Version 9.0.0

Daily Emission Estimates for -> Tank Site Painting Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.08	2.12	0.17	0.02	0.02	0.00	0.01	0.01	0.00	0.00	359.14	0.02	0.00	360.98
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.08	2.12	0.17	0.02	0.02	0.00	0.01	0.01	0.00	0.00	359.14	0.02	0.00	360.98
Total (tons/construction project)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.37	0.00	0.00	2.38

Notes: Project Start Year -> 2020
Project Length (months) -> 0
Total Project Area (acres) -> 1
Maximum Area Disturbed/Day (acres) -> 0
Water Truck Used? -> Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	0	0
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	100	0
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Tank Site Painting Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.37	0.00	0.00	2.16
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.37	0.00	0.00	2.16
Total (tons/construction project)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	2.37	0.00	0.00	2.16

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

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Daily Emission Estimates for -> Well Site Conveyance Pipeline				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM10 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.14	3.48	0.32	3.05	0.05	3.00	0.65	0.03	0.62	0.01	619.48	0.10	0.01	625.77
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.24	6.10	0.55	3.07	0.07	3.00	0.66	0.04	0.62	0.01	1,001.91	0.20	0.02	1,012.29
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.24	6.10	0.55	3.07	0.07	3.00	0.66	0.04	0.62	0.01	1,001.91	0.20	0.02	1,012.29
Total (tons/construction project)	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	1.70	0.00	0.00	1.71

Notes: Project Start Year -> 2020
Project Length (months) -> 0
Total Project Area (acres) -> 1
Maximum Area Disturbed/Day (acres) -> 1
Water Truck Used? -> Yes

	Total Material Imported/Exported Volume (yd^3/day)		Daily VMT (miles/day)			
Phase	Soil	Asphalt	Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	400	2
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	500	3
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Well Site Conveyance Pipeline				Total	Exhaust	Fugitive Dust	Total	Exhaust	Fugitive Dust					
Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM10 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.21
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.47	0.00	0.00	1.35
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.47	0.00	0.00	1.35
Total (tons/construction project)	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	1.70	0.00	0.00	1.56

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

The maximum pounds per day in row 11 is summed over overlapping phases, but the maximum tons per phase in row 34 is not summed over overlapping phases.

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Daily Emission Estimates for -> Tank Site Conveyance Pipeline

Project Phases (Pounds)	ROG (lbs/day)	CO (lbs/day)	NOx (lbs/day)	Total PM10 (lbs/day)	Exhaust PM10 (lbs/day)	Fugitive Dust PM10 (lbs/day)	Total PM2.5 (lbs/day)	Exhaust PM2.5 (lbs/day)	Fugitive Dust PM2.5 (lbs/day)	SOx (lbs/day)	CO2 (lbs/day)	CH4 (lbs/day)	N2O (lbs/day)	CO2e (lbs/day)
Grubbing/Land Clearing	0.14	3.48	0.32	3.05	0.05	3.00	0.65	0.03	0.62	0.01	619.48	0.10	0.01	625.77
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.24	6.10	0.55	3.07	0.07	3.00	0.66	0.04	0.62	0.01	1,001.91	0.20	0.02	1,012.29
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (pounds/day)	0.24	6.10	0.55	3.07	0.07	3.00	0.66	0.04	0.62	0.01	1,001.91	0.20	0.02	1,012.29
Total (tons/construction project)	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	1.70	0.00	0.00	1.71

Notes: Project Start Year -> 2020
Project Length (months) -> 0
Total Project Area (acres) -> 0
Maximum Area Disturbed/Day (acres) -> 0
Water Truck Used? -> Yes

Phase	Total Material Imported/Exported Volume (yd^3/day) Soil	Asphalt	Daily VMT (miles/day) Soil Hauling	Asphalt Hauling	Worker Commute	Water Truck
Grubbing/Land Clearing	0	0	0	0	400	2
Grading/Excavation	0	0	0	0	0	0
Drainage/Utilities/Sub-Grade	0	0	0	0	500	3
Paving	0	0	0	0	0	0

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

Total Emission Estimates by Phase for -> Tank Site Conveyance Pipeline

Project Phases (Tons for all except CO2e. Metric tonnes for CO2e)	ROG (tons/phase)	CO (tons/phase)	NOx (tons/phase)	Total PM10 (tons/phase)	Exhaust PM10 (tons/phase)	Fugitive Dust PM10 (tons/phase)	Total PM2.5 (tons/phase)	Exhaust PM2.5 (tons/phase)	Fugitive Dust PM2.5 (tons/phase)	SOx (tons/phase)	CO2 (tons/phase)	CH4 (tons/phase)	N2O (tons/phase)	CO2e (MT/phase)
Grubbing/Land Clearing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.23	0.00	0.00	0.21
Grading/Excavation	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Drainage/Utilities/Sub-Grade	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.47	0.00	0.00	1.35
Paving	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Maximum (tons/phase)	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.47	0.00	0.00	1.35
Total (tons/construction project)	0.00	0.01	0.00	0.01	0.00	0.01	0.00	0.00	0.00	0.00	1.70	0.00	0.00	1.56

PM10 and PM2.5 estimates assume 50% control of fugitive dust from watering and associated dust control measures if a minimum number of water trucks are specified.

Total PM10 emissions shown in column F are the sum of exhaust and fugitive dust emissions shown in columns G and H. Total PM2.5 emissions shown in Column I are the sum of exhaust and fugitive dust emissions shown in columns J and K.

CO2e emissions are estimated by multiplying mass emissions for each GHG by its global warming potential (GWP), 1 , 25 and 298 for CO2, CH4 and N2O, respectively. Total CO2e is then estimated by summing CO2e estimates over all GHGs.

The CO2e emissions are reported as metric tons per phase.

(PROJECT NO. 5400544-001P
SRF12P110)

EXHIBIT D
"SPECIES LIST – BIOLOGICAL RESOURES RESEARCH"

ALLENSWORTH COMMUNITY SERVICES DISTRICT
WATER SYSTEM IMPROVEMENT PROJECT

Biological Reconnaissance Survey Results
Allensworth Community Services District
New Water Well and Storage Facility Project
Tulare County, California

May 2020

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1.0 INTRODUCTION

This report has been prepared at the request of Mr. Curtis Skaggs, PE on behalf of Allensworth Community Services District (ACSD). The following sections evaluate special-status biological resources that may be affected by the proposed installation of a new well and storage facility. The information contained herein, amends and updates previous biological documents and database queries prepared for this project. Previous biological documentation includes:

- 2015 *Biological Reconnaissance Survey Results Allensworth Community Services District Test Well Project*
- 2015 *Trapping Results, Allensworth Test Well Project, Tulare County, California*
- 2015 *Daily Reptile Observations During Protocol-level Surveys for the Presence of Blunt-nosed Leopard Lizard*
- 2016 *Allensworth Community Service District Test Well Proposed Avoidance Measures*
- 2017 *Biological Assessment Allensworth Community Services District Test Well Project*
- 2018 *Compliance Monitoring Report for the Allensworth Community Services District Test Well Project*

As a result of the test well drilling and sampling, it was determined that the aquifer had sufficient water quality and capacity to continue with providing this needed infrastructure improvements for the community of Allensworth. Work required for the new well site development includes: site preparation, grading, well drilling, well installation, water pipeline installation, and electrical utility tie-in. The storage facility includes: site grading and subgrade preparation beneath the storage tank, the booster pump foundations, the hydropneumatic tank footings, and the electrical equipment foundation. One year has been estimated for project completion. Project components that have the potential to impact special-status species, their habitat, or other biological resources are analyzed and recommendations to reduce potentially significant project-related impacts are provided, when deemed necessary.

2.0 BACKGROUND

2.1 Project Description

The project requires site development in two general locations, a new well and tie-in pipeline, and a water storage facility and pipeline tie-in. The Area of Potential Effect (APE) for the well location and pipeline tie-in is located in Section 13, T24S, R24E, Mount Diablo Base and Meridian (MDBM; Figures 1-4, Appendix A). The APE for the storage tank facility is located on an old residential property in the community of Allensworth at 3300 Road 84, #A, Allensworth, CA 93219, specifically APN 333-390-009 in Section 16, T24S, R24E, MDBM (Figures 2 and 4, Appendix A).

The project includes the drilling, constructing, and development of a water supply well; the equipping of this well with a pump, motor, discharge piping, and electrical; connection of the well to the existing well lateral with 6” underground PVC piping; the construction of a

0.5MG AWWA D100 welded steel storage tank and booster pumping station; and the associated underground PVC piping to connect the tank inlet and the booster pumping station to the existing water distribution system. Site plan details are provided in Appendix B. These project components are discussed in greater detail below.

Water Well Site

The Project will involve the drilling of a 24-inch diameter well hole to a depth of approximately 245 feet (74.7 meters) using a single drill rig and drilling using the reverse-rotary method. The approximate footprint of this equipment is 30 feet by 60 feet (9 meters by 18 meters) and then also a pipe trailer that is approximately 15 feet by 40 feet (4.6 meters by 12 meters). The well will be cased with 12-inch diameter by ¼" wall thickness steel casing to a depth of 225 feet. The perforated interval will be from approximately 110 feet to 215 feet below ground surface. Gravel filter material will be installed from the bottom of hole up to approximately 85 feet and then a cement annular seal installed from 85 feet up to ground surface. Approximately 27 cubic yards (21 cubic meters) of earth material or drill cuttings will be removed during the Project. This material will be discharged to above-ground tanks and then removed and spread on the ground in a stockpile to be removed at the completion of the Project once dried. As water bearing formations are encountered and water quality samples collected, the pumped water will be discharged to above-ground tanks. During well development the pumped water will be directed to aboveground storage tanks to settle out any sediment and then drained to an existing irrigation water ditch. The construction equipment will include a drilling rig, pipe trailer, above ground mud pits, backhoe, forklift, loader, welding truck, and support vehicles. The well drilling work is anticipated to involve 4 weeks to 8 weeks.

Upon completion of the well construction, the well site will be prepared to install the underground PVC electrical conduits and the well pad and electrical equipment concrete foundations. The area beneath the concrete foundations will be over-excavated 18-inches to 5-ft beyond the limits of the foundation and compacted to 90% relative compaction.

A concrete foundation for the well pad will be formed, reinforcement steel installed, and the concrete well foundation constructed. A vertical turbine pump will be installed in the well and set to an approximate depth of 210-ft. The pumping capacity is approximately 300 gpm with an approximate 50 hp motor.

The well pump will discharge through 6-inch fusion bonded epoxy lined and coated steel piping above ground with a check valve, dresser coupling, flow meter, gate valve, air release valves, and miscellaneous appurtenances. The steel piping will transition below ground surface to 6-inch PVC pipe with approximately 36-inches of earth cover and be installed out of the well site onto the existing dirt road and be installed in a westerly direction approximately 660 feet to connect to the existing 6-inch PVC well piping.

A 6-inch thick reinforced concrete foundation will be constructed near the well foundation for the site electrical and controls. The electrical equipment will be pad or backboard mounted and installed beneath a 10-ft tall shade structure. Underground electrical conduits and wire will be installed to the well pump motor, pressure gauges, flow meter, and controls. Electrical conduits will be PVC and galvanized or PVC coated steel piping and be installed approximately 36-inches below ground surface.

In addition, the well site will be secured with 6-ft tall chain link fencing with vinyl slats and a concrete mow strip. Access gates will be installed for personnel access and pump rig access. The well site is approximately 104-ft by 208-ft for 0.50 acres.

The construction equipment to be utilized during construction will include a backhoe, loader, excavator, pump rig, hand operated equipment such as whacker packers, power tools, and support vehicles. The temporary and permanent disturbance will be confined to the permanent well site that is 0.50 acres and the dirt access road to the site. The construction duration for equipping the well site is anticipated to be approximately six to eight months.

Conveyance Pipelines

From the Water Well Site described above, a 6-inch PVC pipeline will be installed extending approximately 660 ft. west of the well to tie into an existing ACSD well lateral. Pipeline excavation and backfill will be performed in the existing dirt roadway and completed using a backhoe or excavator for excavation and whacker packers for compaction. The construction equipment will include support vehicles, hydrocrane/hydraulic truck crane, loader, excavator, and backhoe. One week is anticipated for this installation.

From the Tank Site described below, a 6-inch PVC pipeline will be installed extending approximately 500 ft. north of the tank site to connect to the existing ACSD well lateral. Pipeline excavation and backfill will be performed in the existing roadway/shoulder of Road 84 and completed using an excavator or backhoe for excavation and whacker packers for compaction. The construction equipment will include support vehicles, hydrocrane/hydraulic truck crane, loader, excavator, and backhoe. One week is anticipated for this installation.

In addition, a 12-inch PVC underground pipeline will be installed from the booster pump station to the road right-of-way for Road 84 and connect to the existing ACSD distribution system piping. The pipeline will be installed with a minimum of 36-inches of earth cover. Pipeline excavation and backfill will be performed with an excavator or backhoe for excavation and whacker packers for compaction. The construction equipment will include support vehicles, hydrocrane/hydraulic truck crane, excavator, loader, and backhoe. One week is anticipated for this installation.

Storage Tank

The storage tank and booster pumping plant facility will include a 500,000 gallon AWWA D100 welded steel storage tank that has a diameter of 60 feet and a height of 24 feet and the booster pump station will have three 250 gpm horizontal centrifugal booster pumps with 25 hp motors.

The construction work will involve site grading and subgrade preparation beneath the storage tank, the booster pump foundations, the hydropneumatic tank footings, and the electrical equipment foundation. The subgrade preparation will involve over-excavating 18-inches beneath the foundations and re-compacting to 90% relative compaction. The site grading work will also involve demolition and removal of debris from the tank site including portions of an old concrete foundation from the previous house that was located on the site. This work will involve a loader, skip and drag, scraper, and support vehicles and is anticipated to involve one to two weeks.

A 61-ft diameter reinforced concrete ringwall foundation will be constructed for the foundation of the storage tank. This will include excavation, formwork installation, reinforcement steel, and concrete placement. Within the concrete ringwall, a 6-inch thick layer of Class II aggregate base will be installed and compacted and then a 4-inch layer of oiled sand installed on top of the aggregate base flush with the top of the concrete ringwall foundation for support of the tank. This work will involve a backhoe, loader, concrete pumper, smooth drum roller or wheel roller, whacker packers, and support vehicles. The tank foundation is anticipated to be constructed in approximately four to five weeks.

The materials for the storage tank will then be delivered to the site and the tank erected. The floor sheets will be laid, cut, and welded in place. The side shell sheets will be installed with a crane, set and tack welded, and then fully welded in place. The roof structure columns, rafters, and roof plates will be installed with a crane and bolted and welded in place. The tank appurtenances will be installed and the tank prepared for coating and painting. The tank interior and exterior will be coated with an epoxy paint, stainless steel screens installed on tank roof openings, and a cathodic protection anode system installed inside the tank. The tank construction work will include a crane, scaffolding, power tools, diesel generator, painting equipment, and support vehicles. The tank erection work is anticipated to take five to six weeks and the tank coating work is anticipated to take approximately five to seven weeks.

Underground electrical conduits will be trenched and installed from the electrical equipment pad location to the storage tank, the booster pump station facility, and the site lighting. The underground electrical conduits will be PVC and PVC coated steel pipe and will be installed approximately 30-inches to 36-inches below finish grade. All trenches will be backfilled and compacted with whacker packers to 90% relative compaction. The concrete foundations for the pumps, motors, hydropneumatic tank, electrical equipment, and miscellaneous pads will be formed, reinforcement steel installed, and the concrete placed and cured. The equipment will then be installed, set in place, and anchored to the concrete foundations. The fusion bonded epoxy lined and coated steel piping, valves, and appurtenances will be installed for the suction manifold from the tank to the booster pumps, for the discharge manifold from the pumps to the hydropneumatic tank, and for the conveyance piping from the hydropneumatic tank to its transition below ground to 12-inch PVC piping to Road 84 where it will connect to the existing ACSD distribution piping. All above ground steel piping, valves, and appurtenances will be painted. This work will include a backhoe, whacker packers, power tools, crane, and support vehicles. The work is anticipated to involve six to eight weeks.

The well supply line to fill the storage tank will be modified and re-routed to the new storage tank location on Road 84. The existing piping at the intersection of Avenue 32 and Road 84 will be severed and re-routed south approximately 500-ft to the connection at the new storage tank. The piping will be 6-inch C900 DR18 PVC pipe, installed with approximately 36-inches to 48-inches of cover, and be installed within the Road 84 road right-of-way and then enter the tank site property on the west side of Road 84. The tank inlet piping will include pipe supports, fill control valve, flow meter, and chlorine injection. A 125 gallon polyethylene chemical tank will be installed with secondary containment and a chemical feed pump to inject 12.5% Sodium Hypochlorite for disinfection at the inlet piping to the tank. The construction equipment will include excavator, backhoe, loader, whacker packers, and support vehicles. The work is anticipated to involve approximately one to two weeks.

The electrical equipment and shade structure will be installed on the electrical equipment foundation. Instrumentation and controls will be installed including high-pressure switches, level transducers, pressure transducers, flow meters, level floats, etc. Wiring for power and signal will be installed and terminated and site lighting completed. The site lighting will be a maximum height of 20-ft, will be turned down and inward to the site to reduce glare, and the light bulbs will be LED. The construction equipment will involve power tools and support vehicles and the work is anticipated to involve approximately three weeks to four weeks.

The final site development will include fine grading, placement of ¾-inch Class II aggregate base site ground cover, placement of AC drive approaches to the site from Road 84, installation of site fencing with vinyl slats and personnel and drive access gates, and final project clean-up and testing. The construction equipment will include a backhoe, loader, whacker packers, and support vehicles. This work will involve approximately one to two weeks.

Figure 1: Regional Location Map – Tulare County, California (Google Earth Pro 2020)

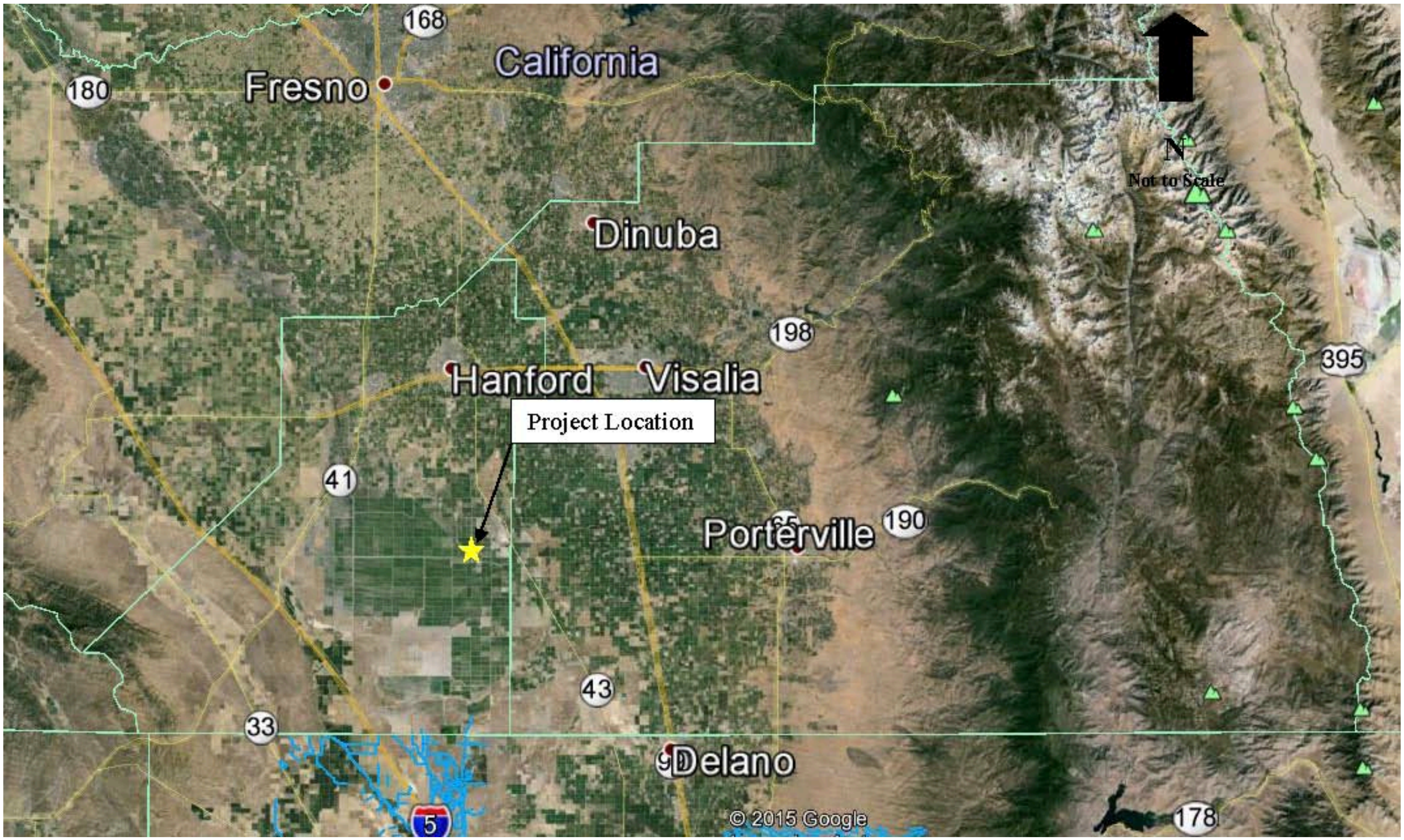

Figure 2: Area of Potential Effect Proximity Location Map – Allensworth, California (Google Earth Pro 2020)

Figure 3: Aerial Photograph of Well Site APE (Google Earth Pro 2020)

Figure 4: Aerial Photograph of the Storage Facility APE (Google Earth Pro 2020)

2.2 Purpose

The purpose of this report is to document the biological resources within the APE, update previously documented biological information, and evaluate potential impacts to biological resources including special-status species, if they were identified. If potential impacts were identified, recommendations to reduce those impacts to species are included in this report.

The project site is located within the geographic range of several threatened and/or endangered wildlife and plant taxa. Based on general habitat conditions present in the APE and general vicinity, the following listed species species were evaluated: San Joaquin kit fox (*Vulpes macrotis mutica*), giant kangaroo rat, (*Dipodomys ingens*), Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*), blunt-nosed leopard lizard (*Gambelia sila*), Swainson's hawk (*Buteo swainsonii*), California jewelflower (*Caulanthus californicus),* Kern mallow (*Ermalche parryi* var. *kernensis*), and San Joaquin woollythreads (*Monolopia congdonii*).

Based on the general location of the project and conditions in the APE vicinity, several other special-status plant and wildlife species known to occur in the region were eliminated from further consideration due to specific habitat requirements that are not expected and were not observed on or near the APE (Well or Storage Facility location) during the field investigation (Appendix C). However, several species of special concern have been identified on or in the APE are will be evaluated even though these species are not afforded any legal protection.

These plant and wildlife species of special concern include: Heartscale (*Atriplex cordulata* var. *cordulata*, Brittlescale (*Atriplex depressa*), San Joaquin coachwhip (*Masticophis flagellum ruddocki*), Coast horned lizard (*Phrynosoma blainvillii*), Burrowing owl (*Athene cunicularia*), California horned lark (*Eremophila alpestris actia*), Tulare grasshopper mouse (*Onychomys torridus tularensis*), and Loggerhead shrike (*Lanus ludovicianus*).

Listed plant and animal species are protected through the Federal Endangered Species Act (FESA) and/or the California Endangered Species Act (CESA). Each of these laws, among other provisions, prohibits *take* of listed threatened and endangered wildlife species. CESA further prohibits take of listed rare, threatened, or endangered plants and candidates for listing. Although the definition of *take* under each law varies somewhat, in general, injuring or killing listed species without a permit issued from the United States Fish and Wildlife Service (USFWS) and/or the California Department of Fish and Wildlife (CDFW) is unlawful. Under FESA, harassment and/or harm are also considered *take* for which the USFWS requires a permit. In addition, regulations in the California Fish and Game Code (CFGC) identifies blunt-nosed leopard lizard (BNLL) as a fully protected species.

The site-specific evaluation for these special-status species is discussed more thoroughly in Section 3.0. Other resources considerations (e.g., *no net loss* of wetlands and wetland communities) were considered during the site evaluation.

2.3 Data Collection and Evaluation Methods

Special-status species considered in this evaluation include those that may occur in the APE that have statutory protections, such as federal- and state-listed (rare, threatened, or endangered; fully protected) species and candidates for listing under FESA and/or CESA. In addition, species that are of *concern* to either the USFWS or the CDFW, but have no formal state of federal status, were given consideration; however, they were not evaluated further in this assessment.

Species may meet the criteria for consideration if a special-interest group, such as the California Native Plant Society (CNPS), has concluded through published data that the species is declining and warrants concern. In addition, consideration was given if potential habitat is present on the project site or immediate vicinity. Species evaluated in this biological resource assessment are collectively referred to as *special-status species*.

The list of special-status species that was evaluated for this proposed project was compiled by consulting pertinent literature, accessing the California Natural Diversity Data Base (CNDDB), USFWS IPaC, and the CNPS Rare Plant Inventory (CNPS 2017) and other pertinent information, including available literature, to complete the list of species considered in this document.

A standard 10-mile (16-kilometer) CNDDB report was generated for each project APE location (i.e., query of the United States Geological Survey (USGS) 7.5-minute topographic quadrangle) in which the project site is found as well as the quadrangles located within a 10-mile radius of the project footprint (Appendix C). The CNDDB contains records for special-status species and sensitive natural communities that have been reported by researchers, consultants, literature, and other entities deemed reliable sources by the CDFW and are updated electronically on a monthly basis. The potential for the occurrence of each species/natural community in the report for the USGS quadrangle containing the project site was evaluated.

A reconnaissance-level field survey of each APE location was conducted by walking belt transects spaced 30 ft. apart with the intent to visually inspect 100% of the APE. Direct observations of special-status wildlife species and important habitat elements for special-status plants and wildlife were noted if encountered. All plant and wildlife taxa observed during the surveys were identified to the greatest extent possible.

Subsequent to conducting the reconnaissance-level field survey, special-status resource occurrence information from the existing databases and literature was reviewed against field survey results to complete an occurrence evaluation. Potential impacts to each identified special-status resource were compiled based on this occurrence evaluation. If potentially significant impacts were identified during the evaluation process, recommendations for reducing these impacts are included in this report. The sources of these recommendations include agency guidelines and protocols, previously prepared environmental documents for similar projects, and the biologist's experience and professional judgment.

3.0 EXISTING BIOLOGICAL ENVIRONMENT

3.1 General Site Conditions

The well site location has been used for grazing since 2009 and continues to date. No native tree species were noted and what vegetation was present is consistent with California grassland (non-native grassland) habitat. As proposed, the well site will impact 0.50 acre of non-native grassland habitat that is known to support special-status species. The surrounding land use is agricultural with pistachio orchards located nearby, and an ecological preserve to the north.

Approximately 2.86 miles to the west along Avenue 32 is the tie-in and Storage Facility site. This storage facility is located on a single-family unit parcel that burned down years ago. Debris, concrete foundation, an old truck and other dilapidated belongings remain. While grassy, no habitat for species is present on the storage facility parcel. Surrounding land use to the north and south are exist residential units. West and east of the parcel are disked agricultural fields. From the property, the pipeline will cross Road 84 by an open cut heading east. Once across Road 84, it will turn north following the road shoulder to Avenue 32 where it will connect to existing waterline infrastructure. Total disturbance is estimated to be 0.50 acre. Appendix A provides photographs depicting current site conditions at both the well site and storage facility site. Appendix B provides site plans for the project.

Alkali seasonal rain channels occur within the APE and in the immediate area. These channels are isolated and do not have 404 connectivity to be considered as jurisdictional. According to the USGS soil survey maps, two different soils are present. The Well APE is comprised of one soil map unit, Atesh-Jerryslu association with 0 to 2% slopes. The Storage Facility APE is also comprised of one soil map unit, Kimberlina fine sandy loam, 0 to 2 percent slopes MLRA 17 (Appendix D).

3.2 Special-status Biological Resources

Sections 3.2.1 and 3.2.2 discuss special-status plant and wildlife species identified as potentially occurring in the vicinity of the project, or those that warrant additional discussion due to regional sensitivity and/or potential impacts from the proposed project. This discussion is based on available literature regarding special-status species and LBC's professional experience in the project area (Section 5.0). Species initially evaluated, but eliminated from further consideration are included only in Appendix E.

3.2.1 Special-status Plant Species

Evaluation of potential project-related impacts to special-status plant species relies on a combination of literature reviews, species identification, elevation, soil types, and the habitat community in which the project area occurs. Appendix E provides the results of the literature review for sensitive plant species that may occur in the project area.

A brief description of the special-status plant species with the potential to occur in the APE is included in the following paragraphs. Appendix E provides the results of the literature review for sensitive plant species that may occur in the project area.

California jewelflower (*Caulanthus californicus*)

California jewelflower, a member of the mustard family (Brassicaceae), is an herbaceous annual that branches from the base, with upper leaves clasping the succulent stems. Plants reach a height of 6 to 15 inches (15–38 centimeters). Foliage is gray-green, with heart-shaped clasping stem leaves and wavy margined strap-shaped basal leaves. Unopened flowers appear deep maroon in color. Open flowers are white to greenish-yellow. Habitat for this species is non-alkaline to slightly alkaline sandy loam soils of relatively undisturbed grassland communities below 3,000 feet in elevation (Al-Shehbaz 2016).

Seeds begin to germinate in the fall, and seedlings may continue to emerge for several months. The seedlings develop into rosettes of leaves during winter months, after which stems elongate and flower buds appear in February or March. Translucent white flowers with purple to green tips may continue blooming as late as May if rainfall and temperatures are favorable (USFWS 1998). It is thought that this species forms a persistent seed bank, but seeds appear to germinate only when exposed to conditions simulating prolonged weathering (Taylor & Davilla 1986). Seed dispersal agents are unknown, but may include gravity, seed-eating animals such as GKR, wind and water.

Historically, the range of the species included the upper San Joaquin and adjacent valleys from Coalinga in the northwest to the Cuyama Valley in the southwest. Of 55 historical locations, approximately 20 extant populations remain (CNPS 2010b). Recently, extant populations have been found on the Carrizo Plain in San Luis Obispo County, and in the Kreyenhagen Hills of Fresno County. An attempt has been made to establish an artificial population at the Paine Wildflower Preserve, Kern County; however, this population has not been successful (CNPS 2010b; USFWS 1998).

<u>Kern mallow (*Eremalche parryi* var. *kernensis*)</u>

Kern mallow is an erect annual of the mallow family (Malvaceae). It is a Federally listed endangered species. Plants have either bisexual or pistillate flowers. The fruit consists of 7-19 indehiscent, unwinged, one-seeded segments. The leaves are deeply 3-5 palmately-lobed or parted. Habitat includes eroded hillsides and alkali flats with non-native grassland, saltbush scrub, juniper woodland, or ephedra scrub from 230-500 feet in elevation.

The taxonomic characters that separate Kern mallow from Parry's mallow (*Eremalche parryi*) (Bates, 1993) are complicated. Hickman (1993) classified this taxon as a subspecies of *E. parryi*. Others have kept Kern mallow as *E. kernensis* (USFWS 1998; CNPS 2020). A complex breeding system and diverse morphology have made definitive classification difficult. Another closely related species that also occurs in some areas with both Kern mallow and Parry's mallow is desert mallow (*E. exilis*). Using the historic strict definition of *E. kernensis* (as in USFWS (1998), Kern mallow was considered as white-flowered plants known only from the area known as Lokern in western Kern County plus populations of pink flowered plants in the Buena Vista Valley, Elk Hills, Lost Hills, McKittrick Hills, Stockdale, and the Temblor Range in Kern County. Subsequently, many herbarium specimens previously identified as *E. kernensis* were found to have been misidentified and were actually *E. exilis*. Upon annotation of approximately 15 years of records for the taxon, Cypher (2002a, 2004) truncated the range to a narrow band along Lokern Road in Kern County. The USFWS currently accepts a definition of the species that includes all populations that exhibit both perfect and pistillate flowers (known as gynodioecy), regardless of flower color. *E. kernensis* is the only member of the genus to exhibit gynodioecy (USFWS 2013).

Historically, populations of this species were thought to be restricted to a small area within the Lokern area. However, based on recent studies the range is now considered to include populations from the Lokern area and several additional western Kern County locations as well as populations that have been verified based on herbarium collections in San Luis Obispo, Santa Barbara, Ventura, and Tulare counties (USFWS 2013).

San Joaquin wooly-threads (*Monolopia condonii*)

San Joaquin wooly-threads a member of the Asteraceae family, is a small, inconspicuous annual which may be 1 to 10 inches (2.5–25 centimeters) in height at maturity. Stems are multiple, decumbent and often somewhat succulent. Leaves and stems are typically loosely floccose to woolly-haired. Leaves are 1.5 inches (4 centimeters) long by about 0.25 inch (0.64 centimeters) wide with wavy margins. Individual flowers are arranged in heads that are clustered towards the ends of branches. Each head has four to seven phyllaries that are commonly black tipped. Tiny yellow ray and disk flowers appear in late February or March. Ray flowers and their achenes are clearly distinguished from those of the disk (Johnson 2016).

Insect pollinators are not required for seed-set of this species. However, animals may be important to this plant species in other ways. For example, GKR activity contributes to greater plant size and flower head production in San Joaquin woolly-threads where the two species co-occur, probably by increasing available soil nutrients and reducing competition from other plants. The microhabitat offered by GKR *precincts* (burrow systems) also contributes to earlier seed germination and maturation of San Joaquin woolly-threads, possibly because precinct surfaces are warmer than the surrounding area during the winter months (USFWS 1998).

San Joaquin wooly-threads are found in valley grassland habitat types with silty sand or sandy loam soils at elevations ranging from 400 to 1,200 feet (122–366 meters). Valley saltbush is often the dominant shrub in these habitat types. The preferred microhabitat for this species consists of areas with reduced annual grass competition. It is generally not found where annual grasses are extremely dense and tall (Taylor 1989). This species is somewhat prostrate, allowing it to persist under grazing pressure. Known extant populations in Kern County occur along the Kern River near I-5, near Lost Hills, and on the Belridge Plain (USFWS 1998).

Descriptions of the two Species of Concern, identified on the Well APE are provided below.

Heartscale (*Atriplex cordulata* var. *cordulata*)

Heartscale is an annual reaching heights of 4 to 20 inches (1 to 5 decimeters), with one to a few stiff stems growing upward from the base. Branches are gray and scaly, with densely matted hairs covering the tips. Leaves are sessile, thickish, 1/4 to 3/4 inch (6 to 20 mm) long, and pear shaped with a cordate base on lower leaves and a rounded base on upper leaves. Fruit bracts are pear-shaped to roundish, fused half way up, deeply toothed on the edge and 1/8 to 3/16 inch (3 to 5 mm) long. Female and male flowers are in mixed clusters and seeds are brown (Zacharias 2013a).

Heartscale blooms from April to October and is usually found on compacted soils, grassland, saline, or alkaline soils in meadows and seeps, chenopod scrub, and valley and foothill grasslands at elevations of 0 to 1,840 feet in elevation (CNPS 2012).

Brittlescale (*Atriplex depressa*)

Brittlescale is a dicot in the family Chenopodiaceae. It is an annual herb that is native to California and is endemic to California alone, specifically in the Sacramento and San Joaquin Valley. Stems are prostrate to decumbent, scaly, white, and typically brittle. Leaves are generally opposite with a blade of 0.2 to 0.3 inches (4–8 millimeters). This species has reddish seeds, and fruit bracts are 0.1 to 0.14 inches (2–3.5 millimeters), diamond-shaped, and fused to near tip (Zacharias 2014).

Brittlescale blooms from April to October and is usually found on alkaline, clay soils, inn chenopod scrub, meadows and seeps, playas, valley and foothill grassland and vernal pools between 3 to 1,050 feet (1–320 meters) in elevation (CNPS 2010).

Suitable soils for some of the special-status plant species are present within the survey area. The field survey completed by LBC was not conducted during the optimal blooming period for annual special-status plant species. Of the listed species evaluated, California jewelflower, Kern mallow, and San Joaquin wooly-threads have not been recorded in the vicinity of the APE, no effects to special-status plant species are anticipated.

Other special-status plant species were eliminated from further consideration, because the project site does not provide potential habitat or the site is located outside the known range for the species.

3.2.2 Special-status Wildlife Species

A brief description of the special-status wildlife species with the potential to occur in the vicinity of the project is included in the following paragraphs. Appendix E provides the results of the literature review for sensitive wildlife species that may occur in the project areas.

Based on the anticipated impacts and conditions in the vicinity of the project, five special-status wildlife species have the potential to be directly or indirectly impacted by the project and require further impact evaluation.

Blunt-nosed leopard lizard (*Gambelia sila*)

The BNLL is a relatively large lizard in the Iguanidae family. It has a long, regenerative tail, long and powerful hind limbs, and a short, blunt snout (Stebbins 1985). Adult total length may reach up to 13 inches (33 centimeters). Coloration consists of a light grayish, tan, or brown background with a conspicuous pattern of dark overlaying spots and/or pale crossbars. During the spring courtship season both sexes may develop reddish markings on the sides, tail, and ventral surfaces. Juveniles usually show a similar, but more yellowish pattern (USFWS 1998).

BNLL are active during the day, primarily between the months of April and October. Peak daily activity usually occurs when air temperatures are between 75 and 95 °F. Animals overwinter underground in rodent burrows. BNLL feed primarily on insects (particularly grasshoppers, crickets and moths), other lizards, and occasionally plant material (USFWS 1998).

BNLL were historically distributed over the San Joaquin Valley and in adjacent lower foothills, plains, and valleys. Currently, this species is found only in the San Joaquin Valley. It inhabits sparsely vegetated plains, lower canyon slopes, valley floors, and washes. Associated vegetation may include a variety of grasses, saltbush, golden bush, iodine bush, and seep weed (USFWS 2010).

Giant kangaroo rat (*Dipodomys ingens*)

This species occupies annual grasslands and sparse shrublands with well-drained, usually loamy or sandy loam soils. Giant kangaroo rats (GKR) favor flat to gently sloping terrain with low annual precipitation, typically 5 inches (13 centimeters) or less in the southwestern San Joaquin Valley, and adjacent plateaus and valleys in the Inner Coast Ranges. The species is found from elevations of about 300 to 2,900 feet (91–884 meters). Little extant habitat remains at elevations below 650 feet (198 meters) and few colonies are located above 2,500 feet (762 meters).

GKR *burrow systems* (precincts) are distinctive due to the size and orientation of individual entrances, and the presence of cleared vegetation in the vicinity of the system. Precincts may include one to several burrow openings and a colony may consist of two to thousands of precincts. Burrows of two types may be observed within GKR precincts: hose with horizontal burrow openings, and those with vertical burrow openings. Horizontal burrow openings are similar in appearance compared to other kangaroo rats; however, these openings are usually quite large in comparison to other species. Other characteristics of GKR precincts include tracks from their distinctively large feet and tail drags, haystacks of seeds drying near burrows, and large scat near burrow entrances. Individual precincts are usually connected to other precincts by well-worn paths and are relatively easy to detect, even from a distance. This species is nocturnal and detection of characteristic burrow systems is used as a method of determining potential presence. When sign of presence is detected, small mammal trapping is needed to verify the species is actually present.

GKR originally occurred throughout the San Joaquin Valley from southern Merced County to southwestern Kern County and northern Santa Barbara County. By 1980, conversion of native valley grassland habitats to agricultural uses had reduced extant GKR distribution to approximately 2 to 3 percent of its historic range. The remaining habitat has been broken into six major geographic units, including Lokern. The Cuyama Valley is the farthest south of the identified extant populations of this species. Due to high vulnerability of these small, widely scattered colonies, GKR are currently federal- and state-listed as endangered (CDFW 2014; ETWP 1987; USFWS 1998; Williams 1980).

Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)

The Tipton kangaroo rat is one of three subspecies of the San Joaquin kangaroo rat. It is a small rodent, measuring up to 9 inches (23 centimeters) in total length and weighing from 1 to 1.3 ounces (28–37 grams). Its head is large, compared to other rodents, with large eyes and small rounded ears. The hind legs are elongated and serve as the principal means of locomotion. Coloration is dark above, changing to whitish ventrally with a white stripe extending laterally across each flank and along the sides of the prominently-tufted tail. The presence of four toes on the feet of the San Joaquin kangaroo rat helps to distinguish it from other sympatric kangaroo rat species that have five toes (CDFG 2005, ETWP 1988; USFWS 2015c).

Tipton kangaroo rats are typically found in scrub and grassland communities in level to near-level terrain having alluvial fan and floodplain soil with sparse grasses and woody vegetation such as iodine bush, saltbush, seep weed, and mesquite. San Joaquin kangaroo rats excavate shallow burrows from which they emerge at night to forage for seeds. They hold seeds in fur-lined pouches on the sides of their mouth before caching a significant portion for later use.

Little information is available on the population densities of San Joaquin kangaroo rats; however, Tipton kangaroo rats are known to occur in the Tulare Sub-basin extending from Lemoore and Hanford in Kings County southward to the Caliente Wash in central Kern County, and west to the north side of Buena Vista Lake. The California Aqueduct is the approximate line between the ranges of the state- and federal-listed Tipton kangaroo rat and short-nosed kangaroo rat (*Dipodomys nitratoides brevinasus*). Tipton kangaroo rat is treated by the regulatory agencies as occupying lands to the east of the California Aqueduct and north of Buena Vista and Kern Lakes (USFWS 1998; Williams 1985).

Swainson's hawk (*Buteo swainsoni*)

Swainson's hawks are state-listed as a threatened species. They are diurnal and similar in size to the red-tailed hawk, but lack their pale spotting on scapulars. There are two distinct color morphs with variations in between. Light morphs have a whitish forehead and white patch on the throat below the bill, while the rest of the head, sides of the throat, patch on its chest, and all other upper body parts are dark brown. The belly is white with brown barring, and in flight their wings have dark trailing edges that contrast with the light colored leading edges and the belly. Individuals of the dark morph are entirely dark brown, except for a patch under the tail (Brown 2006; Dunn & Alderfer 2008). The Swainson's hawk feeds on mice, gophers, ground squirrels, rabbits, large arthropods, amphibians, reptiles, birds and sometimes fish (Brown & Amadon 1968; Dunkle 1977).

Swainson's hawks are an uncommon resident and migrant in the Central Valley, Klamath Basin, Northeastern Plateau, Lassen County and Mojave Desert. Limited breeding has been reported from Lanfair Valley, Owens Valley, Fish Lake Valley and Antelope Valley (Bloom 1980; Garrett & Dunn 1981). The majority of the state's breeding sites are in two disjunct populations in the Great Basin and Central Valley. In the Central Valley, nest sites are strongly associated with riparian forest vegetation, whereas in the Great Basin nest sites are widely distributed in upland habitats (Woodbridge 1998). Typical habitat is open desert, grassland, or cropland containing scattered, large trees or small groves. Migrating individuals move south through the southern and central interior of California in September and October, and move north from March through May (Grinnell & Miller 1944; Zeiner et al. 1990).

<u>San Joaquin kit fox (*Vulpes macrotis mutica*)</u>

This species, currently federal-listed as endangered and state-listed as threatened, resembles a small, lanky dog in appearance, with disproportionately large ears containing an abundance of large white, inner guard hairs. The San Joaquin kit fox (SJKF) is the largest subspecies of kit fox, with adults weighing 4.5 to 5 pounds (2–2.3 kilograms). Total length is about 32 inches (81 centimeters), including a black-tipped tail up to 12 inches (30 centimeters) long. Coloration ranges from light buff to grayish along the back and tail; gray, rust, or yellowish along the sides; and white on the belly.

SJKF occur in a variety of open grassland, oak savannah, and shrub vegetation types/habitats as well as agricultural and urban areas in Kern County. In the southern San Joaquin Valley portion of the range, SJKF are generally found in sparse, annual grassland and scrub communities (e.g., valley sink scrub, saltbush scrub). Den characteristics of the taxon vary across its range. In the southern portion of its range the taxon often creates dens with two entrances. Natal dens generally have multiple entrances. Entrances are usually 8 to 10 inches (20–25 centimeters) in diameter and are normally higher than wide, but kit foxes can utilize dens with entrances as small as 4 inches (10 centimeters) in diameter. Kit foxes do not typically excavate their own dens, but rather enlarge the burrows of other species, such as California ground squirrels, and change dens on a regular basis. Home ranges for the taxon have been reported by several authors to range from 1 to 12 square miles (1.6–19 square kilometers). In one study, a single kit fox was tracked to 70 dens during a 2-year period (Native Fish and Wildlife 1967; USFWS 1998).

SJKF are primarily nocturnal, but can be seen during the day when activities on the surface get their attention. Potential site occupation is determined based on observation of canid scat within a size range appropriate for this species, and presence of dens that meet the criteria for classification as known or natal/pupping per the USFWS guidelines (USFWS 2011).

Six Species of Concern that have been either observed or anticipated to occur on the Well APE are discussed below.

<u>Burrowing owl (*Athene cunicularia*)</u>

The burrowing owl is a California species of special concern, and documented population declines have occurred in the state since at least the 1970s. It has no federal listing, but is protected by the Migratory Bird Treaty Act (CDFG 2012; CDFW 2015b; MBTA 2015).

Adults have bold spotting and barring, and individuals of this species can be distinguished from all other small owls by their long legs. Burrowing owls are diurnal, and during active periods of the year may be observed above ground in the vicinity of their burrows, roosting on the ground or nearby high spots such as berms, fence posts, or shrubs. They have a varied diet that includes insects, small rodents, birds, amphibians, reptiles, and carrion, and there is some evidence that population sizes of California vole (*Microtus californicus*) influence their survival and reproductive success. In California, the species is typically found in close association with California ground squirrels (*Otospermophilus beecheyi*). The squirrels create burrows that are used by burrowing owls as year-round shelter and seasonal nesting habitat; however, burrowing owls may also use human-made structures such as culverts, corrugated metal pipes, debris piles, or openings beneath pavement as shelter and nesting habitat.

Within California, burrowing owls are found throughout the Central Valley, in the San Francisco Bay Area, Carrizo Plain, and Imperial Valley. The Central Valley population is a year-round resident in annual and perennial grasslands or other vegetation communities that support little to no tree or shrub cover. The state of California is considered an important wintering ground for migrants, whose burrowing owl population is augmented during the winter season (CDFG 2012; Dunn & Alderfer 2008; Shuford & Gardali 2008).

<u>California horned lark (*Eremophila alpestris actia*)</u>

The California horned lark is on the California Department of Fish and Wildlife's watch list under the California Endangered Species Act. They are small ground-dwelling songbird slightly larger than a house sparrow. Males are sandy to rusty brown above and white below, have a yellowish face and throat, and a conspicuous black face mask that curves down around their short, thin bills. Black head stripes extending to the back of the head sometimes appear to be raised into two tiny horns. The head and breast patterns of the females are less defined, but are similar to the males.

They prefer bare ground to forage for insects and seeds (often associated with bare agricultural fields), and are found in grasslands, meadows, prairie, deserts and tundra. Nesting begins in March with most activity occurring in May. Nests are rarely found in vegetation taller than 2 inches (5 centimeters), are small shallow cups in depression in open ground about 3 to 4 inches (8–10 centimeters) in diameter, and are woven from grass and other plant material. Eggs in groups of 2 to 5 are laid up to 3 times during the nesting season. Incubation can last up to 12 days with nestlings taking flight about 10 days later.

The range of the California horned lark extends from Alaska to Mexico in elevations between sea level and 13,000 feet (3,962 meters). In California, this species is both a migrant and resident (CDFW 2015; Cornell Lab of Ornithology 2015; Zeiner et al. 1990).

<u>Loggerhead shrike (*Lanius ludovicianus*)</u>

The loggerhead shrike is considered and species of special concern in California (CDFW 2014). It is a robin-sized bird about 9 inches (23 centimeters) in length with a raptor-like, hooked bill. Dorsal coloration of adults is bluish-gray, and ventral coloration is whitish with very faint barring. Juveniles tend to be more brownish. Most distinctive is the black eye mask, and in flight, the white wing patches on the contrasting dark wings. It is distinguished from the northern mockingbird (*Mimus polyglottos*), which it resembles in flight, by darker wings and smaller white wing patches. The mockingbird also lacks the conspicuous eye patch and hooked bill, and has slower wing beats (Dunn & Alderfer 2008).

Lacking talons, the shrike impales its prey to facilitate feeding, or to store it for future consumption. Its diet includes a variety of insects and spiders, small reptiles, rodents, and small birds. Nests are built on stable branches in densely-foliaged shrubs or trees, usually well-concealed (Ehrlich et al. 1988).

This species prefers open habitats such as savannas and deserts, with scattered shrubs, trees, posts, fences, utility lines, or other perches. In California, the shrike occurs as a resident over most of the state, being absent from high mountain regions (Zeiner et al. 1990).

San Joaquin coachwhip (*Masticophis flagellum ruddocki*)

The San Joaquin coachwhip is a large, smooth-scaled, slender snake that is 35 to 61 inches (90–155 centimeters) in length, and may be light yellow, olive brown or occasionally reddish in dorsal coloration. Neck bands are very faint or entirely absent. The ventral color is straw yellow becoming pinkish to orange beneath the tail. The scalation on the tail suggests a braided whip.

This diurnal snake emerges from rodent burrows typically during the warmest part of the day, except in the hot period during the summer. The San Joaquin coachwhip is active from late spring (April–May) through early fall (September). It primarily feeds upon lizards, and small mammals including bats but will also feed on birds and eggs, snakes, amphibians, and carrion, and is known to climb bushes and trees for viewing prey and potential predators.

Endemic to California, the San Joaquin Coachwhip is known to occur in valley grassland and saltbush scrub associations and ranges from Arbuckle in Colusa County southward to the Grapevine in the Kern County portion of the San Joaquin Valley and westward into the inner South Coast Ranges. An isolated population occurs in the Sutter Buttes. Land-use conversion, for agriculture and urban development, combined with consecutive years of drought, has significantly contributed to population fragmentation. The species is considered a California species of special concern (CDFW 2015b; Jennings et al. 1994; Nafis 2000–2014, Stebbins 2003).

Tulare grasshopper mouse (*Onychomys torridus tularensis*)

The Tulare grasshopper mouse is considered a California species of special concern (CDFW 2015b). It is a stout-bodied rodent with a club-like, bi-colored tail. The body is also bi-colored, being pale brown to gray or pinkish-cinnamon above with white underparts. Though the Tulare grasshopper mouse prefers to feed on small mammals and insects, its diet also includes other invertebrates and seeds. It may be confused with the white-footed mouse (*Peromyscus* spp.); however, the grasshopper mouse has a shorter, thicker tail, and larger forefeet

Historically, the species ranged from western Merced and eastern San Benito Counties east to Madera County and south to the Tehachapi Mountains. Currently, they are known to occur along the western margin of the Tulare Basin including western Kern County; within the Carrizo Plain Natural Area; along the Cuyama Valley side of the Caliente Mountains in San Luis Obispo County; and the Ciervo-Panoche Region in Fresno and San Benito Counties (Brown & Williams 2006).

Coast horned lizard (*Phrynosoma blainvillii*)

The coast horned lizard is a flat-bodied lizard that is up to 6 inches in length. It has a large crown of spines on the posterior portion of its head. The cranial spines of the California horned lizard are similar in size, whereas the central two spines tend to be longer in the other subspecies. There are large, dark spots on the side of its neck and there are two rows of pointed scales at the fringe of its trunk. Coloration is reddish, brown, yellow, or gray with dark blotches on the back; coloration is variable and is possibly dependent upon soil coloration.

This lizard is diurnal and will inflate with air when frightened to avoid predation. Other defensive strategies include threatening would-be enemies with an open mouth and hissing noises, tilting its head to expose the cranial spines, biting, and spraying blood from the corner of its eyes. This lizard lays a clutch of 6 to 12 eggs in May or June, and hatchlings emerge in July or September. The main food source of this species is native ants.

The California horned lizard occurs along the coast, north of San Francisco Bay to Los Angeles, and inland into the Sacramento and San Joaquin Valleys. It inhabits open areas of sandy soil with low, sparse vegetation (Jennings and Hayes 1994).

3.2.3 Critical Habitat

The project does not occur in any area designated as critical habitat for listed species.

3.3 Field Surveys

Numerous site visits have occurred as part of the project's environmental review process. Laurendine Biological Consulting, LLC (LBC) on May 6, 2020, conducted a reconnaissance-level survey of the well and storage facility locations. Previous fieldwork included botanical surveys, protocol-level BNLL surveys, and small mammal trapping. Conditions on the project site and buffer zone were evaluated to ascertain potential for special-status plant and animal species occurrence, identify recommendations for species avoidance, and determine whether focused surveys were needed to further specify species presence. Figure 3 illustrates the project areas that were surveyed. Complete floristic surveys meeting CDFW protocol were not conducted (CDFG 2009).

3.3.1 Field Survey Results

The habitat present is considered non-native grassland and conditions are good for potential occurrence of several special-status species. In addition, suitable soils for some of the special-status plant species are present within APE. The reconnaissance-level field survey completed by LBC was not conducted during the optimal blooming period for some plant species. Of the listed plant species evaluated, California jewelflower, Kern mallow, and San Joaquin wooly-threads have not been recorded in the vicinity of the APE, no effects to special-status plant species are anticipated. A complete on-going list of plants and wildlife species observed during the field surveys is shown in Tables 1 and 2.

Plant species observed during site visits include: tumbleweed (*Salsola tragus*), Jimson weed (*Datura wrightii*), London rocket (*Sisymbrium irio*), fiddleneck (*Amsinckia* sp.), red brome (*Bromus madritensis* ssp. *rubens*), and red-stemmed filaree (*Erodium cicutarium*); however, two special-status plant species, Heartscale (*Atriplex cordulata*) and Brittlescale (*Atriplex depressa*) have been observed on previous surveys. Site conditions have remained similar to those previously reported in 2015 and 2017.

Table 1: Plants Observed During Previous Surveys Conducted for the Allensworth Community Services District Well and Storage Facility Project

Scientific Name	**Common Name**
Apiaceae	
Eryngium castrense	Great Valley button celery
Aponcynaceae	
Asclepias fascicularis	Narrow-leaf milkweed
Asteraceae	
Ambrosia acanthicarpa	Annual bur-sage
Centaurea melitensis	Tocalote
Centromadia pungens	Tarweed
Isocoma acradenia var. *bracteosa*	Alkali golden bush
Silybum marianum	Milk thistle
Boraginaceae	
Amsinckia sp.	Fiddleneck
Heliotropium curassavicum	Alkali heliotrope
Plagiobothrys sp.	Popcornflower
Brassicaceae	
Lepidium nitidum	Peppergrass
Sisymbrium irio	London rocket
Sisymbrium orientale	Oriental mustard
Caryophyllaceae	
Herniaria hirsuta	Herniaria
Chenopodiaceae	
*Atriplex cordulata**	Heartscale
Atriplex covillei	Arrowscale
*Atriplex depressa**	Brittlescale
Atriplex fruticulosa	Valley saltbush
Salsola sp.	Russian thistle
Suaeda nigra	Alkali seep weed
Convolvulaceae	
Cuscuta sp.	Dodder
Crassulaceae	
Crassula connata	Pygmy weed
Fabaceae	
Lupinus sp.	Lupine
Wislizenia refracta	Jackass clover
Geraniaceae	
Erodium cicutarium	Red-stemmed filaree
Lamiaceae	
Marrubium vulgare	Horehound
Trichostema lanceolatum	Vinegar weed
Poaceae	
Bromus madritensis ssp. *rubens*	Red brome
Distichlis spicata	Salt grass

Schismus arabicus	Mediterranean grass
Polemoniaceae	
Gilia sp.	Tricolor
Polygonaceae	
Eriogonum gracillimum	Slender-stemmed buckwheat
Resedaceae	
Oligomeris linifolia	Lineleaf whitepuff
Solanaceae	
Datura wrightii	Jimsonweed
Themidaceae	
Dichelostemma capitatum	Blue dicks

*Denotes special-status species

Table 2: Wildlife Observed During Surveys Conducted for the Allensworth Community Services District Well and Storage Facility Project

Common Name	Scientific Name
Reptiles	
California whiptail	*Aspidoscelis tigris*
Western rattlesnake	*Crotalus viridis*
Blunt-nosed leopard lizard	*Gambelia sila**
Coast horned lizard	*Phrynosoma blainvillii**
Gopher snake	*Pituophis catenifer*
Side-blotched lizard	*Uta stansburiana*
Birds	
Bell's sparrow	*Amphispiza belli*
Great horned owl	*Bubo virginianus*
Red-tailed hawk	*Buteo jamaicensis*
House finch	*Carpodacus mexicanus*
Common raven	*Corvus corax*
Horned lark	*Eremophila alpestris*
Barn swallow	*Hirundo rustica*
Loggerhead shrike	*Lanius ludovicianus**
Northern mockingbird	*Mimus polyglottos*
Western meadowlark	*Sturnella neglecta*
Western kingbird	*Tyrannus verticalis*
Mourning dove	*Zenaida macroura*
Mammals	
Black-tailed jackrabbit	*Lepus californicus*

*Denotes special-status species

Although limited in their distribution, many of the small mammal burrows observed exhibited characteristics of kangaroo rat (*Dipodomys* sp.). In addition, typical signs of kangaroo rat species presence was observed and included: tail drags, footprints, dust baths, and scat. Previous trapping efforts for small mammals did not capture any Tipton kangaroo rat in the Well APE.

During the field investigation, no potential, known, or natal dens for SJKF were observed in either APE.

To date, no evidence of nesting raptors (e.g., burrowing owl) have been recorded during any survey at either APE location. In addition, no Swainson's hawk nests or nesting habitat is available in either APE: however, the habitat at the Well APE does afford foraging opportunities for these species.

The habitat present in the Well APE is habitat for BNLL. Protocol surveys for BNLL were completed in 2015 and identified numerous individuals on the site and in the immediate vicinity. In addition, coastal horned lizard was also observed on many occasions during the protocol survey.

No habitat for special-status species exists at the Storage Facility APE, as the parcel was a residential unit, it is heavily disturbed and the pipeline route is contained within the existing shoulder of Road 84. Further discussion regarding the storage facility is not warranted as habitat and special-status species are not present.

4.0 IMPACTS AND MITIGATION MEASURES

As noted in this report, wetlands, special status plants and animals (i.e., threatened and endangered species, candidate species for threatened or endangered status, and species of special concern), and animal movement corridors are all biotic resource issues that may be regulated according to provisions of federal and state laws and/or local policies. These issues can affect how a property is used or developed. The discussion below addresses likely impacts to sensitive biological resources resulting from the proposed development. This discussion recognizes that not all impacts are significant and, therefore, establishes the criteria by which significance is determined. The discussion also examines state and federal laws that determine how sensitive habitats are developed.

4.1 SIGNIFICANCE CRITERIA

General plans, area plans, and specific projects are subject to the provisions of the California Environmental Quality Act (CEQA). The purpose of CEQA is to assess the impacts of propose projects on the environment before they are carried out. For example, site development may require the removal of some or all of its existing vegetation. Animals associated with this vegetation could be destroyed or displaced. Animals adapted to humans, roads, buildings, pets, and other conditions could potentially replace those species formerly occurring on a site. Plants and animals that are state and/or federally listed as threatened or endangered may be destroyed or displaced. Sensitive habitats such as wetlands and riparian woodlands may be altered or destroyed.

Whenever possible, public agencies are required to avoid or minimize environmental impacts by implementing practical alternatives or mitigation measures. According to Section 15382 of the CEQA Guidelines, a significant effect on the environment means a "substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project, including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic interest."

Specific project impacts to biological resources may be considered "significant" if they would:

- Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;

- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service;

- Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means;

- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;

- Reduce substantially the habitat of a fish or wildlife species, including causing a fish or wildlife population to drop below self-sustaining levels or threaten to eliminate an animal community;

- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or

- Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan.

Furthermore, CEQA Guidelines Section 15065(a) states that a project may trigger the requirement to make a "mandatory findings of significance" if the project has the potential to:

> Substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of an endangered, rare or threatened species, or eliminate important examples of the major periods of California history or prehistory.

4.2 RELEVANT GOALS, POLICIES, AND LAWS

4.2.1 Threatened and Endangered Species

State and federal endangered species legislation has provided the California Department of Fish and Wildlife (CDFW) and the U.S. Fish and Wildlife Service (USFWS) with a mechanism for conserving and protecting plant and animal species of limited distribution and/or low or declining populations. Species listed as threatened or endangered under provisions of the state and federal endangered species acts, candidate species for such listing, state species of special concern, and some plants listed as endangered by the California Native Plant Society are collectively referred to as “species of special status.” Permits may be required from both the CDFG and USFWS if activities associated with a proposed project will result in the “take” of a listed species. “Take” is defined by the state of California as “to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture or kill” (California Fish and Game Code, Section 86). “Take” is more broadly defined by the federal Endangered Species Act to include “harm” (16 USC, Section 1532(19), 50 CFR, Section 17.3). Furthermore, the CDFG and the USFWS are responding agencies under the California Environmental Quality Act (CEQA). Both agencies review CEQA documents in order to determine the adequacy of their treatment of endangered species issues and to make project-specific recommendations for their conservation.

4.2.2 Migratory Birds

State and federal laws also protect most birds. The Federal Migratory Bird Treaty Act (16 U.S.C., scc. 703, Supp. I, 1989) prohibits killing, possessing, or trading in migratory birds, except in accordance with regulations prescribed by the Secretary of the Interior. This act encompasses whole birds, parts of birds, and bird nests and eggs. Migratory birds and their nests are also protected in California under the provisions of sections 3503 and 3513 of the California Fish and Game Code. Section 3503 of the Fish and Game Code makes it “unlawful to take, possess, or needlessly destroy the nests or eggs of any bird, except as otherwise provided by this code or any regulation made pursuant thereto.” Section 3513 of the California Fish and Game Code makes it unlawful to “take or possess any migratory nongame bird as designated in the Migratory Bird Treaty Act or any part of such migratory nongame bird except as provided by rules and regulations adopted by the Secretary of the Interior under provisions of the Migratory Treaty Act.”

4.2.3 Birds of Prey

Birds of prey are also protected in California under provisions of the State Fish and Game Code, Section 3503.5, which states that it is “unlawful to take, possess, or destroy any birds in the order Falconiformes or Strigiformes (birds of prey) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “taking” by the CDFW.

4.2.4 Bats

Section 2000 and 4150 of the California Fish and Game Code states that it unlawful to take or possess a number of species, including bats, without a license or permit as required by Section 3007. Additionally, Title 14 of the California Code of Regulations states it is unlawful to harass, herd, or drive a number of species, including bats. To harass is defined as “an intentional act that disrupts an animal's normal behavior patterns, which includes, but is not limited to, breeding, feeding or sheltering.”

4.2.5 Wetlands and Other Jurisdictional Waters

Natural drainage channels and adjacent wetlands may be considered "waters of the United States" (hereafter referred to as "jurisdictional waters") subject to the jurisdiction of the U.S. Army Corps of Engineers (USACE). The extent of jurisdiction has been defined in the Code of Federal Regulations but has also been subject to interpretation of the federal courts. Jurisdictional waters generally include:

• All waters which are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

• All interstate waters including interstate wetlands:

• All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation or destruction of which could affect interstate or foreign commerce;

• All impoundments of waters otherwise defined as waters of the United States under the definition;

• Tributaries of waters identified in paragraphs (a)(1)-(4) (i.e., the bulleted items above);

• The territorial seas; and

• Wetlands adjacent to waters (other than waters which are themselves wetlands) identified in paragraphs (a)(1) through (6) of this section (i.e., the bulleted items above).

As recently determined by the United States Supreme Court in *Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers* (the SWANCC decision), channels and wetlands isolated from other jurisdictional waters cannot be considered jurisdictional on the basis of their use, hypothetical or observed, by migratory birds. However, the U.S Supreme Court decisions *Rapanos v. United States* and *Carabell v. U.S. Army Corps of Engineers* (referred together as the Rapanos decision) impose a "significant nexus" test for federal jurisdiction over wetlands. In June 2007, the USACE and Environmental Protection Agency (EPA) established guidelines for applying the significant nexus standard. This standard includes 1) a case-by-case analysis of the flow characteristics and functions of the tributary or wetland to determine if they significantly affect the chemical, physical, and biological integrity of downstream navigable waters; and 2) consideration of hydrologic and ecologic factors (EPA and USACE 2007).

The USACE has jurisdiction over Waters of the U.S. under the authority of Section 404 of the Clean Water Act. The extent of jurisdiction within drainage channels is defined by "ordinary high water marks" on opposing channel banks. Wetlands are habitats with soils that are intermittently or permanently saturated, or inundated. The resulting anaerobic conditions select for plant species known as hydrophytes that show a high degree of fidelity to such soils. Wetlands are identified by the presence of hydrophytic vegetation, hydric soils (soils saturated intermittently or permanently saturated by water), and wetland hydrology according to methodologies outlined in the 1987 *Corps of Engineers Wetlands Delineation Manual* (USACE 1987) and the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008).

All activities that involve the discharge of fill into jurisdictional waters are subject to the permit requirements of the USACE (Wetland Training Institute, Inc. 1991). Such permits are typically issued on the condition that the applicant agrees to provide mitigation that result in no net loss of wetland functions or values. No permit can be issued until the Regional Water Quality Control Board (RWQCB) issues a certification (or waiver of such certification) that the proposed activity will meet state water quality standards. The filling of isolated wetlands, over which the USACE has disclaimed jurisdiction under the SWANCC decision, is regulated by the RWQCB. It is unlawful to fill isolated wetlands without filing a Notice of Intent with the RWQCB. The RWQCB is also responsible for enforcing National Pollution Discharge Elimination System (NPDES) permits, including the General Construction Activity Storm Water Permit. All projects requiring federal money must also comply with Executive Order 11990 (Protection of Wetlands).

The California Department of Fish and Wildlife has jurisdiction over the bed and bank of natural drainages according to provisions of Section 1601 and 1602 of the California Fish and Game Code (2003). Activities that would disturb these drainages are regulated by the CDFW via a Streambed Alteration Agreement. Such an agreement typically stipulates that certain measures will be implemented that protects the habitat values of the drainage in question.

4.3 ENVIRONMENTAL IMPACTS AND MITIGATION

The proposed project is for the improvement and development of water conveyance and delivery systems within the ASCD. Construction of the proposed project will remove habitat for species; however, the project will incorporate and implement appropriate impact minimization and mitigation measures to reduce impacts that could result from the project with negligible impacts to sensitive species locally and regionally.

The project will create a new well and pipeline tie-in to existing conveyance system impacting 1.0 acre in total. The majority of these impacts are considered temporary. Regarding the storage facility and pipeline conveyance, project impacts are to occur on a disturbed residential housing lot and alongside County Road 84. Earthwork, infrastructure improvements, pumping plant construction, and the installation of two pipeline systems will be required.

This project is expected to operate in similar fashion as other existing infrastructure in the distribution system. The small footprint and temporary nature of the construction activities will allow for upland conditions to return and provide habitat for regional plant and animal species, including some locally occurring special-status species (e.g., Brittlescale, heartscale, blunt-nosed leopard lizard, coastal horned lizard, Tulare grasshopper mouse, etc.).

4.3.1 Potential Project Impacts from Habitat Modification to Special Status Plant Species

Potential Impacts. Crushing and/or removal from vehicle traffic and clearing activities required by the Project could impact plants. The listed California jewelflower, San Joaquin wooly-threads, and Kern mallow were not observed during this survey or other surveys completed for this project. Please note that complete floristic surveys meeting the CDFW protocol were not conducted (CDFG 2009). Two species of *Atriplex* (i.e., heartscale and brittlescale) were observed within the Well APE. Though these plants are considered species of concern, neither have a formal state or federal listing status. The individuals identified within the APE do not occur on the proposed new well drilling site or along the existing dirt roadway and can be avoided.

Based on soils, geographic location and other site features, other potentially occurring special-status plant species evaluated were determined to have a very low likelihood of occurrence (Appendix E). Therefore, no further measures are recommended as habitat modification is considered diminutive and the individuals that were identified can be avoided.

No impacts to federally listed special-status plant species should occur as a result of the Project. Based on the results of the conducted field surveys, the small project footprint, and temporary habitat disturbance to the Well APE, Project effects to California jewelflower, Kern mallow, and San Joaquin wooly-threads are considered negligible, and a determination that a "No Effect" on plant species can be made.

Mitigation. None warranted.

4.3.2 Potential Project Affects from Modification to habitats for Special-Status Animal Species that may forage or reside on site.

Potential Impacts. Impacts in the Storage Facility APE will fully develop the entire parcel; however, the APE (0.50 acre) is on a disturbed residential parcel. In addition, impacts associated with the pipeline tie-in are considered temporary as they occur in the shoulder of an existing asphalt county road. No impacts to special-status species will occur as a result of this APE development.

Regarding the Well APE, less than half of the 0.50 acre lot is planned for development (Appendix B). Potential impacts associated with well drilling, its development, installation of the pump and electrical equipment, and pipeline tie-in will occur during construction; however, the majority of these impacts (loss of shelter and foraging opportunities) are considered temporary. Permanent impacts will result from the two small concrete slabs required for the electrical box and well pad. Additional impacts will result from the gravel access to the well location.

The habitat consists primarily of California grassland. Eleven of the 22 special-status wildlife species identified in the Table 3 they are either absent, rarely occur or are transient through the Well APE. The temporary conversion at the Well APE of approximately 0.5 acre of land on each site would not constitute a significant loss of foraging habitat for these species.

Blunt-nosed leopard lizard protocol level surveys (adult) determined that the site and surrounding vicinity is utilized by this species. It is important to note, that the blunt-nosed leopard lizard is a California protected species and as such, the California Department of Fish and Wildlife cannot usually authorize take of this species. However, because Allensworth is an impoverished community with an inadequate water conveyance and storage system, a request to remove the "fully protected status" was made to the State Senate. On April 5, 2018 Senate Bill No. 495 was amended, allowing CDFW to authorize, under the California Endangered Species Act, the take or possession of the blunt-nosed leopard lizard resulting from impacts attributable to or otherwise related to the Allensworth Community Services District Safe Drinking Water Project to drill a new water well for the community of Allensworth and the Colonel Allensworth State Historic Park, if specified conditions are met." (Appendix F). As such, CDFW now can authorize an Incidental Take Permit (ITP) (pending) for take of the species.

The temporary loss of foraging habitat on the Well APE would be considered a less-than-significant impact, as the wildlife identified are relatively abundant regionally so that this loss of foraging habitat will not adversely affect their regional abundance or distribution.

Blunt-nosed leopard lizard, Tipton kangaroo rat, Tulare grasshopper mouse, coastal horned lizard, and San Joaquin whipsnake will take refuge in small mammal burrows; therefore, direct vehicle strikes, or entombment by crushing of burrows could be significant.

The burrowing owl, Tipton's kangaroo rat, American badger, and San Joaquin kit fox have a higher potential to occur in the APE and potential impacts to them are addressed below.

Mitigation. No mitigation is warranted for the loss of foraging habitat for all wildlife species listed in Table 1 except for the burrowing owl, Tipton's kangaroo rat American badger, and San Joaquin kit fox (see further discussions for these species below).

4.3.3 Potential Project Affects from Modification to habitats for the San Joaquin Kit Fox.

The habitat present on the project site is suitable for San Joaquin kit fox, a California threatened and a federal endangered species to utilize. However, while no individuals or their sign (e.g., dens, scat, tracks) were observed during the numerous surveys for the project, they could be transient through the site.

It should be noted that coyotes were observed on several site visits. Coyotes not only compete for resources, but also are known predators of the kit fox. The abundance of coyotes may have contributed to the lack of kit fox sign in the project area. However, given that kit fox are highly motile species, they could utilize the more natural habitats of Project Site for denning and foraging. Construction activities at the Project Site also have the potential to kill or injure San Joaquin kit fox though direct impacts from construction equipment and vehicles.

Effects on regional abundance and distribution of the kit fox is expected to be limited as the project has a small footprint, construction is considered temporary, and the abundance of similar foraging habitat exists within the vicinity of the Project Site.

Mitigation 1. A preconstruction survey of the Project Site will be conducted to ensure no kit foxes have moved into the area prior to beginning ground disturbance. By completing a preconstruction survey, potential dens, known dens, and natal dens, will be identified and treated in accordance with the 2011 *U.S. Fish and Wildlife Service Standardized Recommendations for the Protection of the San Joaquin Kit Fox Prior to or During Ground*

Disturbance (Appendix G).

If occupied known or natal dens cannot be avoided through the timing of construction or buffer zones, the applicant shall obtain permission from the USFWS and CDFW to relocate kit fox from the dens or propose an alternative construction method to avoid dens. No occupied den or natal den will be disturbed until the CDFW and USFWS have provided guidance and issued appropriate "take" authorization. A buffer of 100 feet will be established around any known den discovered during the pre-construction survey. A buffer of 500 feet will be established around any occupied natal den found during preconstruction surveys.

Compliance with the above mitigation measures would reduce impacts to San Joaquin kit fox to a less than significant level and will not likely result in direct or indirect impacts to San Joaquin kit fox.

In addition, the following are Best Management Practices that when implemented will further help to reduce impacts to kit fox and other species during construction activities.

Best Management Practices

In addition to the measures specified above, several Best Management Practices (BMPs) have been provided to minimize and avoid take of sensitive species during construction activities at the Project Sites. All ACSD personnel and contractors working on the construction of the various improvement projects will implement these measures.

• A qualified wildlife biologist shall conduct a sensitive species education program (tailgate briefing) for all project personnel. Topics to be discussed during the briefing shall include: occurrence and distribution of sensitive species in the project area, take avoidance measures being implemented during the project, reporting requirements if incidental take occurs, and applicable definitions and prohibitions under the Endangered Species Act.

• A biological monitor(s) shall be present while ground-disturbing activities are occurring based on the sensitivity of the habitat in which a project occurs. In addition to conducting pre-construction surveys for the project, the biological monitors shall aid crews in satisfying take avoidance criteria and implementing project mitigation measures, will document all pertinent information concerning project effects on sensitive species, and shall assist in minimizing the adverse effects of project activities on sensitive species.

• Biological monitors are empowered to order cessation of activities if take avoidance and/or mitigation measures are violated and will notify an ACSD representative.

• Unless biological monitors allow alterations to routes, all project vehicles shall be confined to existing roads or prominently staked and/or flagged access routes that are surveyed prior to use. All observed sensitive species and their habitat features such as dens, burrows or specific habitats shall be flagged as necessary to alert project personnel to their presence. All project-related flagging shall be collected and removed after completion of the project.

• To prevent inadvertent entrapment of species, excavation will include only that amount that can be worked and backfilled within a single workday. If this is not possible, all open holes, steep-walled holes, or trenches more than 2 feet deep shall be covered at the close of each working day by plywood or similar materials, or provided with one or more escape ramps constructed of earth fill or wooden planks (wooden planks should be more no less than 10 inches in width and should reach to bottom of trench). Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals.

• All spills of hazardous materials shall be cleaned up immediately.

• Pets are prohibited on the construction site.

• Firearms are prohibited on the construction site.

• All food-related trash, such as wrappers, cans, bottles, bags, and food scraps shall be disposed of daily in containers with secure covers and regularly removed from project sites.

• ACSD shall agree to and appoint a representative who will be the contact source for any employee or contractor who inadvertently kills or injures a threatened or endangered species, who finds a dead, injured, or entrapped individual, or who finds a dead, injured or entrapped threatened or endangered animal species. The representative will be identified during the preconstruction educational briefing.

• All project-related vehicles shall observe a speed limit of 25 mph or less on all except as posted on State and County highway/roads or paved facility roads.

• Appropriate measures shall be undertaken to prevent unauthorized vehicle entry to offroad survey routes in sensitive habitat areas. Signing will be the preferred method to discourage use.

• Work boundaries will be delineated with flagging, lathe stakes, temporary fencing or other marking to minimize surface disturbance associated with project activities.

• The area of disturbance will be reduced to the smallest practical area, considering topography, placement of facilities, location of burrows, nesting sites or dens, public safety, and other limiting factors.

• Work in large draws and drainages with saltbush should be avoided when possible.

• Project vehicles shall be confined to existing primary or secondary roads or to specifically delineated project sites (i.e., areas that have been surveyed and described in existing documentation). Otherwise, off-road vehicle travel is not permitted.

• To the extent practicable, previously disturbed areas will be used to stockpile excavated materials, storage of equipment, digging of slurry or borrow pits, trailer placement, vehicle parking, and other surface disturbing actions.

• Project activities shall be minimized during evening hours when some listed species become active and vulnerable to vehicle strikes.

• Any contractor, employee(s), or other personnel who inadvertently kills or injures a threatened or endangered species shall immediately report the incident to their representative.

The representative shall contact ACSD representative and, if feasible, a qualified biologist. ACSD will contact CDFW immediately in the case of a dead, injured, or entrapped listed species. The CDFW contact for immediate assistance is State Dispatch at (916) 445- 0045. State Dispatch will contact the local warden or biologist. The qualified biologist will also document all circumstances of death, injury, or entrapment of sensitive species. The biologist will 1) take all reasonable steps to enable the individual animal to escape should it be entrapped, 2) contact CDFW or other appropriate authorities to identify an approved rehabilitation center and appropriate capture and transport techniques should the animal be injured, and 3) document circumstances of death in writing and if possible photographing dead animal *in situ* prior to moving.

• USFWS and CDFW shall be notified in writing within three (3) working days in the event of an accidental death or injury of a San Joaquin kit fox or other threatened or endangered species. Notification shall include the date, time, and location of the incident or of the finding of a dead or injured animal, and any other pertinent information. The USFWS contact for this information is the Endangered Species, Program Field Office, 2800 Cottage Way, Room W-2605, Sacramento, CA 95825, (916) 414-6600. The CDFG contact information is 1416 9th Street, Sacramento, CA 95814, and (916) 654-4262. Any dead or injured kit fox or other threatened or endangered species shall be turned over to the CDFW Environmental Services Division, Fresno Regional Headquarters at (559) 243-4017 at the agency's request. The dead threatened or endangered animal can be transported to California State University at Bakersfield or the Endangered Species Recovery Team in Bakersfield for storage and research, if CDFW approves.

4.3.4 Potential Project Affects from Modification to habitats for the Burrowing Owl.

Potential Impact. Although no burrowing owls or their nests were observed, they could occupy the surrounding habitat. While suitable habitat is abundant regionally for burrowing owls, conversion of the Valley grassland and chenopod scrub habitat nonetheless constitutes s significant impact to burrowing owl nesting and foraging habitat. Additionally, construction activities may result in harm, injury and even death.

Mitigation1. Avoidance and Minimization to Individual Owls. In order to avoid impacts to active burrowing owl nests, a qualified biologist should conduct pre-construction surveys for burrowing owls within the construction footprint and within 250 ft. of the footprint no more than 30 days prior to the onset of ground disturbance. These surveys should be conducted in a manner consistent with the CDFW's burrowing owl survey methods (CDFG 2012). If preconstruction surveys determine that burrowing owls occupy the site during the non-breeding season (September 1 through January 31), then a passive relocation effort (e.g., blocking burrows with one-way doors and leaving them in place for a minimum of three days) may be necessary to ensure that the owls are not harmed or injured during construction. Once it has been determined that owls have vacated the site, the burrows can be collapsed, and ground disturbance can proceed. If burrowing owls are detected within the construction footprint or immediately adjacent lands (i.e., within 250 ft. of the footprint) during the breeding season (February 1 through August 31), a construction-free buffer of 250 ft. should be established around all active owl nests. The buffer area should be enclosed with temporary fencing, and construction equipment and workers should not enter the enclosed setback areas. Buffers should remain in place for the duration of the breeding season or until it has been confirmed by a qualified biologist that all chicks have fledged and are independent of their parents. After the breeding season, passive relocation of any remaining owls may take place as described above.

4.3.5 Potential Project Affects from Modification to habitats for the Tipton's Kangaroo Rat.

Potential Impacts. Although not captured during the small mammal trapping, direct effects to Tipton kangaroo rat will result from the loss of valley grassland and chenopod scrub habitat due to construction activities; grading, trenching, drilling, and excavation. During the initial earth moving activities, these species may be killed by being crushed or buried in their burrows. Disoriented and displaced individuals may die while dispersing or be subject to exposure or increased predation common around construction sites where earthmoving displaces and kills small mammals. Vehicles may crush fleeing individuals. Loss of habitat or forage may further result in the death of additional individuals.

Mitigation. The Tipton's kangaroo rat is a small, fossorial, mammal. Prior drilling efforts has disturbed the drill site. Few burrows exist on the Well APE. The Burrow Avoidance and Work Plan (Appendix H) and ITP being pursued for this project will provide guidance to reduce the impact to a less than significant level.

4.3.6 Impacts to American Badgers

Potential Impacts. Conversion of natural lands would result in a less-than-significant loss of habitat for the American badger. Badgers were not detected during surveys, but should they move onto the site prior to construction of the basins, individual badgers could be harmed or injured from construction activities and this would constitute a significant adverse impact.

Mitigation. Pre-construction surveys conducted for burrowing owls should also be used to determine the presence or absence of badgers in the development footprint. If an active badger den is identified during pre-construction surveys within or immediately adjacent to the work zone, a construction-free buffer of up to 300 ft. should be established around the den. Because badgers are known to use multiple burrows in a breeding burrow complex, a biological monitor should be present onsite during construction activities to ensure the buffer is adequate to avoid direct impact to individuals or nest abandonment. The monitor would be necessary onsite until it is determined that young are of an independent age and construction activities would not harm individual badgers. Once it has been determined that badgers have vacated the site, the burrows can be collapsed or excavated, and ground disturbance can proceed.

4.3.7 Disturbance to Nesting Raptors during Construction Activities

While nesting habitat for raptors is limited in the general project area, construction activities occurring during the breeding season, February through August, could result in nest abandonment or direct mortality to these birds. This would constitute a significant impact and be in violation of state and federal laws.

Mitigation. A qualified biologist should conduct a pre-construction survey for nesting raptors (particularly burrowing owl and Swainson's hawk) if construction activity is to occur during the breeding season (February 1 through August 31). This survey should be conducted no more than 14 days prior to the initiation of demolition/construction activities during the early part of the breeding season (February through April) and no more than 30 days prior to the initiation of these activities during the late part of the breeding season (May through August). If nesting raptors are detected on the site during the survey, a suitable construction-free buffer should be established around all active nests. The precise dimension of the buffer (a minimum of 150 ft., up to a maximum of 500 ft.) would be determined at that time and may vary depending on location, species and the type of work. Buffers should remain in place for the duration of the breeding season or until it has been confirmed by a qualified biologist that all chicks have fledged and are independent of their parents. Pre-construction surveys during the non-breeding season are not necessary, as the birds are expected to abandon their roosts during construction activities.

Implementation of the above measures would mitigate impacts to tree-nesting raptors and other migratory birds to a less-than-significant level.

4.3.8 Natural Communities of Special Concern

No natural communities of special concern were identified by the CNDDB as occurring on or in the vicinity of the Project. None of these natural communities occur on site.

Mitigation. None warranted.

4.3.9 Degradation of Water Quality in Seasonal Creeks, Reservoirs, and Downstream Waters

The proposed project is for the construction of a new well and storage facility. The majority of the acreage identified for this project has already undergone previous disturbance. Existing residential parcel, previous test well drilling, dirt roadways, paved roads and graded road shoulders, all contribute to the degraded conditions of the project site. One canal exists to the north of the access road to the well site, but this will be avoided.

M**itigation.** Project impacts to water quality in seasonal creeks, reservoirs, and downstream waters are not expected to result from the development of the Project Site. Implementation of BMPs to protect water quality during the construction of the project will occur as a condition of Stormwater Pollutions Prevention Plan (SWPPP).

4.3.10 Interference with the Movement of Native Wildlife

Many terrestrial animals need more than one biotic habitat in order to complete all of their biological activities. With increasing encroachment of humans on wildlife habitats, it has become important to establish and maintain linkages for animals to be able to access locations containing different biotic resources that are essential to maintaining their life cycles. Terrestrial animals use ridges, canyons, riparian areas, and open spaces for movement between their required habitats. Formal studies of wildlife movement in the area were not performed; however, because project construction is short in duration, disturbance to animal movement would be considered temporary. Furthermore, the proposed project site is not identified in the *Recovery Plan for Upland Species of the San Joaquin Valley, California* (USFWS 1998) as being located in the vicinity of an area identified where linkages should be pursued.

Mitigation. None required.

4.3.11 Conflict with Local Policies or Ordinances Protecting Biological Resources

The proposed Project is not expected to conflict with the goals or policies of Tulare County General Plan and recent updates.

Mitigation. Mitigation measures are not warranted.

4.3.12 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 Project site is located on parcels adjacent to an environmental preserved; however, there are no other approved habitat conservation plans, natural community conservation plans, regional or state habitat conservation plans in effect within the vicinity of the proposed Project. Take authorization for Tipton's kangaroo rat, blunt-nosed leopard lizard, and the San Joaquin kit fox would be granted under the ITP being prepared for this project. ACSD would be expected to comply with its provisions. The installation and operation of the well and storage project's improvements will not conflict with any local, regional, or state habitat conservation plan.

Mitigation. No mitigation is required.

4.3.13 Disturbance to Jurisdictional Waters

A preliminary wetland delineation was not conducted on the Project Site; however, a sufficiently thorough investigation was conducted so that any areas meeting the technical criteria of jurisdictional wetlands (i.e. drainages and seasonal pools) would be identified. Review of the United States Fish and Wildlife Service Wetlands Geodatabase did not indicate the presence of wetlands within the Project Site. The Project is not expected to result in impacts to jurisdictional wetlands or riparian habitats. Therefore, the project is expected to result in a less than significant impact to riparian habitats, Waters of the U.S. and Waters of the State.

Mitigation. None required.

5.0 SUMMARY OF FINDINGS

The habitat present in the Well APE has the potential to support the federal- and state listed species identified in Section 3.2 (Appendix C). During the field surveys, two species of concern plant species (Bitterscale and Heartscale), and three species of concern wildlife species (Coastal horned lizard, California horned lark, and Loggerhead shrike) have been observed in the APE on several occassions; however, none of these species have a formal state or federal listing status.

The only listed state- and federal-listed species observed in the APE was blunt-nosed leopard lizard. The implementation of the Species Avoidance Measures, removal of the BNLL's fully protected status, and the implementation of an ITP for this species will greatly reduce both direct and indirect species impacts. In addition, Project-related impacts (e.g., construction) could possibly impact foraging habitat; however, based on the size of the APE, the small project footprint, and the fact the majority of impacts are considered temporary, this Project would be considered negligible and insignificant to the overall survival of these species.

6.0 CONCLUSION

Because the Project will avoid burrows, has a small footprint, majority of the disturbance is considered temporary, a conclusion/decision can be made that the Project “May affect- is not likely to adversely affect” listed plant or wildlife species or their habitat can be made.

7.0 LIST OF PREPARERS

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Appendix A

Project Site Photos for the
Allensworth Community Service District – New Well and Storage Facility Project

New well location photographs.

Existing well tie-in location.

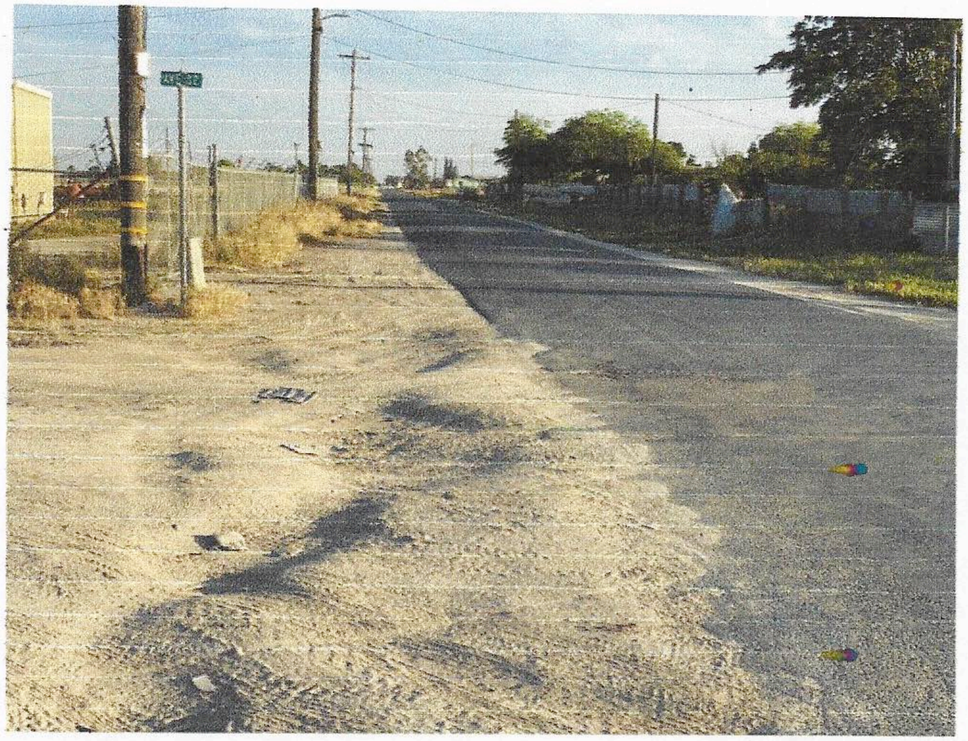
Pipeline to be installed in the middle of roadway.

New well project site. This site has had previous disturbance and has few small mammal burrows present.

Storage Facility Photographs

The storage facility is located on a residential parcel. It is disturbed and is not considered habitat for species.

From the storage facility, the pipeline crosses Road 84 and heads north along the road shoulder. No burrows were observed.



At the intersection of Avenue 32 and Road 84 looking south. The pipeline will join an existing water line at this intersection.

Appendix B
Site Plans

ALLENSWORTH WATER SYSTEM IMPROVEMENT PROJECT

CAUTION:
CONTRACTOR SHALL CALL U.S.A. FOR LOCATION OF UNDERGROUND UTILITIES PRIOR TO EXCAVATION.

CALL 1-800-642-2444 48 HRS.

NOTE:
THE ENGINEER HAS MADE A DILIGENT SEARCH OF RECORDS, CONTACTED UTILITY COMPANIES AND OTHERWISE ENDEAVORED TO INDICATE ON THE DRAWINGS ALL UTILITIES WHICH EXIST WITHIN THE LIMITS OF THE WORK OF THIS PROJECT. HOWEVER, THE ENGINEER DOES NOT ASSUME RESPONSIBILITY FOR ERRORS OR OMISSIONS. THE CONTRACTOR SHALL CONTACT THE OWNERS OF THE UNDERGROUND FACILITIES AND REQUEST THEY LOCATE AND MARK ON THE GROUND THEIR FACILITIES PRIOR TO BEGINNING WORK. PRIOR TO DELIVERY OF ANY MATERIALS OR BEGINNING EXCAVATION FOR ANY CONSTRUCTION INCLUDING BUT NOT LIMITED TO SEWER LINES, WATER LINES, STORM DRAINS, STREETS, ETC. AND PRIOR TO BRINGING ANY ADDITIONAL MEN OR EQUIPMENT ON THE JOB, THE CONTRACTOR SHALL EXPOSE AND CONFIRM THE EXACT LOCATION AND ANY POSSIBLE CONFLICT WITH THE WORK TO BE PERFORMED. THE ENGINEER SHALL THEN DETERMINE IF ANY REVISIONS TO THE DESIGN ARE REQUIRED AND PREPARE ANY NECESSARY REVISIONS TO THE PLANS PRIOR TO THE CONTRACTOR PROCEEDING WITH ANY WORK ON OR AROUND THE AFFECTED LINE OR LINES. NO EXTRA COMPENSATION WILL BE ALLOWED FOR EXTRA COSTS INCURRED DUE TO THE CONTRACTOR'S FAILURE TO STRICTLY FOLLOW THIS PROCEDURE. IN ACCORDANCE WITH GENERALLY ACCEPTED CONSTRUCTION PRACTICES, THE CONTRACTOR SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THE PROJECT, INCLUDING SAFETY OF ALL PERSONS AND PROPERTY; THIS REQUIREMENT APPLIES CONTINUOUSLY AND IS NOT LIMITED TO NORMAL WORKING HOURS. CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD THE DESIGN PROFESSIONAL(S) HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF THE DESIGN PROFESSIONAL(S).

STATE OF CALIFORNIA

VICINITY MAP
NOT TO SCALE

N
N.T.S.

SECTION 9, T24S, R24E, M.D.B.&M.

SHEET INDEX

NOTES:

1. CONTRACTOR IS RESPONSIBLE FOR OBTAINING AND COMPLYING WITH ALL NECESSARY PERMITS.
2. CONTRACTOR SHALL PROVIDE A U.S.A. LOCATE PRIOR TO COMMENCING ANY CONSTRUCTION.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING, OBTAINING, AND COMPLYING WITH A DUST CONTROL PLAN/PERMIT FROM THE SAN JOAQUIN VALLEY AIR POLLUTION CONTROL DISTRICT.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING, PAYING ALL FEES ASSOCIATED WITH, AND COMPLYING WITH A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AND IMPLEMENTING ALL NECESSARY BMP'S.

DEE JASPAR & ASSOCIATES, INC.
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FAX 661 393-4799
15 W. PUTNAM AVENUE, 2ND FLOOR
PORTERVILLE, CALIFORNIA 93257
PHONE 559 791-9286
FAX 559 783-9275

DESIGNED BY
COLSON HERTZOG
EIT 168432

REVIEWED BY
CURTIS SKAGGS
RCE 60960
(12-31-20)

REGISTERED PROFESSIONAL ENGINEER
CURTIS M. SKAGGS
NO. 60960
EXP. 12/31/20
CIVIL
STATE OF CALIFORNIA

APPROVED BY
DEE JASPAR
RCE 23042
(12-31-21)

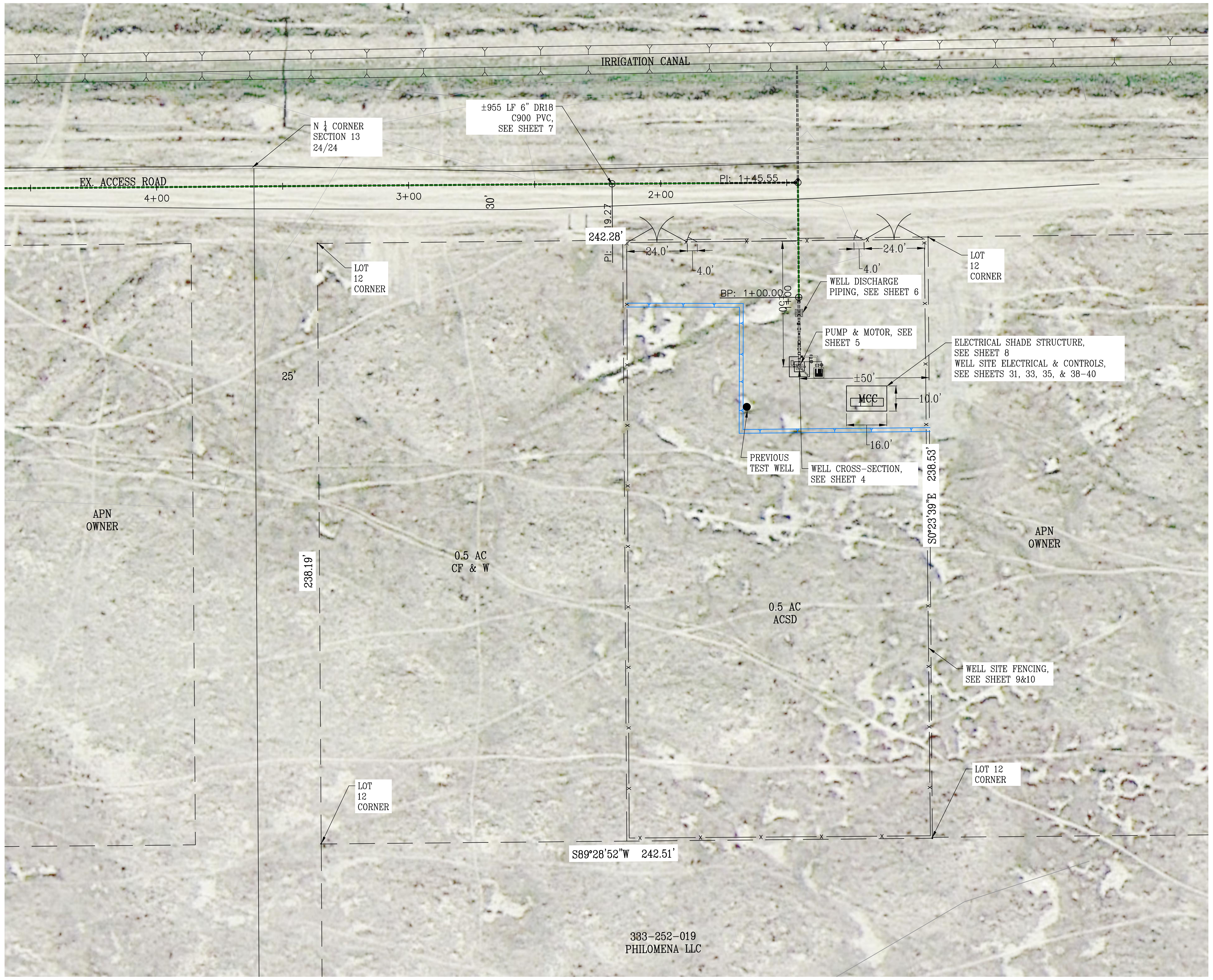
REGISTERED PROFESSIONAL ENGINEER
DEE JASPAR
NO. 23042
EXP. 12/31/21
CIVIL
STATE OF CALIFORNIA

APPROVED BY
ALLENSWORTH COMMUNITY SERVICES DISTRICT

ALLENSWORTH COMMUNITY SERVICES DISTRICT

TULARE COUNTY, CALIFORNIA

MAY, 2020



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NOTES:

1. COMPACTION TESTING WILL BE PERFORMED BY ALLENSWORTH COMMUNITY SERVICES DISTRICT. THE NUMBER AND LOCATION OF REQUIRED TESTS SHALL BE DETERMINED BY THE ENGINEER. THE DISTRICT WILL BEAR THE COST OF ALL COMPACTION TESTING.
2. FOR THE LOCATION OF EXISTING UNDERGROUND UTILITY LINES THE CONTRACTOR SHALL NOTIFY BOTH ALLENSWORTH COMMUNITY SERVICES DISTRICT, AND UNDERGROUND SERVICE ALERT (USA) AT LEAST TWO (2) WORKING DAYS PRIOR TO THE START OF CONSTRUCTION.

   USA PHONE: (800) 642-2444
3. ALLENSWORTH COMMUNITY SERVICES DISTRICT WILL OBTAIN A BUILDING AND GRADING PERMIT FROM THE COUNTY OF TULARE AND WILL PAY ALL FEES. THE CONTRACTOR SHALL NOT COMMENCE CONSTRUCTION ACTIVITIES UNTIL THESE PERMITS ARE IN PLACE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING THE REQUIRED INSPECTIONS WITH ALLENSWORTH COMMUNITY SERVICES DISTRICT AND THE COUNTY INSPECTOR. A COUNTY ENCROACHMENT PERMIT WILL BE OBTAINED FROM THE COUNTY OF TULARE BY ALLENSWORTH COMMUNITY SERVICES DISTRICT FOR ALL WORK TO BE PERFORMED IN THE COUNTY RIGHT-OF-WAY. THE CONTRACTOR SHALL BE RESPONSIBLE FOR COMPLYING WITH ALL INSPECTIONS AND REQUIREMENTS OF THE PERMIT. CONTRACTOR SHALL BE RESPONSIBLE FOR PREPARING & COMPLYING WITH A TRAFFIC CONTROL PLAN.
4. THE LOCATIONS OF EXISTING UTILITIES AND UNDERGROUND PIPELINES SHOWN ON THESE PLANS ARE APPROXIMATE ONLY. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND PIPELINES BEFORE COMMENCING WORK WHETHER THE UTILITIES ARE SHOWN ON THE DRAWINGS OR NOT. CONTRACTOR ASSUMES ALL LIABILITY FOR ANY AND ALL DAMAGES TO EXISTING UTILITIES OCCASIONED BY HIS FAILURE TO EXACTLY LOCATE, PRESERVE, AND PROTECT ANY AND ALL UNDERGROUND UTILITIES AND PIPELINES.
5. THE LOCATIONS OF ALL PROPOSED CONNECTIONS TO EXISTING FACILITIES SHALL BE POTHOLED AND THE CONTRACTOR SHALL IDENTIFY THE SIZE, TYPE, CONFIGURATION, AND DEPTH. IF WHAT IS DISCOVERED DURING POTHOLING CONFLICTS WITH WHAT IS SHOWN HEREIN THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER FOR RESOLUTION. THE CONTRACTOR SHALL BEAR ALL COSTS RESULTING FROM HIS FAILURE TO PROPERLY FOLLOW THIS PROCEDURE.
6. CONTRACTOR AGREES THAT HE SHALL ASSUME SOLE AND COMPLETE RESPONSIBILITY FOR JOB SITE CONDITIONS DURING THE COURSE OF CONSTRUCTION OF THIS PROJECT, INCLUDING THE SAFETY OF ALL PERSONS AND PROPERTY; THAT THIS REQUIREMENT SHALL APPLY CONTINUOUSLY AND NOT BE LIMITED TO NORMAL WORKING HOURS; THAT THE CONTRACTOR SHALL DEFEND, INDEMNIFY, AND HOLD THE OWNER, ENGINEER, AND COUNTY OF TULARE HARMLESS FROM ANY AND ALL LIABILITY, REAL OR ALLEGED, IN CONNECTION WITH THE PERFORMANCE OF WORK ON THIS PROJECT, EXCEPTING THE LIABILITY ARISING FROM THE SOLE NEGLIGENCE OF SAID ENTITIES.
7. ALL CONSTRUCTION WORK UNDER THIS CONTRACT SHALL BE PERFORMED IN ACCORDANCE WITH THESE DRAWINGS, ALLENSWORTH COMMUNITY SERVICES DISTRICT STANDARDS, COUNTY OF TULARE STANDARDS, AND AS DIRECTED BY THE ENGINEER. IN THE CASE OF A CONFLICT BETWEEN SAID STANDARDS, THE MORE STRINGENT SHALL APPLY.

811

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TWO WORKING DAYS
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WELL SITE PLAN

ALLENSWORTH WATER SYSTEM IMPROVEMENT PROJECT

ALLENSWORTH COMMUNITY SERVICES DISTRICT
ALLENSWORTH, TULARE COUNTY, CALIFORNIA

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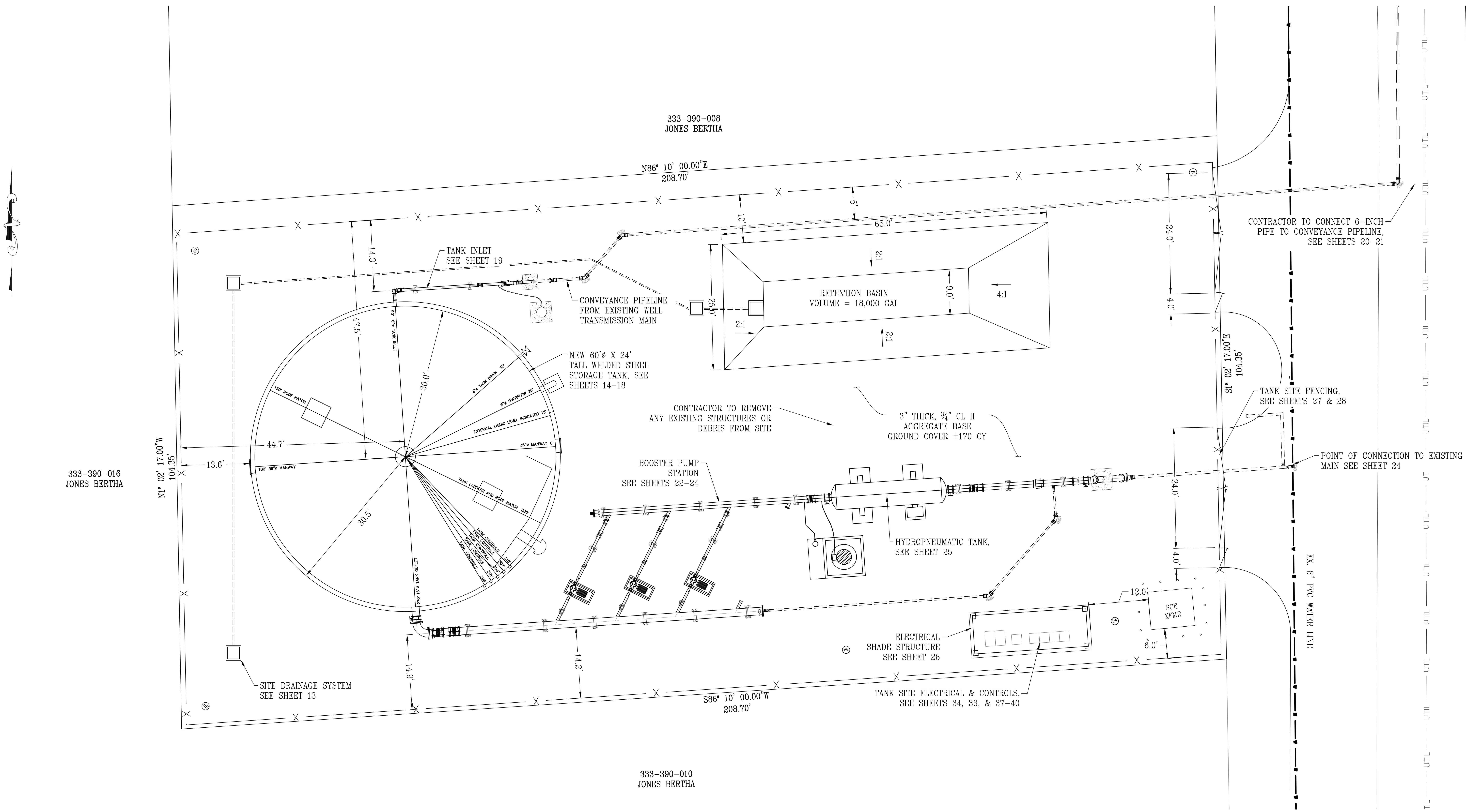

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REV.	DATE	DESCRIPTION	BY

DEE JASPAR & ASSOCIATES, INC.
CIVIL • ENGINEERS
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TANK SITE PLAN

ALLENSWORTH WATER SYSTEM IMPROVEMENT PROJECT

ALLENSWORTH COMMUNITY SERVICES DISTRICT
ALLENSWORTH, TULARE COUNTY, CALIFORNIA

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DATE	JUNE 2019
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Appendix C

California Natural Diversity Database Query,
U.S. Fish and Wildlife Service IPaC Trust Resource Report, and
California Native Plant Society Inventory Results Generated for the
Allensworth Community Services District –Well Project

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Taxonomic Group is (Fish or Amphibians or Reptiles or Birds or Mammals or Mollusks or Arachnids or Crustaceans or Insects or Ferns or Gymnosperms or Monocots or Dicots or Lichens or Bryophytes) and Quad is (Allensworth (3511974) or Alpaugh (3511984) or Delano East (3511972) or Delano West (3511973) or McFarland (3511962) or Pixley (3511983) or Pond (3511963) or Sausalito School (3511982) or Wasco NW (3511964))

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Agelaius tricolor tricolored blackbird	G2G3 S1S2	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_EN-Endangered NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	205 205	503 S:2	0	0	0	0	0	2	0	2	2	0	0
Ammospermophilus nelsoni Nelson's antelope squirrel	G2 S2	None Threatened	BLM_S-Sensitive IUCN_EN-Endangered	207 235	254 S:5	0	0	0	1	0	4	5	0	5	0	0
Athene cunicularia burrowing owl	G4 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	190 275	1870 S:33	6	11	3	1	0	12	11	22	33	0	0
Atriplex cordulata var. erecticaulis Earlimart orache	G3T1 S1	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	235 330	21 S:14	0	0	4	0	2	8	8	6	12	2	0
Atriplex coronata var. vallicola Lost Hills crownscale	G4T2 S2	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	275 275	80 S:2	0	0	0	0	0	2	1	1	2	0	0
Atriplex depressa brittlescale	G2 S2	None None	Rare Plant Rank - 1B.2	225 320	61 S:2	0	0	0	0	0	2	2	0	2	0	0
Atriplex persistens vernal pool smallscale	G2 S2	None None	Rare Plant Rank - 1B.2	370 370	41 S:1	0	0	0	0	0	1	1	0	1	0	0
Atriplex subtilis subtle orache	G1 S1	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	250 325	24 S:5	0	0	0	0	0	5	4	1	5	0	0
Branchinecta lynchi vernal pool fairy shrimp	G3 S2S3	Threatened None	IUCN_VU-Vulnerable	210 320	754 S:3	0	1	0	0	0	2	3	0	3	0	0

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks						Population Status		Presence		
						A	B	C	D	X	U	Historic > 20 yr	Recent <= 20 yr	Extant	Poss. Extirp.	Extirp.
Buteo swainsoni Swainson's hawk	G5 S3	None Threatened	BLM_S-Sensitive IUCN_LC-Least Concern USFWS_BCC-Birds of Conservation Concern	200 210	2394 S:2	0	1	1	0	0	0	0	2	2	0	0
Calochortus striatus alkali mariposa-lily	G3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden USFS_S-Sensitive	235 235	104 S:1	0	0	0	0	0	1	0	1	1	0	0
Caulanthus californicus California jewelflower	G1 S1	Endangered Endangered	Rare Plant Rank - 1B.1	295 320	63 S:4	0	0	0	0	4	0	4	0	0	1	3
Charadrius alexandrinus nivosus western snowy plover	G3T3 S2	Threatened None	CDFW_SSC-Species of Special Concern NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	200 200	121 S:1	0	0	0	0	0	1	1	0	1	0	0
Charadrius montanus mountain plover	G3 S2?	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened NABCI_RWL-Red Watch List USFWS_BCC-Birds of Conservation Concern	205 205	88 S:1	0	0	1	0	0	0	0	1	1	0	0
Cicindela tranquebarica ssp. San Joaquin tiger beetle	G5T1 S1	None None		200 200	2 S:1	0	0	0	0	0	1	0	1	1	0	0
Delphinium recurvatum recurved larkspur	G3 S3	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	225 320	96 S:16	2	3	0	0	1	10	13	3	15	1	0
Dipodomys nitratoides nitratoides Tipton kangaroo rat	G3T1T2 S1S2	Endangered Endangered	IUCN_VU-Vulnerable	210 390	77 S:18	1	2	1	0	2	12	16	2	16	0	2
Entosphenus hubbsi Kern brook lamprey	G1G2 S1S2	None None	AFS_TH-Threatened CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened USFS_S-Sensitive	395 395	2 S:1	0	0	0	0	0	1	1	0	1	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Eryngium spinosepalum spiny-sepaled button-celery	G2 S2	None None	Rare Plant Rank - 1B.2	300 300	90 S:1	0	0	0	0	0	1	1	0	1	0	0
Gambelia sila blunt-nosed leopard lizard	G1 S1	Endangered Endangered	CDFW_FP-Fully Protected IUCN_EN-Endangered	212 870	312 S:25	1	8	0	0	0	16	21	4	25	0	0
Lasthenia glabrata ssp. coulteri Coulter's goldfields	G4T2 S2	None None	Rare Plant Rank - 1B.1 BLM_S-Sensitive SB_RSABG-Rancho Santa Ana Botanic Garden	225 225	89 S:1	0	0	0	0	0	1	1	0	1	0	0
Layia munzii Munz's tidy-tips	G1 S1	None None	Rare Plant Rank - 1B.2 BLM_S-Sensitive	300 300	59 S:1	0	0	0	0	1	0	1	0	0	0	1
Lytta hoppingi Hopping's blister beetle	G1G2 S1S2	None None		300 300	5 S:1	0	0	0	0	0	1	1	0	1	0	0
Lytta molesta molestan blister beetle	G2 S2	None None		200 200	17 S:1	0	0	0	0	0	1	1	0	1	0	0
Lytta morrisoni Morrison's blister beetle	G1G2 S1S2	None None		210 240	10 S:2	0	0	0	0	0	2	0	2	2	0	0
Masticophis flagellum ruddocki San Joaquin whipsnake	G5T2T3 S2?	None None	CDFW_SSC-Species of Special Concern	220 250	86 S:3	0	1	1	0	0	1	3	0	3	0	0
Perognathus inornatus San Joaquin Pocket Mouse	G2G3 S2S3	None None	BLM_S-Sensitive	210 245	121 S:8	0	0	1	0	0	7	3	5	8	0	0
Phrynosoma blainvillii coast horned lizard	G3G4 S3S4	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	230 255	728 S:7	2	1	1	0	0	3	5	2	7	0	0
Spea hammondii western spadefoot	G3 S3	None None	BLM_S-Sensitive CDFW_SSC-Species of Special Concern IUCN_NT-Near Threatened	245 403	425 S:10	1	2	0	0	0	7	5	5	10	0	0
Taxidea taxus American badger	G5 S3	None None	CDFW_SSC-Species of Special Concern IUCN_LC-Least Concern	280 280	478 S:1	0	0	0	0	0	1	1	0	1	0	0

Summary Table Report

California Department of Fish and Wildlife

California Natural Diversity Database

Name (Scientific/Common)	CNDDB Ranks	Listing Status (Fed/State)	Other Lists	Elev. Range (ft.)	Total EO's	Element Occ. Ranks A	B	C	D	X	U	Population Status Historic > 20 yr	Recent <= 20 yr	Presence Extant	Poss. Extirp.	Extirp.
Vulpes macrotis mutica San Joaquin kit fox	G4T2 S2	Endangered Threatened		205 460	965 S:64	5	4	2	1	0	52	57	7	64	0	0

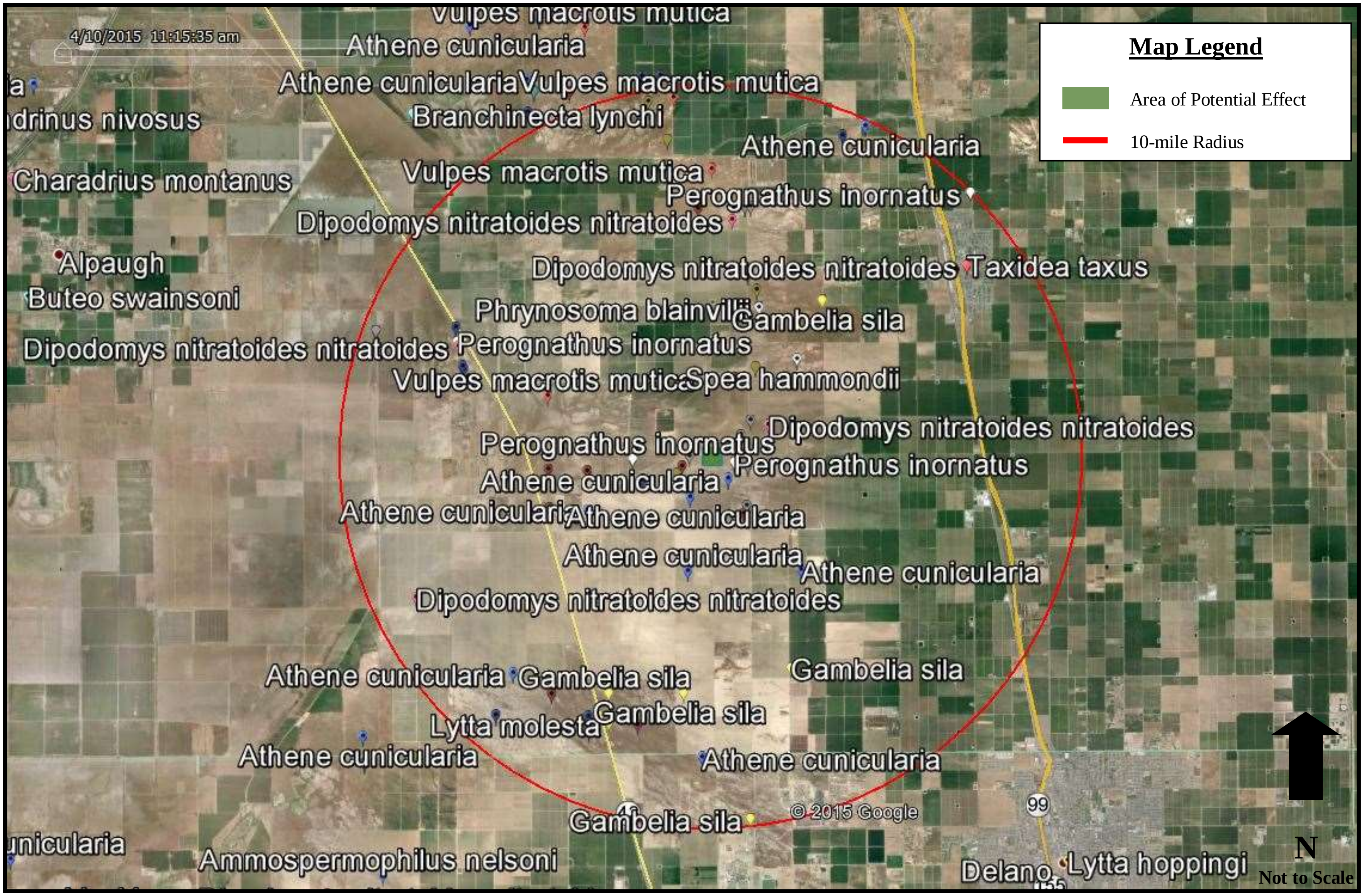


Figure C1: California Natural Diversity Database Query – Recorded Wildlife Observations (Google Earth Pro 2015)

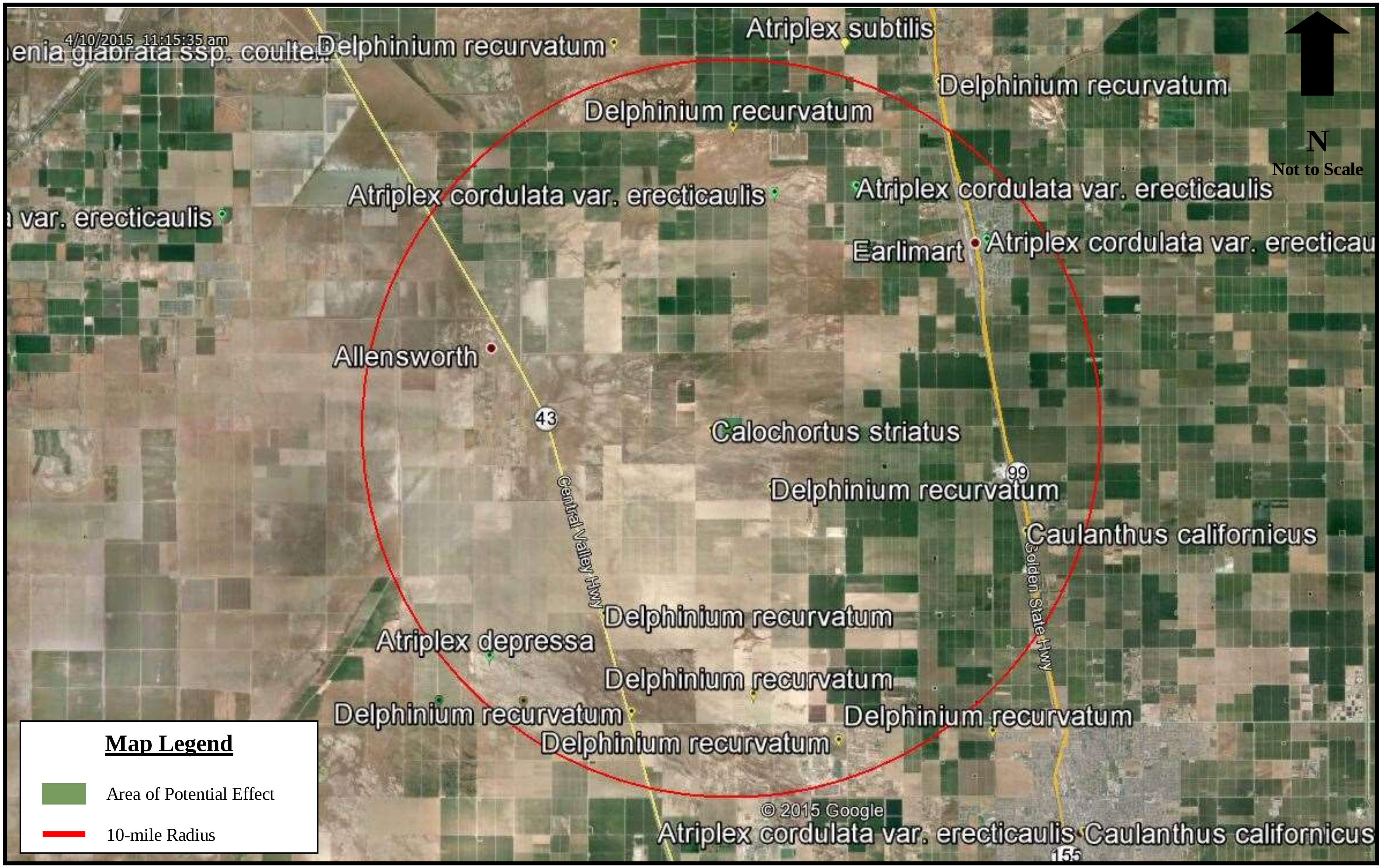


Figure C2: California Natural Diversity Database Query – Recorded Plant Observations (Google Earth Pro 2015)

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: May 07, 2020
Consultation Code: 08ESMF00-2020-SLI-1842
Event Code: 08ESMF00-2020-E-05706
Project Name: Allensworth Community Services District New Well and Storage Facility

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF

Please be aware that bald and golden eagles are protected under the Bald and Golden Eagle Protection Act (16 U.S.C. 668 *et seq.*), and projects affecting these species may require development of an eagle conservation plan (http://www.fws.gov/windenergy/eagle_guidance.html). Additionally, wind energy projects should follow the wind energy guidelines (http://www.fws.gov/windenergy/) for minimizing impacts to migratory birds and bats.

Guidance for minimizing impacts to migratory birds for projects including communications towers (e.g., cellular, digital television, radio, and emergency broadcast) can be found at: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm; http://www.towerkill.com; and http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2020-SLI-1842

Event Code: 08ESMF00-2020-E-05706

Project Name: Allensworth Community Services District New Well and Storage Facility

Project Type: WATER SUPPLY / DELIVERY

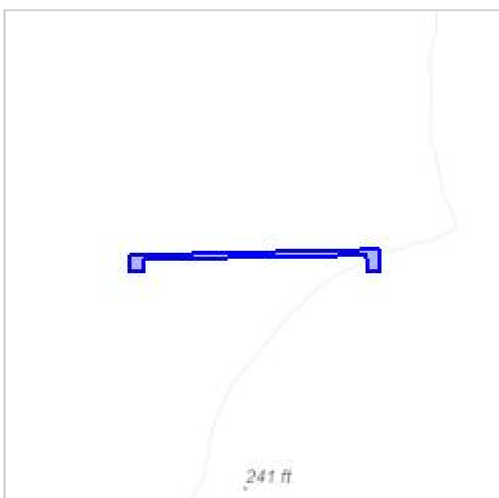
Project Description: The ACSD project water well site is location is in Section 13, T24S, R24E, Mount Diablo Base and Meridian (MDBM). The storage tank is located in the community of Allensworth at 3300 Road 84, #A, Allensworth, CA 93219 also being APN 333-390-009 in Section 16, T24S, R24E, MDBM.

The project includes the drilling, constructing, and development of a water supply well; the equipping of this well with a pump, motor, discharge piping, and electrical; connection of the well to the existing well lateral with 6” underground PVC piping; the construction of a 0.5MG AWWA D100 welded steel storage tank and booster pumping station; and the associated underground PVC piping to connect the tank inlet and the booster pumping station to the existing water distribution system.

The project will take one year to complete and construction is anticipated sometime in August 2020.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/35.848258859838914N119.3299843941075W



Counties: Tulare, CA

Endangered Species Act Species

There is a total of 10 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered
Tipton Kangaroo Rat *Dipodomys nitratoides nitratoides* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7247 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/40/office/11420.pdf	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard *Gambelia silus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
Conservancy Fairy Shrimp *Branchinecta conservatio* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/8246	Endangered
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
California Jewelflower *Caulanthus californicus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4599	Endangered
Kern Mallow *Eremalche kernensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1731	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
Phone: (916) 414-6600 Fax: (916) 414-6713

In Reply Refer To: May 07, 2020
Consultation Code: 08ESMF00-2020-SLI-1840
Event Code: 08ESMF00-2020-E-05703
Project Name: Allensworth Community Services District- New Well and Storage Facility

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, under the jurisdiction of the U.S. Fish and Wildlife Service (Service) that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the Service under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

Please follow the link below to see if your proposed project has the potential to affect other species or their habitats under the jurisdiction of the National Marine Fisheries Service:

http://www.nwr.noaa.gov/protected_species/species_list/species_lists.html

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

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We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List

Official Species List

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This species list is provided by:

Sacramento Fish And Wildlife Office
Federal Building
2800 Cottage Way, Room W-2605
Sacramento, CA 95825-1846
(916) 414-6600

Project Summary

Consultation Code: 08ESMF00-2020-SLI-1840

Event Code: 08ESMF00-2020-E-05703

Project Name: Allensworth Community Services District- New Well and Storage Facility

Project Type: WATER SUPPLY / DELIVERY

Project Description: The ACSD project water well site is location is in Section 13, T24S, R24E, Mount Diablo Base and Meridian (MDBM). The storage tank is located in the community of Allensworth at 3300 Road 84, #A, Allensworth, CA 93219 also being APN 333-390-009 in Section 16, T24S, R24E, MDBM.

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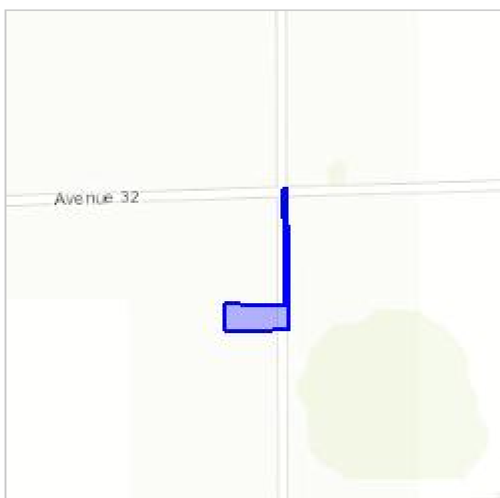
The project will take one year to complete and construction is anticipated sometime in August 2020.

Project Location:

Approximate location of the project can be viewed in Google Maps: https://www.google.com/maps/place/35.84717178833765N119.38428799280281W



Counties: Tulare, CA

Endangered Species Act Species

There is a total of 9 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries[1], as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

---

1. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Giant Kangaroo Rat *Dipodomys ingens* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/6051	Endangered
San Joaquin Kit Fox *Vulpes macrotis mutica* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/2873	Endangered
Tipton Kangaroo Rat *Dipodomys nitratoides nitratoides* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/7247 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/40/office/11420.pdf	Endangered

Reptiles

NAME	STATUS
Blunt-nosed Leopard Lizard *Gambelia silus* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/625	Endangered
Giant Garter Snake *Thamnophis gigas* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4482	Threatened

Amphibians

NAME	STATUS
California Red-legged Frog *Rana draytonii* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/2891 Species survey guidelines: https://ecos.fws.gov/ipac/guideline/survey/population/205/office/11420.pdf	Threatened

Fishes

NAME	STATUS
Delta Smelt *Hypomesus transpacificus* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/321	Threatened

Crustaceans

NAME	STATUS
Vernal Pool Fairy Shrimp *Branchinecta lynchi* There is **final** critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/498	Threatened

Flowering Plants

NAME	STATUS
Kern Mallow *Eremalche kernensis* No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1731	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

CNPS California Native Plant Society

*The database used to provide updates to the Online Inventory is under construction. View updates and changes made since May 2019 here.

Plant List

23 matches found. *Click on scientific name for details*

Search Criteria

Found in Quads 3511985, 3511984, 3511983, 3511975, 3511974, 3511973, 3511965 3511964 and 3511963;

Modify Search Criteria Export to Excel Modify Columns Modify Sort Display Photos

Scientific Name	Common Name	Family	Lifeform	Blooming Period	CA Rare Plant Rank	State Rank	Global Rank
Allium howellii var. howellii	Howell's onion	Alliaceae	perennial bulbiferous herb	Mar-Apr	4.3	S3	G3G4T3
Atriplex cordulata var. cordulata	heartscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G3T2
Atriplex cordulata var. erecticaulis	Earlimart orache	Chenopodiaceae	annual herb	Aug-Sep(Nov)	1B.2	S1	G3T1
Atriplex coronata var. coronata	crownscale	Chenopodiaceae	annual herb	Mar-Oct	4.2	S3	G4T3
Atriplex coronata var. vallicola	Lost Hills crownscale	Chenopodiaceae	annual herb	Apr-Sep	1B.2	S2	G4T2
Atriplex depressa	brittlescale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S2	G2
Atriplex minuscula	lesser saltscale	Chenopodiaceae	annual herb	May-Oct	1B.1	S2	G2
Atriplex persistens	vernal pool smallscale	Chenopodiaceae	annual herb	Jun,Aug,Sep,Oct	1B.2	S2	G2
Atriplex subtilis	subtle orache	Chenopodiaceae	annual herb	Jun,Aug,Sep(Oct)	1B.2	S1	G1
Calochortus striatus	alkali mariposa lily	Liliaceae	perennial bulbiferous herb	Apr-Jun	1B.2	S2S3	G3?
Caulanthus californicus	California jewelflower	Brassicaceae	annual herb	Feb-May	1B.1	S1	G1
Cirsium crassicaule	slough thistle	Asteraceae	annual / perennial herb	May-Aug	1B.1	S1	G1
Delphinium recurvatum	recurved larkspur	Ranunculaceae	perennial herb	Mar-Jun	1B.2	S2?	G2?
Eremalche parryi ssp. kernensis	Kern mallow	Malvaceae	annual herb	Jan,Mar,Apr,May(Feb)	1B.2	S3	G3G4T3

Eriastrum hooveri	Hoover's eriastrum	Polemoniaceae	annual herb	(Feb)Mar-Jul	4.2	S3	G3
Hordeum intercedens	vernal barley	Poaceae	annual herb	Mar-Jun	3.2	S3S4	G3G4
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
Layia munzii	Munz's tidy-tips	Asteraceae	annual herb	Mar-Apr	1B.2	S2	G2
Monolopia congdonii	San Joaquin woollythreads	Asteraceae	annual herb	(Jan)Feb-May	1B.2	S2	G2
Myosurus minimus ssp. apus	little mousetail	Ranunculaceae	annual herb	Mar-Jun	3.1	S2	G5T2Q
Phacelia ciliata var. opaca	Merced phacelia	Hydrophyllaceae	annual herb	Feb-May	3.2	SH	G5TH
Puccinellia simplex	California alkali grass	Poaceae	annual herb	Mar-May	1B.2	S2	G3
Tropidocarpum californicum	Kings gold	Brassicaceae	annual herb	Feb-Mar	1B.1	S1	G1

Suggested Citation

California Native Plant Society, Rare Plant Program. 2020. Inventory of Rare and Endangered Plants of California (online edition, v8-03 0.39). Website http://www.rareplants.cnps.org [accessed 07 May 2020].

Appendix D
Natural Resources Conservation Service Soil Survey Data

Soil Map—Tulare County, Western Part, California

MAP LEGEND

Area of Interest (AOI)

- Area of Interest (AOI)

Soils

- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features

- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features

- Streams and Canals

Transportation

- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background

- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Tulare County, Western Part, California
Survey Area Data: Version 13, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 15, 2016—Nov 5, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
127	Kimberlina fine sandy loam, 0 to 2 percent slopes MLRA 17	1.2	100.0%
Totals for Area of Interest		**1.2**	**100.0%**

Soil Map—Tulare County, Western Part, California

Map Scale: 1:1,770 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 25 50 100 150

Feet: 0 50 100 200 300

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
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- Gravel Pit
- Gravelly Spot
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- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
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- Streams and Canals

Transportation
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- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

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Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
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Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

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The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
103	Atesh-Jerryslu association, 0 to 2 percent slopes	2.1	100.0%
Totals for Area of Interest		**2.1**	**100.0%**

Appendix E

Special-status Plant and Wildlife Evaluation Allensworth Community Services District – New Well and Storage Facility Project

Species	Status	Habitat	*Occurrence in the Study Area
Animals			
Conservancy fairy shrimp (*Branchinecta conservation*)	FE	Conservancy fairy shrimp inhabit rather large, cool-water vernal pools with moderately turbid water. Known from Butte, Tehama, Glenn, Yolo. Solano, Stanislaus, Merced, and Ventura Counties.	**Absent.** Habitat is not present. No aquatic resources were observed on the project site.
Vernal pool fairy shrimp (*Branchinecta lynchi*)	FT	Occupies a variety of different vernal pool habitats, from small, clear, sandstone rock pools to large, turbid, alkaline, grassland valley floor pools. They are most frequently found in pools measuring less than 0.05 acres (0.02 hectares). Distribution in the Central Valley ranges from Shasta County to Tulare County. Kern County has no documented occurrences.	**Absent.** Habitat is not present. No aquatic resources were observed on the project site.
Delta smelt (*Hypomesus transpacificus*)	FT/CT	Found only in the Sacramento-San Joaquin Estuary in the interface between salt and freshwater.	**Absent.** Habitat is not present. No permanent aquatic resources were observed on the project site.
Western spadefoot (Spea (=*Scaphiopus*) *hammondii*)	SC	Mainly occurs in valley and foothill grasslands of San Joaquin Valley, coast ranges, south into Mexico. Vernal pools or other temporary pools/wetlands are required for breeding usually below 4,472 feet in elevation.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
California red-legged frog (*Rana draytonii*)	FT	Inhabits quiet pools of streams, marshes, and occasionally ponds. Occurs along the Coast Ranges from Mendocino County south and in portions of the Sierra Nevada and Cascades ranges, usually below 3,936 feet.	**Absent.** Suitable habitat does not exist in the project area.
Coast (California) horned lizard (*Phrynosoma blainvillii*)	SC	Occurs in a variety of habitats including annual grassland, valley and foothill woodland, coniferous and riparian, and pine-cypress, in Sierra Nevada below 3,940 feet, but most common in lowlands along sandy washes with scattered low brushes.	**Present.** Suitable habitat is available for this species. During protocol surveys for BNLL, this species was observed on numerous occasions.
San Joaquin whipsnake (*Masticophis flagellum ruddocki*)	SC	Open dry habitats with little or no tree cover found in valley grassland and saltbush scrub in the San Joaquin Valley.	**Possible.** Suitable habitat is located in the study area, but none were observed during the field surveys of the study area.
Giant garter snake (*Thamnophis gigas*)	FT	Highly aquatic usually found in areas with low gradient freshwater marshes, sloughs, drainage canals, irrigation ditches, rice fields, and occasionally in slow-moving creeks. Prefers locations with vegetation close to the water for basking. Known from Chico, Butte, Fresno Counties; but historically further south in the San Joaquin Valley.	**Absent.** Suitable aquatic habitat does not exist in the study area.
Blunt-nosed leopard lizard (*Gambelia sila*)	FE, CE	Inhabits sparsely vegetated open grassland saltbush scrub, alkali sink scrub, and wash habitats. Known from San Joaquin Valley, Elkhorn plain, Panoche Valley,	**Present.** Suitable habitat is available for this species. During protocol surveys, this species was observed on numerous occasions.
Western pond turtle (*Emys marmorata*)	SC	Inhabits permanent or nearly permanent bodies of water in many habitat types. Requires basking and suitable nesting sites.	**Absent.** Suitable habitat does exist in the study area.

Species	Status	Habitat	*Occurrence in the Study Area
Western snowy plover (*Charadrius alexandrinus nivosus*)	FT	Nests, feeds, and takes cover on sandy or gravelly beaches along the coast, on estuarine salt ponds, alkali lakes, and at the Salton Sea. On the Pacific coast, it nests on barren to sparsely vegetated sand beaches, dry salt flats in lagoons, dredge spoils deposited on beach or dune habitat, levees and flats at salt-evaporation ponds, and river bars.	**Absent.** Suitable habitat does exist in the study area. This species has not been observed during any field visits.
Mountain plover (*Charadrius montanus*)	PT/SC	Forages in short grasslands and plowed fields Winter resident from September through March in the Central Valley from Sutter and Yuba Counties southward also Los Angeles County, eastern San Bernardino County and along the Colorado River Valley, does not breed in California.	**Absent.** Habitat is not present. Project site is outside of the nesting range for this species.
Tricolored blackbird (*Agelaius tricolor*)	SC	Occurs near fresh water with dense cattails, or thickets of willows or shrubs. Forages in grassland, wetlands, drainage canals, and upland areas. Found throughout the Central Valley.	**Possible.** Suitable foraging habitat is located in the study area, but lacks nesting habitat. None were observed during the field surveys of the study area.
Golden eagle (*Aquila chryaetos*)	SFP	Uncommon permanent resident and migrant throughout California except the Central Valley; forages in rolling foothills, mountain and desert areas. Below 12,575 feet in elevation. Nests on cliffs and in large trees in open areas, very susceptible to human disturbances.	**Absent.** Suitable foraging habitat is located in the study area, but lacks nesting habitat; however, no evidence of this species was observed.
Burrowing owl (*Athene cunicularia*)	SC	Inhabit dry, open grasslands, rolling hills, desert floors, prairies, savannas, agricultural land, and other areas of open, bare ground. These owls will also inhabit open areas near human habitation, such as airports, golf courses, shoulders of roads, railroad embankments, and the banks of irrigation ditches and reservoirs.	**Possible.** Suitable habitat for this species is available The project site is within the range for this species; however, no burrows/nests or sign were observed during the field surveys.
California horned lark (*Eremophila alpestris actia*)	WL	Inhabits grasslands, meadows, prairie, deserts and tundra. They frequent open agricultural fields.	**Present.** Suitable foraging habitat is present on the Project Site. This species was observed during the field surveys.
Swainson's hawk (*Buteo swainsoni*)	FT	Riparian and sometimes large isolated trees used for nesting; grasslands and agricultural lands used for foraging; in California, breeds primarily in the Sacramento Valley, with occasional nesting to the south through Kern County; migrate through the Central and San Joaquin Valleys to their wintering grounds in South America.	**Possible.** Suitable foraging habitat, but no nesting habitat is available onsite. No Swainson's hawks have been observed during the numerous site visits.
Nelson's antelope squirrel (*Ammospermophilus nelsoni*)	CT	Found in grasslands or open shrublands; formerly more extensive, current range includes southwestern portion of the San Joaquin Valley and in adjacent valleys to the west.	**Absent.** Habitat is present. No San Joaquin antelope squirrels were observed during any site visit.
Giant kangaroo rat (*Dipodomys ingens*)	E/E	Western side of the San Joaquin Valley, including the Carrizo Plain and the Panoche Valley; grassland and shrub-land habitats with sparse vegetative cover and soils that are well-drained, fine sandy loams with gentle slopes.	**Absent.** Habitat is present. Sign of kangaroo rat occupancy is present on the project site; however, no burrows indicative of giant kangaroo rat were observed during the field surveys. Small mammal trapping did not capture GKR.

Species	Status	Habitat	*Occurrence in the Study Area
Tipton kangaroo rat (*Dipodomys nitratoides nitratoides*)	FE, CE	Found in arid communities on the valley floor portions of Kern, Tulare, and Kings counties in scrub and grassland communities in level to near-level terrain with alluvial fan-floodplain soil (fine sands and sandy loams) with sparse grasses and woody vegetation such as iodine bush, saltbush, seep weed, and mesquite.	**Absent.** Habitat is present. Sign of kangaroo rat occupancy is present on the project site; however, small mammal trapping did not capture this species.
Tulare grasshopper mouse (*Onychomys torridus tularensis*)	SC	Found in valley grasslands habitats, blue oak savanna, desert associations dominated by annual grasses and California ephedra, alkali sink scrub, saltbush scrub, and upper Sonoran shrub associations, dominated by ephedra.	**Present.** Habitat is present. This species was captured during the small mammal trapping completed for this project.
San Joaquin pocket mouse (*Perognathus inornatus inornatus*)	---	Grassland, oak savanna and arid scrubland in the southern Sacramento Valley, Salinas Valley, San Joaquin Valley and adjacent foothills, south to the Mojave Desert.	**Absent.** Habitat is present. This species could occupy the project site; however, small mammal trapping did not capture this species.
American badger (*Taxidea taxus*)	SC	Uncommon resident found through California; in less disturbed grassland and shrubland habitats in San Joaquin Valley.	**Possible.** Habitat is present. No burrows or evidence of badger presence was observed during any site visit.
San Joaquin kit fox (*Vulpes macrotis mutica*)	FE, CT	Found in valley saltbush scrub, valley sink scrub, Interior Coast Range saltbush scrub, upper Sonoran sub-shrub scrub, non-native grassland, and valley sacaton grassland in the Central Valley and adjacent foothills and valleys, infrequently to the outer Coast Ranges; generally not found in densely wooded areas, wetland areas, or areas subject to frequent periodic flooding.	**Possible.** Habitat is present. The project site is within the known range for this species. No San Joaquin kit fox sign or dens were observed.
Plants			
Howell's onion (*Allium howellii* var. *howellii*)	4.3	Perennial herb bulb that occurs in valley and foothill grasslands in clay or serpentinite soils between 164-7,218 feet in elevation. Know to occur from Fresno, Kings, Kern, Merced, San Benito, Santa Clara, San Luis Obispo, and Tulare Counties. Blooming period March to April.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
Heartscale (*Atriplex cordulata* var. *cordulata*)	1B.2	Herbaceous annual that occurs in saline or alkaline chenopod scrub, meadows and seeps, and valley and foothill grasslands in sandy, saline, or alkaline soils below 1,837 feet in elevation. Known to occur in the Great Central Valley from Kern County north to southern Butte County. Blooming period April to October.	**Present.** Suitable habitat is available for this species. This species was observed during surveys.
Heartscale (*Atriplex cordulata* var. *erecticaulis*)	1B.2	Herbaceous annual that occurs in valley and foothill grasslands ranging in elevation from 131-328 feet. Known to occur in western Tulare County and northern Kern County. Blooming period August to September.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
(*Atriplex coronata* var. *coronata*) Crownscale	4.2	Herbaceous annual that occurs in chenopod scrub, valley and foothill grasslands, and vernal pools in alkaline clay soils between 3-1,936 feet. Known to occur in Alameda, Contra Costa, Fresno, Glenn, Kings, Kern, Merced, Monterey, San Joaquin, San Luis Obispo, Solana, and Stanislaus Counties. Blooming period March to October.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.

Species	Status	Habitat	*Occurrence in the Study Area
(*Atriplex coronata* var. *vallicola*) Lost Hills crownscale	1B.2	Annual herb that occurs in chenopod scrub, valley and foothill grasslands, and vernal pools in alkaline soils between 164-2,083 feet. Known to occur in Fresno, Kings, Kern, Merced, San Benito, San Luis Obispo, and Tulare Counties. Blooming period April to September.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
Bitterscale (*Atriplex depressa*)	1B.2	Herbaceous annual that occurs in saline or alkaline chenopod scrub, meadows and seeps, playas, valley and foothill grasslands, and vernal pools below 1,050 feet in elevation. Known to occur in the Great Central Valley from Tulare County north to Glenn and Butte Counties. Blooming period April to October.	**Present.** Suitable habitat is available for this species. This species was observed during surveys.
Lesser saltscale (*Atriplex minuscula*)	1B.1	Annual herb found in vernal pools with alkaline soils from 33-377 feet in elevation. Known to occur in the Great Central Valley from western Tulare County north to Solano County. Blooming period June to October.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
Vernal pool small scale (*Atriplex persistens*)	1B.2	Herbaceous annual that occurs in valley and foothill grasslands ranging in elevation from 131-328 feet. Known to occur in western Tulare County and northern Kern County. Blooming period August to September.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
Subtle orache (*Atriplex subtilis*)	1B.2	Annual herb found in valley and foothill grasslands from 131-328 feet in elevation. Known to occur in the San Joaquin Valley from northwestern Kern County to southern Merced County and in Sacramento Valley to southern Butte County. Blooming period June to August (but occasionally October).	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
Alkali Mariposa lily (*Calochortus striatus*)	1B.2	Bulbiferous perennial herb found in chaparral, chenopod scrub, Mojavean desert scrub meadows, and seeps on alkaline soils between 230-5,234 feet in elevation. Known to occur in the southern San Joaquin Valley and southern Sierra Nevada from Kern County, Los Angeles, and San Bernardino Counties. Blooming period April to June.	**Absent.** Habitat not suitable for this species. This species was not observed during surveys.
California jewelflower (*Caulanthus californicus*)	FE/CE/1B.1	Herbaceous annual found in chenopod scrub, pinyon and juniper woodland, and valley foothill grasslands between 200-3,281 feet in elevation. Although many populations are thought to have been extirpated from San Joaquin Valley, occurrences are known from Kern, Kings, Tulare, San Luis Obispo, Santa Barbara, and Fresno Counties. Blooming period February to May.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
Slough thistle (*Cirsium crassicaule*)	1B.1	Herbaceous annual or perennial that occurs in chenopod scrub, marshes, and swamps (sloughs), and riparian scrub. Between 10-328 feet. Known to occur in the southern San Joaquin Valley in Kern and southern Kings Counties, and in northern San Joaquin Valley in San Joaquin County. Blooming period May to August.	**Potential.** Suitable habitat is available along the canal. This species was not observed during surveys.
Recurved larkspur (*Delphinium recurvatum*)	1B.2	Perennial herb in chenopod scrub, cismontane woodland, and valley and foothill grasslands on alkaline soils between 10-2,461 feet. Known to occur in Mojave Desert and southern San Joaquin Valley Kern County north to Solano County, the southern Inner Coastal Ranges from San Luis Obispo county north to Stanislaus County, and the Sacramento Valley from San Joaquin County north to Butte County. Blooming period March to June.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
(*Eremalche parryi* ssp.	FE, CE,	Annual herb that occurs in chenopod scrub, pinyon and juniper woodland, and	**Absent.** Suitable habitat is available for this

Species	Status	Habitat	*Occurrence in the Study Area
kernensis) Kern Mallow	1B.2	valley and foothill grassland on dry open sandy to clay soils between 230-4,232 feet in elevation. Know from Kings, Kern, Santa Barbara, San Luis Obispo, Tulare, and Ventura Counties. Blooming period March to May.	species. This species was not observed during surveys.
Hoover's Eriastrum (*Eriastrum hooveri*)	4.2	Annual herb that occurs in chenopod scrub, pinyon and juniper woodland, valley and foothill grassland between 164-3,002 feet in elevation. Known from Fresno, Kings, Kern, Los Angeles, San Benito, and San Luis Obispo Counties. Blooming period march to July. (delisted on 10/7/03)	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
Spiny-sepaled button-celery (*Eryngium spinosepalum*)	1B.2	Annual/perennial herb in valley and foothill grasslands, and vernal pools between 262-837 feet in elevation. Known to occur from eastern San Joaquin Valley and Sierra Nevada foothills from Tulare County north to Calaveras County. Blooming period April to May.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
Tejon Poppy (*Eschscholzia lemmonii* ssp. *kernensis*)	1B.1	Annual herb in chenopod scrub, and valley and foothill grasslands, between 525-3,281 feet in elevation. Known to occur from southern Sierra Nevada foothills and southern San Joaquin Valley in Kern County. Blooming period March to May.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
Vernal barley (*Hordeum intercedens)*	3.2	Annual herb in coastal dunes, coastal scrub, valley and foothill grassland (saline flats and depressions), and vernal pools between 16-3,280 feet in elevation. Know to occur from Baja California north to Merced County. Blooming period March to June.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
Coulter's Goldfields (*Lasthenia glabrata* ssp. *coulteri*)	1B.1	Annual herb in marshes, swamps, playas, and vernal pools between 3-4,003 feet in elevation. Known to occur from Transverse Ranges in Santa Barbara, Ventura, and San Bernardino Counties, the Peninsular Ranges in San Diego, Orange, and Riverside Counties, the South coast in Los Angeles County, northern Channel Islands, the south Coastal Range, San Luis Obispo County, the Tehachapi Mountains in Kern County and the southern San Joaquin Valley in Kern, Tulare, and Merced Counties. Blooming period February to June.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
Munz's tidy-tips (*Layia munzii*)	1B.2	Annual herb in chenopod scrub, and valley and foothill grasslands in alkaline clay soils, between 492-2,297 feet in elevation. Known to occur in the San Joaquin Valley from Kern County north to Madera County, and the southern Inner Coastal Ranges from San Luis Obispo County north to San Benito County. Blooming period March to April.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
San Joaquin woollythreads (*Monolopia congdonii)*	FE/1B.2	Annual herb in valley and foothill grasslands on sandy soils between 197-2,625 feet in elevation. Known to occur in the San Joaquin Valley from Kern County north to San Benito County and the Carrizo Plain in San Luis Obispo and Santa Barbara Counties. Blooming period February to May.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
Little mousetail (*Myosurus minimus*)	3.1	Annual herb in valley and foothill grasslands, and alkaline vernal pools between 66-2,100 feet in elevation. Known to occur in Alameda, Contra Costa, Colusa, Lake, Merced, Riverside, San Bernardino, San Diego, Solano, Tulare, and Yolo Counties. Blooming period March to June.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
Merced phacelia	3.2	Annual herb found in valley and foothill grasslands sometimes in alkaline soils	**Absent.** Suitable habitat is available for this

Species	Status	Habitat	*Occurrence in the Study Area
(*Phacelia ciliate* var. *opaca*)		between 197-492 feet in elevation. Known to occur in Kings and Merced Counties. Blooming period February to May.	species. This species was not observed during surveys.
California alkali grass (*Puccinellia simplex*)	1B.2	Annual herb found in valley and foothill grasslands, chenopod scrub, meadows and seeps, vernal pools between 197-492 feet in elevation. Known to occur in Kings and Merced Counties. Blooming period March to May.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.
King's gold (*Tropidocarpum californicum*)	1B.1	Annual herb found in chenopod scrub between 213-590 feet in elevation. Known to occur in Kings and Kern Counties. Blooming period March to May. Blooming period February to March.	**Absent.** Suitable habitat is available for this species. This species was not observed during surveys.

* Please note that numerous attempts were made to contact CDFW to obtain a CNDDB subscription to run a recent query for 2020. Contact and purchase of the subscription was not made. Whether this was attributed to Covid19 shelter in place is unknown. As a result, the CNDDB data was taken from the 2017 report was utilized. Both CNPS and IPaC database queries are recent.

Appendix F

Senate Bill No. 495, as amended

AMENDMENTS TO SENATE BILL NO. 495

Amendment 1

In the title, in line 1, strike out "19601.4 of the Business and Professions", strike out line 2 and insert:

5050 of, and to add Section 2081.12 to, the Fish and Game Code, relating to endangered species.

Amendment 2

On page 2, before line 1, insert:

SECTION 1. Section 2081.12 is added to the Fish and Game Code, to read:

2081.12. (a) The department may authorize, under this chapter, the take or possession of the blunt-nosed leopard lizard (Gambelia sila) resulting from impacts attributable to or otherwise related to the Allensworth Community Services District Safe Drinking Water Project to drill a new water well for the community of Allensworth and the Colonel Allensworth State Historic Park, if all of the following conditions are met:

(1) The department determines the authorized take will not jeopardize the continued existence of the blunt-nosed leopard lizard.

(2) The impacts of the authorized take are minimized.

(3) The take authorization provides for the development and implementation of an adaptive management plan, approved by the department, for monitoring the effectiveness of, and adjusting as necessary, the measures to minimize the impacts of the authorized take.

(b) This section shall not be construed to exempt the project described in subdivision (a) from any other law.

SEC. 2. Section 5050 of the Fish and Game Code is amended to read:

5050. (a) (1) Except as provided in this section, or Section 2081.7, ~~Section~~ 2081.9, 2081.12, or ~~Section~~ 2835, a fully protected reptile or amphibian may not be taken or possessed at any time. No provision of this code or any other law shall be construed to authorize the issuance of a permit or license to take a fully protected reptile or amphibian, and no permit or license previously issued shall have any force or effect for that purpose. However, the department may authorize the taking of a fully protected reptile or amphibian for necessary scientific research, including efforts to recover fully protected, threatened, or endangered species. Before authorizing the take of a fully protected reptile or amphibian, the department shall make an effort to notify all affected and interested parties to solicit information and comments on the proposed authorization. The notification shall be published in the California Regulatory Notice Register and be made available to each person who has notified the department, in writing, of his or her interest in fully protected species and who has provided an email address, if available, or postal address to the department. Affected and interested parties shall have 30 days after notification is published in the California Regulatory Notice Register to provide relevant information and comments on the proposed authorization.

(2) As used in this subdivision, "scientific research" does not include an action taken as part of specified mitigation for a project, as defined in Section 21065 of the Public Resources Code.

(3) A legally imported fully protected reptile or amphibian may be possessed under a permit issued by the department.

(b) The following are fully protected reptiles and amphibians:

(1) Blunt-nosed leopard lizard ~~(Crotaphytus wislizenii silus).~~ (Gambelia sila).

(2) San Francisco garter snake (Thamnophis sirtalis tetrataenia).

(3) Santa Cruz long-toed salamander (Ambystoma macrodactylum croceum).

(4) Limestone salamander (Hydromantes brunus).

(5) Black toad (Bufo boreas exsul).

Amendment 3

On page 2, strike out lines 1 to 30, inclusive

- 0 -

LEGISLATIVE COUNSEL'S DIGEST

SB 495, as amended, Vidak. ~~Horse racing: wagering: fairs: facilities maintenance and improvement funds.~~ Endangered species: blunt-nosed leopard lizard: taking or possession.

Existing law prohibits the taking or possession of a fully protected reptile or amphibian, except as provided, and designates the blunt-nosed leopard lizard as a fully protected reptile. The California Endangered Species Act prohibits the taking of an endangered or threatened species, except as specified. Under that act, the Department of Fish and Wildlife is permitted to authorize, by permit, the take of listed species if the take is incidental to an otherwise lawful activity and the impacts are minimized and fully mitigated.

This bill would permit the department to authorize, under the California Endangered Species Act, the take or possession of the blunt-nosed leopard lizard resulting from impacts attributable to or otherwise related to the Allensworth Community Services District Safe Drinking Water Project to drill a new water well for the community of Allensworth and the Colonel Allensworth State Historic Park, if specified conditions are met. The bill would also make a conforming change.

~~Existing law, the Horse Racing Law, authorizes a fair, a combination of fairs, or an association conducting racing at a fair, after approval from the California Horse Racing Board, to contribute 1% of the total amount handled daily in conventional and exotic pools for facilities maintenance and improvements at a fair's racetrack inclosure, for those fairs that contribute or those fairs where an association conducting racing at that fair contributes. Existing law requires that the money raised be deposited into the Inclosure Facilities Improvement Fund, which is created as a special fund in the State Treasury, and that money be made available upon appropriation by the Legislature in the annual Budget Act. Existing law requires the Secretary of Food and Agriculture to appoint a committee to advise on the administration of the funds, and requires the secretary to include in the annual expenditure plan any allocations made pursuant to these provisions, as specified.~~

~~This bill would remove the requirement that the secretary include in the annual expenditure plan any allocations made pursuant to these provisions.~~

Vote: majority. Appropriation: no. Fiscal committee: yes. State-mandated local program: no.

Appendix G

2011 U.S. Fish and Wildlife Service Standardized Recommendations for Protection of the Endangered San Joaquin Kit Fox Prior to or During Ground Disturbance gray fox, and kit fox tracks, and to have seen a kit fox in the wild, at a zoo, or as a museum mount. Resumes of biologists should be submitted to the Service for review and approval prior to an6y survey or monitoring work occurring.

SMALL PROJECTS

Small projects are considered to be those projects with small foot prints, of approximately one acre or less, such as an individual in-fill oil well, communication tower, or bridge repairs. These projects must stand alone and not be part of, or in any way connected to larger projects (i.e., bridge repair or improvement to serve a future urban development). The Service recommends that on these small projects, the biologist survey the proposed project boundary and a 200-foot area outside of the project footprint to identify habitat features and utilize this information as guidance to situate the project to minimize or avoid impacts. If habitat features cannot be completely avoided, then surveys should be conducted and the Service should be contacted for technical assistance to determine the extent of possible take.

Preconstruction/preactivity surveys shall be conducted no less than 14 days and no more than 30 days prior to the beginning of ground disturbance and/or construction activities or any project activity likely to impact the San Joaquin kit fox. Kit foxes change dens four or five times during the summer months, and change natal dens one or two times per month (Morrell 1972). Surveys should identify kit fox habitat features on the project site and evaluate use by kit fox and, if possible, assess the potential impacts to the kit fox by the proposed activity. The status of all dens should be determined and mapped (see Survey Protocol). Written results of preconstruction/preactivity surveys must be received by the Service within five days after survey completion and prior to the start of ground disturbance and/or construction activities.

If a natal/pupping den is discovered within the project area or within 200-feet of the project boundary, the Service shall be immediately notified and under no circumstances should the den be disturbed or destroyed without prior authorization. If the preconstruction/preactivity survey reveals an active natal pupping or new information, the project applicant should contact the Service immediately to obtain the necessary take authorization/permit.

If the take authorization/permit has already been issued, then the biologist may proceed with den destruction within the project boundary, except natal/pupping den which may not be destroyed while occupied. A take authorization/permit is required to destroy these dens even after they are vacated. Protective exclusion zones can be placed around all known and potential dens which occur outside the project footprint (conversely, the project boundary can be demarcated, see den destruction section).

OTHER PROJECTS

It is likely that all other projects occurring within kit fox habitat will require a take authorization/permit from the Service. This determination would be made by the Service during the early evaluation process (see Survey Protocol). These other projects would include, but are not limited to: Linear projects; projects with large footprints such as urban development; and projects which in themselves may be small but have far reaching impacts (i.e., water storage or conveyance facilities that promote urban growth or agriculture, etc.).

The take authorization/permit issued by the Service may incorporate some or all of the protection measures presented in this document. The take authorization/permit may include measures specific to the needs of the project and those requirements supersede any requirements found in this document.

EXCLUSION ZONES

In order to avoid impacts, construction activities must avoid their dens. The configuration of exclusion zones around the kit fox dens should have a radius measured outward from the entrance or cluster of entrances due to the length of dens underground. The following distances are **minimums**, and if they cannot be followed the Service must be contacted. Adult and pup kit foxes are known to sometimes rest and play near the den entrance in the afternoon, but most above-ground activities begin near sunset and continue sporadically throughout the night. Den definitions are attached as Exhibit A.

Potential den**	50 feet
Atypical den**	50 feet
Known den*	100 feet
Natal/pupping den (occupied and unoccupied)	Service must be contacted

*Known den: To ensure protection, the exclusion zone should be demarcated by fencing that encircles each den at the appropriate distance and does not prevent access to the den by kit foxes. Acceptable fencing includes untreated wood particle-board, silt fencing, orange construction fencing or other fencing as approved by the Service as long as it has openings for kit fox ingress/egress and keeps humans and equipment out. Exclusion zone fencing should be maintained until all construction related or operational disturbances have been terminated. At that time, all fencing shall be removed to avoid attracting subsequent attention to the dens.

**Potential and Atypical dens: Placement of 4-5 flagged stakes 50 feet from the den entrance(s) will suffice to identify the den location; fencing will not be required, but the exclusion zone must be observed.

Only essential vehicle operation on existing roads and foot traffic should be permitted. Otherwise, all construction, vehicle operation, material storage, or any other type of surface-disturbing activity should be prohibited or greatly restricted within the exclusion zones.

DESTRUCTION OF DENS

Limited destruction of kit fox dens may be allowed, if avoidance is not a reasonable alternative, provided the following procedures are observed. The value to kit foxes of potential, known, and natal/pupping dens differ and therefore, each den type needs a different level of protection. **Destruction of any known or natal/pupping kit fox den requires take authorization/permit from the Service**.

Destruction of the den should be accomplished by careful excavation until it is certain that no kit foxes are inside. The den should be fully excavated, filled with dirt and compacted to ensure that kit foxes cannot reenter or use the den during the construction period. If at any point during excavation, a kit fox is discovered inside the den, the excavation activity shall cease immediately and monitoring of the den as described above should be resumed. Destruction of the den may be completed when in the judgment of the biologist, the animal has escaped, without further disturbance, from the partially destroyed den.

Natal/pupping dens: Natal or pupping dens which are occupied will not be destroyed until the pups and adults have vacated and then only after consultation with the Service. Therefore, project activities at some den sites may have to be postponed.

Known Dens: Known dens occurring within the footprint of the activity must be monitored for three days with tracking medium or an infra-red beam camera to determine the current use. If no kit fox activity is observed during this period, the den should be destroyed immediately to preclude subsequent use.

If kit fox activity is observed at the den during this period, the den should be monitored for at least five consecutive days from the time of the observation to allow any resident animal to move to another den during its normal activity. Use of the den can be discouraged during this period by partially plugging its entrances(s) with soil in such a manner that any resident animal can escape easily. Only when the den is determined to be unoccupied may the den be excavated under the direction of the biologist. If the animal is still present after five or more consecutive days of plugging and monitoring, the den may have to be excavated when, in the judgment of a biologist, it is temporarily vacant, for example during the animal's normal foraging activities.

The Service encourages hand excavation, but realizes that soil conditions may necessitate the use of excavating equipment. However, extreme caution must be exercised.

Potential Dens: If a take authorization/permit has been obtained from the Service, den destruction may proceed without monitoring, unless other restrictions were issued with the take authorization/permit. If no take authorization/permit has been issued, then potential dens should be monitored as if they were known dens. If any den was considered to be a potential den, but is later determined during monitoring or destruction to be currently, or previously used by kit fox (e.g., if kit fox sign is found inside), then all construction activities shall cease and the Service shall be notified immediately.

CONSTRUCTION AND ON-GOING OPERATIONAL REQUIREMENTS

Habitat subject to permanent and temporary construction disturbances and other types of ongoing project-related disturbance activities should be minimized by adhering to the following activities. Project designs should limit or cluster permanent project features to the smallest area possible while still permitting achievement of project goals. To minimize temporary disturbances, all project-related vehicle traffic should be restricted to established roads, construction areas, and other designated areas. These areas should also be included in preconstruction surveys and, to the extent possible, should be established in locations disturbed by previous activities to prevent further impacts.

1. Project-related vehicles should observe a daytime speed limit of 20-mph throughout the site in all project areas, except on county roads and State and Federal highways; this is particularly important at night when kit foxes are most active. Night-time construction should be minimized to the extent possible. However if it does occur, then the speed limit should be reduced to 10-mph. Off-road traffic outside of designated project areas should be prohibited.

2. To prevent inadvertent entrapment of kit foxes or other animals during the construction phase of a project, all excavated, steep-walled holes or trenches more than 2-feet deep should be covered at the close of each working day by plywood or similar materials. If the trenches cannot be closed, one or more escape ramps constructed of earthen-fill or wooden planks shall be installed. Before such holes or trenches are filled, they should be thoroughly inspected for trapped animals. If at any time a trapped or injured kit fox is discovered, the Service and the California Department of Fish and Game (CDFG) shall be contacted as noted under measure 13 referenced below.

3. Kit foxes are attracted to den-like structures such as pipes and may enter stored pipes and become trapped or injured. All construction pipes, culverts, or similar structures with a diameter of 4-inches or greater that are stored at a construction site for one or more overnight periods should be thoroughly inspected for kit foxes before the pipe is subsequently buried, capped, or otherwise used or moved in any way. If a kit fox is

discovered inside a pipe, that section of pipe should not be moved until the Service has been consulted. If necessary, and under the direct supervision of the biologist, the pipe may be moved only once to remove it from the path of construction activity, until the fox has escaped.

4. All food-related trash items such as wrappers, cans, bottles, and food scraps should be disposed of in securely closed containers and removed at least once a week from a construction or project site.

5. No firearms shall be allowed on the project site.

6. No pets, such as dogs or cats, should be permitted on the project site to prevent harassment, mortality of kit foxes, or destruction of dens.

7. Use of rodenticides and herbicides in project areas should be restricted. This is necessary to prevent primary or secondary poisoning of kit foxes and the depletion of prey populations on which they depend. All uses of such compounds should observe label and other restrictions mandated by the U.S. Environmental Protection Agency, California Department of Food and Agriculture, and other State and Federal legislation, as well as additional project-related restrictions deemed necessary by the Service. If rodent control must be conducted, zinc phosphide should be used because of a proven lower risk to kit fox.

8. A representative shall be appointed by the project proponent who will be the contact source for any employee or contractor who might inadvertently kill or injure a kit fox or who finds a dead, injured or entrapped kit fox. The representative will be identified during the employee education program and their name and telephone number shall be provided to the Service.

9. An employee education program should be conducted for any project that has anticipated impacts to kit fox or other endangered species. The program should consist of a brief presentation by persons knowledgeable in kit fox biology and legislative protection to explain endangered species concerns to contractors, their employees, and military and/or agency personnel involved in the project. The program should include the following: A description of the San Joaquin kit fox and its habitat needs; a report of the occurrence of kit fox in the project area; an explanation of the status of the species and its protection under the Endangered Species Act; and a list of measures being taken to reduce impacts to the species during project construction and implementation. A fact sheet conveying this information should be prepared for distribution to the previously referenced people and anyone else who may enter the project site.

10. Upon completion of the project, all areas subject to temporary ground disturbances, including storage and staging areas, temporary roads, pipeline corridors, etc. should be

re-contoured if necessary, and revegetated to promote restoration of the area to pre-project conditions. An area subject to "temporary" disturbance means any area that is disturbed during the project, but after project completion will not be subject to further disturbance and has the potential to be revegetated. Appropriate methods and plant species used to revegetate such areas should be determined on a site-specific basis in consultation with the Service, California Department of Fish and Game (CDFG), and revegetation experts.

11. In the case of trapped animals, escape ramps or structures should be installed immediately to allow the animal(s) to escape, or the Service should be contacted for guidance.

12. Any contractor, employee, or military or agency personnel who are responsible for inadvertently killing or injuring a San Joaquin kit fox shall immediately report the incident to their representative. This representative shall contact the CDFG immediately in the case of a dead, injured or entrapped kit fox. The CDFG contact for immediate assistance is State Dispatch at (916)445-0045. They will contact the local warden or Mr. Paul Hoffman, the wildlife biologist, at (530)934-9309. The Service should be contacted at the numbers below.

13. The Sacramento Fish and Wildlife Office and CDFG shall be notified in writing within three working days of the accidental death or injury to a San Joaquin kit fox during project related activities. Notification must include the date, time, and location of the incident or of the finding of a dead or injured animal and any other pertinent information. The Service contact is the Chief of the Division of Endangered Species, at the addresses and telephone numbers below. The CDFG contact is Mr. Paul Hoffman at 1701 Nimbus Road, Suite A, Rancho Cordova, California 95670, (530) 934-9309.

14. New sightings of kit fox shall be reported to the California Natural Diversity Database (CNDDB). A copy of the reporting form and a topographic map clearly marked with the location of where the kit fox was observed should also be provided to the Service at the address below.

Any project-related information required by the Service or questions concerning the above conditions or their implementation may be directed in writing to the U.S. Fish and Wildlife Service at: Endangered Species Division
2800 Cottage Way, Suite W2605
Sacramento, California 95825-1846
(916) 414-6620 or (916) 414-6600

EXHIBIT "A" - DEFINITIONS

"Take" - Section 9 of the Endangered Species Act of 1973, as amended (Act) prohibits the "take" of any federally listed endangered species by any person (an individual, corporation, partnership, trust, association, etc.) subject to the jurisdiction of the United States. As defined in the Act, take means " . . . to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct". Thus, not only is a listed animal protected from activities such as hunting, but also from actions that damage or destroy its habitat.

"Dens" - San Joaquin kit fox dens may be located in areas of low, moderate, or steep topography. Den characteristics are listed below, however, the specific characteristics of individual dens may vary and occupied dens may lack some or all of these features. Therefore, caution must be exercised in determining the status of any den. Typical dens may include the following: (1) one or more entrances that are approximately 5 to 8 inches in diameter; (2) dirt berms adjacent to the entrances; (3) kit fox tracks, scat, or prey remains in the vicinity of the den; (4) matted vegetation adjacent to the den entrances; and (5) manmade features such as culverts, pipes, and canal banks.

"Known den" - Any existing natural den or manmade structure that is used or has been used at any time in the past by a San Joaquin kit fox. Evidence of use may include historical records, past or current radiotelemetry or spotlighting data, kit fox sign such as tracks, scat, and/or prey remains, or other reasonable proof that a given den is being or has been used by a kit fox. The Service discourages use of the terms "active" and "inactive" when referring to any kit fox den because a great percentage of occupied dens show no evidence of use, and because kit foxes change dens often, with the result that the status of a given den may change frequently and abruptly.

"Potential Den" - Any subterranean hole within the species' range that has entrances of appropriate dimensions for which available evidence is insufficient to conclude that it is being used or has been used by a kit fox. Potential dens shall include the following: (1) any suitable subterranean hole; or (2) any den or burrow of another species (e.g., coyote, badger, red fox, or ground squirrel) that otherwise has appropriate characteristics for kit fox use.

"Natal or Pupping Den" - Any den used by kit foxes to whelp and/or rear their pups. Natal/pupping dens may be larger with more numerous entrances than dens occupied exclusively by adults. These dens typically have more kit fox tracks, scat, and prey remains in the vicinity of the den, and may have a broader apron of matted dirt and/or vegetation at one or more entrances. A natal den, defined as a den in which kit fox pups are actually whelped but not necessarily reared, is a more restrictive version of the pupping den. In practice, however, it is difficult to distinguish between the two, therefore, for purposes of this definition either term applies.

"Atypical Den" - Any manmade structure which has been or is being occupied by a San Joaquin kit fox. Atypical dens may include pipes, culverts, and diggings beneath concrete slabs and buildings.

Appendix H
Allensworth Community Service District Test Well Proposed Burrow Avoidance Work Plan

Allensworth Community Service District Test Well
Proposed Avoidance Measures
October 13, 2016

The following avoidance measures were initially developed by McCormick Biological and submitted to CDFW in a letter dated December 22, 2015. Three Additional Provisions are being proposed at this time to avoid impacts to any kangaroo rat or potential blunt-nosed leopard lizard burrows that may occur under the 30 X 50 foot work area.

At this time, Allensworth Community Service District is specifically requesting to begin drilling a test well. Completion of this task will require:

• The test well project will involve the drilling of a hole to a depth of approximately 500-ft using a single drill rig with attached casing hammer and necessary tooling. The drill rig is a 1977 Gardner Denver 17W1 drill rig, 900 cfm air compressor, Wellon 1262 casing hammer, and necessary tooling to drill the test well.

• The drill rig and equipment will be moved onto the site by means of an access route approved by the biologist. The approximate footprint of this equipment is 30-ft by 50-ft and includes the drill rig and a service truck with pipe trailer.

• The test well will advance an 8-5/8" diameter steel casing as it drills and will collect water quality samples at each water bearing formation encountered as the drilling progresses. Approximately 8 cubic yards of earth material or drill cuttings will be removed during the test well project and this material will be discharged to above ground tanks that can be removed and disposed of at the completion of the project. No excavation sump will be required as all cuttings and fluids will be pumped into an above ground tank. The above ground tanks will have a 21,000 gallon capacity (42.5 ft. x 8 ft.) and be staged along the traveled dirt roadway as approved by the biologist. An approximate 50-ft long hose will be placed overland in an area approved by the biologist to convey cuttings and fluids to the above ground tanks. As water bearing formations are encountered and water quality samples collected, the pumped water will also be discharged to above ground tanks. It is anticipated that there would be approximately twelve water quality samples each pumped for 10 minutes at approximately 50 gpm to 80 gpm. At the completion of the test hole, it will be filled with cement from the bottom to 6-ft below ground surface and the ground surface restored to original conditions. All equipment will be removed from the site by the same routes entered and as cleared by the biologist.

Based on the survey results, MBI was able to locate an area that would accommodate the project and avoid burrows by a minimum of 5-10 ft. The project can be completed upon avoidance. MBI recommends that work be completed during the winter months when blunt-nosed leopard lizards are underground. No burrows will be destroyed. No nighttime construction activity will occur. In addition, MBI completed a small mammal trapping program for this project; no Tipton kangaroo rats were captured during this effort **(Attached)**.
In order to safely complete this task, MBI is recommending the following protective measures:

• No site grading will occur at the site.
• The drill rig will enter the site forward and back out when completed.
• Support vehicles will back into the site and exit forward when completed.
• Placement collection tanks will be placed along the existing dirt roadway. Collection pipes will routed to avoid burrows. No sump excavation will occur.
• Because of the limited space, unless necessary, vehicles will be parked along the roadway.
• Presence of a biological monitor during all drilling activities. Prior to work each day, a biological monitor will check for species activity on the project site.
• Limitation of drilling activities to daylight hours as kangaroo rat species are active at night.
• An exclusion fence (e.g., lathe stakes and caution tape) will be place to delineate the work area.

Additional Provisions

1) The first 65 cm of the well bore (and a 8 inch buffer: 16-17 inch total diameter) will be carefully hand excavated using small shovels and hand trowels under the supervision of the project biologist to determine that no burrows are intercepted by the boring. If a burrow is discovered, the hand digging will be stopped, a 24 X24 inch ¾ inch piece of plywood will be placed in an excavated ledge just above the burrow depth (to create a ceiling and/or chamber) and the hole will be filled in with excavated soil. The well bore will be relocated at least 4 feet away, and the new bore location will be hand excavated in a similar manner.

2) The work site area under the drill truck travel path, the pipe truck travel path, the rear of the drill truck to the road edge, and work areas within 20 feet of adjacent kangaroo rat burrows will be covered with two layers of ¾ inch plywood, or similar material, to avoid soil compaction in the 30 X 50 foot work area. The edges of the plywood will be sealed with soil so that there are no openings under the plywood edges that may be used by wildlife.

3) Vertical barriers will be installed on the edge of the plywood behind the drill truck in a manner to contain drill fluids and cuttings from entering and/or covering the existing adjacent kangaroo rat burrows.

Drilling will be completed in approximately two weeks.

The proposed project layout has been modified to accommodate the revised work area in the limited burrow free zone. All drilling materials will be piped into tanks along the existing dirt roadway. These pipes will be set on the dirt in a burrow free area. The drill rig will pull forward and drill support vehicle will be backed into the site. Upon completion, these vehicles can be demobilized and leave through the same tracks. As currently proposed, the Test Well will be immediately closed (e.g., filled with concrete) once the test samples have been obtained.

Larry Saslaw, Wildlife Biologist

larry7719@sbcglobal.net, 661-706-2673

(PROJECT NO. 5400544-001P
SRF12P110)

EXHIBIT E
"CALIFORNIA HISTORICAL RESOURES INFORMATION SYSTEMS (CHRIS) – CULTURAL, HISTORIC, AND ARCHAEOLOGICAL RESOURES RECORDS SEARCH"

ALLENSWORTH COMMUNITY SERVICES DISTRICT
WATER SYSTEM IMPROVEMENT PROJECT

CULTURAL RESOURCES ASSESSMENT

Cross-Cutter Test Well Project

Allensworth, Unincorporated Tulare County, California

Prepared for:

Curtis M. Skaggs, PE
Dee Jaspar & Associates, Inc.
Bakersfield - Porterville

Prepared by:

David Brunzell, M.A., RPA
Principal Investigator
BCR Consulting LLC
505 West Eighth Street
Claremont, California 91711

BCR Consulting LLC Project No. DJA2001

Sites Recorded: None
Keywords: Reconnaissance Survey
USGS Quadrangles: 7.5-minute *Delano West* (1969), California
Section 18 of Township 24S, Range 25E, Mt. Diablo Base and Meridian
USGS Quadrangles: 7.5-minute *Allensworth* (1969), California
Section 16 of Township 24S, Range 24E, Mt. Diablo Base and Meridian

BCRCONSULTING LLC

May 28, 2020

MANAGEMENT SUMMARY

BCR Consulting LLC (BCR Consulting) is under contract to Dee Jaspar & Associates, Inc. to complete a Cultural Resources Assessment of the proposed Cross-Cutter Test Well Project (the project) in the unincorporated Community of Allensworth, Tulare County, California. A cultural resources records search and reconnaissance-level pedestrian field survey were conducted for the project in partial fulfillment of Section 106 of the National Historic Preservation Act (NHPA). Research completed through the Southern San Joaquin Valley Information Center (SSJVIC) revealed that one cultural resource study has taken place and no cultural resources have been recorded within one mile of the Allensworth Test Well and the ACSD Proposed Well Site. That previous study did assess the Allensworth Test Well and ACSD Proposed Well and identified no cultural resources within either project site boundaries. The research also revealed that 15 cultural resource studies have taken place and two cultural resources have been identified within a mile of the GE3EF6 Pipeline portion of the project. Two previous studies assessed the GE3EF6 project site and did not identify any resources within its boundaries. During the field survey, BCR Consulting did not identify any cultural resources, including prehistoric or historic-period archaeological sites or historic-period buildings, within the project boundaries. Furthermore, surface disturbances have taken place beyond depths at which buried cultural deposits are likely. Therefore, a recommendation of No Historic Properties Affected pursuant to 36 CFR Part 800.4(d)(1) is considered appropriate.

Please note that a Sacred Lands File search has been completed through the Native American Heritage Commission (NAHC), with negative results. The NAHC response included a list of potentially interested tribes who have been contacted to determine potential concerns. This process was initiated on May 28, 2020. Thirty days are normally allowed for tribes to respond. Concerns or wishes expressed by tribes to initiate formal consultation prior to June 28, should be forwarded to the lead agency. This process would be considered complete if no concerns are raised within 30 days (by June 28).

The current study attempted to determine whether historic properties were present within the project boundaries. Although none were yielded during the records search and field survey, ground-disturbing activities have the potential to reveal buried deposits not observed during these tasks. Prior to the initiation of ground-disturbing activities, field personnel should be alerted to the possibility of buried prehistoric or historic cultural deposits. In the event that field personnel encounter buried cultural materials, work in the immediate vicinity of the find should cease and a qualified archaeologist should be retained to assess the significance of the find. The qualified archaeologist shall have the authority to stop or divert construction excavation as necessary. If the qualified archaeologist finds that any cultural resources present meet eligibility requirements for listing on the National Register, plans for the treatment, evaluation, and mitigation of impacts to the find will need to be developed. Prehistoric or historic cultural materials that may be encountered during ground-disturbing activities include:

- historic-period artifacts such as glass bottles and fragments, cans, nails, ceramic and pottery fragments, and other metal objects;
- historic-period structural or building foundations, walkways, cisterns, pipes, privies, and other structural elements;

- prehistoric flaked-stone artifacts and debitage (waste material), consisting of obsidian, basalt, and or cryptocrystalline silicates;
- groundstone artifacts, including mortars, pestles, and grinding slabs;
- dark, greasy soil that may be associated with charcoal, ash, bone, shell, flaked stone, groundstone, and fire affected rocks;
- human remains.

If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC.

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INTRODUCTION

BCR Consulting LLC (BCR Consulting) is under contract to Dee Jaspar & Associates, Inc. to conduct a Cultural Resources Assessment of the Cross-Cutter Test Well Project (the Area of Potential Effects [APE] or project site) in the unincorporated community of Allensworth, Tulare County, California. A cultural resources records search and reconnaissance-level pedestrian field survey were conducted for the project in partial fulfillment of Section 106 of the National Historic Preservation Act (NHPA).

AREA OF POTENTIAL EFFECTS AND UNDERTAKING/PROJECT

The APE/project site comprises three locations. The Allensworth Test Well and the ACSD Proposed Well Site are both located in Section 13 of Township 24 South, Range 24 East, Mount Diablo Baseline and Meridian. The GE3EF6 Pipeline is located in Section 16 of Township 24 South, Range 24 East, Mount Diablo Baseline and Meridian. The project sites are surrounded by agriculture. The Allensworth Test Well and ACSD Proposed Well Site are both depicted on the U.S. Geological Survey (USGS) *Delano West, California* (1969) 7.5 minute topographic quadrangle. The GE3EF6 Pipeline is dsee epicted on the USGS *Allensworth, California* (1969) 7.5-minute topographic quadrangles (Figure 1).

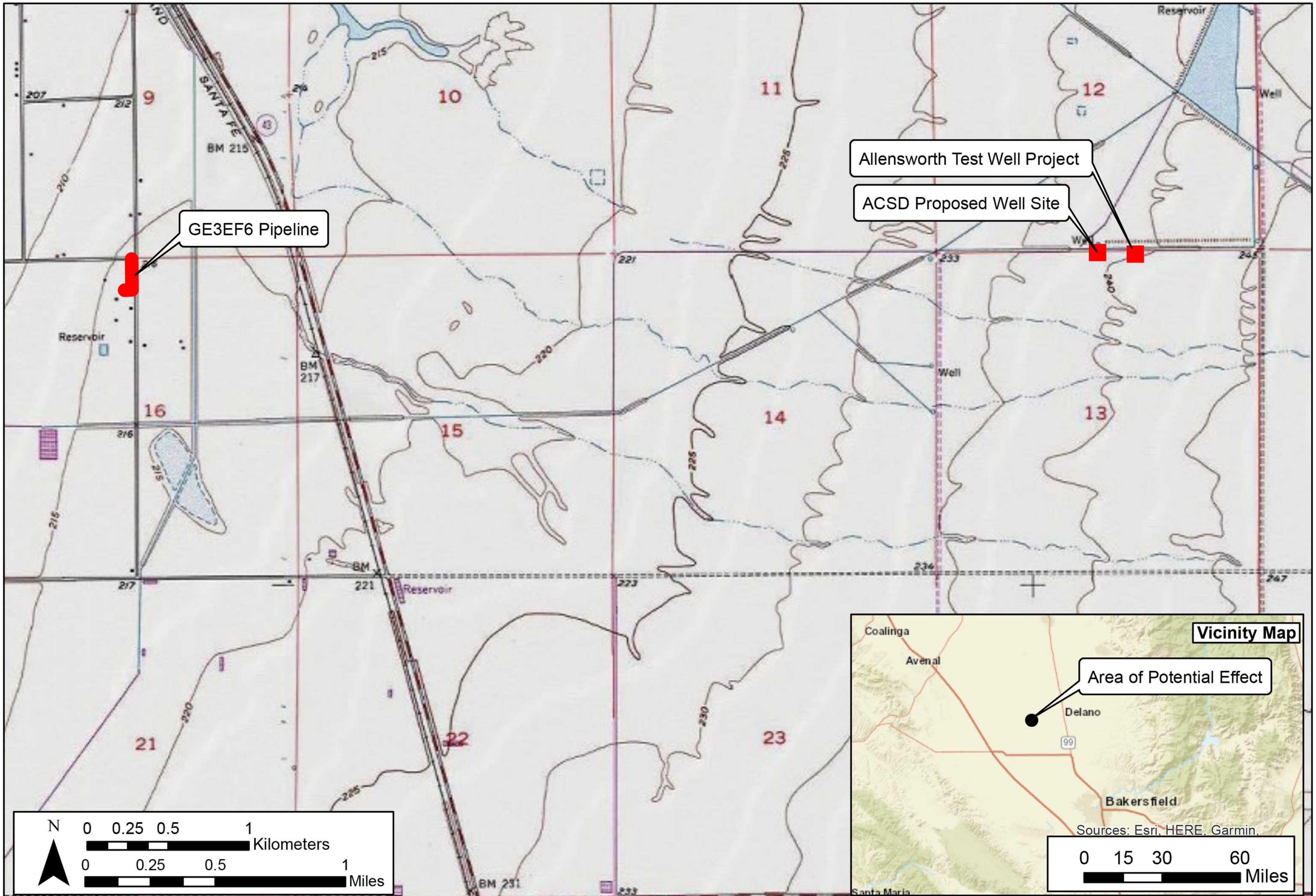
NATURAL SETTING

The elevation of the project site is approximately 210 to 230 feet above mean sea level (AMSL). The site has been graded flat and plowed for cultivation. Natural topography conveys water via sheetwashing and channelized drainages in a westerly direction (USGS 1969). Most of the local vegetation is a result of cultivation. Prior to the introduction of large-scale agriculture, the local watershed consisted of White River runoff, fed by snowmelt from the Greenhorn Mountains to the east. The greater ecosystem historically comprised a portion of the San Joaquin Valley's massive system of channels, sloughs, and tule-choked marshes (Wallace 1978:462). As a result, the biotic character of the region was historically much more diversified than is presently evident. Large freshwater marshes and vast expanses of grassland supported a variety of wildlife, including grizzly bears and wolves (both locally extinct), tule elk, jackrabbits, quail, and numerous fish, rodents, reptiles and birds (Twisselmann 1967, Osborne 1992, Cogswell 1977, and Moyle 1976). The formerly active waterways and high-energy flood zones have deposited late Pleistocene and Holocene alluvium that covers the project site (California Geological Survey 2011).

CULTURAL SETTING

Prehistory

Humans proliferated globally during the early Holocene due to gradual environmental warming that marked the close of the last ice age, and signs of prehistoric humans in the so-called "Lake Country" of the San Joaquin Valley go back at least 8,000 years (Wallace 1977:449). A dearth of archaeological data for the region makes early chronology particularly problematic, although a number of significant finds do indicate probable trends. One site on the western shore of Buena Vista Lake has yielded evidence for a hunting culture carbon dated to 6,000 B.C. The subsistence strategy for the site was inferred from an assemblage of stone tools suited to killing and processing big game (ibid., Fredrickson 1965, Fredrickson and Grossman 1966). The southern shore of Tulare Lake has yielded numerous fluted points attributed to early fluted traditions, and indicating similar subsistence



BCRCONSULTING LLC
Claremont Napa Tehachapi
www.bcrconsulting.net
909-525-7078

Project Location

Cross-Cutter Test Well Project

Figure 1

Reference: ESRI; USGS Quad: Delano West (1969), California

Dee Jaspar & Associates, Inc.

strategies. Although the Tulare Lake finds were not recovered from a verifiably dated stratum and have not been locally associated with Pleistocene fauna or other data to pinpoint a particular tradition, fluted points found throughout North America commonly precede the dates offered for the Buena Vista Lake site and almost certainly do here (Rondeau 2009). Culleton et al. (2005) has organized the late Holocene into three temporal phases for the Buena Vista Basin. Culleton's study synthesized his own findings with those by Hartzell (1992), Fredrickson (1983), Walker (1947), and Wedel (1941). These phases are summarized in Table A.

Table A. Prehistoric Holocene Phases of the Buena Vista Basin

Phase	Cultural Hallmarks
Late Holocene I (4000-2000 BP)	Sparse but even population distribution; seasonal encampments supported by hunting activities, and seed gathering and processing; extended burials.
Late Holocene II (2000-900 BP)	Populations along lakeshores diminish considerably based on more mobile settlement strategy and terrestrially based resources.
Late Holocene III/Yokut (900 BP-Contact)	Populations expand considerably and diversify resource exploitation strategies to include slough-based resources and satellite settlements along the sloughs; lake-shore sites exhibit more permanent settlements and include shell middens, cemeteries, and house pits.

Ethnography

The project sites are situated within the traditional boundaries of the Southern Valley Yokuts. This prehistoric population depended heavily on the Tulare, Buena Vista, and Kern Lakes and their connecting sloughs and rivers for sustenance and transportation (Wallace 1978:448). The local Southern Valley Yokuts, also referred to as the Chuxoxi, represented one of the southernmost Yokut political units and were associated with the Kern River delta (Wallace 1978:449; Kroeber 1925:483). Chuxoxi trade routes and rights to the delta allowed them to reap the benefits of the related perennial water sources. This enabled local populations to pursue a relatively sedentary lifestyle in an otherwise arid climate. Prehistorically, such sedentism often coincides with a village-style residential model in which residential bases remain the same or seasonal, while specialized procurement parties are deployed to more remote areas to collect specialized resources (Binford 1980, Thomas 1983). This village model has been locally supported by early ethnographers, who considered Yokuts unique in California for forming "true tribes" and for developing an unparalleled array of dialects (Kroeber 1925:474).

History

The first Europeans to establish contact with the Sothern Valley Yokuts were Spanish troops led by Captain Don Pedro Fages in pursuit of deserters. Father Francisco Garces also travelled through the San Joaquin Valley searching for an overland route from Yuma to Monterey. During his travels, Garces noted positive interactions with locals (see Smith 1939, Bailey 1984). The Mexican era (1821-1848) saw little notable cultural exchange between Mexicans and Southern Valley Yokuts, although an 1833 malaria epidemic devastated the local native population (Wallace 1978:460).

The ensuing American era, punctuated by California's annexation into the United States in 1848, resulted in overwhelming Anglo settlement and seizing of Indian lands, and disrupted any remaining prehistoric Yokut influence in the San Joaquin Valley. Mining and ranching represented the early historical focus of the San Joaquin Valley, although the region's abundant natural water supply, mild climate, and huge tracts of arable land soon led to the successful development of agriculture. The resulting diversion of local water and escalating land values transformed the physical and economic character of the area, and has allowed it to remain one of the world's most productive agricultural regions to this day (Preston 1981).

Local Sequence

Allensworth, California is distinguished as the first town in California to be exclusively established by African Americans. Its namesake, Colonel Allen Allensworth, was a former slave born in Kentucky in 1842 before he fled behind Union lines during the Civil War. After serving the remainder of the war as a civilian nurse in the Army Hospital Corps, he went on to serve in the U.S. Navy and was ordained as a minister.

In 1886, he rejoined the army and was appointed as the second African American U.S. Army Chaplain in history before retiring as lieutenant-colonel in 1906. He had relocated to Los Angeles in 1904 looking to settle a town-site where African Americans could start a new life apart from the Jim Crow South. With the aid of four other prominent African Americans, Colonel Allensworth identified an area in southwest Tulare County with rich soil and abundant water.

The five men created the California Colonization and Home Promoting Association and in 1908 they filed for a township site with a depot connecting Los Angeles and San Francisco along the Santa Fe Railroad. The following year, the town was renamed from Solito to Allensworth, in honor of its founder. In 1912, a school district comprising 33 square miles was established and Allensworth became a voting precinct. At its apex of prosperity during the 1910s, Allensworth residents were said to generate $5,000 per month, and occupants pursued a variety of occupations, including farmers, storekeepers, carpenters, and nurses. The community consisted of 900 acres of land worth more than $112,500 in 1914. By the 1920s, its residents numbered upwards of 300. Colonel Allensworth died in Los Angeles in 1914 but the town continued to prosper, gradually drawing more residents.

However, the Santa Fe station at the edge of the Allensworth was soon moved to another nearby town, eliminating a point of access that had enabled the community's growth. After 1925, lack of irrigation for farming resulted in diminishing prospects for the burgeoning town-site. By 1930, the population had dropped well below 300 as many properties had lost the water resources vital to agricultural and ranching enterprises.

The few residents who stayed behind attempted to sustain the town by drilling wells and designing new farming methods. In 1966, high levels of arsenic was found in the drinking water, forcing all but 34 families to leave Allensworth. The future outlook changed in 1969, when Cornelius Ed Pope, an African American employee of the Department of Parks and Recreation, began lobbying State Parks officials and the general public to designate the town-site as historically and culturally significant to California's early African American populations.

In 1974 the California State Parks purchased land within the town-site and in 1976, the plans were approved to develop the central portion of the town as Colonel Allensworth State Park. As part of the State Park's efforts, many of the remaining buildings were restored, including Colonel Allensworth's home, the schoolhouse, the Baptist church, and the library (California Department of Parks and Recreation; Mikell 2017; Wheeler 2000).

PERSONNEL

David Brunzell, M.A., RPA acted as Principal Investigator, and compiled the technical report. BCR Consulting Staff Historian and Archaeological Field Technician Dylan Williams, B.A., completed the pedestrian field survey. The Southern San Joaquin Valley Information Center (SSJVIC) completed the cultural resources records search.

METHODS

Research

Prior to fieldwork, the SSJVIC completed the cultural resources records search. This included a review of all prerecorded historic-period and prehistoric cultural resources, as well as a review of known cultural resources surveys and excavation reports generated from projects located within one mile of the subject property. In addition, a review was conducted of the National Register of Historic Places (National Register), the California Register of Historical Resources (California Register), and documents and inventories from the California Office of Historic Preservation (OHP) including the lists of California Historical Landmarks, California Points of Historical Interest, Listing of National Register Properties, and the Inventory of Historic Structures.

Field Survey

A reconnaissance-level cultural resources field survey of the APE or project sites depicted in Figure 1 was conducted on April 23, 2020. The survey was conducted by walking parallel transects spaced approximately 15 meters apart across 100 percent of the project site. Digital photographs were taken at various points (see Appendix A).

RESULTS

Research

Research completed through the SSJVIC revealed that one cultural resource study has taken place and no cultural resources have been recorded within one mile of the Allensworth Test Well and the ACSD Proposed Well Site. That previous study did assess the Allensworth Test Well and ACSD Proposed Well and identified no cultural resources within either project site boundaries. The research also revealed that 15 cultural resource studies have taken place and two cultural resources have been identified within a mile of the GE3EF6 Pipeline portion of the project. Two previous studies assessed the GE3EF6 project site and did not identify any resources within its boundaries.The results of the records search are summarized below.

Table B. Cultural Resources and Studies within One Half-Mile of the Project Site

USGS 7.5 Min Quad	Cultural Resources Within One Mile of Project Site	Reports Within One Mile of Project Site
Allensworth (1969)	P-54-4052: Allensworth Historic District (3/4 M. N) P-54-5417: Allensworth Cemetery (1/2 Mile WSW)	TU-41*, 1702*, 418, 623, 633, 1025, 1100, 1191, 1441, 1498, 1552, 1786, 1788, 1791, 1803
Delano West (1969)	None	TU-318*

*Previously assessed the project site for cultural resources.

Field Survey

During the field survey, BCR Consulting personnel carefully inspected the project sites and identified no cultural resources within any of the project site boundaries. At the Allensworth Test Well site and the ACSD Proposed Well site, surface visibility was approximately 25 percent revealing sandy clay sediment covered by overgrown seasonal grasses. Ground disturbances were severe, from trampling by cattle, mechanical grading, and plowing. The GE3EF6 Pipeline location is along a paved-asphalt street. At its southernmost extent, the area is in a vacant lot with approximately five to ten percent surface visibility. Visible sediments included sandy silt covered by overgrown weeds and grasses. Large metal fragments of modern refuse were scattered within the lot. Ground disturbances were severe and have resulted from pavement, mechanical excavation, and other modern construction.

RECOMMENDATIONS

Research completed through the Southern San Joaquin Valley Information Center (SSJVIC) revealed that one cultural resource study has taken place and no cultural resources have been recorded within one mile of the Allensworth Test Well and the ACSD Proposed Well Site. That previous study did assess the Allensworth Test Well and ACSD Proposed Well and identified no cultural resources within either project site boundaries. The research also revealed that 15 cultural resource studies have taken place and two cultural resources have been identified within a mile of the GE3EF6 Pipeline portion of the project. Two previous studies assessed the GE3EF6 project site and did not identify any resources within its boundaries. During the field survey, BCR Consulting did not identify any cultural resources, including prehistoric or historic-period archaeological sites or historic-period buildings, within the project boundaries. Furthermore, surface disturbances have taken place beyond depths at which buried cultural deposits are likely. Therefore, a recommendation of No Historic Properties Affected pursuant to 36 CFR Part 800.4(d)(1) is considered appropriate.

Please note that a Sacred Lands File search has been completed through the Native American Heritage Commission (NAHC), with negative results. The NAHC response included a list of potentially interested tribes who have been contacted to determine potential concerns. This process was initiated on May 28, 2020. Thirty days are normally allowed for tribes to respond. Concerns or wishes expressed by tribes to initiate formal consultation prior to June 28, should be forwarded to the lead agency. This process would be considered complete if no concerns are raised within 30 days (by June 28).

The current study attempted to determine whether historic properties were present within the project boundaries. Although none were yielded during the records search and field survey, ground-disturbing activities have the potential to reveal buried deposits not observed during these tasks. Prior to the initiation of ground-disturbing activities, field personnel should be alerted to the possibility of buried prehistoric or historic cultural deposits. In the event that field personnel encounter buried cultural materials, work in the immediate vicinity of the find should cease and a qualified archaeologist should be retained to assess the significance of the find. The qualified archaeologist shall have the authority to stop or divert construction excavation as necessary. If the qualified archaeologist finds that any cultural resources present meet eligibility requirements for listing on the National Register, plans for the treatment, evaluation, and mitigation of impacts to the find will need to be developed. Prehistoric or historic cultural materials that may be encountered during ground-disturbing activities include:

- historic-period artifacts such as glass bottles and fragments, cans, nails, ceramic and pottery fragments, and other metal objects;
- historic-period structural or building foundations, walkways, cisterns, pipes, privies, and other structural elements;
- prehistoric flaked-stone artifacts and debitage (waste material), consisting of obsidian, basalt, and or cryptocrystalline silicates;
- groundstone artifacts, including mortars, pestles, and grinding slabs;
- dark, greasy soil that may be associated with charcoal, ash, bone, shell, flaked stone, groundstone, and fire affected rocks;
- human remains.

If human remains are encountered, State Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the County Coroner has made a determination of origin and disposition pursuant to Public Resources Code Section 5097.98. The County Coroner must be notified of the find immediately. If the remains are determined to be prehistoric, the Coroner will notify the Native American Heritage Commission (NAHC), which will determine and notify a Most Likely Descendant (MLD). With the permission of the landowner or his/her authorized representative, the MLD may inspect the site of the discovery. The MLD shall complete the inspection within 48 hours of notification by the NAHC.

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APPENDIX A

PHOTOGRAPHS

Photo 1: GE3EF6 Pipeline Overview (View South)

Photo 2: GE3EF6 Pipeline Overview (View North)


Photo 3: Vacant Lot at Southwest Terminus of Proposed Pipeline (View West)


Photo 4: Overview of site for proposed well (View East)


Photo 5: Allensworth Test Well Site (View South)


Photo 6: ACSD Proposed Well Site (View South)

APPENDIX B

RECORDS SEARCH RESULTS

California
Historical
Resources
Information
System

Fresno
Kern
Kings
Madera
Tulare

Southern San Joaquin Valley Information Center
California State University, Bakersfield
Mail Stop: 72 DOB
9001 Stockdale Highway
Bakersfield, California 93311-1022
(661) 654-2289
E-mail: ssjvic@csub.edu
Website: www.csub.edu/ssjvic

5/11/2020

Joseph Orozco
BCR Consulting
505 W. 8th Street
Claremont, CA 91711

Re: DJA2001
Records Search File No.: 20-181

The Southern San Joaquin Valley Information Center received your record search request for the project area referenced above, located on the Allensworth and Delano West USGS 7.5’ quads. The following reflects the results of the records search for the project area and the 1.0 mile radius:

As indicated on the data request form, the locations of resources and reports are provided in the following format: ☐ custom GIS maps ☒ shapefiles

Resources within project area:	None
Resources within 1.0 mile radius:	P-54-004052, 005317
Reports within project area:	TU-00041, 00318, 01702
Reports within 1.0 mile radius:	TU-00418, 00623, 00633, 01025, 01100, 01191, 01441, 01498, 01552, 01786, 01788, 01791, 01803

Resource Database Printout (list): ☒ enclosed ☐ not requested ☐ nothing listed

Resource Database Printout (details): ☐ enclosed ☒ not requested ☐ nothing listed

Resource Digital Database Records: ☐ enclosed ☒ not requested ☐ nothing listed

Report Database Printout (list): ☒ enclosed ☐ not requested ☐ nothing listed

Report Database Printout (details): ☐ enclosed ☒ not requested ☐ nothing listed

Report Digital Database Records: ☐ enclosed ☒ not requested ☐ nothing listed

Resource Record Copies: ☐ enclosed ☒ not requested ☐ nothing listed

Report Copies: ☒ enclosed ☐ not requested ☐ nothing listed

OHP Built Environment Resources Directory: ☐ enclosed ☒ not requested ☐ nothing listed

Archaeological Determinations of Eligibility: ☐ enclosed ☒ not requested ☐ nothing listed

CA Inventory of Historic Resources (1976): ☐ enclosed ☒ not requested ☐ nothing listed

Caltrans Bridge Survey: Not available at SSJVIC; please see

http://www.dot.ca.gov/hq/structur/strmaint/historic.htm

Ethnographic Information: Not available at SSJVIC

Historical Literature: Not available at SSJVIC

Historical Maps: Not available at SSJVIC; please see
http://historicalmaps.arcgis.com/usgs/

Local Inventories: Not available at SSJVIC

GLO and/or Rancho Plat Maps: Not available at SSJVIC; please see
http://www.glorecords.blm.gov/search/default.aspx#searchTabIndex=0&searchByTypeIndex=1 and/or
http://www.oac.cdlib.org/view?docId=hb8489p15p;developer=local;style=oac4;doc.view=items

Shipwreck Inventory: Not available at SSJVIC; please see
http://www.slc.ca.gov/Info/Shipwrecks.html

Soil Survey Maps: Not available at SSJVIC; please see
http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx

Please forward a copy of any resulting reports from this project to the office as soon as possible. Due to the sensitive nature of archaeological site location data, we ask that you do not include resource location maps and resource location descriptions in your report if the report is for public distribution. If you have any questions regarding the results presented herein, please contact the office at the phone number listed above.

The provision of CHRIS Data via this records search response does not in any way constitute public disclosure of records otherwise exempt from disclosure under the California Public Records Act or any other law, including, but not limited to, records related to archeological site information maintained by or on behalf of, or in the possession of, the State of California, Department of Parks and Recreation, State Historic Preservation Officer, Office of Historic Preservation, or the State Historical Resources Commission.

Due to processing delays and other factors, not all of the historical resource reports and resource records that have been submitted to the Office of Historic Preservation are available via this records search. Additional information may be available through the federal, state, and local agencies that produced or paid for historical resource management work in the search area. Additionally, Native American tribes have historical resource information not in the CHRIS Inventory, and you should contact the California Native American Heritage Commission for information on local/regional tribal contacts.

Should you require any additional information for the above referenced project, reference the record search number listed above when making inquiries. Invoices for Information Center services will be sent under separate cover from the California State University, Bakersfield Accounting Office.

Thank you for using the California Historical Resources Information System (CHRIS).

Sincerely,

Celeste M. Thomson
Coordinator

Report List

SSJVIC Record Search 20-181

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
TU-00041	BLM - Permit No. CA-95-01-0004; NADB-R - 1141258	1995	Self, William	Class I Overview, Santa Fe Pacific Pipeline Partners, L.P., Proposed Concord to Colton Pipeline Project	William Self Associates	
TU-00318	Submitter - 96-01	1996	Fleagle, Dorothy	An Archaeological Assessment of a Proposed Well Cite for the Allensworth Community Services District, Northwest of Delano, Tulare County, California	Three Girls and a Shovel	
TU-00418	Submitter - CRF-95-22	1995	Parr, Robert E.	An Archaeological Assessment of a 160-Acre Portion of the Allensworth Ecological Reserve, Tulare County, California	Cultural Resource Facility, California State University, Bakersfield	
TU-00623		1973	Williams, Charlotte	The Impact of the Proposed Allensworth State Park On the Archaeological Resources of the Area Around It	Individual Consultant	
TU-00633		1983	Woodward, Jim	Archaeological Survey Report for Colonel Allensworth State Historical Park Tailer Pad Campground Construction, Tulare County, California	Individual Consultant	
TU-01025		2000	Nelson, Wendy J.	Cultural Resources Survey for the Level (3) Communications Long Haul Fiber Optics Project; Project Number 27101	Far Western Anthropological Research Group, Inc.	54-000389
TU-01100		2001	Collet, Tom	Section 106 Review for the Allensworth Cell Tower Site, Tulare County, California	Terracon	
TU-01191		2000	Mason, Roger D. and Shepard, Richard S.	Cultural Resources Survey Report for Level (3) Long Haul Fiber Optic Project: WS04, State Route 43 Reroute, Kern and Tulare Counties, California	Chambers Group, Inc.	
TU-01441		2009	Gold, Alan P.	Cultural Resource Survey for a 57.8 Acre Parcel, Southwest of the Community of Allensworth Near Road 80 and Between Avenues 28 and 32, Tulare County, California	Archaeological Associates of Kern County	
TU-01498	Submitter - Contract No. 06A1106; Submitter - Expenditure Authorization No. 06-0A7408	2010	Leach-Palm, Laura, Brandy, Paul, King, Jay, Mikkelsen, Pat, Seil, Libby, Hartman, Lindsay, and Bradeen, Jill	Cultural Resources Inventory of Caltrans District 6 Rural Conventional Highways in Fresno, Western Kern, Kings, Madera, and Tulare Counties.	Far Western Anthropological Research Group, Inc.	54-000580, 54-001091, 54-001479, 54-004595, 54-004611, 54-004614, 54-004619, 54-004629, 54-004630

Report List

SSJVIC Record Search 20-181

Report No.	Other IDs	Year	Author(s)	Title	Affiliation	Resources
TU-01552		2011	Orfila, Rebecca S.	Archaeological Survey of Project Area for the Southern California Edison Company: Replacement of a Power Pole (#2017535E) Located Near Delano in Tulare County; Circuit: Marsh 12kV; Substation Earlimart (TD357693; RSOC Consultant Work Authorization No. 96)	RSO Consulting, Cultural and Historical Resource Management	
TU-01702		2011	Greenwald, Alexandra	Archaeological Survey for the California High Speed Train, Fresno to Bakersfield Segment	URS Corporation	
TU-01786	IC Record Search Nbr - 15-271; OHP PRN - EPA_2017_0622_001	2017	Brunzell, David	Cultural Resources Assessment Allensworth Test Well Project, Allensworth, Unincorporated Tulare County, California	BCR Consulting	
TU-01788		2017	Thompson, Erica Rose	Allensworth: Preserving the Cemetery of "The Town That Refused to Die"	Sonoma State University	54-005317
TU-01791	OHP PRN - FRA100524C	2016	Unknown	Fresno to Bakersfield Project Section-Final Historic Architectural Survey Report Addendum No. 3 (Early Works Re-exam Area)	California High-Speed Rail Authority	
TU-01803	OHP PRN - FCC_2017_0816_004 ; Submitter - CVL00452	2017	Thomas, Katherine	Cultural Resources Records Search and Site Visit Results for AT&T Mobility, LLC Candidate CVL00452 (Allensworth Christian Church), 3765 Young Road, Earlimart, Tulare County, California (EBI Project # 6117002837)	Helix Environmental Planning	

Resource List

SSJVIC Record Search 20-181

Primary No.	Trinomial	Other IDs	Type	Age	Attribute codes	Recorded by	Reports
P-54-004052		Resource Name - Allensworth Historical District	District	Historic	AH07; AH15; HP02; HP05; HP06; HP15	1971 (Elena Albert, San Francisco African American Historical and Cultural Society)	
P-54-005317	CA-TUL-003110H	Resource Name - Allensworth Cemetery	Site	Historic	AH16; HP40	2017 (Erica Thompson, Sonoma State University)	TU-01788

APPENDIX C

NAHC SACRED LANDS FILE SEARCH AND LETTERS SENT TO TRIBES

BCR Consulting Sacred Lands File and List of Tribes Request, Allensworth Project

From: David Brunzell (david.brunzell@yahoo.com)

To: nahc@nahc.ca.gov

Date: Friday, May 8, 2020, 6:11 PM PDT

Dear NAHC,

I am writing to request a Sacred Lands File Search and list of potentially interested tribes for the proposed Cross-Cutter Test Well Project located in the unincorporated town of Allensworth, Tulare County, California. The legal description and map information are provided below (MDBM):

Section 13 and 16
Township 24 South
Range 24 East
USGS 7.5-Minute *Delano West* (1969) and *Allensworth* (1969), *California* Topographic quadrangle (attached).

Please send the results to my email, and please contact me with questions or if you need anything additional.

Sincerely,

David Brunzell
Principal Investigator/Archaeologist

BCR Consulting LLC
U.S. Small Business Administration (SBA) Member
505 West 8th Street
Claremont, California 91711
909-525-7078

www.bcrconsulting.net

Fig 1.pdf
456.4kB

STATE OF CALIFORNIA Gavin Newsom, *Governor*

NATIVE AMERICAN HERITAGE COMMISSION

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

May 5, 2020

Joseph Orozco

BCR Consulting LLC

Via Email to: josephorozco513@gmail.com

Re: Cross-Cutter Test Well Project, Tulare County

Dear Mr. Orozco:

A record search of the Native American Heritage Commission (NAHC) Sacred Lands File (SLF) was completed for the information you have submitted for the above referenced project. The results were negative. However, the absence of specific site information in the SLF does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Attached is a list of Native American tribes who may also have knowledge of cultural resources in the project area. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated; if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call or email to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance, we can assure that our lists contain current information.

If you have any questions or need additional information, please contact me at my email address: Nancy.Gonzalez-Lopez@nahc.ca.gov.

Sincerely,

Nancy Gonzalez-Lopez

Nancy Gonzalez-Lopez
Cultural Resources Analyst

Attachment

Native American Heritage Commission
Native American Contacts List
May 5, 2020

Kern Valley Indian Community
Julie Turner, Secretary
P.O. Box 1010
Lake Isabella ,CA 93240
(661) 340-0032 Cell
Kawaiisu
Tubatulabal

Kern Valley Indian Community
Robert Robinson, Chairperson
P.O. Box 1010
Lake Isabella ,CA 93240
bbutterbredt@gmail.com
(760) 378-2915 Cell
Tubatulabal
Kawaiisu

Kern Valley Indian Community
Brandy Kendricks
30741 Foxridge Court
Tehachapi ,CA 93561
krazykendricks@hotmail.com
(661) 821-1733
(661) 972-0445
Kawaiisu
Tubatulabal

Santa Rosa Rancheria Tachi Yokut Tribe
Leo Sisco, Chairperson
P.O. Box 8
Lemoore ,CA 93245
(559) 924-1278
(559) 924-3583 Fax
Tache
Tachi
Yokut

Tubatulabals of Kern Valley
Robert L. Gomez, Jr., Tribal Chairperson
P.O. Box 226
Lake Isabella ,CA 93240
(760) 379-4590
(760) 379-4592 Fax
Tubatulabal

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589
Porterville ,CA 93258
neil.peyron@tulerivertribe-nsn.gov
(559) 781-4271
(559) 781-4610 Fax
Yokuts

Wuksache Indian Tribe/Eshom Valley Band
Kenneth Woodrow, Chairperson
1179 Rock Haven Ct.
Salinas ,CA 93906
kwood8934@aol.com
(831) 443-9702
Foothill Yokuts
Mono
Wuksache

This list is current as of the date of this document and is based on the information available to the Commission on the date it was produced.

Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code,Section 5097.94 of the Public Resources Code, or Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans Tribes for the proposed:
Cross-Cutter Test Well Project, Tulare County.

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May 28, 2020

Kern Valley Indian Community
Julie Turner, Secretary
P.O. Box 1010
Lake Isabella, California 93240

Subject: Tribal Scoping for the Cross-Cutter Test Well Project, Allensworth, Tulare County, California

Dear Ms. Turner:

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

May 28, 2020

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589
Porterville, California 93258

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11749 Rock Haven Court
Salinas, California 93906

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May 28, 2020

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P.O. Box 8
Lemoore, California 93245

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Principal Investigator/Archaeologist

May 28, 2020

Tubatulabals of Kern Valley
Robert L. Gomez, Jr. Tribal Chairperson
P.O. Box 226
Lake Isabella, California 93240

Subject: Tribal Scoping for the Cross-Cutter Test Well Project, Allensworth, Tulare County, California

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BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

(PROJECT NO. 5400544-001P
SRF12P110)

EXHIBIT F
"NATIVE AMERICAN HERITAGE COMMISSION – CULTURAL RESOURCES RESEARCH"

ALLENSWORTH COMMUNITY SERVICES DISTRICT
WATER SYSTEM IMPOVEMENT PROJECT

May 28, 2020

Kern Valley Indian Community
Julie Turner, Secretary
P.O. Box 1010
Lake Isabella, California 93240

Subject: Tribal Scoping for the Cross-Cutter Test Well Project, Allensworth, Tulare County, California

Dear Ms. Turner:

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May 28, 2020

Tule River Indian Tribe
Neil Peyron, Chairperson
P.O. Box 589
Porterville, California 93258

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Wuksache Indian Tribe/Eshom Valley Band
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11749 Rock Haven Court
Salinas, California 93906

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May 28, 2020

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Brandy Kendricks
30741 Foxridge Court
Tehachapi, California 93561

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Lemoore, California 93245

Subject: Tribal Scoping for the Cross-Cutter Test Well Project, Allensworth, Tulare County, California

Dear Mr. Chairperson:

This is an invitation to comment on a proposed development project at locations with which you have Tribal cultural affiliation. The purpose of the Tribal Scoping is to ensure the protection of Native American cultural resources on which the proposed project may have an impact. In the Tribal Scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American Groups and Individuals, as consulting parties, on potential effect of the development project, and to avoid costly delays. Further, we understand that much of the content of the correspondence will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The Cross-Cutter Test Well Project Area of Potential Effects (APE) comprises three locations. The Allensworth Test Well and the ACSD Proposed Well Site are both located in Section 13 of Township 24 South, Range 24 East, Mount Diablo Baseline and Meridian. The GE3EF6 Pipeline is located in Section 16 of Township 24 South, Range 24 East, Mount Diablo Baseline and Meridian. The project sites are surrounded by agriculture. The Allensworth Test Well and ACSD Proposed Well Site are both depicted on the U.S. Geological Survey (USGS) *Delano West, California* (1969) 7.5 minute topographic quadrangle. The GE3EF6 Pipeline is depicted on the USGS *Allensworth, California* (1969) 7.5-minute topographic quadrangles (see attached map).

If you know of any cultural resources in the vicinity that may be of religious and/or cultural significance to your community, if you would like more information, or if you would like to request consultation with the lead agency, please contact me at 909-525-7078 or david.brunzell@yahoo.com. Correspondence can also be sent to BCR Consulting LLC, Attn: David Brunzell, 505 West 8th Street, Claremont, California 91711. I request a response by May 1, 2019. If you require more time, please let me know. All tribal scoping correspondence will be appended to the final *Cultural Resources Assessment Cross-Cutter Test Well Project Allensworth, Unincorporated Tulare County, California.* Thank you for your involvement in this process.

Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

May 28, 2020

Tubatulabals of Kern Valley
Robert L. Gomez, Jr. Tribal Chairperson
P.O. Box 226
Lake Isabella, California 93240

Subject: Tribal Scoping for the Cross-Cutter Test Well Project, Allensworth, Tulare County, California

Dear Mr. Chairperson:

This is an invitation to comment on a proposed development project at locations with which you have Tribal cultural affiliation. The purpose of the Tribal Scoping is to ensure the protection of Native American cultural resources on which the proposed project may have an impact. In the Tribal Scoping process, early communication is encouraged in order to provide for full and reasonable public input from Native American Groups and Individuals, as consulting parties, on potential effect of the development project, and to avoid costly delays. Further, we understand that much of the content of the correspondence will be confidential and will include, but not be limited to, the relationship of proposed project details to Native American Cultural Historic Properties, such as burial sites, known or unknown, architectural features and artifacts, ceremonial sites, sacred shrines, and cultural landscapes. The Cross-Cutter Test Well Project Area of Potential Effects (APE) comprises three locations. The Allensworth Test Well and the ACSD Proposed Well Site are both located in Section 13 of Township 24 South, Range 24 East, Mount Diablo Baseline and Meridian. The GE3EF6 Pipeline is located in Section 16 of Township 24 South, Range 24 East, Mount Diablo Baseline and Meridian. The project sites are surrounded by agriculture. The Allensworth Test Well and ACSD Proposed Well Site are both depicted on the U.S. Geological Survey (USGS) *Delano West, California* (1969) 7.5 minute topographic quadrangle. The GE3EF6 Pipeline is depicted on the USGS *Allensworth, California* (1969) 7.5-minute topographic quadrangles (see attached map).

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Sincerely,

BCR Consulting LLC

David Brunzell, M.A./RPA
Principal Investigator/Archaeologist

(PROJECT NO. 5400544-001P
SRF12P110)

EXHIBIT G
GEOTECHNICAL ENGINEERING INVESTIGATION

ALLENSWORTH COMMUNITY SERVICES DISTRICT
WATER SYSTEM IMPOVEMENT PROJECT

GEOTECHNICAL ENGINEERING INVESTIGATION
PROPOSED ALLENSWORTH WATER
SYSTEM IMPROVEMENTS
3300 ROAD 84
ALLENSWORTH, TULARE COUNTY, CALIFORNIA

KA PROJECT NO. 012-20022
APRIL 6, 2020

Prepared for:

MR. CURTIS SKAGGS
DEE JASPER & ASSOCIATES
2730 UNICORN ROAD, BUILDING A
BAKERSFIELD, CALIFORNIA 93308

Prepared by:

KRAZAN & ASSOCIATES, INC.
GEOTECHNICAL ENGINEERING DIVISION
215 W. DAKOTA AVENUE
CLOVIS, CALIFORNIA 93612
(559) 348-2200

Krazan & ASSOCIATES, INC.
SITE DEVELOPMENT ENGINEERS

April 6, 2020 KA Project No. 012-20022

Mr. Curtis Skaggs
Dee Jasper & Associates
2730 Unicorn Road, Building A
Bakersfield, California 93308

RE: Geotechnical Engineering Investigation
Proposed Allensworth Water System Improvements
3300 Road 84
Allensworth, Tulare County, California

Dear Mr. Skaggs:

In accordance with your request, we have completed a Geotechnical Engineering Investigation for the above-referenced site. The results of our investigation are presented in the attached report.

If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (559) 348-2200.

REGISTERED PROFESSIONAL ENGINEER
DAVID R. JAROSZ II
NO. 2698
EXP. 6/30/2020
GEOTECHNICAL
STATE OF CALIFORNIA

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

David R. Jarosz, II
Managing Engineer
RGE No. 2698/RCE No. 60185

DRJ:ht

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INTRODUCTION

This report presents the results of our Geotechnical Engineering Investigation for the proposed Water System Improvements to be located at 3300 Road 84 in Allensworth, Tulare County, California. Discussions regarding site conditions are presented herein, together with conclusions and recommendations pertaining to site preparation, Engineered Fill, utility trench backfill, drainage and landscaping, foundations, concrete floor slabs and exterior flatwork, retaining walls, and soil cement reactivity.

A site plan showing the approximate boring locations is presented following the text of this report. A description of the field investigation, boring logs, and the boring log legend are presented in Appendix A. Appendix A also contains a description of the laboratory testing phase of this study, along with the laboratory test results. Appendix B contains a guide to earthwork specifications. When conflicts in the text of the report occur with the general specifications in the appendices, the recommendations in the text of the report have precedence.

PURPOSE AND SCOPE

This investigation was conducted to evaluate the soil and groundwater conditions at the site, to make geotechnical engineering recommendations for use in design of specific construction elements, and to provide criteria for site preparation and Engineered Fill construction.

Our scope of services was outlined in our proposal dated January 31, 2020 (KA Proposal No. P010-20) and included the following:

- A site reconnaissance by a member of our engineering staff to evaluate the surface conditions at the project site.
- A field investigation consisting of drilling 5 borings to depths ranging from approximately 10 to 50 feet for evaluation of the subsurface conditions at the project site.
- Performing laboratory tests on representative soil samples obtained from the borings to evaluate the physical and index properties of the subsurface soils.

- Evaluation of the data obtained from the investigation and an engineering analysis to provide recommendations for use in the project design and preparation of construction specifications.

- Preparation of this report summarizing the results, conclusions, recommendations, and findings of our investigation.

PROPOSED CONSTRUCTION

We understand that design of the proposed development is currently underway; structural load information and other final details pertaining to the structures are unavailable. On a preliminary basis, it is understood that the proposed development will consist of a new water treatment facility which will include tanks, equipment, piping and electrical systems. It is anticipated the structures will be supported on conventional footings and/or mat foundations. Pipe supports may be associated with the development. Footing loads are anticipated to be light to moderate.

In the event, these structural or grading details are inconsistent with the final design criteria, the Soils Engineer should be notified so that we may update this writing as applicable.

SITE LOCATION AND SITE DESCRIPTION

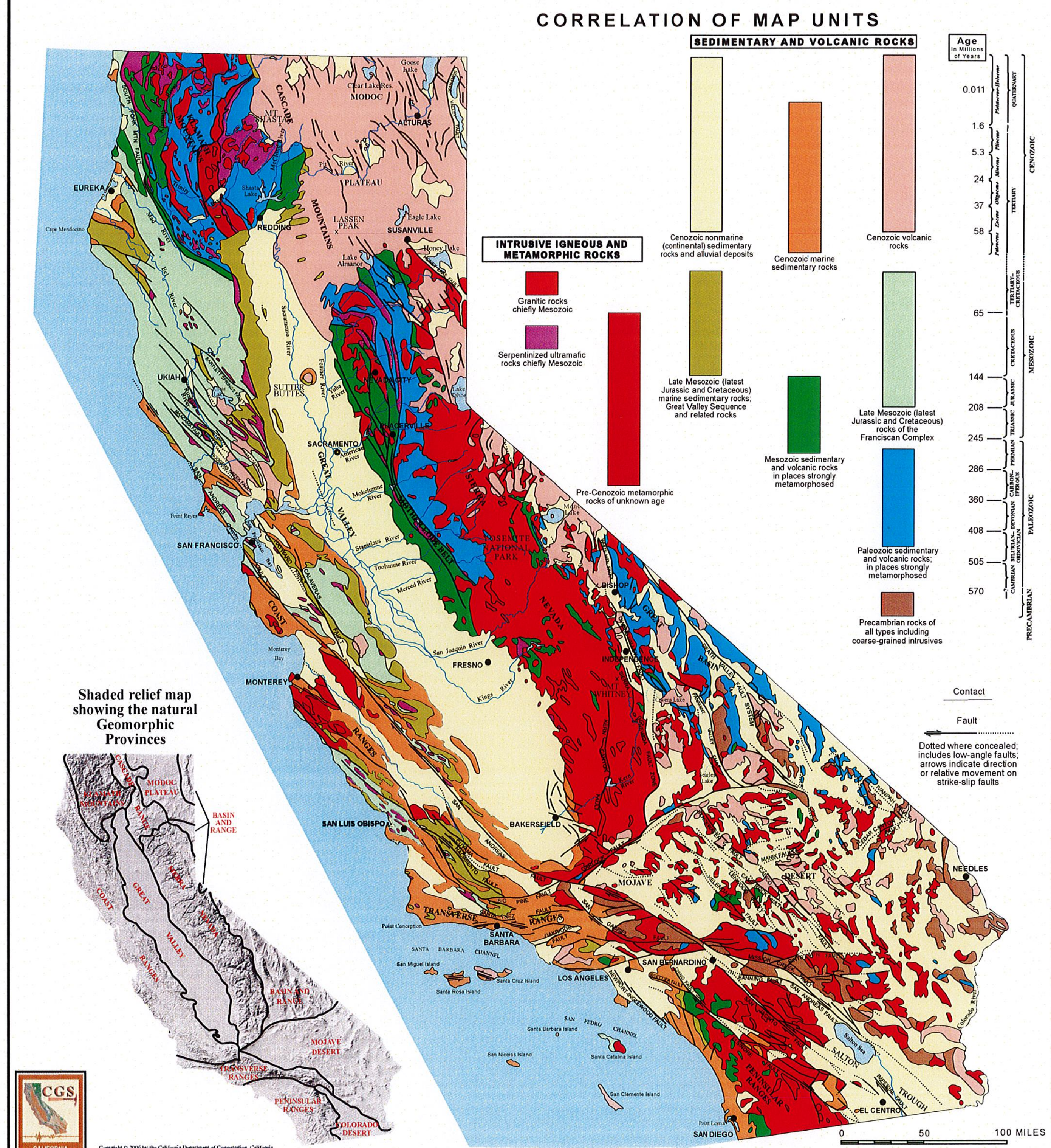
The site is rectangular in shape and encompasses approximately ½ acre. The site is located approximately 400 feet south of Avenue 32, just west of Road 84 in Allensworth, Tulare County, California. The site has a street address of 3300 Road 84. The site is predominately surrounded by rural residential developments and vacant land.

Presently, the site predominately consists of a vacant lot. Remnants of a burned building are located in the central portion of the site. In addition, burnt debris is scattered across portions of the site. Several trees are located within the site. The site is covered by a sparse to moderate weed growth and the surface soils have a loose consistency. Buried utility lines are located along the edges of the site and extend into portions of the site. The site is relatively level with no major changes in grade.

GEOLOGIC SETTING

The San Joaquin Valley, which includes the Allensworth area, is a topographic and structural basin that is bounded on the east by the Sierra Nevada and on the west by the Coast Ranges. The Sierra Nevada, a fault block dipping gently southwestward, is made up of igneous and metamorphic rocks of pre-Tertiary age that comprise the basement complex beneath the Valley. The Coast Ranges contain folded and faulted sedimentary rocks of Mesozoic and Cenozoic age, which are similar to those rocks that underlie the Valley at depth and non-conformably overlie the basement complex; gently dipping to nearly horizontal sedimentary rocks of Tertiary and Quaternary age overlie the older rocks. These younger rocks are mostly of continental origin and in the Allensworth area, they were derived from the Sierra Nevada.

SIMPLIFIED GEOLOGIC MAP OF CALIFORNIA



The Kern and Kings River are the principal rivers in the area. Alluvial fans formed by these rivers are the largest geomorphic features in the Allensworth area. The formation of the fans has resulted in rather flat regional topography.

The Coast Ranges evolved as a result of folding, faulting, and accretion of diverse geologic terrains. They are composed chiefly of sedimentary and metamorphic rocks that are sharply deformed into complex structures. They are broken by numerous faults, the San Andreas Fault being the most notable structural feature.

Both the Sierra Nevada and Coast Range are geologically young mountain ranges and possess active and potentially active fault zones. Major active faults and fault zones occur at some distance to the east, west, and south of the Allensworth area. The Owens Valley Fault Zone bounds the eastern edge of the Sierra Nevada block and contains both active and potentially active faults.

Portions of the Ortigalita, Calaveras, Hayward, and Rinconada Faults, which are to the west, are considered potentially active. The San Andreas Fault is possibly the best known fault and is located about 60 to 70 miles to the west.

There are no active fault traces in the project vicinity. Accordingly, the project area is not within an Earthquake Fault Zone (Special Studies Zone) and will not require a special site investigation by an Engineering Geologist.

Allensworth residents could feel the effects of a large seismic event on one of the nearby active or potentially active fault zones. Allensworth has experienced groundshaking from earthquakes in the historical past. According to the Five County Seismic Safety Element, groundshaking of VII intensity (Modified Mercali Scale) was felt in Allensworth from the 1872 Owens Valley Earthquake. This is the largest known earthquake event affecting the Allensworth area.

Secondary hazards from earthquakes include rupture, seiche, landslides, liquefaction, and subsidence. Since there are no known faults within the immediate area, ground rupture from surface faulting should not be a potential problem. Seiche and landslides are not hazards in the area either. Liquefaction potential (sudden loss of shear strength in a saturated cohesionless soil) should be low based on our liquefaction analysis included in this report. Lastly, deep subsidence problems may be low to moderate according to the conclusions of the Five County Seismic Safety Element. However, there are no known occurrences of structural or architectural damage due to deep subsidence in the Allensworth area.

FIELD AND LABORATORY INVESTIGATIONS

Subsurface soil conditions were explored by drilling 5 borings to depths ranging from approximately 10 to 50 feet below existing site grade, using a truck-mounted drill rig. The approximate boring locations are shown on the site plan. During drilling operations, penetration tests were performed at regular intervals to evaluate the soil consistency and to obtain information regarding the engineering properties of the subsoils. Soil samples were retained for laboratory testing. The soils encountered were continuously examined and visually classified in accordance with the Unified Soil Classification System. A more detailed description of the field investigation is presented in Appendix A.

Laboratory tests were performed on selected soil samples to evaluate their physical characteristics and engineering properties. The laboratory testing program was formulated with emphasis on the evaluation of natural moisture, density, gradation, shear strength, consolidation potential, permeability, atterberg limits, and moisture-density relationships of the materials encountered. In addition, chemical tests were performed to evaluate the soil-cement reactivity. Details of the laboratory test program and results of the laboratory tests are summarized in Appendix A. This information, along with the field observations, was used to prepare the final boring logs in Appendix A.

SOIL PROFILE AND SUBSURFACE CONDITIONS

Based on our findings, the subsurface conditions encountered appear typical of those found in the geologic region of the site. In general, the surface soils consisted of approximately 6 to 12 inches of very loose silty sand/sandy silt or sandy silt. These soils are disturbed, have low strength characteristics, and are highly compressible when saturated.

Approximately 1 to 1½ feet of fill material was encountered within the borings drilled throughout the site. The fill material predominately consisted of silty sand/sandy silt. The thickness and extent of fill material was determined based on limited test borings and visual observation. Thicker fill may be present at the site. Limited testing was performed on the fill soils during the time of our field and laboratory investigations. The limited testing indicates the fill soils had varying strength characteristics ranging from loosely placed to compacted.

Below the loose surface soils and fill material, approximately 2 to 3 feet of medium dense to dense silty sand/sandy silt or sandy silt was encountered. Field and laboratory tests suggest that these soils are moderately strong and slightly compressible. Some of these soils contained traces of clay. Penetration resistance ranged from 16 to 44 blows per foot. Dry densities ranged from 99 to 103 pcf. A representative soil sample consolidated approximately 2½ percent under a 2 ksf load when saturated. A representative soil sample had an angle of internal friction of 30 degrees.

Below 4 to 5 feet, layers of predominately loose to very dense silty sand and clayey sand or stiff to hard silty clay and sandy clay were encountered. Field and laboratory tests suggest that these soils are moderately strong and slightly compressible. Penetration resistance ranged from 10 to 61 blows per foot. Dry densities ranged from 93 to 124 pcf. Representative soil samples contained approximately 15 to 93 percent fines. These soils had slightly stronger strength characteristics than the upper soils and extended to the termination depth of our borings.

For additional information about the soils encountered, please refer to the logs of borings in Appendix A.

PERMEABILITY TESTING

Two permeability tests were performed on soil samples collected from depths of 5 to 10 feet below existing site grade. The permeability tests were performed in accordance with ASTM Test Method D2434. The results of the tests are as follows:

Boring No.	Depth (ft)	Coefficient of Permeability (cm/sec)	Soil Type
B1	5-6	4.06×10^{-5}	Silty Sand (SM)
B3	10-11	1.08×10^{-5}	Clayey Sand (SC)

GROUNDWATER

Test boring locations were checked for the presence of groundwater during and immediately following the drilling operations. Free groundwater was encountered at a depth of 15 feet below existing site grade. Information obtained from the State of California Department of Water Resources indicates that historically groundwater has been as shallow as 14 feet within the project site vicinity.

It should be recognized that water table elevations may fluctuate with time, being dependent upon seasonal precipitation, irrigation, land use, and climatic conditions, as well as other factors. Therefore, water level observations at the time of the field investigation may vary from those encountered during the construction phase of the project. The evaluation of such factors is beyond the scope of this report.

SOIL LIQUEFACTION

Soil liquefaction is a state of soil particle suspension, caused by a complete loss of strength when the effective stress drops to zero. Liquefaction normally occurs in soils, such as sands, in which the strength is purely frictional. However, liquefaction has occurred in soils other than clean sands. Liquefaction usually occurs under vibratory conditions, such as those induced by seismic events.

To evaluate the liquefaction potential of the site, the following items were evaluated:

1) Soil type

2) Groundwater depth

3) Relative density

4) Initial confining pressure

5) Intensity and duration of groundshaking

The predominant soils within the project site consist of layers of silty sand, sandy silt, clayey sand, sandy clay and silty clay. Groundwater was encountered at a depth of 15 feet during out subsurface investigation. However, groundwater has been historically encountered at depths as shallow as 14 feet below site grade within the project site and vicinity.

The potential for soil liquefaction during a seismic event was evaluated using the LIQUEFYPRO computer program (version 5.8h) developed by CivilTech Software. For the analysis, a maximum earthquake magnitude of 8.12 was used. A peak horizontal ground surface acceleration of 0.411g was considered conservative and appropriate for the liquefaction analysis within the area. A high groundwater depth of 14 feet was used for the analysis. The computer analysis indicates that soils above a depth of 14 feet are non-liquefiable due to the absence of groundwater. The soils below depths of 14 feet have a very low potential for liquefaction with factors of safety of 1.8 to 5.0. The analysis indicates that the estimated total seismic induced settlement due to soil liquefaction is less than approximately ¼ inch. The estimated differential seismic settlements were less than ⅛ inch over the width of the structures. Due to the relative density of the granular soils encountered at the site, the moderate penetration resistance (N-values) measured, as well as the anticipated low to moderate seismicity of the area, warrant the conclusion that the potential for liquefaction and related settlement is low at this site and no liquefaction mitigation procedures are necessary for this project.

CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of our field and laboratory investigations, along with previous geotechnical experience in the project area, the following is a summary of our evaluations, conclusions, and recommendations.

Administrative Summary

In brief, the subject site and soil conditions, with the exception of the fill material and previous development, appear to be conducive to the development of the project. Approximately 1 to 1½ feet of fill material was encountered within the borings drilled throughout the site. The fill material predominately consisted of silty sand/sandy silt and sandy silt. The thickness and extent of fill material was determined based on limited test borings and visual observation. Thicker fill may be present at the site. Limited testing was performed on the fill soils during the time of our field and laboratory investigations. The limited testing indicates the fill soils had varying strength characteristics ranging from loosely placed to compacted. Therefore, it is recommended the fill soils be excavated and stockpiled so that the native soils can be prepared properly. These soils will be suitable for reuse as Engineered Fill, provided they are cleansed of excessive organics and debris and are moisture-conditioned to a minimum of 2 percent above optimum moisture content. Prior to fill placement, Krazan & Associates, Inc. should inspect the bottom of the excavation to verify no additional removal will be required.

It is recommended that following stripping and fill removal operations, the upper 12 inches of native soils within the proposed structural areas be excavated, worked until uniform and free from large clods, moisture-conditioned as necessary, and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Prior to backfilling, the exposed subgrade soils should be scarified to a depth of 6 inches, moisture-conditioned as necessary, and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

Structures previously occupied the site. Associated with these developments were buried structures, such as utility lines. Demolition activities should include proper removal of any buried structures. Any surface or buried structures encountered during construction should be properly removed and/or relocated. It is suspected that demolition activities of the existing structures will disturb the upper soils.

Areas disturbed by demolition activities should be excavated to firm native ground. The resulting excavations should be backfilled with Engineered Fill, compacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557.

Sandy soil conditions were encountered at the site. These cohesionless soils have a tendency to cave in trench wall excavations. Shoring or sloping back trench sidewalls may be required within these sandy soils.

After completion of the recommended site preparation, the site should be suitable for shallow footing support. The proposed tank foundations may be designed utilizing either a continuous ring-wall footing or mat foundation with allowable bearing pressures of 2,500 psf and 2,000 psf, respectively, for dead-plus-live loads. Continuous ring-wall footings, if utilized, should have a minimum embedment of 18 inches. The proposed structures may be supported on drilled cast in place concrete piers/caissons. If drilled piers or caissons will be utilized, no over-excavation will be required provided they extend to a minimum depth of 8 feet. Recommendations regarding conventional foundations and drilled piers are provided in the foundation section of this report.

Groundwater Influence on Structures/Construction

Based on our findings and historical records, it is not anticipated that groundwater will rise within the zone of structural influence or affect the construction of foundations and pavements for the project. However, if earthwork is performed during or soon after periods of precipitation, the subgrade soils may become saturated, "pump," or not respond to densification techniques. Typical remedial measures include: discing and aerating the soil during dry weather; mixing the soil with dryer materials; removing and replacing the soil with an approved fill material; or mixing the soil with an approved lime or cement product. Our firm should be consulted prior to implementing remedial measures to observe the unstable subgrade conditions and provide appropriate recommendations.

Site Preparation

General site clearing should include removal of vegetation; asphaltic concrete; existing utilities; structures including foundations; basement walls and floors; existing stockpiled soil; trees and associated root systems; rubble; rubbish; and any loose and/or saturated materials. Site stripping should extend to a minimum depth of 2 to 4 inches, or until all organics in excess of 3 percent by volume are removed. Deeper stripping may be required in localized areas. These materials will not be suitable for reuse as Engineered Fill. However, stripped topsoil may be stockpiled and reused in landscape or non-structural areas.

Approximately 1 to 1½ feet of fill material was encountered within the borings drilled throughout the site. The fill material predominately consisted of silty sand/sandy silt and sandy silt. The thickness and extent of fill material was determined based on limited test borings and visual observation. Thicker fill may be present at the site. Limited testing was performed on the fill soils during the time of our field and laboratory investigations. The limited testing indicates the fill soils had varying strength characteristics ranging from loosely placed to compacted. Therefore, it is recommended the fill soils be excavated and stockpiled so that the native soils can be prepared properly. These soils will be suitable for reuse as Engineered Fill, provided they are cleansed of excessive organics and debris. Prior to fill placement, Krazan & Associates, Inc., should inspect the bottom of the excavation to verify no additional removal will be required.

Remnants of previous structures are located within the project site. Demolition activities should include proper removal of any buried structures. Any surface or buried structures encountered during construction should be properly removed and/or relocated. It is suspected that demolition activities of the existing structures will disturb the upper soils. Areas disturbed by demolition activities should be excavated to firm native ground. The resulting excavations should be backfilled with Engineered Fill. Excavations, depressions, or soft and pliant areas extending below planned, finished subgrade levels should be cleaned to firm, undisturbed soil and backfilled with Engineered Fill. In general, any septic tanks, debris pits, cesspools, or similar structures should be entirely removed. Concrete footings should be removed to an equivalent depth of at least 3 feet below proposed footing elevations or as recommended by the Soils Engineer. Any other buried structures should be removed in accordance with the recommendations of the Soils Engineer. The resulting excavations should be backfilled with Engineered Fill.

In order to reduce the potential for excessive total and differential movement, it is recommended that following stripping and fill removal operations, the upper 12 inches of native soils within the proposed structural areas be excavated, worked until uniform and free from large clods, moisture-conditioned as necessary, and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Prior to backfilling, the exposed subgrade soils should be scarified to a depth of 6 inches, moisture-conditioned as necessary, and recompacted to a minimum of 90 percent of maximum density based on ASTM Test Method D1557. Limits of removal and recompaction should extend 5 feet beyond structural elements.

The upper soils, during wet winter months, become very moist due to the absorptive characteristics of the soil. Earthwork operations performed during winter months may encounter very moist unstable soils, which may require removal to grade a stable building foundation. Project site winterization consisting of placement of aggregate base and protecting exposed soils during the construction phase should be performed.

A representative of our firm should be present during all site clearing and grading operations to test and observe earthwork construction. This testing and observation is an integral part of our service, as acceptance of earthwork construction is dependent upon compaction and stability of the material. The Soils Engineer may reject any material that does not meet compaction and stability requirements. Further recommendations of this report are predicated upon the assumption that earthwork construction will conform to recommendations set forth in this section and the Engineered Fill section.

Engineered Fill

The on-site, upper native soils and fill material are predominately silty sands and sandy silts. Some of these soils contained traces of clay and gravel. Clayey soils with an expansion index greater than 15 will not be suitable for re-use as Engineered Fill within the upper 12 inches of soil supporting lightly loaded foundations (less than 1,000 psf), slabs-on-grade or exterior flatwork areas.

The preferred materials specified for Engineered Fill is suitable for most applications with the exception of exposure to erosion. Project site winterization and protection of exposed soils during the construction phase should be the sole responsibility of the Contractor, since he has complete control of the project site at that time.

Imported Fill should consist of a well-graded, slightly cohesive, fine silty sand or sandy silt, with relatively impervious characteristics when compacted. This material should be approved by the Soils Engineer prior to use and should typically possess the following characteristics:

Percent Passing No. 200 Sieve	20 to 50
Plasticity Index	10 maximum
UBC Standard 29-2 Expansion Index	15 maximum

Fill soils should be placed in lifts approximately 6 inches thick, moisture-conditioned as necessary, and compacted to achieve at least 90 percent maximum density as determined by ASTM Test Method D1557. Additional lifts should not be placed if the previous lift did not meet the required dry density or if soil conditions are not stable.

Drainage and Landscaping

The ground surface should slope away from building pad and pavement areas toward appropriate drop inlets or other surface drainage devices. In accordance with Section 1804 of the 2019 California Building Code, it is recommended that the ground surface adjacent to foundations be sloped a minimum of 5 percent for a minimum distance of 10 feet away from structures, or to an approved alternative means of drainage conveyance. Swales used for conveyance of drainage and located within 10 feet of foundations should be sloped a minimum of 2 percent. Impervious surfaces, such as pavement and exterior concrete flatwork, within 10 feet of building foundations should be sloped a minimum of 1 percent away from the structure. Drainage gradients should be maintained to carry all surface water to collection facilities and off-site. These grades should be maintained for the life of the project.

Utility Trench Backfill

Utility trenches should be excavated according to accepted engineering practice following OSHA (Occupational Safety and Health Administration) standards by a Contractor experienced in such work. The responsibility for the safety of open trenches should be borne by the Contractor. Traffic and vibration adjacent to trench walls should be minimized; cyclic wetting and drying of excavation side slopes should be avoided. Depending upon the location and depth of some utility trenches, groundwater flow into open excavations could be experienced; especially during or following periods of precipitation.

Sandy soil conditions were encountered at the site. These cohesionless soils have a tendency to cave in trench wall excavations. Shoring or sloping back trench sidewalls may be required within these sandy soils.

Utility trench backfill placed in or adjacent to buildings and exterior slabs should be compacted to at least 90 percent of maximum density based on ASTM Test Method D1557. Utility trench backfill placed in pavement areas should be compacted to at least 90 percent of maximum density based on ASTM Test Method D1557. Pipe bedding should be in accordance with pipe manufacturer's recommendations.

The Contractor is responsible for removing all water-sensitive soils from the trench regardless of the backfill location and compaction requirements. The Contractor should use appropriate equipment and methods to avoid damage to the utilities and/or structures during fill placement and compaction.

Pipe Bedding and Envelope

Proper bedding and envelope should be provided for the proposed pipes. The bedding surface should be smooth and true to the design grade. At least 12 inches of compacted cohesionless soil bedding (100 percent passing the No. 4 Sieve and not more than 8 percent passing and No. 200 Sieve) should be provided below the pipes. An envelope of sandy backfill material should be placed along the sides of the pipe and a minimum depth of 12 inches or ⅛ H over the top of pipe (H is the height of soil backfill above the top of the pipe).

Pipe bedding and envelope should be brought to near optimum moisture content, placed in loose lifts not more than 6 inches in thickness, and compacted to achieve at least 90 percent of maximum density based on ASTM Test Method D1557. Due to space limitations, a hand compactor may be required.

Foundations - Conventional

After completion of the recommended site preparation and over-excavation, the site should be suitable for shallow footing support. The proposed tanks, containment structures, and related equipment may be supported on a conventional shallow foundation system bearing on a minimum of 12 inches of Engineered Fill. Continuous or ring-wall footings can be designed for the following maximum allowable soil bearing pressures:

Load	Allowable Loading
Dead Load Only	1,875 psf
Dead-Plus-Live Load	2,500 psf
Total Load, including wind or seismic loads	3,325 psf

The footings should have a minimum depth of 18 inches below pad subgrade (soil grade) or adjacent exterior grade, whichever is lower. The footing should have a minimum width of 12 inches, regardless of load. Ultimate design of foundations and reinforcement should be performed by the project Structural Engineer.

It is recommended that the upper 12 inches of soil beneath the tank pad consist of Class 2 Aggregate Base compacted to a minimum of 95 percent of maximum density based on ASTM Test Method D1557. Furthermore, the tank pad should be graded to ultimately maintain floor slopes for cleaning and emptying of the tank.

The total settlement is not expected to exceed 1 inch. Differential movement should be less than 1 inch. Most of the settlement is expected to occur during construction, as the loads are applied. However, additional post-construction movement may occur if the foundation soils are flooded or saturated.

Resistance to lateral footing displacement can be computed using an allowable friction factor of 0.35 acting between the base of foundations and the supporting subgrade. Lateral resistance for footings can alternatively be developed using an equivalent fluid passive pressure of 300 pounds per cubic foot acting against the appropriate vertical footing faces. The frictional and passive resistance of the soil may be combined without reduction in determining the total lateral resistance. A ⅓ increase in the value above may be used for short duration, wind, or seismic loads.

Foundations - Mat Foundations

After completion of the recommended site preparation and over-excavation, the site should be suitable for shallow footing support. The proposed tanks, containment structures, and related equipment may be supported on a shallow mat foundation bearing on a minimum of 12 inches of Engineered Fill. The mat foundation can be designed based on the following maximum allowable soil bearing pressures:

Load	Allowable Loading
Dead Load Only	1,500 psf
Dead-Plus-Live Load	2,000 psf
Total Load, including wind or seismic loads	2,650 psf

The mat should have a minimum thickness of 12 inches. The mat should be reinforced at a minimum with No. 4 reinforcement bars at 18 inches, on-center both ways. Ultimate design of the mat foundation and reinforcement should be performed by the project Structural Engineer.

The total settlement of the mat foundation is not expected to exceed 2 inches. The differential settlement should be less than 1 inch. Most of the settlement is expected to occur during construction, as the loads are applied. However, additional post-construction movement may occur if the foundation soils are flooded or saturated.

Resistance to lateral footing displacement can be computed using an allowable friction factor of 0.35 acting between the base of foundations and the supporting subgrade. Lateral resistance for footings can alternatively be developed using an equivalent fluid passive pressure of 300 pounds per cubic foot acting against the appropriate vertical footing faces. The frictional and passive resistance of the soil may be combined without reduction in determining the total lateral resistance. A ⅓ increase in the value above may be used for short duration, wind, or seismic loads.

Foundations - Drilled Caissons

The proposed structures can be supported on caissons using an allowable sidewall friction of 350 psf. This value is for dead-plus-live loads. This value may be increased ⅓ for short duration loads, such as wind or seismic. Uplift loads can be resisted by caissons using an allowable sidewall friction of 200 psf of the surface area and the weight of the pier. Caissons should have a minimum embedment depth of 8 feet or bottomed at least 3 feet into the firm native soil, whichever is greater. The upper 2 feet should be neglected from friction calculations. The total and differential settlement should be less than ½ inch. Most of the settlement is expected to occur during construction as the loads are applied. If drilled piers or caissons will be utilized, no over-excavation of the fill and native soils will be required.

Lateral loads for caissons may be designed using the 2019 CBC flagpole formula with a lateral bearing capacity of 150 psf/ft. This value can be doubled for allowable deflections of up to ½ inch. The lateral loading criteria is based on the assumption that the load application is applied at the ground level and flexible cap conditions apply.

Sandy soils were encountered at the site. These sandy soils may be subject to caving during drilling operations. Accordingly, cased caissons may be required.

Lateral Earth Pressures and Retaining Walls

Walls retaining horizontal backfill and capable of deflecting a minimum of 0.1 percent of its height at the top may be designed using an equivalent fluid active pressure of 40 pounds per square foot per foot of depth. Walls that are incapable of this deflection or walls that are fully constrained against deflection may be designed for an equivalent fluid at-rest pressure of 60 pounds per square foot per foot per depth. Expansive soils should not be used for backfill against walls. The wedge of non-expansive backfill material should extend from the bottom of each retaining wall outward and upward at a slope of 2:1 (horizontal to vertical) or flatter. The stated lateral earth pressures do not include the effects of hydrostatic water pressures generated by infiltrating surface water that may accumulate behind the retaining walls; or loads imposed by construction equipment, foundations, or roadways.

Retaining and/or below grade walls should be drained with either perforated pipe encased in free-draining gravel or a prefabricated drainage system. The gravel zone should have a minimum width of 12 inches wide and should extend upward to within 12 inches of the top of the wall. The upper 12 inches of backfill should consist of native soils, concrete, asphaltic concrete or other suitable backfill to minimize surface drainage into the wall drain system. The aggregate should conform to Class 2 permeable materials graded in accordance with Section 68-2.02(F) of the CalTrans Standard

Specifications (2018). Prefabricated drainage systems, such as Miradrain®, Enkadrain®, or an equivalent substitute, are acceptable alternatives in lieu of gravel provided they are installed in accordance with the manufacturer's recommendations. If a prefabricated drainage system is proposed, our firm should review the system for final acceptance prior to installation.

Drainage pipes should be placed with perforations down and should discharge in a non-erosive manner away from foundations and other improvements. The pipes should be placed no higher than 6 inches above the heel of the wall in the center line of the drainage blanket and should have a minimum diameter of 4 inches. Collector pipes may be either slotted or perforated. Slots should be no wider than ⅜ inch in diameter, while perforations should be no more than ¼ inch in diameter. If retaining walls are less than 6 feet in height, the perforated pipe may be omitted in lieu of weep holes on 4 feet maximum spacing. The weep holes should consist of 4-inch diameter holes (concrete walls) or unmortared head joints (masonry walls) and not be higher than 18 inches above the lowest adjacent grade. Two 8-inch square overlapping patches of geotextile fabric (conforming to Section 88-1.02 of the CalTrans Standard Specifications for "edge drains") should be affixed to the rear wall opening of each weep hole to retard soil piping.

During grading and backfilling operations adjacent to any walls, heavy equipment should not be allowed to operate within a lateral distance of 5 feet from the wall, or within a lateral distance equal to the wall height, whichever is greater, to avoid developing excessive lateral pressures. Within this zone, only hand operated equipment ("whackers," vibratory plates, or pneumatic compactors) should be used to compact the backfill soils.

Seismic Parameters – 2019 California Building Code

The Site Class per Section 1613 of the 2019 California Building Code (2019 CBC) and ASCE 7-16, Chapter 20 is based upon the site soil conditions. It is our opinion that a Site Class D is most consistent with the subject site soil conditions. For seismic design of the structures based on the seismic provisions of the 2019 CBC, we recommend the following parameters:

Seismic Item	Value	CBC Reference
Site Class	D	Section 1613.2.2
Site Coefficient F_a	1.212	Table 1613.2.3 (1)
S_s	0.735	Section 1613.2.1
S_{MS}	0.891	Section 1613.2.3
S_{DS}	0.594	Section 1613.2.4
Site Coefficient F_v	2.048	Table 1613.2.3 (2)
S_1	0.276	Section 1613.2.1
S_{M1}	0.565	Section 1613.2.3
S_{D1}	0.377	Section 1613.2.4
T_S	0.634	Section 1613.2

* Based on Equivalent Lateral Force (ELF) Design Procedure being used.

Soil Cement Reactivity

Excessive sulfate in either the soil or native water may result in an adverse reaction between the cement in concrete (or stucco) and the soil. HUD/FHA and CBC have developed criteria for evaluation of sulfate levels and how they relate to cement reactivity with soil and/or water.

Soil samples were obtained from the site and tested in accordance with State of California Materials Manual Test Designation 417. The sulfate concentrations detected from these soil samples were greater than 0.02 percent and are greater than the maximum allowable values established by HUD/FHA and CBC. Therefore, it is recommended that a Type V cement be used within the concrete to compensate for sulfate reactivity with the cement.

Chemical tests were performed on a near-surface soil sample. The test results indicate that the soils are moderately corrosive to buried metal objects. Therefore, buried metal should be protected using either non-corrosive backfill, protective coatings, wrappings, sacrificial anodes, or a combination of these methods in accordance with the manufacturer's recommendations.

Compacted Material Acceptance

Compaction specifications are not the only criteria for acceptance of the site grading or other such activities. However, the compaction test is the most universally recognized test method for assessing the performance of the Grading Contractor. The numerical test results from the compaction test cannot be used to predict the engineering performance of the compacted material. Therefore, the acceptance of compacted materials will also be dependent on the stability of that material. The Soils Engineer has the option of rejecting any compacted material regardless of the degree of compaction if that material is considered to be unstable or if future instability is suspected. A specific example of rejection of fill material passing the required percent compaction is a fill which has been compacted with an in-situ moisture content significantly less than optimum moisture. This type of dry fill (brittle fill) is susceptible to future settlement if it becomes saturated or flooded.

Testing and Inspection

A representative of Krazan & Associates, Inc., should be present at the site during the earthwork activities to confirm that actual subsurface conditions are consistent with the exploratory fieldwork. This activity is an integral part of our service, as acceptance of earthwork construction is dependent upon compaction testing and stability of the material. This representative can also verify that the intent of these recommendations is incorporated into the project design and construction. Krazan & Associates, Inc., will not be responsible for grades or staking, since this is the responsibility of the Prime Contractor.

LIMITATIONS

Soils Engineering is one of the newest divisions of Civil Engineering. This branch of Civil Engineering is constantly improving as new technologies and understanding of earth sciences advance. Although your site was analyzed using the most appropriate and most current techniques and methods, undoubtedly there will be substantial future improvements in this branch of engineering. In addition to advancements in the field of Soils Engineering, physical changes in the site, either due to excavation or fill placement, new agency regulations, or possible changes in the proposed structure after the soils report is completed may require the soils report to be professionally reviewed. In light of this, the Owner should be aware that there is a practical limit to the usefulness of this report without critical review. Although the time limit for this review is strictly arbitrary, it is suggested that 2 years be considered a reasonable time for the usefulness of this report.

Foundation and earthwork construction is characterized by the presence of a calculated risk that soil and groundwater conditions have been fully revealed by the original foundation investigation. This risk is derived from the practical necessity of basing interpretations and design conclusions on limited sampling of the earth. The recommendations made in this report are based on the assumption that soil conditions do not vary significantly from those disclosed during our field investigation. If any variations or undesirable conditions are encountered during construction, the Soils Engineer should be notified so that supplemental recommendations may be made.

The conclusions of this report are based on the information provided regarding the proposed construction. If the proposed construction is relocated or redesigned, the conclusions in this report may not be valid. The Soils Engineer should be notified of any changes so the recommendations may be reviewed and re-evaluated.

This report is a Geotechnical Engineering Investigation with the purpose of evaluating the soil conditions in terms of foundation design. The scope of our services did not include any Environmental Site Assessment for the presence or absence of hazardous and/or toxic materials in the soil, groundwater, or atmosphere; or the presence of wetlands. Any statements, or absence of statements, in this report or on any boring log regarding odors, unusual or suspicious items, or conditions observed, are strictly for descriptive purposes and are not intended to convey engineering judgment regarding potential hazardous and/or toxic assessment.

The geotechnical engineering information presented herein is based upon professional interpretation utilizing standard engineering practices and a degree of conservatism deemed proper for this project. It is not warranted that such information and interpretation cannot be superseded by future geotechnical engineering developments. We emphasize that this report is valid for the project outlined above and should not be used for any other sites.

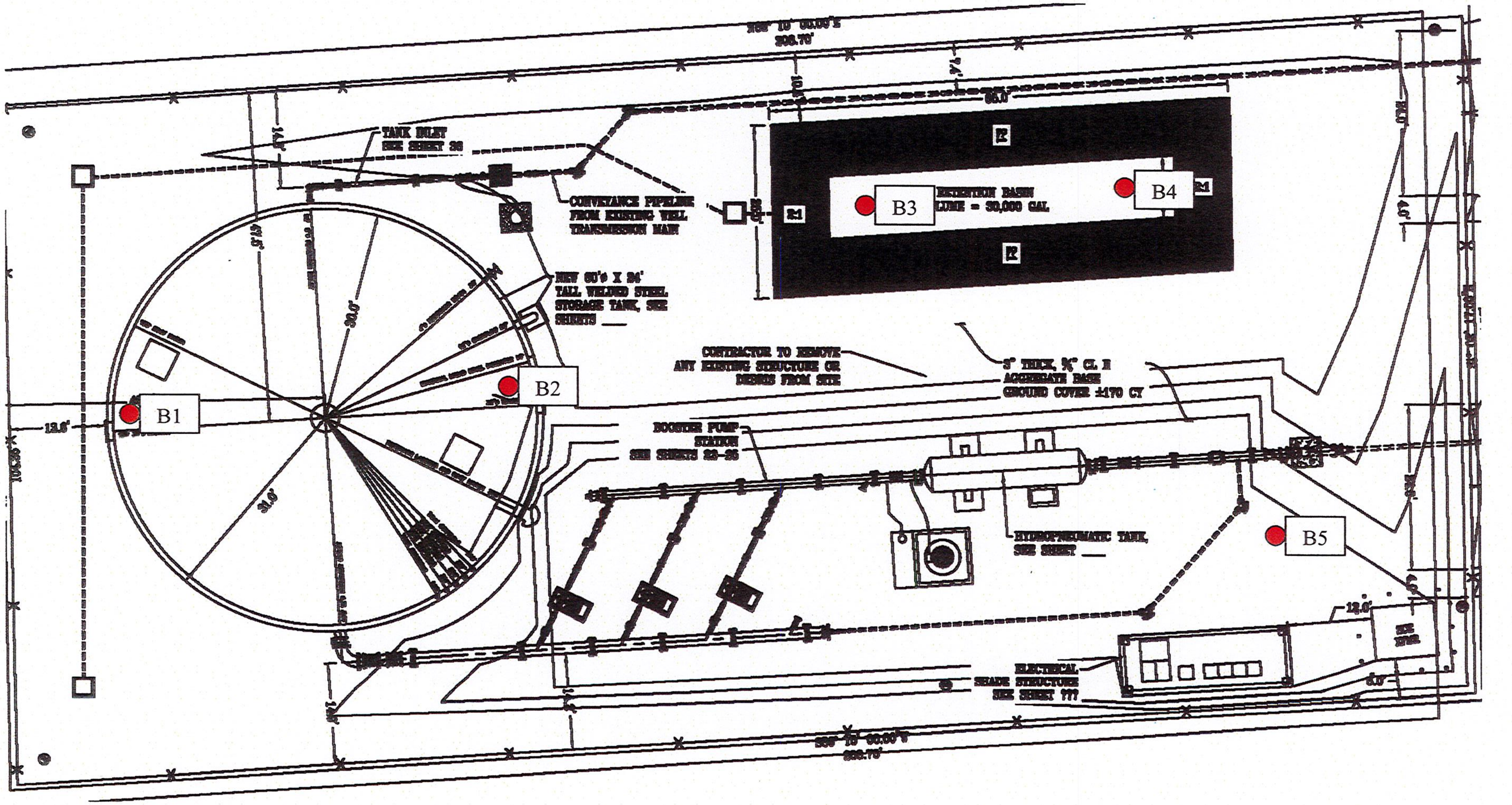
If you have any questions, or if we may be of further assistance, please do not hesitate to contact our office at (559) 348-2200.

Respectfully submitted,
KRAZAN & ASSOCIATES, INC.

Steve Nelson
Project Engineer

David R. Jarosz, II
Managing Engineer
RGE No. 2698/RCE No. 60185

SN/DRJ:ht



APPROXIMATE BORING LOCATION

SITE MAP	Scale: NTS	Date: April 2020	Krazan GEOTECHNICAL ENGINEERING
Allensworth Water System Improvements 3300 Road 84 Allensworth, Tulare County, California	Drawn by: HT	Approved by: DJ	
	Project No. 012-20022	Figure No. 1	

Log of Borings
&
Laboratory Testing

Appendix A

APPENDIX A

FIELD AND LABORATORY INVESTIGATIONS

Field Investigation

The field investigation consisted of a surface reconnaissance and a subsurface exploratory program. Five 4½-inch to 6½-inch exploratory borings were advanced. The boring locations are shown on the site plan.

The soils encountered were logged in the field during the exploration and with supplementary laboratory test data are described in accordance with the Unified Soil Classification System.

Modified standard penetration tests and standard penetration tests were performed at selected depths. These tests represent the resistance to driving a 2½-inch and 1½-inch diameter split barrel sampler, respectively. The driving energy was provided by a hammer weighing 140 pounds falling 30 inches. Relatively undisturbed soil samples were obtained while performing this test. Bag samples of the disturbed soil were obtained from the auger cuttings. The modified standard penetration tests are identified in the sample type on the boring logs with a full shaded in block. The standard penetration tests are identified in the sample type on the boring logs with half of the block shaded. All samples were returned to our Clovis laboratory for evaluation.

Laboratory Investigation

The laboratory investigation was programmed to determine the physical and mechanical properties of the foundation soil underlying the site. Test results were used as criteria for determining the engineering suitability of the surface and subsurface materials encountered.

In-situ moisture content, dry density, consolidation, direct shear, permeability and sieve analysis tests were completed for the undisturbed samples representative of the subsurface material. Atterberg limits tests were completed for select bag samples obtained from the auger cuttings. These tests, supplemented by visual observation, comprised the basis for our evaluation of the site material.

The logs of the exploratory borings and laboratory determinations are presented in this Appendix.

UNIFIED SOIL CLASSIFICATION SYSTEM

UNIFIED SOIL CLASSIFICATION AND SYMBOL CHART

COARSE-GRAINED SOILS (more than 50% of material is larger than No. 200 sieve size.)		
		Clean Gravels (Less than 5% fines)
GRAVELS More than 50% of coarse fraction larger than No. 4 sieve size	GW	Well-graded gravels, gravel-sand mixtures, little or no fines
	GP	Poorly-graded gravels, gravel-sand mixtures, little or no fines
		Gravels with fines (More than 12% fines)
	GM	Silty gravels, gravel-sand-silt mixtures
	GC	Clayey gravels, gravel-sand-clay mixtures
		Clean Sands (Less than 5% fines)
SANDS 50% or more of coarse fraction smaller than No. 4 sieve size	SW	Well-graded sands, gravelly sands, little or no fines
	SP	Poorly graded sands, gravelly sands, little or no fines
		Sands with fines (More than 12% fines)
	SM	Silty sands, sand-silt mixtures
	SC	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS (50% or more of material is smaller than No. 200 sieve size.)		
SILTS AND CLAYS Liquid limit less than 50%	ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts with slight plasticity
	CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
	OL	Organic silts and organic silty clays of low plasticity
SILTS AND CLAYS Liquid limit 50% or greater	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts
	CH	Inorganic clays of high plasticity, fat clays
	OH	Organic clays of medium to high plasticity, organic silts
HIGHLY ORGANIC SOILS	PT	Peat and other highly organic soils

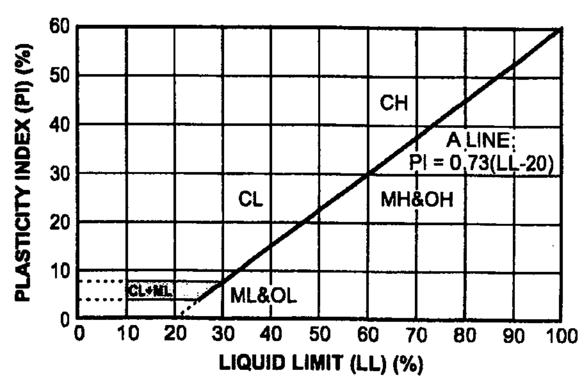
CONSISTENCY CLASSIFICATION

Description	Blows per Foot
Granular Soils	
Very Loose	< 5
Loose	5 – 15
Medium Dense	16 – 40
Dense	41 – 65
Very Dense	> 65
Cohesive Soils	
Very Soft	< 3
Soft	3 – 5
Firm	6 – 10
Stiff	11 – 20
Very Stiff	21 – 40
Hard	> 40

GRAIN SIZE CLASSIFICATION

Grain Type	*Standard Sieve Size*	*Grain Size in Millimeters*
Boulders	Above 12 inches	Above 305
Cobbles	12 to 13 inches	305 to 76.2
Gravel	3 inches to No. 4	76.2 to 4.76
Coarse-grained	3 to ¾ inches	76.2 to 19.1
Fine-grained	¾ inches to No. 4	19.1 to 4.76
Sand	No. 4 to No. 200	4.76 to 0.074
Coarse-grained	No. 4 to No. 10	4.76 to 2.00
Medium-grained	No. 10 to No. 40	2.00 to 0.042
Fine-grained	No. 40 to No. 200	0.042 to 0.074
Silt and Clay	Below No. 200	Below 0.074

PLASTICITY CHART



Log of Boring B1

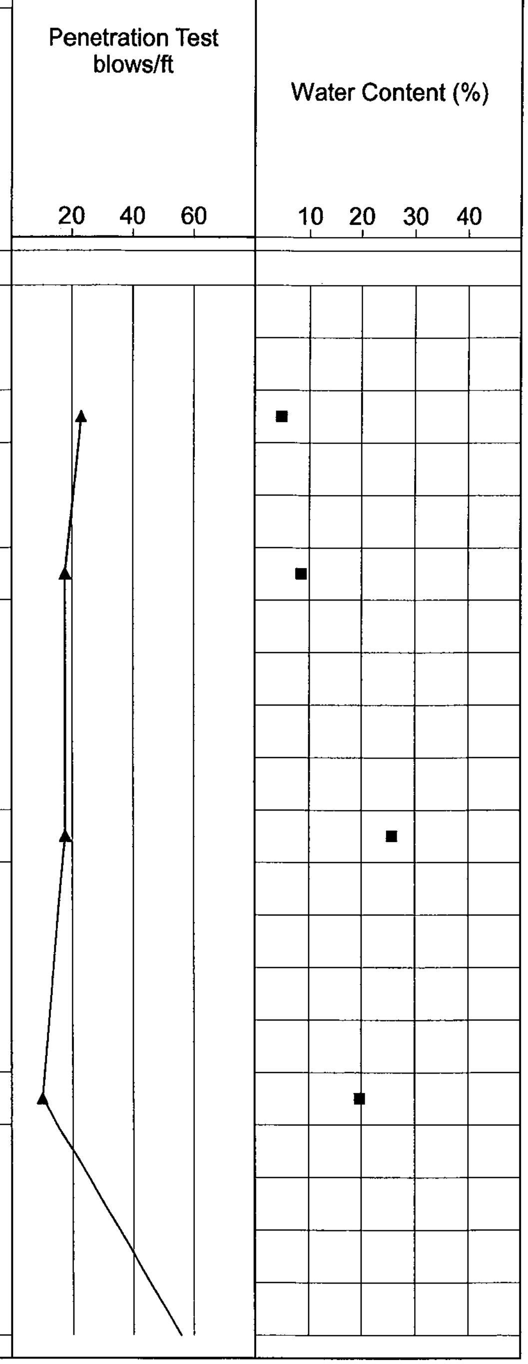
Project: Allensworth Water System Improvements | **Project No:** 012-20022

Client: Dee Jasper & Associates | **Figure No.:** A-1

Location: 3300 Road 84, Allensworth, Tulare County, California | **Logged By:** Wayne Andrade

Depth to Water> **Initial:** 19 Feet | **At Completion:** 15 Feet

Depth (ft)	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0	Ground Surface				
0–1.5	***SILTY SAND/SANDY SILT (SM/ML)*** FILL, fine-grained; light brown, damp, drills easily				
1.5–4	***SILTY SAND/SANDY SILT (SM/ML)*** Medium dense, fine-grained; light brown, damp, drills easily	100.1	5.0		23
4–8	***SILTY SAND (SM)*** Medium dense, fine- to medium-grained; light brown, damp, drills easily	98.8	8.6		18
8–13	***SANDY CLAY (CL)*** Very stiff, fine-grained; olive-brown, moist, drills easily	100.7	25.8		18
13–17.5	***SANDY SILT (ML)*** Medium dense, fine-grained; olive-brown, moist, drills easily Saturated below 15 feet	108.4	19.8		10
17.5–20	***SILTY SAND (SM)*** Very dense, fine- to medium-grained; brown, saturated, drills hard				



Drill Method: Hollow Stem | **Drill Date:** 3-2-20

Drill Rig: CME 45C-1 | **Krazan and Associates** | **Hole Size:** 6½ Inches

Driller: Chris Wyneken | **Elevation:** 50 Feet

Log of Boring B1

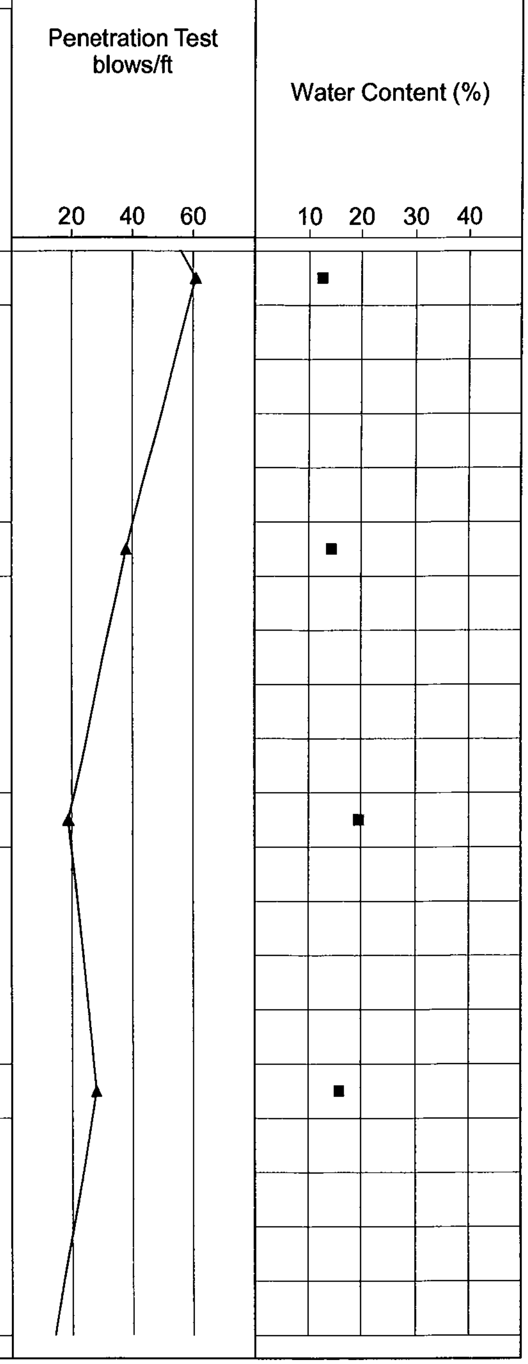
Project: Allensworth Water System Improvements | **Project No:** 012-20022

Client: Dee Jasper & Associates | **Figure No.:** A-1

Location: 3300 Road 84, Allensworth, Tulare County, California | **Logged By:** Wayne Andrade

Depth to Water> **Initial:** 19 Feet | **At Completion:** 15 Feet

Depth (ft)	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
20–28	Dense, fine- to coarse-grained and drills firmly below 25 feet				
~20.5		120.0	12.6		61
~25.5		117.6	14.4		38
28–32.5	***SILTY SAND/SANDY SILT (SM/ML)*** Medium dense, fine- to medium-grained with trace CLAY; brown, saturated, drills easily				
~30.5		101.0	19.7		19
32.5–35.5	***CLAYEY SAND (SC)*** Medium dense, fine-grained; brown, saturated, drills easily				
35.5–39	***SILTY SAND (SM)*** Medium dense, fine- to medium-grained with trace CLAY; brown, saturated, drills easily	115.4	15.9		28



Drill Method: Hollow Stem | **Drill Date:** 3-2-20

Drill Rig: CME 45C-1 | **Krazan and Associates** | **Hole Size:** 6½ Inches

Driller: Chris Wyneken | **Elevation:** 50 Feet

Sheet: 2 of 3

Log of Boring B1

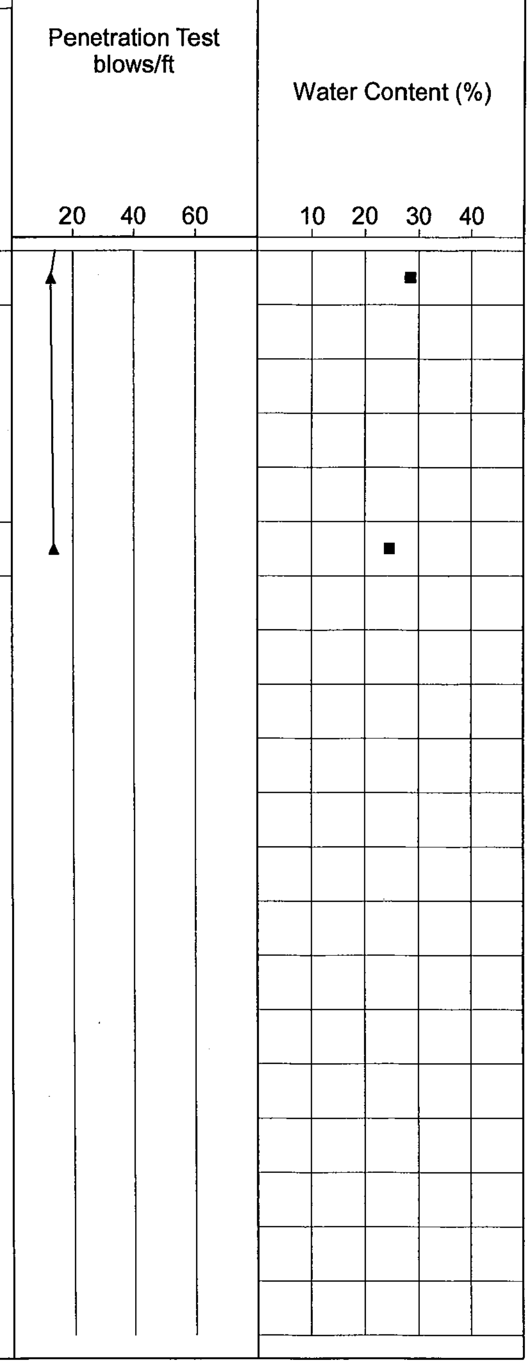
Project: Allensworth Water System Improvements | **Project No:** 012-20022

Client: Dee Jasper & Associates | **Figure No.:** A-1

Location: 3300 Road 84, Allensworth, Tulare County, California | **Logged By:** Wayne Andrade

Depth to Water> **Initial:** 19 Feet | **At Completion:** 15 Feet

Depth (ft)	Symbol	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
40–50		***SANDY CLAY (CL)*** Stiff, fine- to medium-grained; olive-brown, saturated, drills easily	92.6	28.5		13
			99.5	24.8		14
50		End of Borehole				



Drill Method: Hollow Stem | **Drill Date:** 3-2-20

Drill Rig: CME 45C-1 | **Krazan and Associates** | **Hole Size:** 6½ Inches

Driller: Chris Wyneken | **Elevation:** 50 Feet

Sheet: 3 of 3

Log of Boring B2

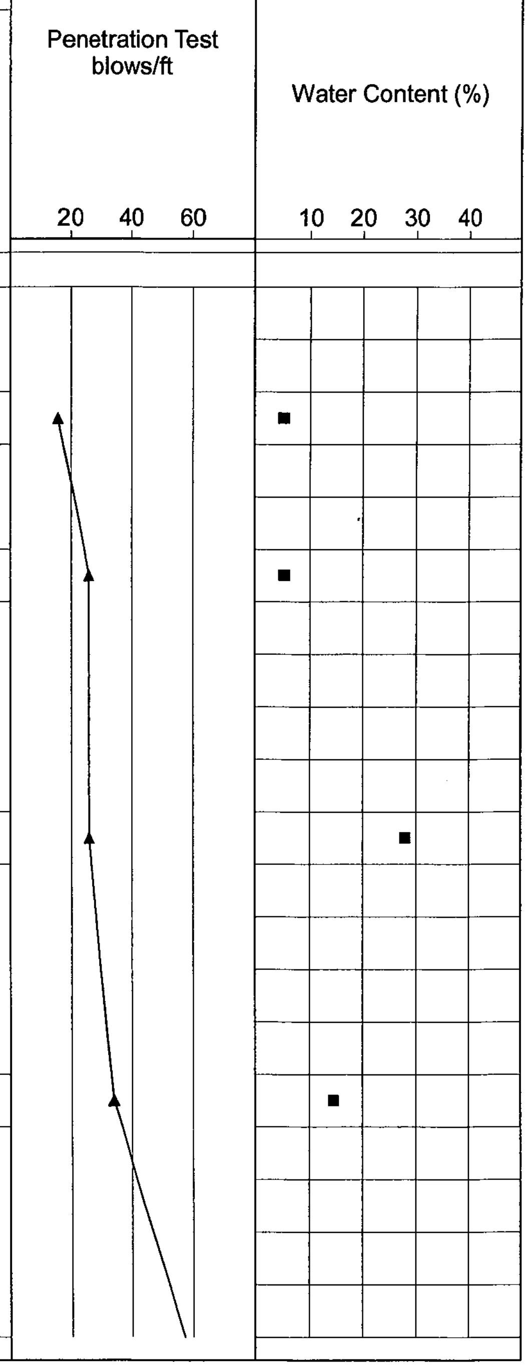
Project: Allensworth Water System Improvements | **Project No:** 012-20022

Client: Dee Jasper & Associates | **Figure No.:** A-2

Location: 3300 Road 84, Allensworth, Tulare County, California | **Logged By:** Wayne Andrade

Depth to Water> | **Initial:** 19 Feet | **At Completion:** 15 Feet

Depth (ft)	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0	Ground Surface				
0–1	***SILTY SAND/SANDY SILT (SM/ML)*** FILL, fine-grained; light brown, damp, drills easily				
1.5–4	***SANDY SILT (ML)*** Medium dense, fine-grained; light brown, damp, drills easily	102.0	5.4	■	16
4–8.5	***SILTY SAND (SM)*** Medium dense, fine- to medium-grained; light brown, damp, drills easily	102.3	5.5	■	26
8.5–14.5	***SILTY CLAY (CL)*** Very stiff; olive-brown, moist, drills easily	98.5	28.0	■	26
14.5–18	***CLAYEY SAND (SC)*** Medium dense, fine- to medium-grained; brown, moist, drills easily Saturated below 15 feet	123.3	14.7	■	34
18–20	***SILTY SAND (SM)*** Dense, fine- to medium-grained with trace CLAY; light brown, saturated, drills easily				



Drill Method: Solid Flight | **Drill Date:** 3-2-20

Drill Rig: CME 45C-1 | **Krazan and Associates** | **Hole Size:** 4½ Inches

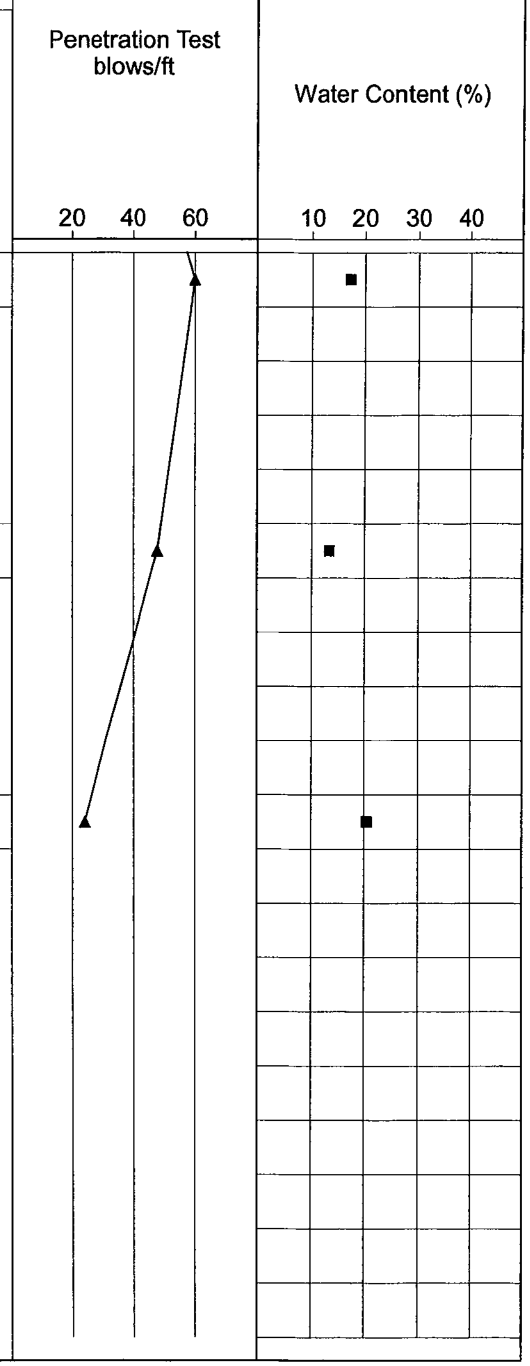
Driller: Chris Wyneken | **Elevation:** 35 Feet

Sheet: 1 of 2

Log of Boring B2

Project: Allensworth Water System Improvements
Project No: 012-20022
Client: Dee Jasper & Associates
Figure No.: A-2
Location: 3300 Road 84, Allensworth, Tulare County, California
Logged By: Wayne Andrade
Depth to Water> **Initial:** 19 Feet **At Completion:** 15 Feet

Depth (ft)	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
20.5		120.9	17.4	■	60
24	***SILTY CLAY (CL)*** Hard; olive-brown, saturated, drills firmly				
25.5		124.4	13.4	■	48
30	Very stiff with trace fine-grained SAND below 30 feet	104.4	20.6	■	24
35	End of Borehole				



Drill Method: Solid Flight
Drill Rig: CME 45C-1
Driller: Chris Wyneken

Krazan and Associates

Drill Date: 3-2-20
Hole Size: 4½ Inches
Elevation: 35 Feet
Sheet: 2 of 2

Log of Boring B3

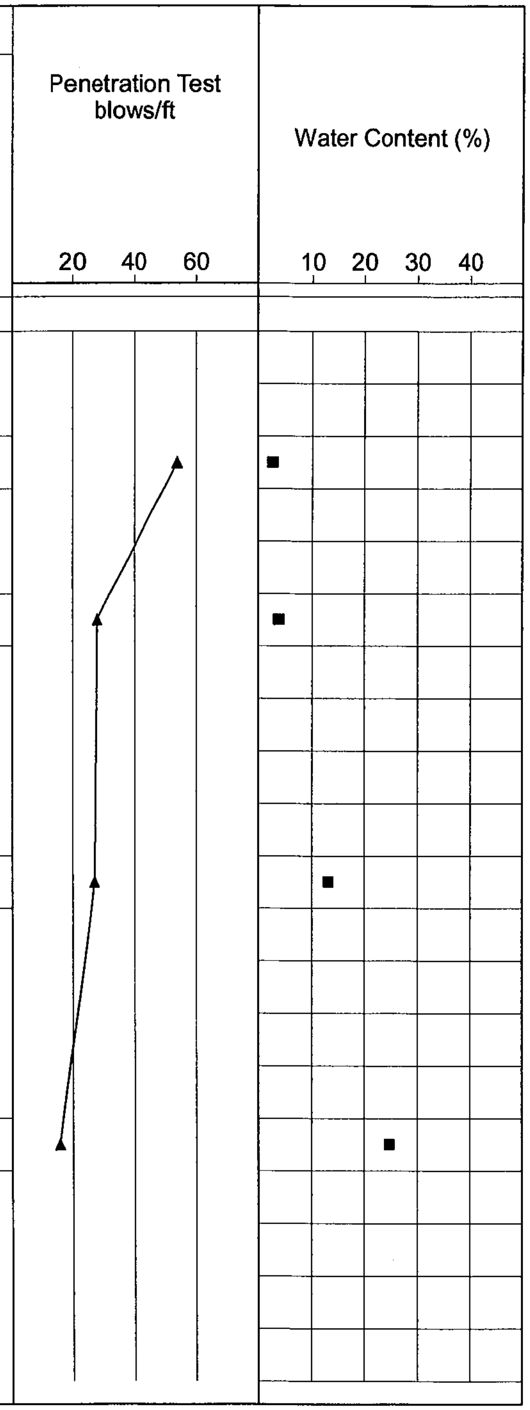
Project: Allensworth Water System Improvements **Project No:** 012-20022

Client: Dee Jasper & Associates **Figure No.:** A-3

Location: 3300 Road 84, Allensworth, Tulare County, California **Logged By:** Wayne Andrade

Depth to Water> **Initial:** 18 Feet **At Completion:** 15 Feet

Depth (ft)	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0	Ground Surface				
0–1.5	***SILTY SAND/SANDY SILT (SM/ML)*** FILL, fine-grained; light brown, damp, drills easily				
1.5–4	***SILTY SAND/SANDY SILT (SM/ML)*** Dense, fine-grained; light brown, damp, drills firmly	103.3	2.8	■	54
4–8	***SILTY SAND (SM)*** Medium dense, fine- to medium-grained; light brown, damp, drills easily	104.8	3.9	■	28
8–13	***CLAYEY SAND (SC)*** Medium dense, fine-grained; olive-brown, moist, drills easily	111.0	13.1	■	27
13–20	***SILTY CLAY (CL)*** Stiff, with trace fine- to medium-grained SAND; olive-brown, very moist, drills easily. Saturated below 15 feet	98.9	24.9	■	16



Drill Method: Solid Flight **Drill Date:** 3-2-20

Drill Rig: CME 45C-1 **Krazan and Associates** **Hole Size:** 4½ Inches

Driller: Chris Wyneken **Elevation:** 20 Feet

Sheet: 1 of 1

Log of Boring B4

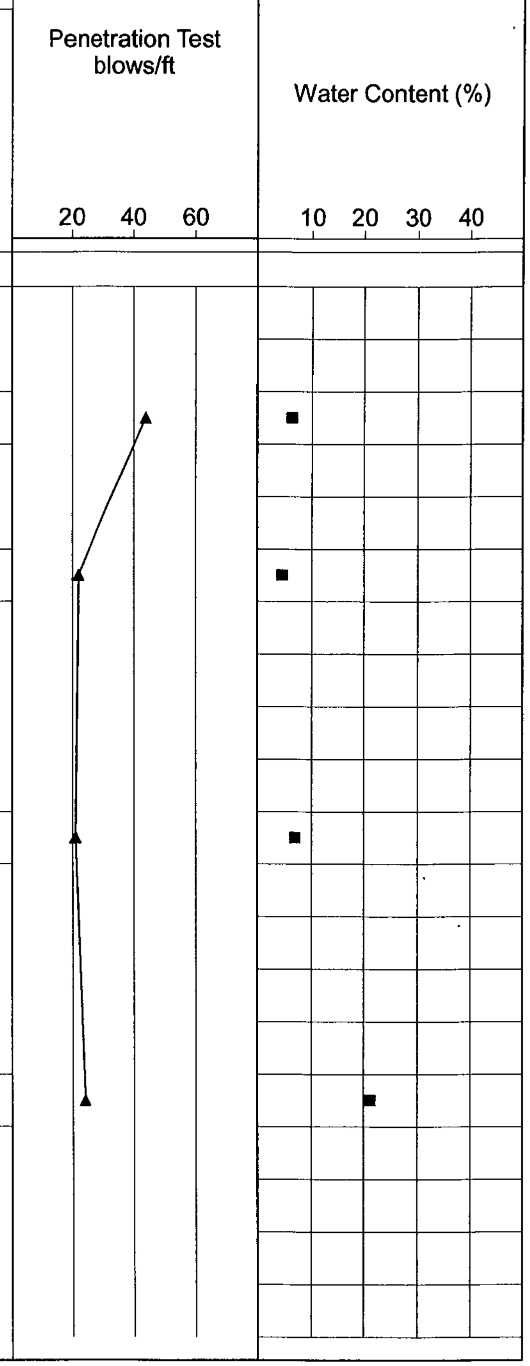
Project: Allensworth Water System Improvements | **Project No:** 012-20022

Client: Dee Jasper & Associates | **Figure No.:** A-4

Location: 3300 Road 84, Allensworth, Tulare County, California | **Logged By:** Wayne Andrade

Depth to Water> **Initial:** 18 Feet **At Completion:** 15 Feet

Depth (ft)	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.
0	Ground Surface				
0–1.5	***SILTY SAND/SANDY SILT (SM/ML)*** FILL, fine-grained; light brown, damp, drills easily				
1.5–4	***SILTY SAND/SANDY SILT (SM/ML)*** Dense, fine-grained; light brown, damp, drills firmly	101.9	6.4	■	44
4–11	***SILTY SAND (SM)*** Medium dense, fine- to medium-grained; light brown, damp, drills easily	109.3	4.7	■	22
	With interbeds of SILTY SAND/SAND below 8 feet	100.2	7.0	■	21
11–14	***SILTY CLAY (CL)*** Very stiff; olive-brown, moist, drills easily				
14–20	***CLAYEY SAND (SC)*** Medium dense, fine-grained; olive-brown, moist, drills easily Saturated below 15 feet	109.6	21.3	■	24



Drill Method: Solid Flight | **Drill Date:** 3-2-20

Drill Rig: CME 45C-1 | **Hole Size:** 4½ Inches

Driller: Chris Wyneken | **Elevation:** 20 Feet

Krazan and Associates

Sheet: 1 of 1

Log of Boring B5

Project: Allensworth Water System Improvements
Project No: 012-20022

Client: Dee Jasper & Associates
Figure No.: A-5

Location: 3300 Road 84, Allensworth, Tulare County, California
Logged By: Wayne Andrade

Depth to Water> **Initial:** None **At Completion:** None

SUBSURFACE PROFILE		SAMPLE				Penetration Test blows/ft	Water Content (%)
Depth (ft)	Description	Dry Density (pcf)	Moisture (%)	Type	Blows/ft.	20 40 60	10 20 30 40
0	Ground Surface						
0–1.5	***SILTY SAND/SANDY SILT (SM/ML)*** FILL, fine-grained; light brown, damp, drills easily						
1.5–4	***SANDY SILT (ML)*** Medium dense, fine-grained; light brown, damp, drills easily	101.3	6.4	■	28		
4–10	***SILTY SAND (SM)*** Medium dense, fine- to medium-grained; light brown, damp, drills easily	105.3	6.4	■	26		
10	End of Borehole						

Drill Method: Solid Flight
Drill Date: 3-2-20

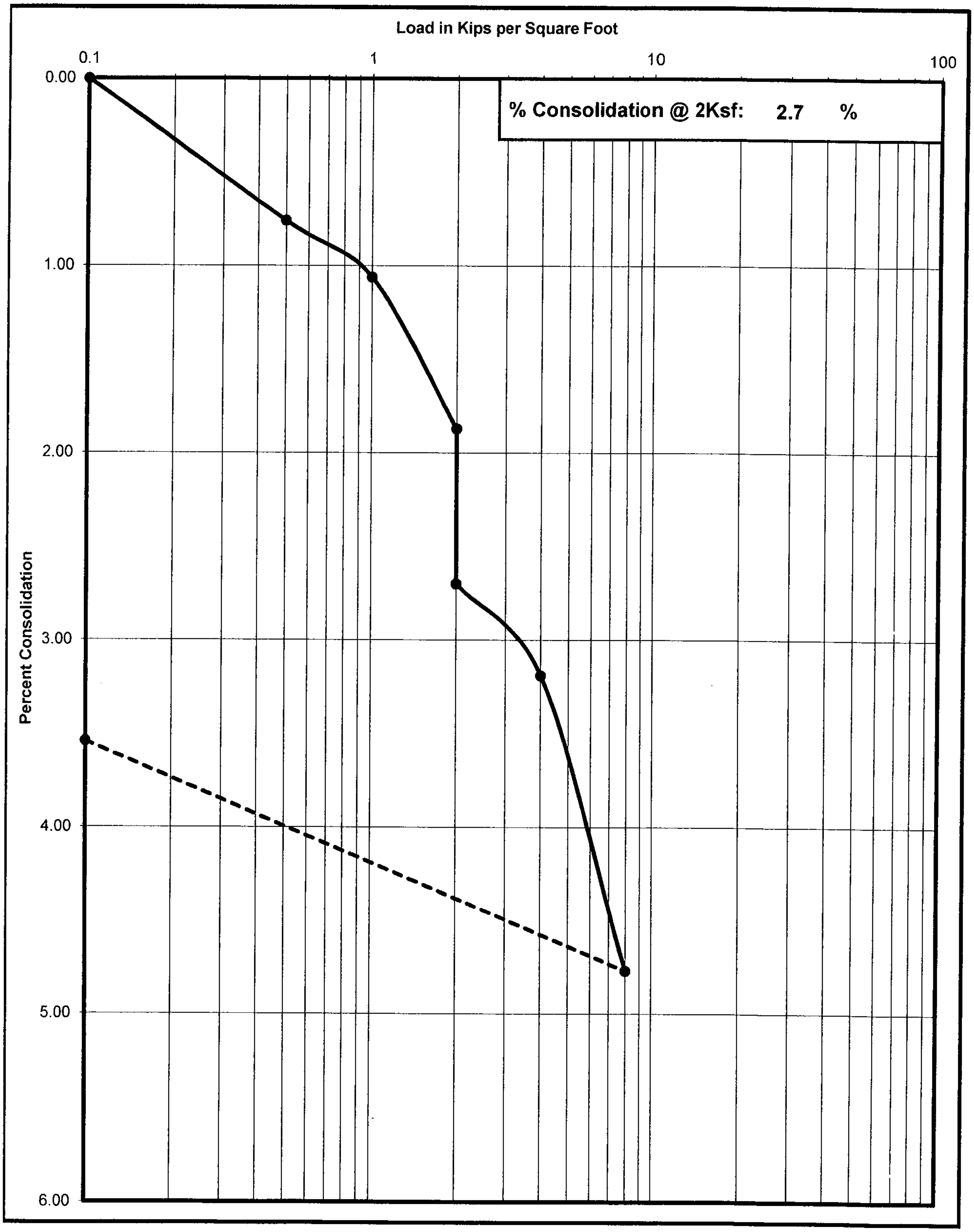
Drill Rig: CME 45C-1
Krazan and Associates
Hole Size: 4½ Inches

Driller: Chris Wyneken
Elevation: 10 Feet

Sheet: 1 of 1

Consolidation Test

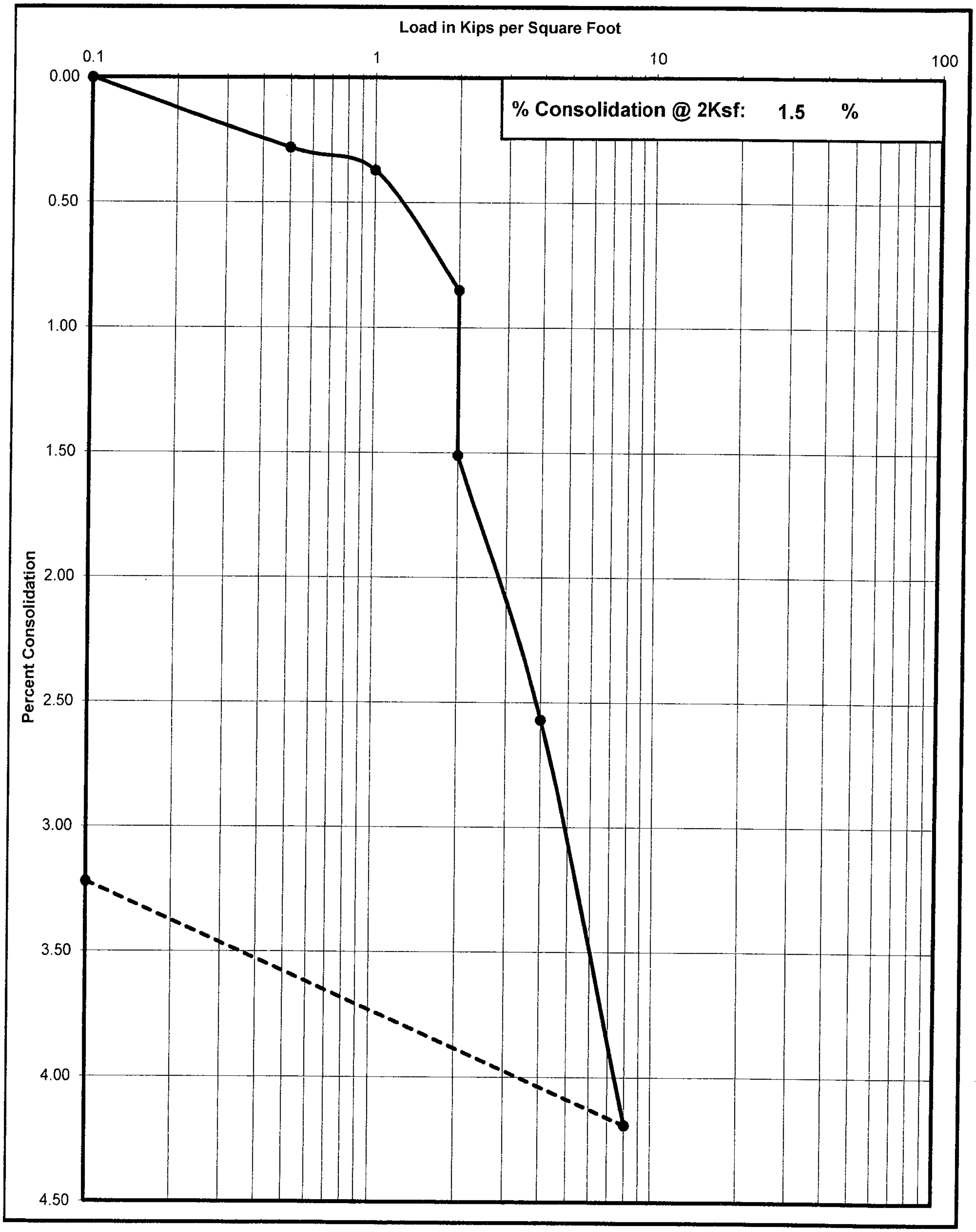
Project No	Boring No. & Depth	Date	Soil Classification
012-20022	B2 @ 2-3'	3/12/2020	ML



Krazan Testing Laboratory

Consolidation Test

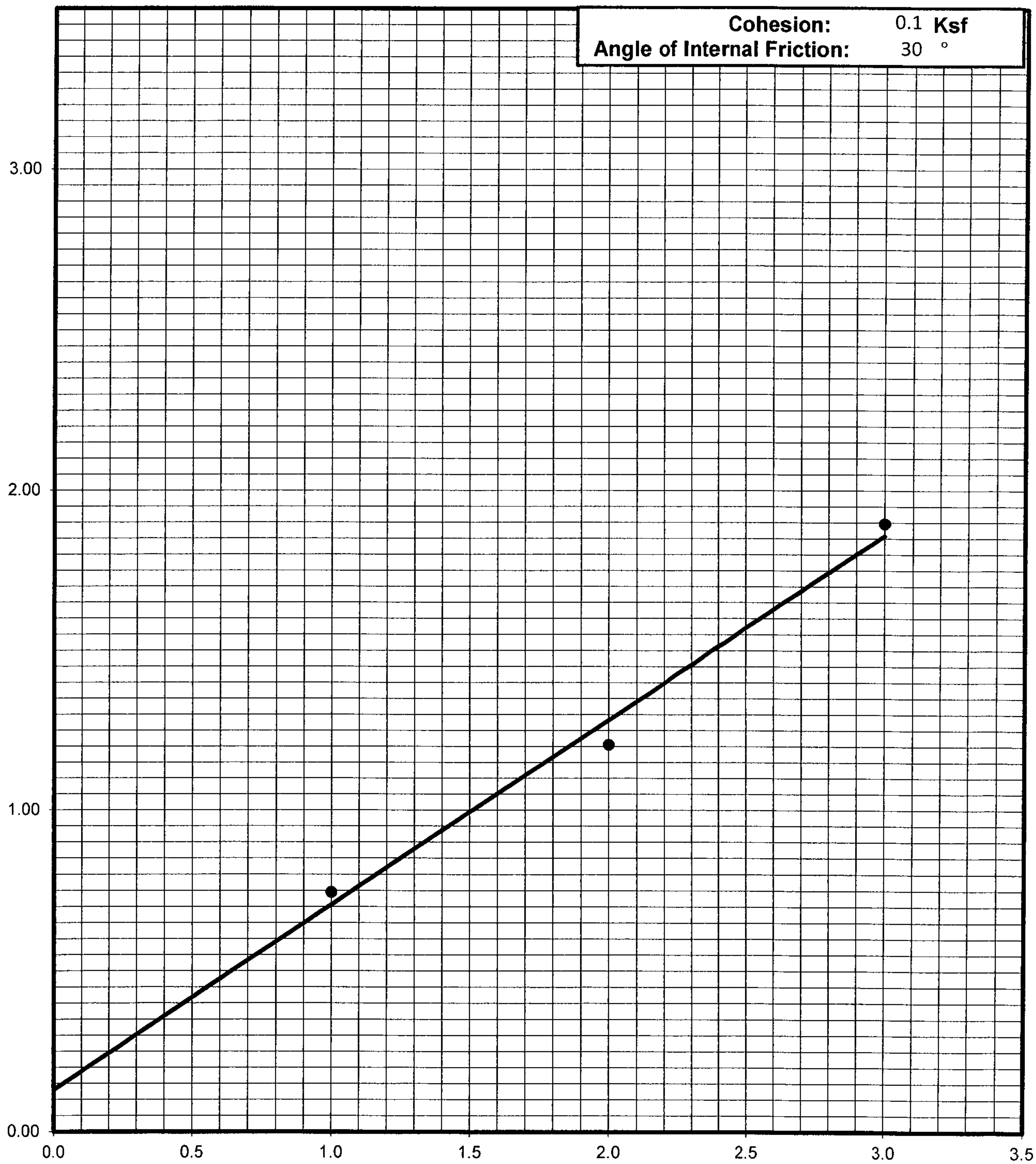
Project No	Boring No. & Depth	Date	Soil Classification
012-20022	B2 @ 5-6'	3/12/2020	SM



Krazan Testing Laboratory

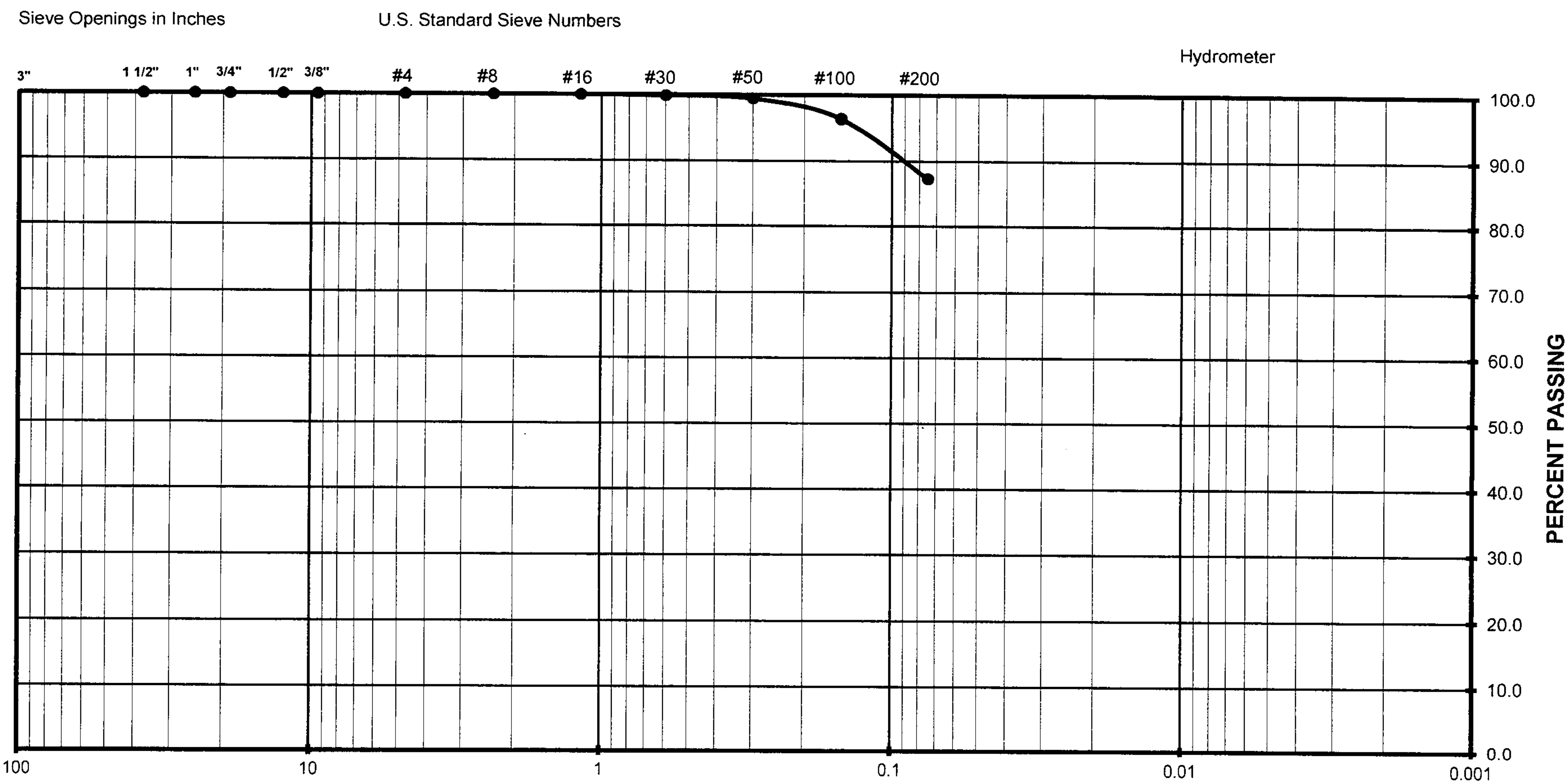
Shear Strength Diagram (Direct Shear)
ASTM D - 3080 / AASHTO T - 236

Project Number	Boring No. & Depth	Soil Type	Date
012-20022	B5 @ 2-3'	ML	3/12/2020



Krazan Testing Laboratory

Grain Size Analysis



Gravel		Sand			Silt or Clay
Coarse	Fine	Coarse	Medium	Fine	

(Unified Soils Classification)

Project Name	Allensworth Water System Improv.
Project Number	012-20022
Soil Classification	ML
Sample Number	B2 @ 2-3'

Krazan Testing Laboratory

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

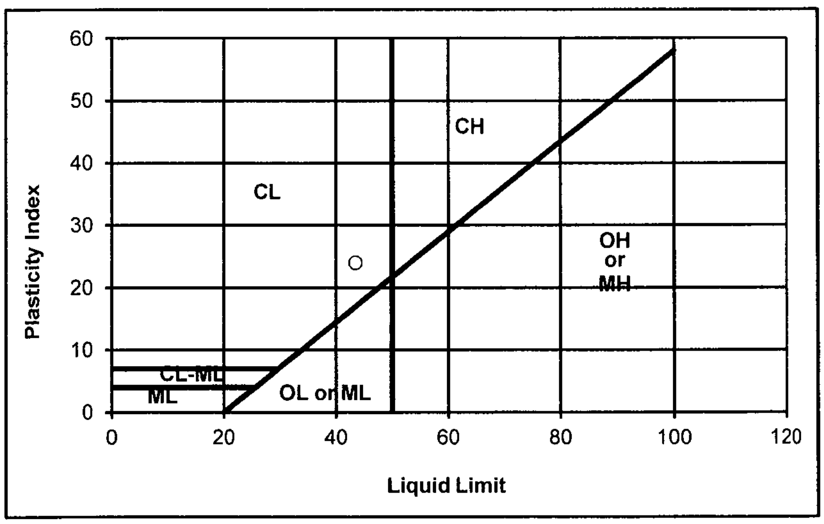
Project: **Allensworth Water System Improv.**
Project Number: **012-20022**
Date Sampled: 3/2/2020
Sampled By: WA
Sample Number:
Sample Location: B1 @ 10-11'
Sample Description: CL

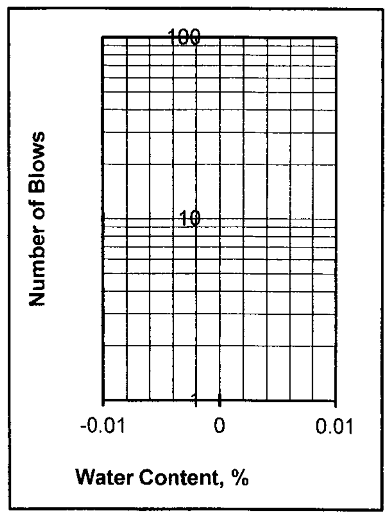
Date Tested: 3/8/2020
Tested By: J Mitchell
Verified By: J Gruszczynski

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	26.16	25.96		24.71	30.50	
Weight of Dry Soil & Tare (g)	24.73	23.97		21.20	26.43	
Weight of Tare (g)	17.25	13.71		13.13	17.04	
Weight of water (g)	1.43	1.98		3.51	4.07	
Weight of Dry Soil (g)	7.48	10.27		8.06	9.39	
Water Content (% of dry wt.)	19.2%	19.3%		43.5%	43.4%	
Number of Blows				25	25	

Plastic Limit : 19 **Liquid Limit : 43**

Plasticity Index : 24
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

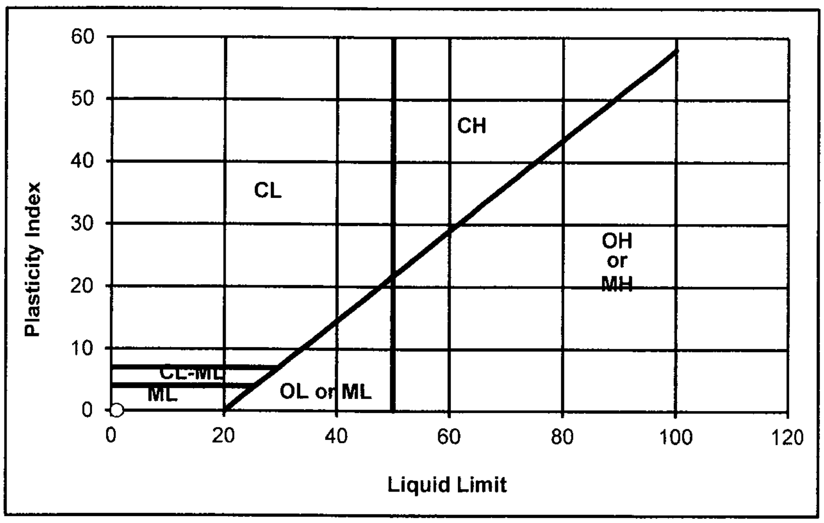
Project: **Allensworth Water System Improv.**
Project Number: **012-20022**
Date Sampled: 3/2/2020
Sampled By: WA
Sample Number:
Sample Location: B1 @ 15-16'
Sample Description: ML

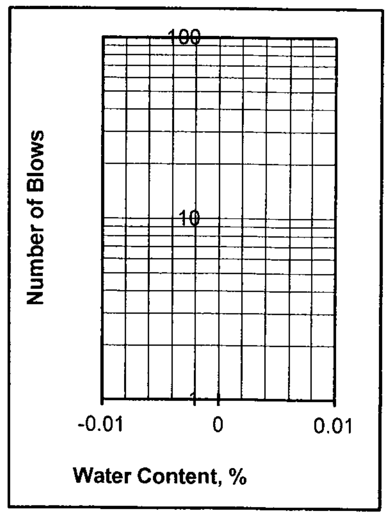
Date Tested: 3/8/2020
Tested By: J Mitchell
Verified By: J Gruszczynski

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

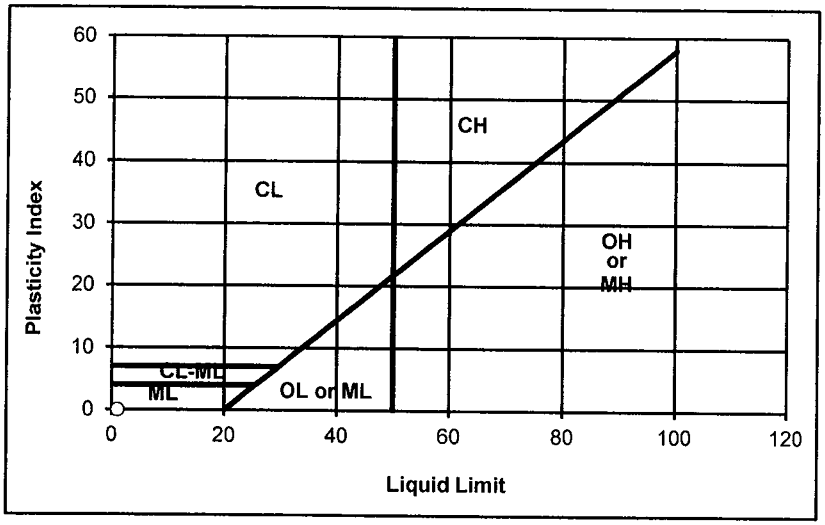
Project: **Allensworth Water System Improv.**
Project Number: **012-20022**
Date Sampled: 3/2/2020
Sampled By: WA
Sample Number:
Sample Location: B1 @ 20-21'
Sample Description: SM

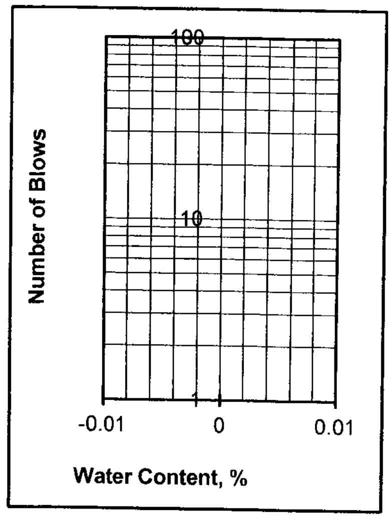
Date Tested: 3/8/2020
Tested By: J Mitchell
Verified By: J Gruszczynski

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

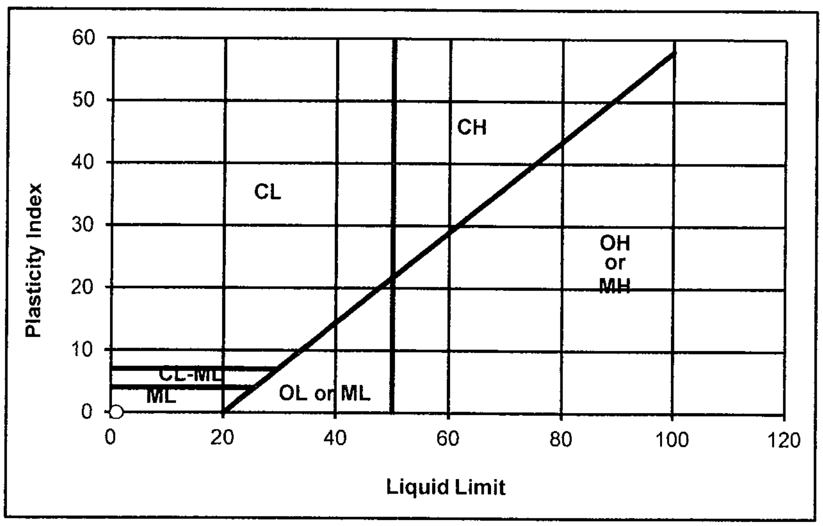
Project: **Allensworth Water System Improv.**
Project Number: **012-20022**
Date Sampled: 3/2/2020
Sampled By: WA
Sample Number:
Sample Location: B1 @ 30-31'
Sample Description: SM/ML

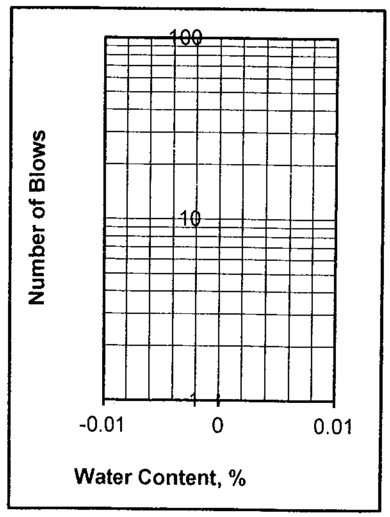
Date Tested: 3/8/2020
Tested By: J Mitchell
Verified By: J Gruszczynski

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)						
Weight of Dry Soil & Tare (g)						
Weight of Tare (g)						
Weight of water (g)						
Weight of Dry Soil (g)						
Water Content (% of dry wt.)						
Number of Blows						

Plastic Limit : N/D **Liquid Limit : N/D**

Plasticity Index : NON-PLASTIC
Unified Soil Classification : NON-PLASTIC **Requirement:**
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

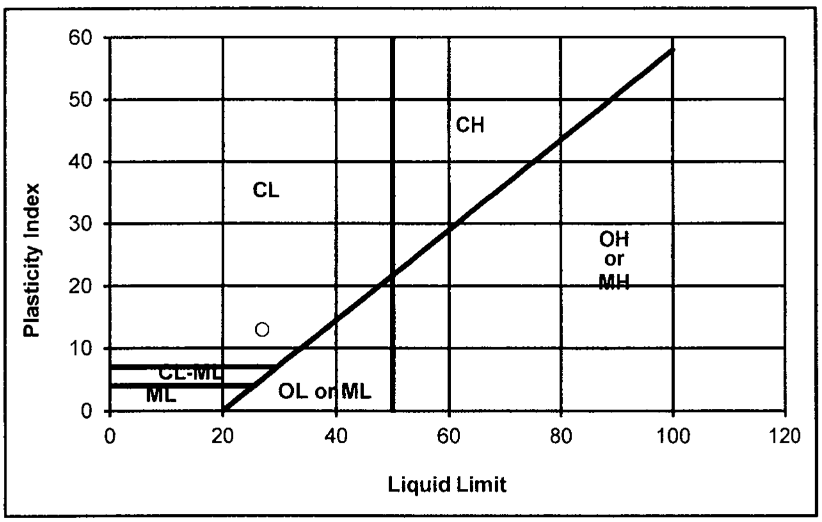
Project: **Allensworth Water System Improv.**
Project Number: **012-20022**
Date Sampled: 3/2/2020
Sampled By: WA
Sample Number:
Sample Location: B1 @ 35-36'
Sample Description: SC

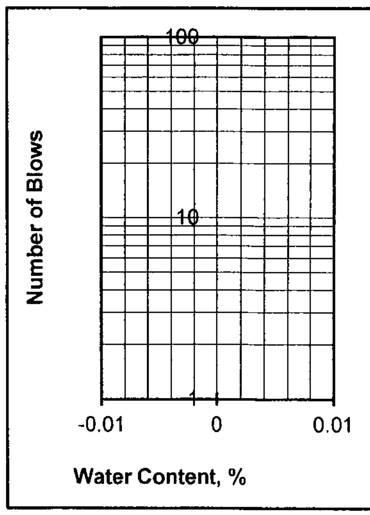
Date Tested: 3/8/2020
Tested By: J Mitchell
Verified By: J Gruszczynski

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	29.47	28.40		27.40	32.64	
Weight of Dry Soil & Tare (g)	27.50	26.57		24.49	29.34	
Weight of Tare (g)	13.34	13.48		13.68	17.10	
Weight of water (g)	1.97	1.83		2.91	3.30	
Weight of Dry Soil (g)	14.16	13.09		10.81	12.24	
Water Content (% of dry wt.)	13.9%	14.0%		27.0%	26.9%	
Number of Blows				25	25	

Plastic Limit : 14 **Liquid Limit : 27**

Plasticity Index : 13
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

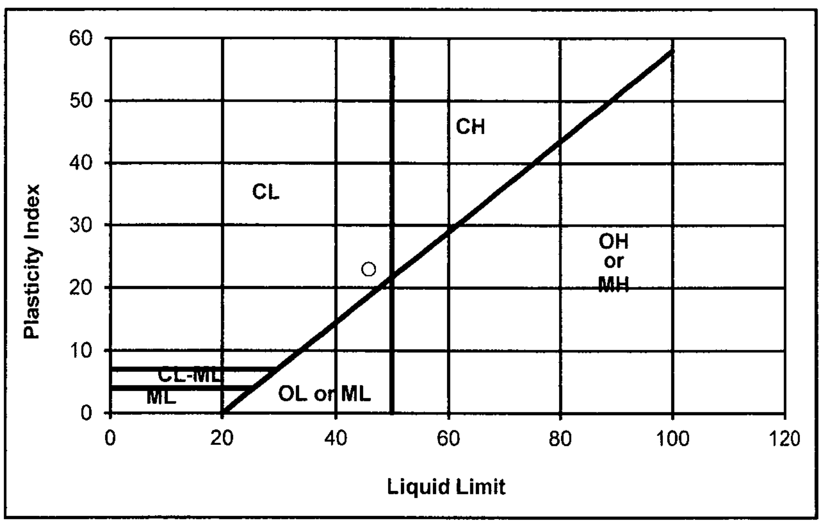
Project: **Allensworth Water System Improv.**
Project Number: **012-20022**
Date Sampled: 3/2/2020
Sampled By: WA
Sample Number:
Sample Location: B1 @ 40-41'
Sample Description: CL

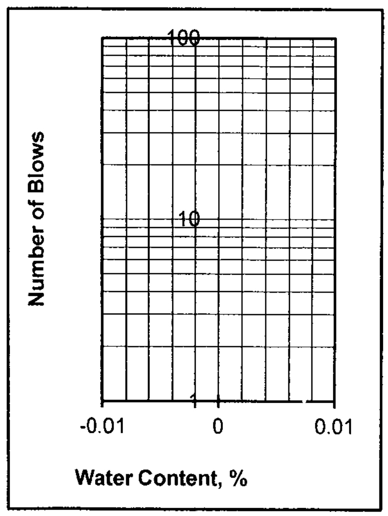
Date Tested: 3/8/2020
Tested By: J Mitchell
Verified By: J Gruszczynski

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	25.95	25.35		26.11	29.63	
Weight of Dry Soil & Tare (g)	24.27	23.80		21.99	24.60	
Weight of Tare (g)	17.06	17.02		13.00	13.55	
Weight of water (g)	1.68	1.56		4.12	5.03	
Weight of Dry Soil (g)	7.21	6.78		8.99	11.05	
Water Content (% of dry wt.)	23.4%	23.0%		45.8%	45.5%	
Number of Blows				25	26	

Plastic Limit : 23 **Liquid Limit : 46**

Plasticity Index : 23
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Plasticity Index of Soils

ASTM D4318/AASHTO T89 T90/CT 204

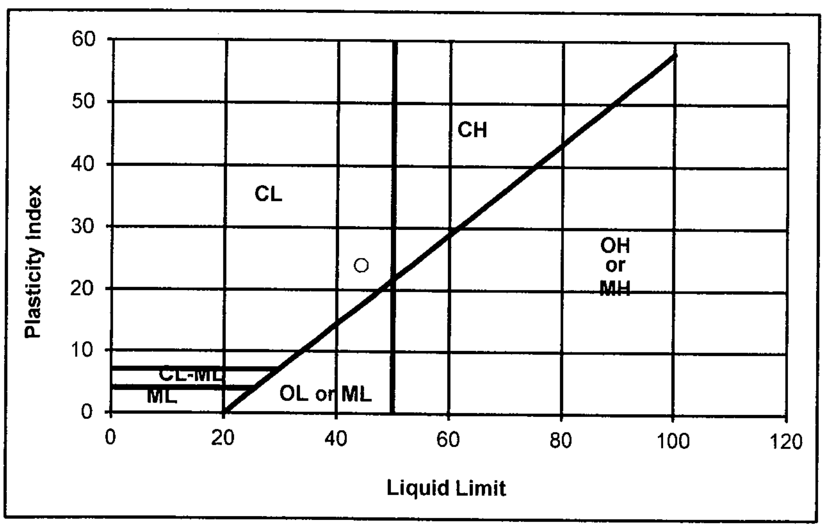
Project: **Allensworth Water System Improv.**
Project Number: **012-20022**
Date Sampled: 3/2/2020
Sampled By: WA
Sample Number:
Sample Location: B1 @ 45-46'
Sample Description: CL

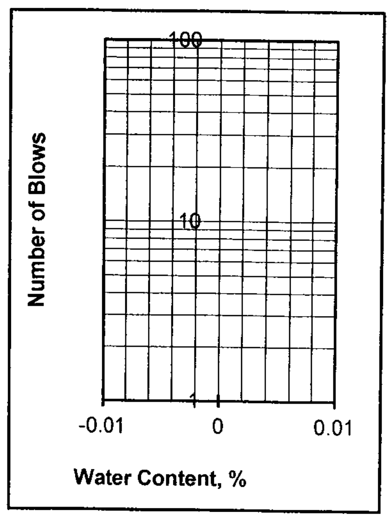
Date Tested: 3/8/2020
Tested By: J Mitchell
Verified By: J Gruszczynski

	Plastic Limit			Liquid Limit		
Trial Number	1	2	3	1	2	3
Weight of Wet Soil & Tare (g)	22.21	26.57		28.83	25.25	
Weight of Dry Soil & Tare (g)	20.65	24.96		25.22	21.63	
Weight of Tare (g)	13.00	17.01		17.05	13.43	
Weight of water (g)	1.56	1.62		3.61	3.63	
Weight of Dry Soil (g)	7.65	7.94		8.17	8.20	
Water Content (% of dry wt.)	20.4%	20.3%		44.2%	44.2%	
Number of Blows				25	25	

Plastic Limit : 20 **Liquid Limit : 44**

Plasticity Index : 24
Unified Soil Classification : CL
Requirement:
Approx. % of Material Retained on # 40 Sieve:





Departures from Outlined Procedure:

Unusual Conditions, Other Notes:

Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	: 012-20022
Project Name	: Allensworth Water System Improv.
Date	: 3/12/2020
Sample Number	: --
Sample Location	: B3 @ 5-6'
Soil Classification	: SM

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	104.8	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	3.9	Initial Length,cm	7.11	% Passing # 200	--
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	$\Delta\mu$ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	$\Delta\sigma$ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			$\Delta\mu/\Delta\sigma$ (**B** Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	5:30	5:45	0.62	3.84	9.76	6.54	19.0	17.5	20.0
2	5:47	6:08	0.86	4.96	9.60	5.50	19.0	17.5	20.0
3									
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	900	0.67664	4.1E-05	4.078E-05
2	1260	0.58083	4.1E-05	4.052E-05
3				
4				
5				
6				

Permeability
4.06E-05 cm/sec
4.06E-07 m/sec

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Soil Permeability

Flexible Wall, Falling Head (Rising Tail)

ASTM D - 5084 / CAL 220

Project Number	: 012-20022
Project Name	: Allensworth Water System Improv.
Date	: 3/12/2020
Sample Number	: --
Sample Location	: B3 @ 10-11'
Soil Classification	: SM

Max Dry Density, lbs/cu.ft	--	Degree of Sat. %		Max. Particle Size	0.0
Optimum Moisture, %	--	%Over Optimum		% Passing 3/8"	--
Initial Dry Density, lbs/cu.ft	111.0	Initial Diameter, cm	3.56	% Passing # 10	--
Initial Moisture, %	13.1	Initial Length,cm	7.11	% Passing # 200	--
Sample Compaction, %	--	Initial Area sq.cm	9.95	Temperature	20.0
Final Dry Density, lbs/cu.ft	--	Final Diameter, cm	3.56	Type of Permeant	Tap Water
Final Moisture, %	--	Final Length, cm	7.11	Δμ (Pore Pressure)	5.0
Specific Gravity (Assumed)	2.7	Final Area, sq.cm	9.95	Δσ (Cell Pressure)	5.0
Comp. Procedure	Undisturbed			Δμ/Δσ (B Value)	1.00

Test	Start Time	Finish Time	H in Start	H in Final	H out Start	H out Final	Back Press	Tail Press.	Cell Press
1	4:45	5:15	0.24	3.12	9.76	6.88	24.0	21.5	25.0
2	5:18	5:32	0.54	1.98	9.82	8.38	24.0	21.5	25.0
3									
4									
5									
6									

Test	Time sec	h1/h2	K cm/sec	k20 cm/sec
1	1800	0.81420	1.1E-05	1.073E-05
2	840	0.90701	1.1E-05	1.092E-05
3				
4				
5				
6				

Permeability
1.08E-05 cm/sec
1.08E-07 m/sec

Krazan Testing Laboratory

General Earthwork Specifications

Appendix B

APPENDIX B

EARTHWORK SPECIFICATIONS

GENERAL

When the text of the report conflicts with the general specifications in this appendix, the recommendations in the report have precedence.

SCOPE OF WORK: These specifications and applicable plans pertain to and include all earthwork associated with the site rough grading, including but not limited to the furnishing of all labor, tools, and equipment necessary for site clearing and grubbing, stripping, preparation of foundation materials for receiving fill, excavation, processing, placement and compaction of fill and backfill materials to the lines and grades shown on the project grading plans, and disposal of excess materials.

PERFORMANCE: The Contractor shall be responsible for the satisfactory completion of all earthwork in accordance with the project plans and specifications. This work shall be inspected and tested by a representative of Krazan and Associates, Inc., hereinafter known as the Soils Engineer and/or Testing Agency. Attainment of design grades when achieved shall be certified by the project Civil Engineer. Both the Soils Engineer and the Civil Engineer are the Owner's representatives. If the Contractor should fail to meet the technical or design requirements embodied in this document and on the applicable plans, he shall make the necessary readjustments until all work is deemed satisfactory as determined by both the Soils Engineer and the Civil Engineer. No deviation from these specifications shall be made except upon written approval of the Soils Engineer, Civil Engineer or project Architect.

No earthwork shall be performed without the physical presence or approval of the Soils Engineer. The Contractor shall notify the Soils Engineer at least 2 working days prior to the commencement of any aspect of the site earthwork.

The Contractor agrees that he shall assume sole and complete responsibility for job site conditions during the course of construction of this project, including safety of all persons and property; that this requirement shall apply continuously and not be limited to normal working hours; and that the Contractor shall defend, indemnify and hold the Owner and the Engineers harmless from any and all liability, real or alleged, in connection with the performance of work on this project, except for liability arising from the sole negligence of the Owner or the Engineers.

TECHNICAL REQUIREMENTS: All compacted materials shall be densified to a density not less than 90 percent relative compaction based on ASTM Test Method D1557 or CAL-216, as specified in the technical portion of the Soil Engineer's report. The location and frequency of field density tests shall be as determined by the Soils Engineer. The results of these tests and compliance with these specifications shall be the basis upon which satisfactory completion of work will be judged by the Soils Engineer.

SOILS AND FOUNDATION CONDITIONS: The Contractor is presumed to have visited the site and to have familiarized himself with existing site conditions and the contents of the data presented in the soil report.

The Contractor shall make his own interpretation of the data contained in said report, and the Contractor shall not be relieved of liability under the Contract documents for any loss sustained as a result of any variance between conditions indicated by or deduced from said report and the actual conditions encountered during the progress of the work.

DUST CONTROL: The work includes dust control as required for the alleviation or prevention of any dust nuisance on or about the site or the borrow area, or off-site if caused by the Contractor's operation either during the performance of the earthwork or resulting from the conditions in which the Contractor leaves the site. The Contractor shall assume all liability, including court costs of codefendants, for all claims related to dust or windblown materials attributable to his work.

SITE PREPARATION

Site preparation shall consist of site clearing and grubbing and the preparations of foundation materials for receiving fill.

CLEARING AND GRUBBING: The Contractor shall accept the site in this present condition and shall demolish and/or remove from the area of designated project earthwork all structures, both surface and subsurface, trees, brush, roots, debris, organic matter, and all other matter determined by the Soils Engineer to be deleterious or otherwise unsuitable. Such materials shall become the property of the Contractor and shall be removed from the site.

Tree root systems in proposed building areas should be removed to a minimum depth of 3 feet and to such an extent which would permit removal of all roots larger than 1 inch. Tree roots removed in parking areas may be limited to the upper 1½ feet of the ground surface. Backfill of tree root excavations should not be permitted until all exposed surfaces have been inspected and the Soils Engineer is present for the proper control of backfill placement and compaction. Burning in areas which are to receive fill materials shall not be permitted.

SUBGRADE PREPARATION: Surfaces to receive Engineered Fill, building or slab loads shall be prepared as outlined above, excavated/scarified to a depth of 12 inches, moisture-conditioned as necessary, and compacted to 90 percent relative compaction.

Loose soil areas, areas of uncertified fill, and/or areas of disturbed soils shall be moisture-conditioned as necessary and recompacted to 90 percent relative compaction. All ruts, hummocks, or other uneven surface features shall be removed by surface grading prior to placement of any fill materials. All areas which are to receive fill materials shall be approved by the Soils Engineer prior to the placement of any of the fill material.

EXCAVATION: All excavation shall be accomplished to the tolerance normally defined by the Civil Engineer as shown on the project grading plans. All over-excavation below the grades specified shall be backfilled at the Contractor's expense and shall be compacted in accordance with the applicable technical requirements.

FILL AND BACKFILL MATERIAL: No material shall be moved or compacted without the presence of the Soils Engineer. Material from the required site excavation may be utilized for construction site fills provided prior approval is given by the Soils Engineer. All materials utilized for constructing site fills shall be free from vegetation or other deleterious matter as determined by the Soils Engineer.

PLACEMENT, SPREADING AND COMPACTION: The placement and spreading of approved fill materials and the processing and compaction of approved fill and native materials shall be the responsibility of the Contractor. However, compaction of fill materials by flooding, ponding, or jetting shall not be permitted unless specifically approved by local code, as well as the Soils Engineer.

Both cut and fill areas shall be surface-compacted to the satisfaction of the Soils Engineer prior to final acceptance.

SEASONAL LIMITS: No fill material shall be placed, spread, or rolled while it is frozen or thawing or during unfavorable wet weather conditions. When the work is interrupted by heavy rains, fill operations shall not be resumed until the Soils Engineer indicates that the moisture content and density of previously placed fill are as specified.

(PROJECT NO. 5400544-001P
SRF12P110)

EXHIBIT H
"NATIONAL COOOPERATIVE SOIL SURVEY – WEB SOILD SURVEY MAP"

United States Department of Agriculture

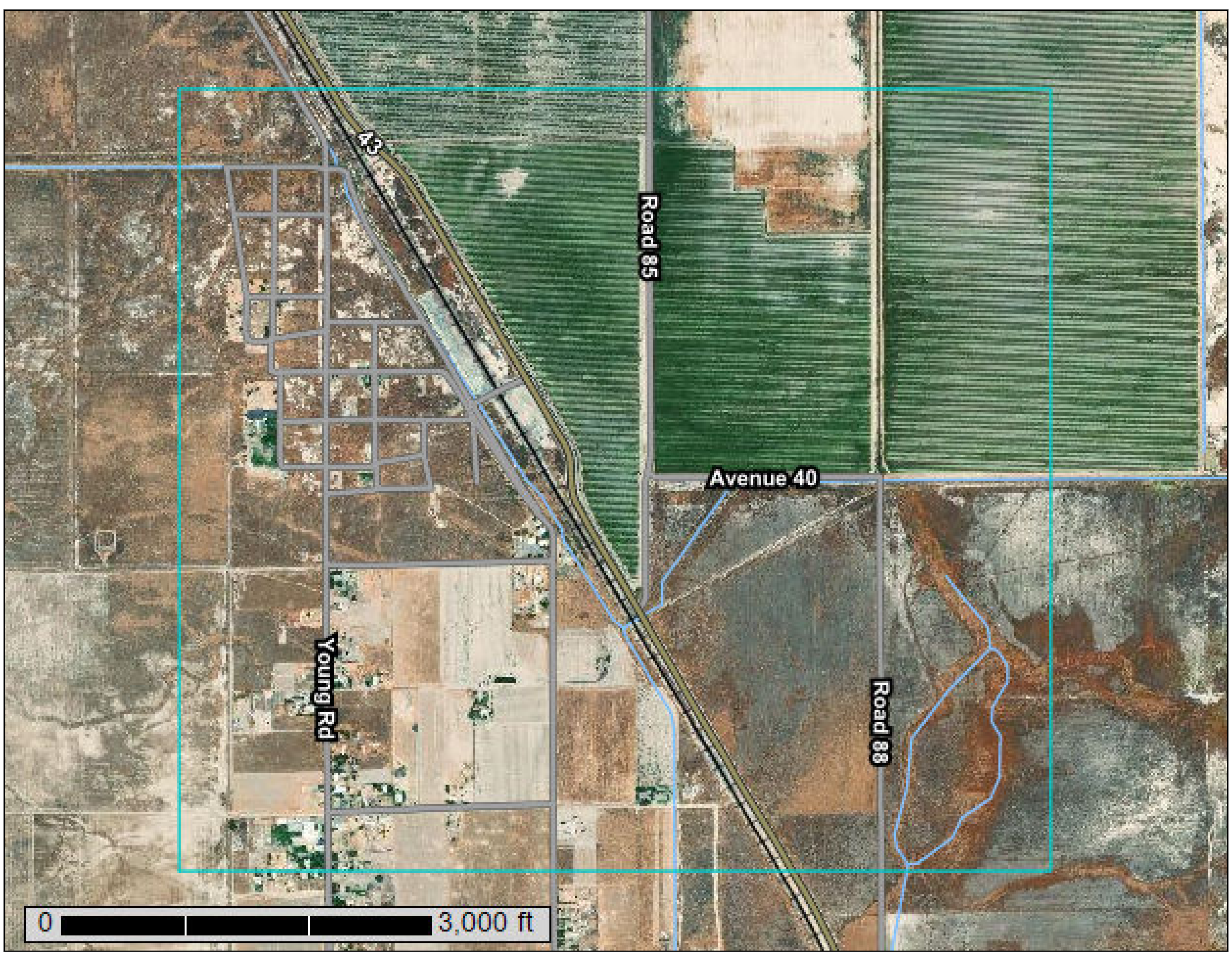
NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

Custom Soil Resource Report for
Tulare County, Western Part, California

ACSD Water System Improvement Project



May 4, 2020

Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (https://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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Contents

How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report
Soil Map

Map Scale: 1:16,300 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0, 200, 400, 800, 1200

Feet: 0, 500, 1000, 2000, 3000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Tulare County, Western Part, California
Survey Area Data: Version 13, Sep 16, 2019

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Apr 15, 2016—Nov 5, 2017

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
119	Gareck-Garces association, 0 to 2 percent slopes	809.4	78.6%
127	Kimberlina fine sandy loam, 0 to 2 percent slopes MLRA 17	220.3	21.4%
Totals for Area of Interest		**1,029.7**	**100.0%**

Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Tulare County, Western Part, California

119—Gareck-Garces association, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: hp4p
Elevation: 210 to 390 feet
Mean annual precipitation: 6 to 8 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 250 to 275 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Gareck and similar soils: 70 percent
Garces and similar soils: 15 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gareck

Setting

Landform: Fan remnants
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Formed by the chemical and mechanical alteration of the garces series which originally formed in alluvium derived from granitic rock sources

Typical profile

Ap1 - 0 to 6 inches: sandy loam
Ap2 - 6 to 28 inches: loam
Ap3 - 28 to 47 inches: sandy clay loam
2Bk - 47 to 62 inches: stratified loamy sand to sandy clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 5 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 8.0
Available water storage in profile: High (about 9.0 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C

Hydric soil rating: No

Description of Garces

Setting

Landform: Fan remnants
Landform position (two-dimensional): Shoulder
Landform position (three-dimensional): Side slope
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from granitic rock sources

Typical profile

A - 0 to 4 inches: loam
Btknz1 - 4 to 14 inches: clay loam
Btknz2 - 14 to 21 inches: sandy clay loam
Bknyz1 - 21 to 29 inches: loam
Bknyz2 - 29 to 62 inches: stratified sandy loam to clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: 2 to 13 inches to natric
Natural drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Low to moderately low (0.01 to 0.06 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 5 percent
Gypsum, maximum in profile: 3 percent
Salinity, maximum in profile: Moderately saline to strongly saline (8.0 to 16.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 100.0
Available water storage in profile: Very low (about 0.6 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: D
Hydric soil rating: No

Minor Components

Kimberlina, saline-sodic

Percent of map unit: 4 percent
Landform: Alluvial fans, flood plains
Hydric soil rating: No

Lethent

Percent of map unit: 3 percent
Landform: Fan remnants
Hydric soil rating: No

Nahrub

Percent of map unit: 3 percent
Landform: Rims
Hydric soil rating: No

Atesh

Percent of map unit: 2 percent
Landform: Fan remnants
Hydric soil rating: No

Jerryslu

Percent of map unit: 2 percent
Landform: Fan remnants
Hydric soil rating: No

Unnamed, ponded

Percent of map unit: 1 percent
Landform: Depressions
Hydric soil rating: Yes

127—Kimberlina fine sandy loam, 0 to 2 percent slopes MLRA 17

Map Unit Setting

National map unit symbol: 2ss96
Elevation: 120 to 1,160 feet
Mean annual precipitation: 4 to 8 inches
Mean annual air temperature: 63 to 64 degrees F
Frost-free period: 240 to 300 days
Farmland classification: Farmland of statewide importance

Map Unit Composition

Kimberlina and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Kimberlina

Setting

Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Alluvium derived from igneous and sedimentary rock

Typical profile

Ap - 0 to 9 inches: fine sandy loam
C - 9 to 45 inches: fine sandy loam
2C - 45 to 71 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Natural drainage class: Well drained
Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high (0.57 to 1.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum in profile: 10 percent
Salinity, maximum in profile: Nonsaline to slightly saline (0.3 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum in profile: 4.0
Available water storage in profile: Moderate (about 8.7 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 7e
Hydrologic Soil Group: A
Hydric soil rating: No

Minor Components

Wasco

Percent of map unit: 7 percent
Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Milham

Percent of map unit: 6 percent
Landform: Alluvial fans
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: No

Unnamed

Percent of map unit: 2 percent
Landform: Flood plains
Landform position (two-dimensional): Footslope
Landform position (three-dimensional): Talf
Down-slope shape: Linear
Across-slope shape: Linear
Hydric soil rating: Yes

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(PROJECT NO. 5400544-001P
SRF12P110)

EXHIBIT I
"FLOOD INSURANCE RATE MAP"

ALLENSWORTH COMMUNITY SERVICES DISTRICT

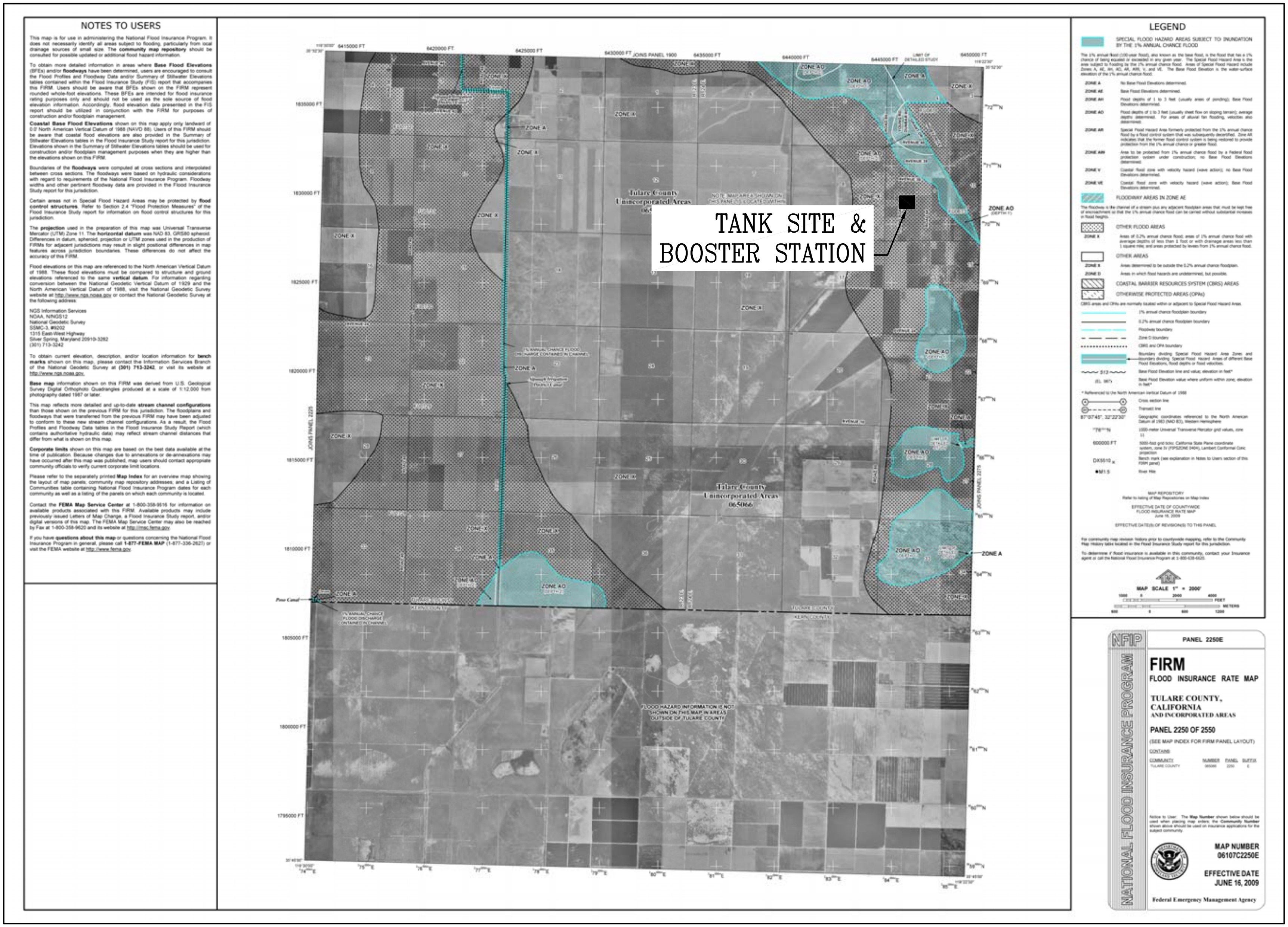


EXHIBIT I

WATER SUPPLY IMPROVEMENT PROJECT

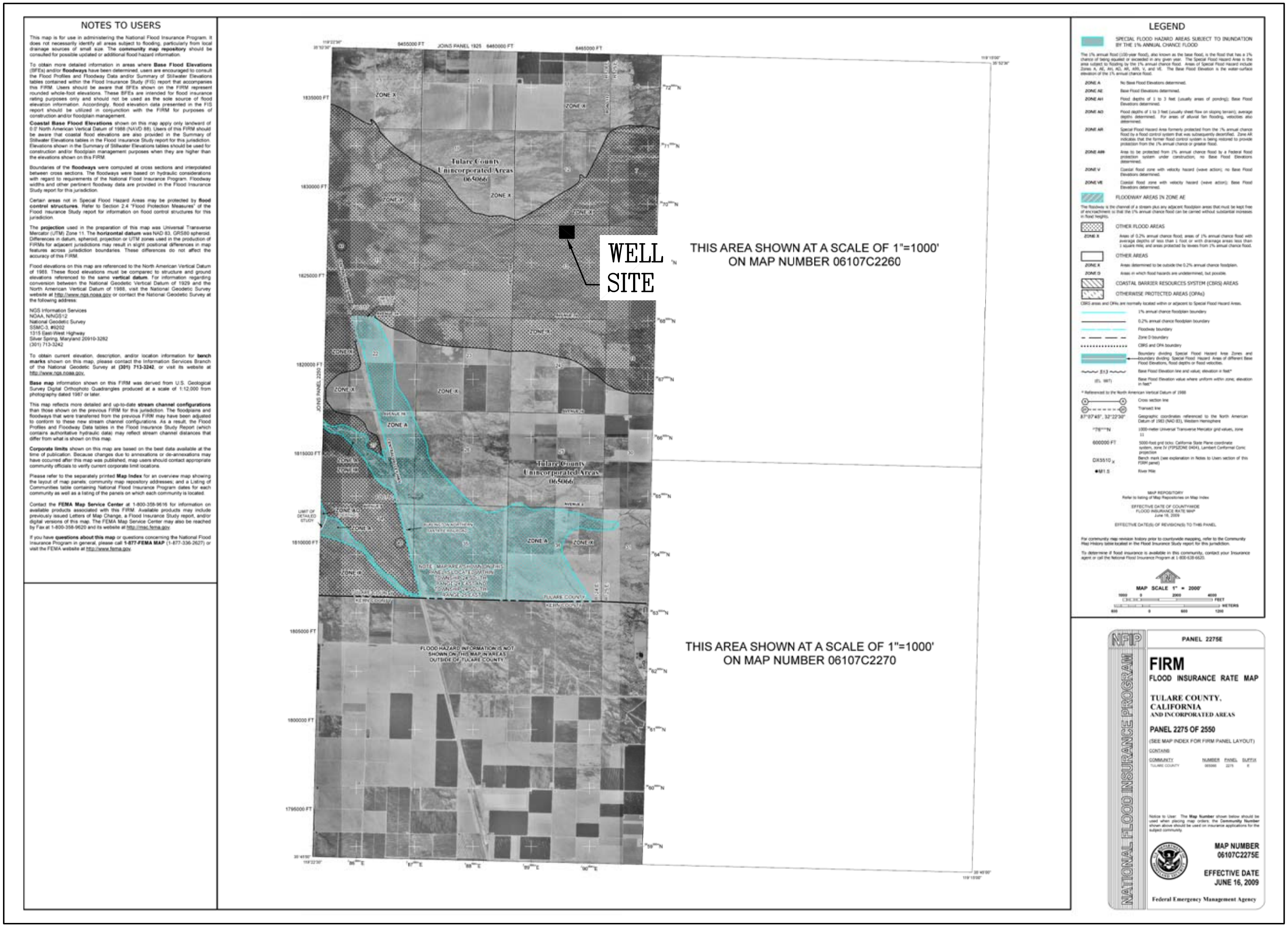
ALLENSWORTH COMMUNITY SERVICES DISTRICT

N

0' 5,000'

SCALE: 1"= 5,000'
DATE: APRIL 25, 2020

DEE JASPAR & ASSOCIATES, INC.
CIVIL • ENGINEERS
PORTERVILLE, CALIFORNIA PHONE 559 791-9286
BAKERSFIELD, CALIFORNIA PHONE 661 393-4796



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ALLENSWORTH COMMUNITY SERVICES DISTRICT

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WATER SYSTEM IMPROVEMENT PROJECT
(PROJECT NO. 5400544-001P
SRF12P110)

EXHIBIT J
"U.S. FISH AND WILDLIFE SERVICE – NATIONAL WETLANDS INVERTORY MAP"

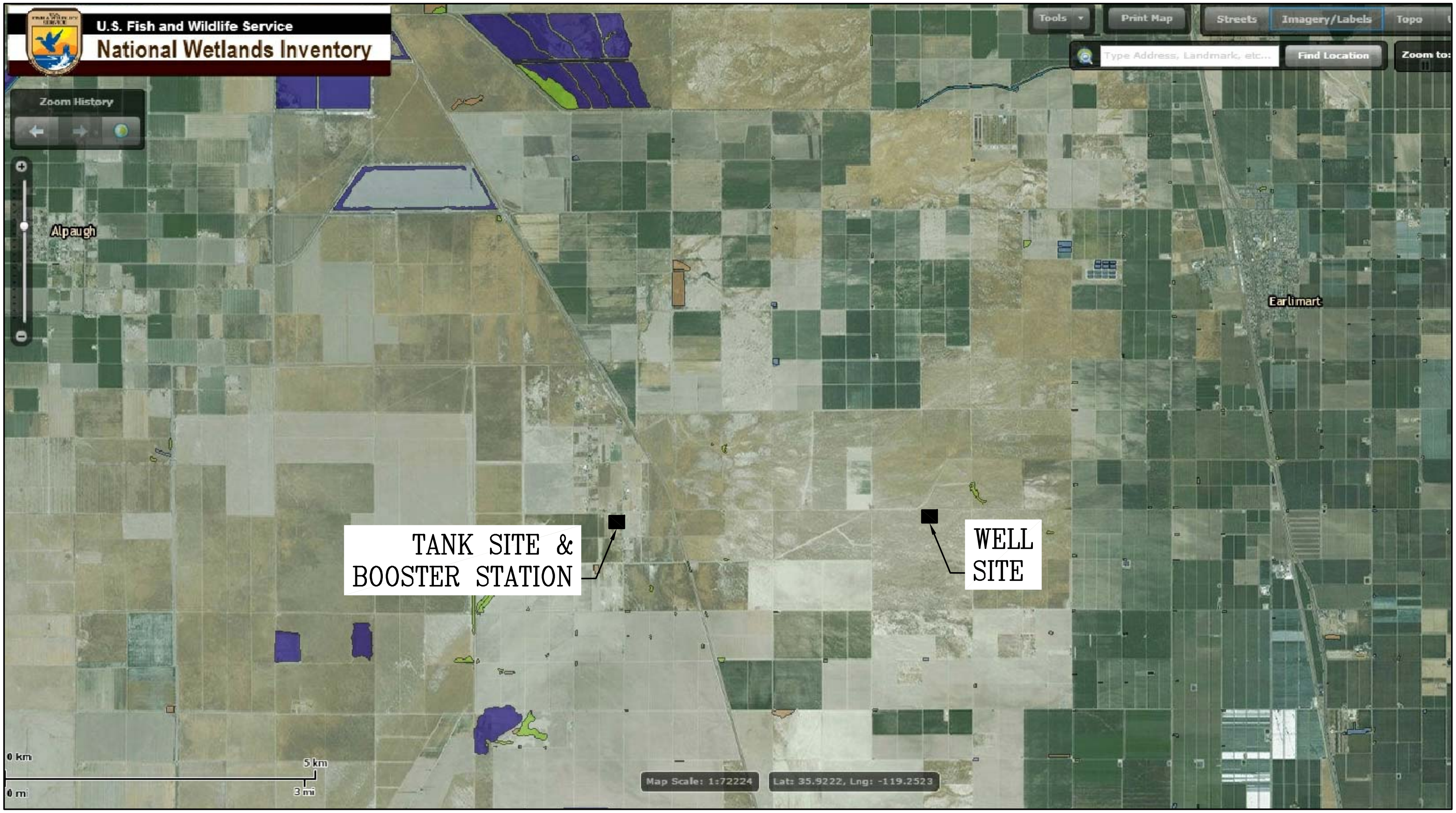

EXHIBIT J

WATER SUPPLY IMPROVEMENT PROJECT

ALLENSWORTH COMMUNITY SERVICES DISTRICT

N

0' 5,000'

SCALE: 1"= 5,000'

DATE: APRIL 25, 2020

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ALLENSWORTH COMMUNITY SERVICES DISTRICT
WATER SYSTEM IMPROVEMENT PROJECT
(PROJECT NO. 5400544-001P
SRF12P110)

EXHIBIT K
"MAP OF SCHOOLS IN PROJECT VICINITY"

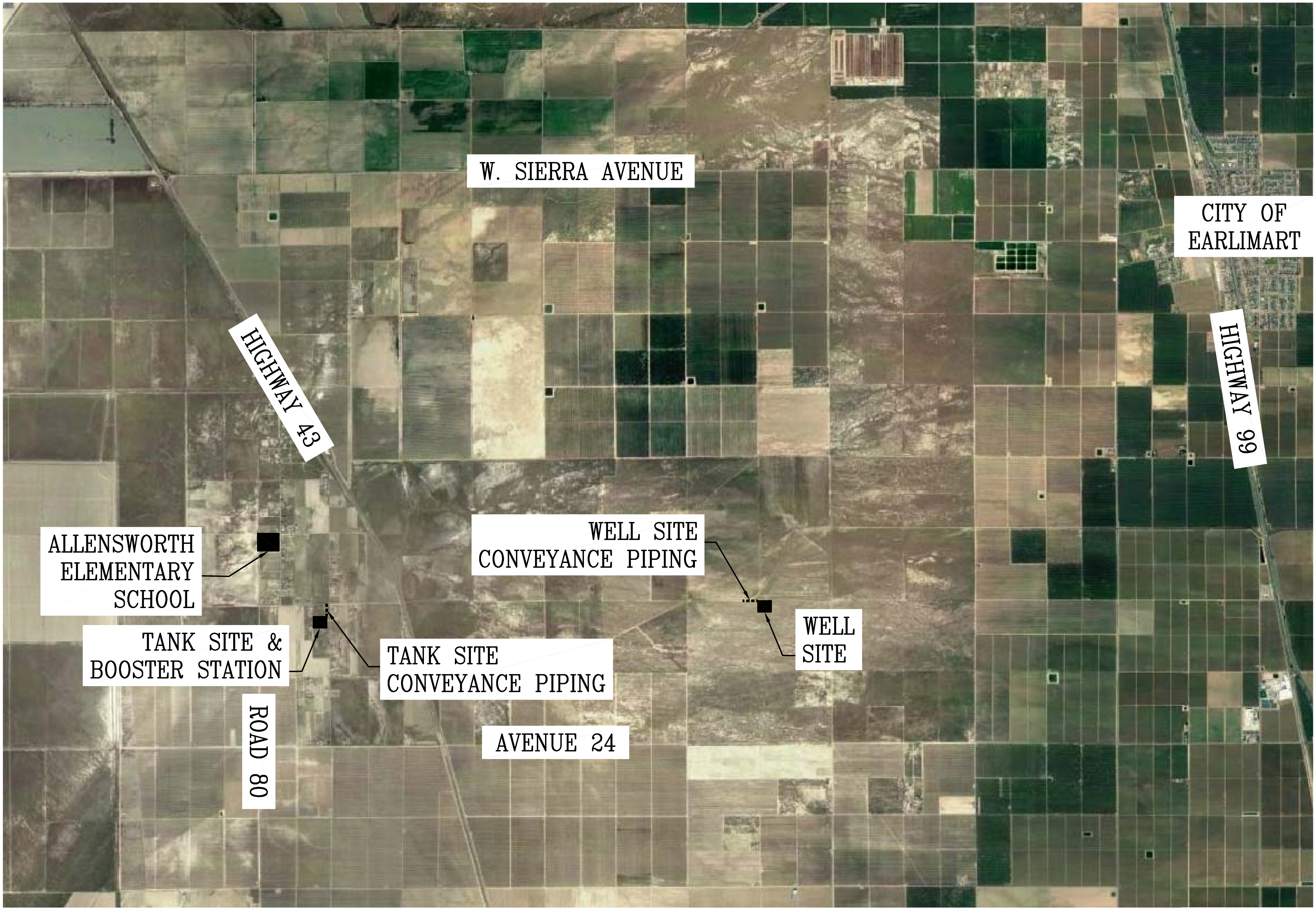

EXHIBIT K

WATER SUPPLY IMPROVEMENT PROJECT

ALLENSWORTH COMMUNITY SERVICES DISTRICT

N

0' 5,000'

SCALE: 1"= 5,000'
DATE: APRIL 25, 2020

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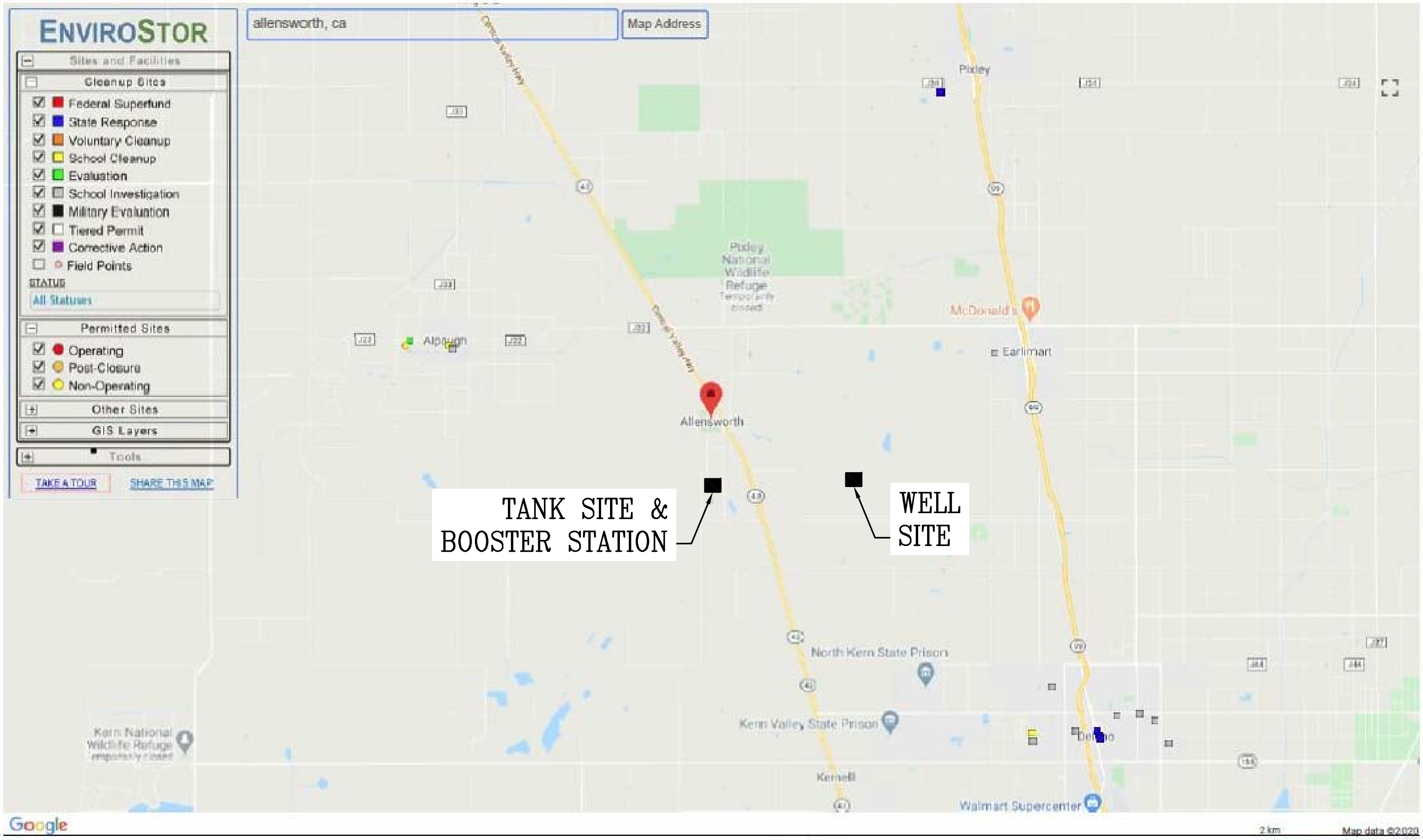
ALLENSWORTH COMMUNITY SERVICES DISTRICT
WATER SYSTEM IMPROVEMENT PROJECT
(PROJECT NO. 5400544-001P
SRF12P110)

EXHIBIT L
"LIST OF HAZARDOUS MATERIALS SITES PER CALIFORNIA DEPT. OF TOXIC SUBSTANCES CONTROL"



SITES CURRENTLY VISIBLE ON MAP

18 SITES LISTED

EXPORT THIS LIST TO EXCEL

PROJECT NAME	STATUS	PROJECT TYPE	ADDRESS	CITY
ALBANY PARK ELEMENTARY SCHOOL EXPANSION	NO FURTHER ACTION	SCHOOL INVESTIGATION	NORTHSIDE OF 20TH STREET/WEST OF ALBANY PARK ELEMENTARY SCHOOL	DELANO
ALPAUGH K-12 RECONSTRUCTION PROJECT	ACTIVE	SCHOOL CLEANUP	5313 ROAD 39	ALPAUGH
ALPAUGH SEPTIC & SOLAR EXPANSION PARCELS	NO ACTION REQUIRED	SCHOOL INVESTIGATION	5218, 5230 & 5244 WILBUR ROAD	ALPAUGH
CECIL AVENUE MIDDLE SCHOOL	NO ACTION REQUIRED	SCHOOL INVESTIGATION	1430 CECIL AVENUE	DELANO
COMPREHENSIVE HIGH SCHOOL NO. 2	CERTIFIED	SCHOOL CLEANUP	11TH STREET/HIETT STREET	DELANO
CUYAMA AUXILIARY FIELD #7	INACTIVE - NEEDS EVALUATION	MILITARY EVALUATION		BAKERSFIELD
DELANO PCE PLUME	ACTIVE	STATE RESPONSE	MAIN STREET AND 10TH AVENUE	DELANO
ELEMENTARY/MIDDLE SCHOOL SITE NO. 11	NO FURTHER ACTION	SCHOOL INVESTIGATION	2020 CECIL AVENUE/BROWNING ROAD	DELANO
FORMER NATIONAL CLEANERS	ACTIVE	STATE RESPONSE	811 11TH AVENUE	DELANO
FREMONT ELEMENTARY SCHOOL	NO ACTION REQUIRED	SCHOOL INVESTIGATION	1318 CLINTON STREET	DELANO
GG FARMS SITE	NO FURTHER ACTION	SCHOOL INVESTIGATION	9TH AVENUE/BROWNING ROAD	DELANO
HARMON FIELD	ACTIVE	STATE RESPONSE	1494 SOUTH AIRPORT DRIVE	PIXLEY
NUTRIEN AG SOLUTIONS, INC.	CLOSED	NON-OPERATING	3201 AVENUE 54	ALPAUGH

EXHIBIT L

WATER SUPPLY IMPROVEMENT PROJECT

ALLENSWORTH COMMUNITY SERVICES DISTRICT

N

0' 5,000'

SCALE: 1"= 5,000'

DATE: APRIL 25, 2020

DEE JASPAR & ASSOCIATES, INC.

CIVIL • ENGINEERS

PORTERVILLE, CALIFORNIA PHONE 559 791-9286

BAKERSFIELD, CALIFORNIA PHONE 661 393-4796

ENVIROSTOR ID	PROJECT NAME	STATUS	PROJECT TYPE	ADDRESS	CITY
60000508	Albany Park Elementary School Expansion	No Further Action	School Investigation	Northside of 20th Street/West of Albany Park Elementary School	Delano
60001606	Alpaugh K-12 Reconstruction Project	Active	School Cleanup	5313 Road 39	Alpaugh
60001644	Alpaugh Septic & Solar Expansion Parcels	No Action Required	School Investigation	5218, 5230 & 5244 Wilbur Road	Alpaugh
15820002	CECIL AVENUE MIDDLE SCHOOL	No Action Required	School Investigation	1430 Cecil Avenue	Delano
15010029	COMPREHENSIVE HIGH SCHOOL NO. 2	Certified	School Cleanup	11th Street/Hiett Street	Delano
80000233	CUYAMA AUXILIARY FIELD #7	Inactive - Needs Evaluation	Military Evaluation		Bakersfield
60001327	Delano PCE Plume	Active	State Response	Main Street and 10th Avenue	Delano
15010024	ELEMENTARY/MIDDLE SCHOOL SITE NO. 11	No Further Action	School Investigation	2020 Cecil Avenue/Browning Road	Delano
60002270	Former National Cleaners	Active	State Response	811 11th Avenue	Delano
15820003	FREMONT ELEMENTARY SCHOOL	No Action Required	School Investigation	1318 Clinton Street	Delano
15010010	GG FARMS SITE	No Further Action	School Investigation	9th Avenue/Browning Road	Delano
54070051	HARMON FIELD	Active	State Response	1494 SOUTH AIRPORT DRIVE	PIXLEY
CAT000611251	NUTRIEN AG SOLUTIONS, INC.	CLOSED	Non-Operating	3201 AVENUE 54	ALPAUGH
60002268	Oak Lane Cleaners	Active	State Response	910 Main Street	Delano
60002269	Oasis Cleaners	Active	State Response	920 Main Street	Delano
60000477	Proposed Delano Charter School	No Further Action	School Investigation	Cecil Avenue/Randolph Street	Delano
60002316	Proposed Earlimart High School	No Further Action	School Investigation	Northeast of W. Washington Ave. & Howard Road	Earlimart
54070288	WESTERN FARM SERVICES	No Action Required	Evaluation	3201 AVE 54	ALPAUGH
15010033	WESTSIDE EDUCATIONAL - NO. 2A	No Further Action	School Investigation	11th and Heitt Avenue	Delano