

**DRAFT**

**Initial Study / Mitigated Negative Declaration  
Groundwater Treatment at La Palma, Linda Vista, Boysen  
Park, and Energy Field Sites**

**February 19, 2021**

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**Table of Acronyms**

<b>Acronym</b>	<b>Definition</b>
AB	Assembly Bill
AFD	Anaheim Fire and Rescue Department
ALUC	Airport Land Use Commission for Orange County
AMC	Anaheim Municipal Code
APE	Area of Potential Effect
APU	Anaheim Public Utilities Department
AQMP	Air Quality Management Plan
BMP	Best Management Practice
BPP	Basin Production Percentage
CAAQS	California Ambient Air Quality Standards
CalEEMod	California Emissions Estimator Model
CalEnviroScreen	California Communities Environmental Health Screening Tool
CalEPA	California Environmental Protection Agency
Cal/OSHA	California Division of Occupational Safety and Health
CALGreen	California Green Building Standards Code
Caltrans	California Department of Transportation
CARB	California Air Resources Board
CCR	California Code of Regulations
CDFW	California Department of Fish and Wildlife
CDOC	California Department of Conservation
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CGS	California Geological Survey
CH <sub>4</sub>	Methane
CHRIS	California Historical Resources Information System
CIFF	California Important Farmland Finder
City	City of Anaheim
CNEL	Community Noise Equivalent Level
CO	Carbon Monoxide
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> E	Carbon Dioxide Equivalent
CRHR	California Register of Historic Resources
CUPA	Certified Unified Program Agency
dB	Decibel
dBA	Decibel A weighted
DAMP	Drainage Area Management Plan
DDW	Division of Drinking Water
DPM	Diesel Particulate Matter
DTSC	Department of Toxic Substances Control
EIA	Energy Information Administration
EIR	Environmental Impact Report



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<b>Acronym</b>	<b>Definition</b>
EO	Executive Order
ESCP	Erosion and Sediment Control Plan
FEMA	Federal Emergency Management Agency
FMMP	Farmland Mapping and Monitoring Program
FTA	Federal Transit Administration
GHG	Greenhouse Gas
GPM	Gallons per Minute
HCP	Habitat Conservation Plan
HP	Horsepower
IS/MND	Initial Study/Mitigated Negative Declaration
kg	Kilogram
kW	Kilowatt
L <sub>eq</sub>	Equivalent Continuous Sound Level (Time-Averaged Sound Level)
LIP	Local Implementation Plan
LOS	Level of Service
LST	Localized Significance Threshold
MG	Million Gallon
MLD	Most Likely Descendant
MM	Mitigation Measure
MPH	Miles Per Hour
MT	Metric Ton
MUTCD	Manual for Uniform Traffic Control Devices
MWD	Metropolitan Water District of Southern California
NAAQS	National Ambient Air Quality Standards
NAHC	Native American Heritage Commission
NCCP	Natural Community Conservation Plan
N <sub>2</sub> O	Nitrous Oxide
NO <sub>2</sub>	Nitrogen Dioxide
NO <sub>x</sub>	Nitrogen Oxides
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
O <sub>3</sub>	Ozone
OCTA	Orange County Transportation Authority
OCWD	Orange County Water District
OEHHA	Office of Environmental Health Hazard Assessment
OSM	Office of the State Fire Marshal
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctanesulfonic acid
PM <sub>2.5</sub>	Fine Particulate Matter
PM <sub>10</sub>	Coarse Particulate Matter
ppm	Parts per Million
ppt	Parts per Trillion

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Acronym	Definition
ppv	Peak Particle Velocity
PRC	Public Resources Code
RCNM	Federal Highway Administration Roadway Construction Noise Model
RL	Response Level
RTP	Regional Transportation Plan
RWQCB	Regional Water Quality Control Board
SB	Senate Bill
SCAB	South Coast Air Basin
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SCCIC	South Central Coastal Information Center
SCS	Sustainable Communities Strategy
SLF	Sacred Lands File
SO <sub>x</sub>	Sulfur Oxides
SRA	Source Receptor Area
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TAC	Toxic Air Contaminant
USACE	United States Army Corps of Engineers
USDA	United States Department of Agriculture
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
VMT	Vehicle Miles Travelled
VOC	Volatile Organic Compound
WDR	Waste Discharge Requirement
WQMP	Water Quality Management Plan

## **1.0 INTRODUCTION**

### **1.1 BACKGROUND**

The City of Anaheim (City) Public Utilities Department (APU) provides water service to the residential, commercial, and industrial customers within the City. APU has three sources of water: groundwater wells, treated water purchased from the Metropolitan Water District of Southern California (MWD), and untreated water purchased from MWD which is treated at the Lenain Water Treatment Plant. Historically, up to approximately 77 percent of the City's water supply came from groundwater wells.

California's drinking water is regulated by the State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW) and the United States Environmental Protection Agency (USEPA). In February 2020, DDW established a Response Level (RL) for perfluorooctanesulfonic acid (PFOS) at 40 parts per trillion (ppt) and perfluorooctanoic acid (PFOA) at 10 ppt. While RLs are not binding standards, DDW recommends that water sources with detections above the RL be taken out of service unless equipped with treatment. Several wells were taken out of service in response to these recommendations.

This Project would construct water treatment systems at four locations: the La Palma Site, Linda Vista Site, Boysen Park Site, and Energy Field Site. The Project would reduce the levels of PFOS and PFOA so the groundwater wells could be returned to service. A new water supply well would be constructed at the La Palma Site to more efficiently operate the new treatment facilities and reduce the need for MWD-supplied water.

### **1.2 CEQA / FEDERAL COMPLIANCE PROCESS**

This Initial Study / Mitigated Negative Declaration (IS/MND) was prepared to evaluate the potential environmental impacts that may result from the proposed Project. The IS/MND has been prepared in accordance with the California Environmental Quality Act (CEQA) pursuant to Public Resources Code (PRC), Section 21000 et seq. (and associated CEQA Guidelines) to evaluate the potential environmental impacts associated with the implementation of the Project. The City is the lead agency for the Project and responsible for preparation and approval of this document. As required by CEQA, the City reviewed and evaluated the potential environmental effects of the Project. Where potentially significant environmental impacts of the Project were identified, mitigation measures (MMs) are developed to reduce potentially significant impacts to levels that are less than significant.

Additionally, the City may seek grants and/or loans from state or federal-administered programs that would require a "CEQA-Plus" evaluation to be completed to comply with federal regulations. These evaluations are included in the within the Environmental Checklist (Section 3.0) portions of this IS/MND. Generally, CEQA-Plus evaluations are provided for resource areas where a relevant federal law directly applies to that resources area (e.g., the Federal Endangered Species Act or Clean Air Act).

Pursuant to Section 15073 of the CEQA Guidelines, this IS/MND is issued for a 30-day review period by the public and by responsible and trustee agencies to provide information about the Project and to disclose its environmental implication. Comments received in writing will be considered by City Council, along with the IS/MND, in making decisions concerning the Project.

### **1.3 CONTACT PERSON**

Any questions about this IS/MND or the Project should be referred to:

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## **2.0 PROJECT DESCRIPTION**

### **2.1 PROJECT LOCATIONS**

The proposed project would include constructing additional water treatment, production, and distribution facilities at the addresses below. The Project site locations are shown on Figure 1.

<b>Location</b>	<b>Address</b>
La Palma Site	1014 N. West St., Anaheim, CA
Linda Vista Site	1411 N. Tustin Ave., Anaheim, CA
Boysen Park Site	973 S. State College Blvd., Anaheim, CA
Energy Field Site	1665 9th St., Anaheim, CA

### **2.2 REGIONAL SETTING**

The Project sites are in Orange County and all work will be conducted within the City. The City is approximately seven miles northwest of Downtown Santa Ana and 23 miles southeast of Downtown Los Angeles. The cities of Yorba Linda, Placentia, Fullerton, Buena Park, Cypress, Stanton, Garden Grove, and Orange and unincorporated Orange County border the City. Interstate 5 (I-5) and State Routes (SR) 39, 55, 57, 90, 91, and 241 provide regional access to the City.

### **2.3 PROJECT OVERVIEW**

Ion exchange treatment is commonly used to remove PFOS and PFOA from groundwater. Treatment vessels are filled with polymer-based ion exchange resin that removes the PFOS and PFOA as water passes over it. The resins are small plastic beads with affixed charges balanced by counter ions. The PFOS and PFOA is removed when the counter ion is exchanged for the charged contaminant ion. The rate of removal depends on initial concentration of the contaminant, the concentration of competing ions, loading rate, size and types of resin beads, and the water chemistry. Over time, the resin becomes loaded with PFOS and PFOA. When saturated, the resin is removed from the vessel and transported to a disposal or incineration facility. Fresh resin is added to the treatment vessels, and treatment continues.

The Project would install water treatment facilities at four sites as described below. The number and size of vessels at each treatment site will depend on the volume of water that will require treatment at each location. While estimated dimensions are included in this IS/MND, exact sizes may vary to ensure the treatment systems can adequately supply the necessary volume of water. To ensure continuous availability of water, the treatment systems would operate up to 24 hours per day. To most efficiently distribute the treated water, a new water supply well would be installed at the La Palma site, and several other wells would be rehabilitated to improve their water production capacity.

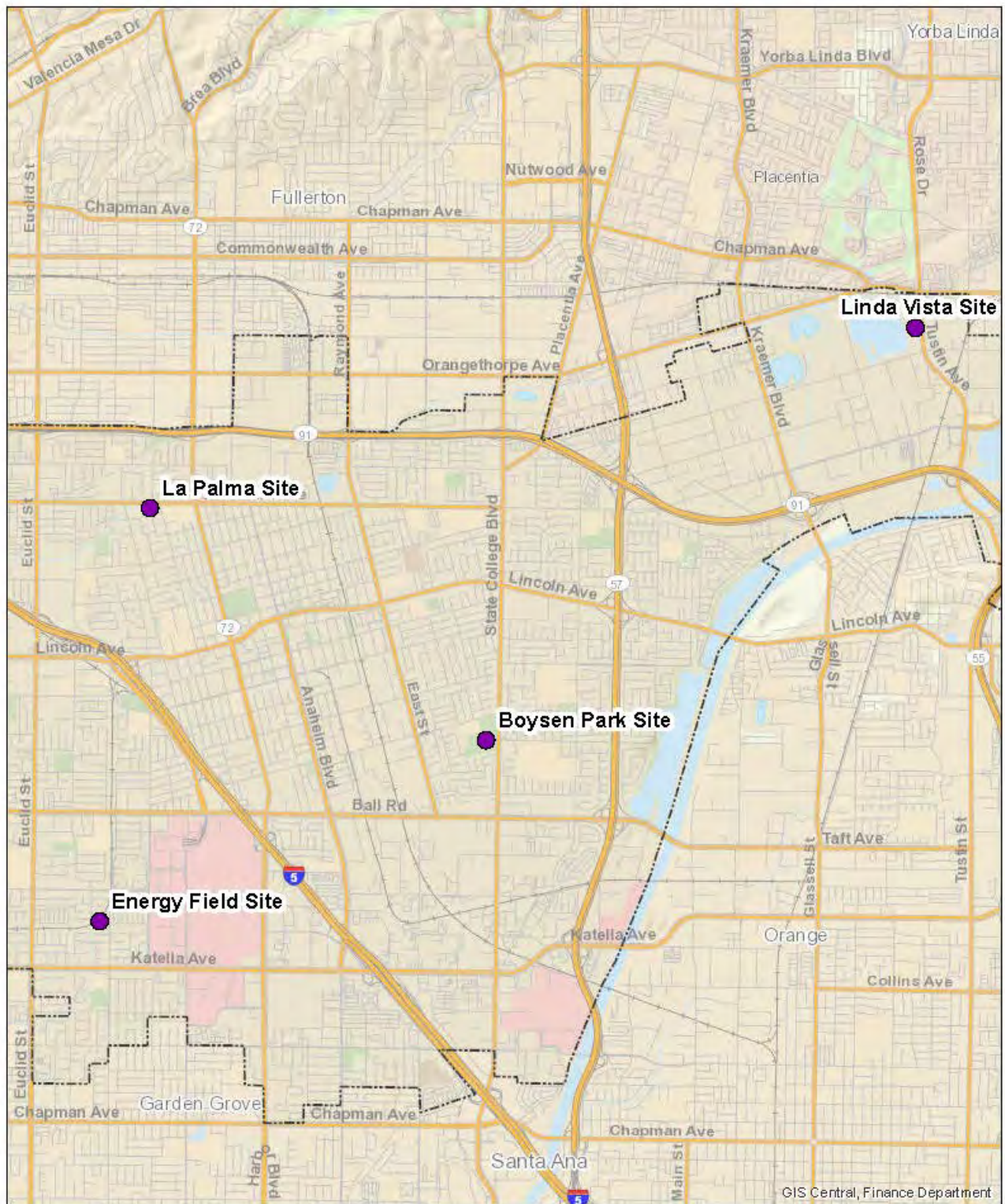
### **2.4 LA PALMA SITE**

The La Palma Site would receive a new treatment plant, water well, piping, and security features. An anticipated site layout is shown on Figure 2.



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**Figure 1 – Site Locations**





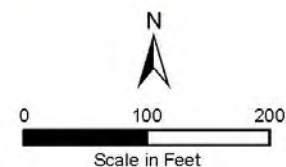
**Figure 2 – La Palma Site**



**Explanation**

- New Water Well
- New Landscaping
- New 10-foot Block Wall
- New Trench
- Upgraded Water Pipe
- Water Treatment Location

Piping and well locations are approximate and may be adjusted. Additional piping would be installed throughout the existing reservoir property. Equipment in the Water Treatment Location would include water treatment vessels, pumps, valves, electrical equipment, and other water treatment equipment.



### **2.4.1 CURRENT USE**

A water treatment system would be installed at the location of the existing La Palma Reservoir. The La Palma Site is located southeast of the intersection of West La Palma Avenue and North West Street. The site is located within a heavily urbanized area. It is bounded to the north by Carbon Creek Channel, to the east by a small strip mall with retail stores and restaurants, to the south by single family homes, and to the west by North West Street.

The site currently contains a water supply well, a water reservoir, water disinfection equipment, a 2,000 gallon diesel fuel tank, a restroom, control buildings, and various piping, valves, pumps, and other water distribution equipment. The site is surrounded by a chain-link fence. A gate is located on North West Street to allow vehicles to enter and exit the site. The ground surface is primarily soil, some areas paved with asphalt, and some areas paved with permeable concrete.

### **2.4.2 PROPOSED USE**

#### **Treatment Plant**

The Project would install a new treatment system in a vacant area of the site east of the existing reservoir and pump station. The system would be designed to treat water at a rate of approximately 8,700 gallons per minute (GPM). Approximately 12 ion exchange resin vessels would be installed at the site. While exact dimensions might vary, the vessels are expected to be approximately 17 feet tall and 12 feet in diameter. The vessels would be installed on the eastern portion of the property. Additional smaller treatment equipment would be installed such as pre-treatment filters, pumps, pipes, valves, and other appurtenant structures. Upgraded disinfection equipment consisting of pumps and tanks would be installed to store additional sodium hypochlorite (bleach) to disinfect the water leaving the treatment plant. Upgraded electrical switchgear would be added to the site to reliably power the pumping equipment. Electrical equipment connections would be installed to allow the facility to operate off a portable emergency backup generator. The treatment plant equipment would be set back from West La Palma Avenue to reduce visibility above the site walls or fences.

#### **Water Well Installation and Rehabilitation**

One new groundwater well would be installed in the southeast corner of the site. The well would be drilled to a depth in excess of 1,000 feet and would be designed to extract up to approximately 4,000 GPM of groundwater that would be available for the City's water system. The well would be equipped with an electric pump. The pump is anticipated to be sized at approximately 500 horsepower (HP). However, the exact sizing will be determined based on the depth to groundwater and the rate at which water can be reliably extracted from the well. A new booster pump would be installed onsite to convey water into the treatment and distribution systems.

The existing water supply well at the La Palma site would be rehabilitated. This would include conducting an initial video survey, using downhole instrumentation to study the vertical alignment, installing a liner casing, and using chemical processes to remove built up scaling and improve performance of the well. New pumps and control equipment would be installed.

#### **Piping**

Buried piping would be installed within the Project site to convey water from the new well and treatment system into the reservoir and distribution system. Existing piping beneath La Palma Avenue (between West Street and Citron Street), and two existing discharge pipes crossing Carbon Creek Channel would be upgraded with larger piping to better accommodate anticipated water demands. The replacement pipe would be installed by boring beneath the existing channel.



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A new buried pipe would be installed connecting the reservoir to existing piping beneath West Street.

The site has an existing pipe that discharges water into Carbon Creek Channel. These discharges occur during well startup and shutdown, and while conducting maintenance on the reservoir. The new treatment system and well would be connected to this existing discharge point to accommodate flushing water when starting, stopping, or conducting maintenance on the site equipment.

New catch basins and storm drain piping would be installed as necessary to accommodate site grade changes.

#### **Security, Entrance, and Landscaping**

To promote site security and better screen the new treatment equipment from view, the existing chain-link fence would be replaced with a new 10-foot high block wall. The wall would extend along the entire north, south, and east side of the site. A new entrance gate would be installed on the northeast corner of the property, which would connect to West La Palma Ave. The gate would be used to allow construction and maintenance vehicles to access the site. The existing site entrance on North West St. would be unchanged. New security lighting would be installed throughout the site. New landscaping would be installed on the north portion of the property, near Carbon Creek Channel. Vines or similar landscaping would be planted along the southern wall for aesthetic improvement and to reduce graffiti. The existing chain link fence has been damaged by trees and vegetation, and some existing trees located along the existing fence may need to be removed to facilitate construction of the new block wall. Additionally, overhead electrical and communication lines are located along the southern boundary of the site. These existing utilities would be removed and relocated underground.

## **2.5 LINDA VISTA SITE**

The Linda Vista Site would receive a new treatment plant, piping, operations building, and security features. An anticipated site layout is shown on Figure 3.

### **2.5.1 CURRENT USE**

A water treatment system would be installed at the location of the existing Linda Vista Reservoir. The Linda Vista Site is located northwest of the intersection of Miraloma Avenue and North Tustin Avenue. The site is located within a commercial/industrial area. It is bounded to the east by Tustin Avenue and commercial properties, to the south by additional commercial properties, and to the north and west by Anaheim Lake. Anaheim Lake is a groundwater recharge facility operated by the Orange County Water District (OCWD). It receives water from MWD, sourced from the Colorado River Aqueduct and State Water Project. It also receives water from the Santa Ana River.

The site currently contains a pump station, a large storage tank, water disinfection equipment, storage buildings, and various piping, valves, and other water distribution equipment. The site also has a 2,220 HP diesel-fueled emergency backup generator and a weather station. Several water supply wells are installed around Anaheim Lake. The southern portion of the site is surrounded by a block wall, with chain link fence on the northern portion. Entrances on North Tustin Avenue allow vehicles to enter and exit the site.

The site formerly contained a 4 million gallon (MG) partially underground reservoir. The reservoir previously extended approximately 15 feet below the current ground surface, which was filled in. The upper 5 feet was demolished and removed. However, portions of the reservoir walls and

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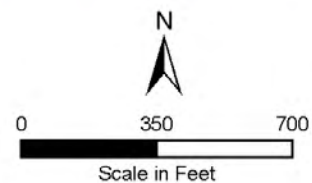
**Figure 3 – Linda Vista Site**



**Explanation**

- New 10-foot Block Wall
- New 10-foot Chain-link Fence
- New Trench
- - - Upgraded Water Pipe
- Water Treatment Location

Piping locations are approximate and may be adjusted. Equipment in the Water Treatment Location would include water treatment vessels, pumps, valves, operations building, electrical equipment, emergency backup generator, and other water treatment equipment.



floors are believed to remain in place at depths ranging five to 15 feet below ground surface. The ground surface in the construction area is primarily soil and weed-type vegetation.

## **2.5.2 PROPOSED USE**

### **Treatment Plant**

The Project would install a new treatment system in a vacant area of the site north of the existing tank. All existing vegetation within the treatment system area would be removed. The system would be designed to treat produced water at up to approximately 20,000 GPM. Approximately 20 ion exchange resin vessels would be installed at the site, with the ability to install approximately 6 vessels in the future. While exact dimensions might vary, the vessels are expected to be approximately 17 feet tall and 12 feet in diameter. Additional smaller treatment equipment would be installed such as pre-treatment filters, pumps, pipes, valves, and other appurtenant structures. An upgraded electrical transformer and switchgear would be added to the site to reliably power the pumping equipment. Existing vegetation would be removed from the treatment plant area prior to construction. A new 350 kilowatt (kW) diesel emergency backup generator would be installed to power the treatment plant, pumps, operations building, and associated equipment in the event of a power outage. Upgraded disinfection equipment consisting of pumps and tanks would be installed to store additional sodium hypochlorite (bleach) to disinfect the water leaving the treatment plant. Portions of the abandoned underground reservoir may need to be demolished to facilitate construction. The treatment plant equipment would be set back from North Tustin Avenue, to reduce visibility above the site walls or fences.

### **Water Well Rehabilitation**

Three existing water supply wells near the Linda Vista site will require rehabilitation. This would include conducting an initial video survey, using downhole instrumentation to study the vertical alignment, installing a liner casing, and using chemical processes to remove built up scaling and improve performance of the well. New pumps and control equipment would be installed.

### **Piping**

Approximately 4,000 feet of undersized piping located on the western and southern sides of Anaheim Lake would be replaced with larger piping to ensure adequate capacity for reliable operation of the well and treatment facility. It is anticipated that the treatment system would have connections to Anaheim Lake to accommodate flushing water when starting, stopping, or conducting maintenance on the site equipment. New pipes would be connected to existing discharge connections to avoid construction within the Lake boundary. Any piping connections leading to Anaheim Lake would be coordinated with OCWD, to ensure any discharges do not affect OCWD's groundwater recharge operations.

New catch basins and storm drain piping would be installed as necessary to accommodate site grade changes.

### **Security, Entrance, and Landscaping**

To promote site security and better screen the new treatment equipment from view, the existing chain-link fence located along Tustin Avenue would be replaced with a new 10-foot high block wall, designed to match the existing block wall to the south. The existing chain-link fence that is not replaced would be equipped with new green screen. A new access gate would be installed on the north end of the site, which would connect to Tustin Avenue. New security lighting would be installed throughout the site. New landscaping would be installed along Tustin Avenue, similar to the landscaping currently located near the existing block wall. New security cameras would also



be installed. New on-site parking would be constructed for APU staff and site visitors. New on-site access paths and roadways would be replaced.

### **Operations Building**

An existing operations center and storage building would be demolished and replaced. The new building would be approximately 45 x 50 feet in size. It would be used by maintenance staff and would contain an electrical room, mechanical room, server room, control room, storage, break areas, and restrooms. The operations building would be connected to the site's existing sewer connection. A weather station is located on site, which is operated by the National Oceanic and Atmospheric Administration (NOAA). Prior to start of construction, the weather station would be temporarily relocated by NOAA onto an existing site building, and would later be installed on the new operations building.

## **2.6 BOYSEN PARK SITE**

The Boysen Park Site would receive a new treatment plant, piping, and security features. An anticipated site layout is shown on Figure 4.

### **2.6.1 CURRENT USE**

An additional water treatment system would be installed within existing Boysen Park. Boysen Park consists of grassy fields, baseball fields, parking areas, playgrounds, and tennis courts. Boysen Park is located southwest of the intersection of South State College Boulevard and Vermont Avenue. The site is bounded to the north, south, and east by residences, and to the west by Theodore Roosevelt Elementary School. A tennis center is located immediately south of the site. An existing water supply well is located north of the proposed treatment plant location. The well site includes disinfection equipment and electric and control equipment. Vehicles are able to enter the project area through the intersection of South State College Boulevard and East Wagner Avenue. The ground surface at the Project area is currently grass and a concrete walkway.

### **2.6.2 PROPOSED USE**

#### **Treatment Plant**

The Project would install a new water treatment system in a mostly vacant area located between an existing baseball field and tennis courts, west of the park's parking lot, approximately 200 feet southwest of an existing groundwater well and approximately 375 feet south of Theodore Roosevelt Elementary School. The system would be designed to treat produced water at up to approximately 4,400 GPM. Approximately six ion exchange resin vessels would be installed at the site. While exact dimensions might vary, the vessels are expected to be approximately 17 feet tall and 12 feet in diameter. Additional smaller treatment equipment would be installed such as pre-treatment filters, pumps, pipes, valves, and other appurtenant structures.

An upgraded electrical transformer would be added to the site to reliably power the pumping equipment. Electrical equipment connections would be installed to allow the facility to operate off a portable emergency backup generator. Upgraded disinfection equipment consisting of pumps and tanks would be installed near the existing well to store additional sodium hypochlorite (bleach) to disinfect the water leaving the treatment plant.

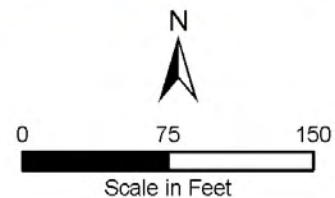
**Figure 4 – Boysen Park Site**



**Explanation**

- Project Boundary
- New Trench
- New Pavement
- New 10-foot Steel Fence
- Water Treatment Location

Piping locations are approximate and may be adjusted. Equipment in the Water Treatment Location would include water treatment vessels, pumps, valves, electrical equipment, and other water treatment equipment. Existing park benches would be relocated.



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Some picnic benches, barbecue grills, and a concrete walkway would need to be relocated from outside the proposed treatment area. These features would be relocated to a location approved by the City's Community Services Department to ensure future public access. Trees, grass, and other vegetation would need to be removed from the footprint of the treatment plant to facilitate construction. Trees would be replanted in new locations approved by the City's Community Services Department.

#### **Well Rehabilitation**

An existing water supply well at the Boysen Park site would be rehabilitated. This would include conducting an initial video survey, using downhole instrumentation to study the vertical alignment, installing a liner casing, and using chemical processes to remove built up scaling and improve performance of the well. New pumps and control equipment would be installed.

#### **Piping**

New buried piping would be installed beneath the existing parking lot to convey water from the existing well into the treatment system and City water system.

The treatment system and well would be connected to the storm drain system located near the existing well. This connection would be used to accommodate flushing water when starting, stopping, or conducting maintenance on the site equipment.

New catch basins and storm drain piping would be installed as necessary to accommodate site grade changes.

#### **Security, Entrance, and Landscaping**

To promote site security and better screen the new treatment equipment from view, a new 10-foot high no-climb fence would be installed around the new treatment site and the existing water well. Existing fences around the park's tennis courts would be increased in height to up to 12-feet tall. A driveway would be connected to the existing park parking lot. Retractable bollards, or similar security structures would be used to prevent unauthorized vehicles from entering the Project site. New security lighting would be installed around the treatment site and existing well.

Some parking area might be temporarily disrupted during construction and some trees and vegetation would need to be removed from the Project area prior to constructing the new treatment system. Activities affecting park usage would be coordinated with the City Community Services Department to minimize the impacts.

## **2.7 ENERGY FIELD SITE**

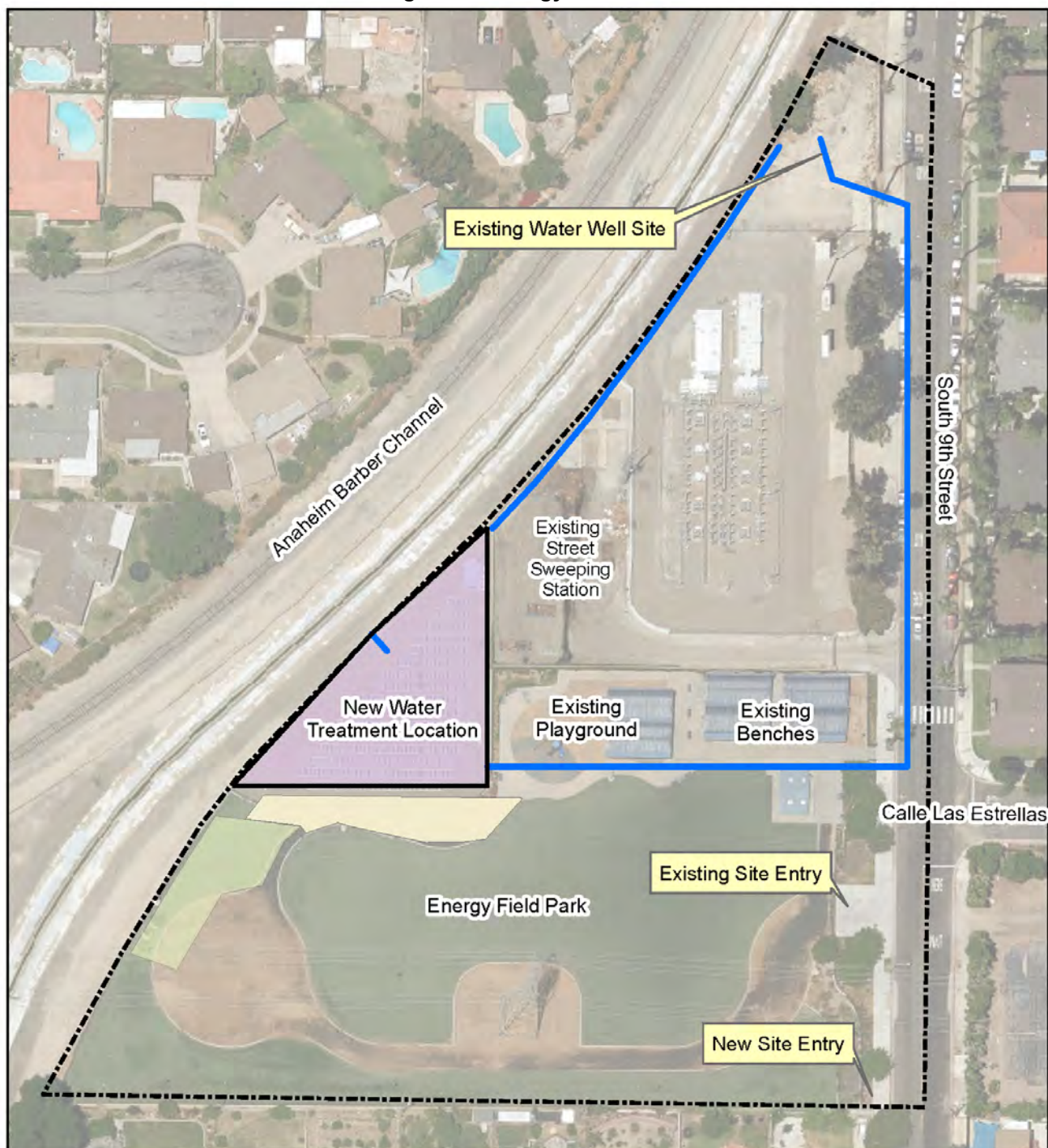
The Energy Field Site would receive a new treatment plant, piping, and security features. An anticipated site layout is shown on Figure 5.

### **2.7.1 CURRENT USE**

An additional water treatment system would be installed approximately 400 feet southwest of an existing City water supply well. The Site is located north of Energy Field Park, west of an existing City street sweeping station and electrical substation, and south and west of Anaheim Barber Channel, an Orange County flood control channel. An unused control building is located at the Site, along with unused solar panel foundations. The park contains a walking path, restrooms, playground, covered benches, and an artificial turf field. An existing water supply well is located north of the proposed treatment plant location.



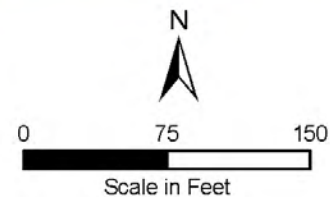
**Figure 5 – Energy Field Site**



**Explanation**

- Project Boundary
- New 8-foot Steel Fence
- New Trench
- New Landscaping
- Water Treatment Location
- New Concrete Walkway / Driveway

Piping locations are approximate and may be adjusted. Equipment in the Water Treatment Location would include water treatment vessels, pumps, valves, electrical equipment, and other water treatment equipment.



## **2.7.2 PROPOSED USE**

### **Treatment Plant**

The Project would install a new water treatment system in a mostly vacant area located in a vacant area north of the Energy Field Park. The system would be designed to treat produced water at up to approximately 3,000 GPM. Approximately four ion exchange resin vessels would be installed at the site. While exact dimensions might vary, the vessels are expected to be approximately 17 feet tall and 12 feet in diameter. Additional smaller treatment equipment would be installed such as pre-treatment filters, pumps, piping, valves, and other appurtenant structures. An existing unused control building may be repurposed to hold treatment system equipment. Alternatively, it may be demolished and removed. The unused solar panel foundations would also be removed.

An upgraded electrical transformer would be added to the site to reliably power the pumping equipment. Electrical equipment connections be installed to allow the facility to operate off a portable emergency backup generator. Upgraded disinfection equipment consisting of pumps and tanks would be installed near the existing well to store additional sodium hypochlorite (bleach) to disinfect the water leaving the treatment plant.

### **Piping**

New buried piping would be installed to convey water from the existing well into the treatment system and City water system. The piping would either be installed to the northwest, beneath an existing City street sweeping station and electrical substation, toward the existing well. Alternatively, piping may be installed to the east beneath the Energy Field Park, and then north beneath South 9<sup>th</sup> Street.

The treatment system might require a new piped connection to the adjacent Anaheim Barber Channel. This connection would be used to accommodate flushing water when starting, stopping, or conducting maintenance on the site equipment. An encroachment permit would be obtained from Orange County Public Works prior to installing new connections to the flood control channel.

### **Security, Entrance, and Landscaping**

To promote site security and better screen the new treatment equipment from view, a new 10-foot high no-climb fence would be installed surrounding the new treatment site. This would require demolition of an existing portion of fence on the south portion of the treatment property. A concrete walkway and new access road would be constructed connecting to the existing site entrance on South 9<sup>th</sup> Street, extending along the southern park boundary, extending further northeast along the adjacent flood control channel. The new driveway would allow access by construction and maintenance vehicles, and also allow increased pedestrian access through the park. New security lighting would be installed around the treatment site and existing well.

## **2.8 TREATMENT SYSTEM CONSTRUCTION**

At all four treatment system sites, minor grading activities would be necessary to prepare the location for vessel installation. This would involve ensuring the ground surface is level and properly compacted to support the vessels. A concrete foundation slab would be installed to accommodate the vessels. Equipment and materials would be transported to each site by truck and would be lifted in place by crane and anchored to the foundation. Piping would be installed to receive water from existing water wells, move it through the treatment process, and pump the treated water into the water distribution system. In most cases, excavation would be conducted at depths of 5 feet or less. However, deeper excavations (up to approximately 10 or more feet) may be necessary for activities such as installing valve vaults. It is anticipated that approximately 100 cubic yards of soil would be excavated from each site to facilitate construction. Work would



generally be conducted from 7:00 AM to 7:00 PM, Monday through Friday. For impact generating equipment, work hours would be further restricted to between 9:00 AM and 4:00 PM, Monday through Friday. Any work in street right-of-way would be conducted from 8:30 AM to 3:30 PM. However, project work may occasionally occur outside of these hours. Work outside these hours would be subject to approval by APU. Typical construction equipment would be used during this Project. This would include pickup trucks, dump trucks, backhoes, excavators, air-driven equipment (such as jackhammers), cranes, soil compactors, cement mixers, and other similar equipment. Equipment would be rotated in and out as construction progresses. To expedite construction, multiple treatment sites may be constructed concurrently.

A drinking water permit amendment would be obtained from DDW prior to operating the treatment plants. All construction activities would be conducted in accordance with local, state, and federal requirements. All additives that come in contact with water would meet the requirements of NSF-61 to ensure they are compatible with drinking water.

## **2.9 WATER WELL CONSTRUCTION**

A new groundwater well would be installed at the La Palma Site. A well drilling permit would be obtained from APU prior to commencing drilling activities. Anaheim Municipal Code (AMC) Section 10.20 requires that water wells be constructed in accordance with California Department of Water Resources Bulletin 74 (California Water Well Standards).

A drill rig would be used to drill a borehole and install a steel casing at both sites. When completed, the well would be constructed of steel and cement would be used to prevent contamination from entering the well. Construction and development of the well will be conducted 24 hours per day 7 days per week for several weeks. Because work will be conducted at night, sound walls up to approximately 24 feet high would be installed to reduce noise during drilling and development activities.

Groundwater and drilling fluid will be pumped from the borehole and well during construction. These fluids will be pumped through settling tanks to reduce sediment. Once the sediment has been reduced to an acceptable level and chlorine has been neutralized, the water would be discharged into the storm drain system in accordance with National Pollutant Discharge Elimination System (NPDES) permit requirements.

Some water treatment chemicals would be temporarily stored on site during well construction. This would include sodium hypochlorite (bleach) for well disinfecting, drilling fluid dispersants, and dechlorination agents.

Upon completion, the well would be equipped with a pump and connected to the water distribution system. The well water would be sampled and tested, and a drinking water permit amendment would be obtained from DDW prior to operating the well. All well construction activities would be conducted in accordance with local, state, and federal requirements.

Construction equipment used during this phase is expected to include a drill rig, backhoe, air compressor, diesel-powered test pump, cement mixers and pumps, flatbed trucks, and other similar equipment. Equipment would be rotated in and out as construction progresses.

## **2.10 WATER WELL REHABILITATION**

Existing water supply wells at the La Palma, Linda Vista, and Boysen Park sites would be rehabilitated. This would entail conducting a downhole video inspection to evaluate the well condition and a survey would be conducted to verify the well's vertical alignment. A brush would be lowered into the well casing to clean the screen. A steel liner would be lowered into the existing well casing and sealed in place with materials such as gravel, sand, bentonite, and/or cement.

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Groundwater would be pumped from the well during rehabilitation. These fluids will be pumped through settling tanks to reduce sediment. Once the sediment has been reduced to an acceptable level and chlorine has been neutralized, the water would be discharged into the storm drain system or Anaheim Lake, in accordance with National Pollutant Discharge Elimination System (NPDES) permit requirements.

Some water treatment chemicals would be temporarily stored on site during well construction. This would include sodium hypochlorite (bleach) for well disinfecting, drilling fluid dispersants, dechlorination agents, hydrochloric acid (to break down accumulated scale in the well), and other similar well rehabilitation products. All products used in the well would comply with NSF-61 to ensure they are safe for use in the water distribution system.

Upon completion, the well would be equipped with a pump and connected to the water distribution system. The well water would be sampled and tested, and a drinking water permit amendment would be obtained from DDW prior to operating the well. All well construction activities would be conducted in accordance with local, state, and federal requirements.

Construction equipment used during this phase is expected to include a well development rig (similar to a crane), backhoe, air compressor, diesel-powered test pump, cement mixers and pumps, flatbed trucks, and other similar equipment. Equipment would be rotated in and out as construction progresses.

## **2.11 TREATMENT SYSTEM AND WELL OPERATION**

Operation and maintenance activities will be conducted to ensure the treatment systems operate safely and efficiently. APU technicians would generally visit each treatment and well site daily to verify the system is operated as designed. The workers would typically be able to conduct their activities using an ordinary pickup truck or similar vehicle. In most cases, maintenance work would be conducted during daytime. However, it is possible that unplanned repairs would need to be conducted at night.

Resin change-out would need to be conducted at each treatment site. Change-outs would be scheduled when the resin becomes saturated and cannot effectively treat the water. This is expected to occur once per year at each treatment site. However, the exact frequency will vary based on the flow through the treatment plants and the chemistry of the water. A water hose would be used to flush the spent resin from the treatment vessels into a tanker truck for transportation. The resin would be taken to an appropriately permitted facility for incineration or disposal. State, local, and federal laws pertaining to waste transportation and disposal would be followed.

## **2.12 SCHEDULE**

Construction is expected to begin in September 2021 and is expected to be completed in May 2023. It is possible that multiple treatment sites would be constructed concurrently. Residents and businesses adjacent to the Project sites would be notified in writing at least one week before beginning construction.

## **2.13 PERMITS AND APPROVALS**

APU would obtain all necessary permits prior to beginning the Project. Potential permits and approvals for the Project would be obtained from:

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Agency	Approval
<b>City of Anaheim</b> Lead Agency	<ul style="list-style-type: none"> <li>• Approval of the MND and the Project by the City Council.</li> <li>• Issuance of building, grading, right of way construction, storm drain, and well drilling permits.</li> <li>• Approval of Water Quality Management Plans (WQMP).</li> </ul>
<b>California Department of Fish and Wildlife</b> Responsible Agency	<ul style="list-style-type: none"> <li>• Issuance of a Lake and Streambed Alteration Agreement, if required.</li> </ul>
<b>Orange County Public Works / Orange County Flood Control District</b> Responsible Agency	<ul style="list-style-type: none"> <li>• Encroachment Permit for connections to flood control channels and future discharges.</li> </ul>
<b>Orange County Water District</b> Responsible Agency	<ul style="list-style-type: none"> <li>• Easement to connect piping to Anaheim Lake and for construction access.</li> </ul>
<b>South Coast Air Quality Management District</b> Responsible Agency	<ul style="list-style-type: none"> <li>• Demolition Notification (Rule 1403).</li> <li>• Emergency Backup Generator Permit to Construct and Permit to Operate.</li> </ul>
<b>State Water Resources Control Board</b> Responsible Agency	<ul style="list-style-type: none"> <li>• Issuance of Domestic Water Supply Permit Amendments.</li> <li>• Approval of Stormwater Pollution Prevention Plan (SWPPP).</li> <li>• Issuance of Waste Discharge Requirements and/or Clean Water Act Section 401 Certification, if required.</li> </ul>

### **3.0 ENVIRONMENTAL CHECKLIST**

#### **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.

- |   |   |  |
|---|---|--|
| <input type="checkbox"/> Aesthetics                         | <input type="checkbox"/> Agriculture and Forestry Resources | <input type="checkbox"/> Air Quality                 |
| <input type="checkbox"/> Biological Resources               | <input type="checkbox"/> Cultural Resources                 | <input type="checkbox"/> Geology / Soils             |
| <input type="checkbox"/> Greenhouse Gas Emissions           | <input type="checkbox"/> Hazards & Hazardous Materials      | <input type="checkbox"/> Hydrology / Water Quality   |
| <input type="checkbox"/> Land Use / Planning                | <input type="checkbox"/> Mineral Resources                  | <input type="checkbox"/> Noise                       |
| <input type="checkbox"/> Population / Housing               | <input type="checkbox"/> Public Services                    | <input type="checkbox"/> Recreation                  |
| <input type="checkbox"/> Transportation / Traffic           | <input type="checkbox"/> Tribal Cultural Resources          | <input type="checkbox"/> Utilities / Service Systems |
| <input type="checkbox"/> Mandatory Findings of Significance |   |  |

#### **DETERMINATION:** (To be completed by the City) 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.
- ☒ 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.
- 

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Jonathan Sanks  
Environmental Services and Safety Manager  
City of Anaheim Public Utilities Department

Date

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**EVALUATION OF ENVIRONMENTAL IMPACTS:** All answers must take account of the whole action involved, including offsite as well as onsite, cumulative as well as Project-level, indirect as well as direct, and construction as well as operational impacts.

- 1) A list of “Supporting Information Sources” must be attached and other sources used or individuals contacted should be cited in the Narrative Summary for each section.
- 2) Response Column Heading Definitions:
  - a. **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.
  - b. **Less Than Significant with Mitigation** applies where the incorporation of mitigation measures has reduced an effect from “Potentially Significant Impact” to a “Less Than Significant Impact”. The mitigation measures must be described, along with a brief explanation of how they reduce the effect to a less than significant level.
  - c. **Less Than Significant Impact** applies where the Project creates no significant impacts, only Less Than Significant impacts.
  - d. **No Impact** applies where a Project does not create an impact in that category. 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 proposed (e.g., the Project falls outside of 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 would not expose sensitive receptors to pollutants, based on a Project-specific screening analysis).

## 3.1 AESTHETICS

### Would the Project:

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
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	

#### a) Have a substantial adverse effect on a scenic vista?

**No Impact.** Scenic vistas are generally described in two ways: panoramic views (visual access to a large geographic area for which the field of view can be wide and extend into the distance),

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and focal views (visual access to a particular object, scene, or feature of interest). The proposed Project sites are located in heavily developed areas of the City. No scenic vistas, as identified in the City's General Plan (City of Anaheim, 2004a), exist within or in proximity to the Project sites. Therefore, there would be no impact on a scenic vista.

#### **b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?**

**No Impact.** The California Department of Transportation (Caltrans) administers the Scenic Highway Program, contained in the State Streets and Highways Code, Sections 260–263. State highways are classified as either Eligible for Scenic Designation, Officially Designated, or Connecting Federal Highway (Caltrans, 2019). The Project sites are not located on or near a State Scenic Highway and would not damage scenic resources within such a highway. Therefore, the Project would have no impact.

#### **c) Substantially degrade the existing visual character or quality of the site and its surroundings?**

**Less than Significant.** A potentially significant impact would occur if the Project were to introduce visual elements that would be incompatible with the character of the area surrounding the Project site. All Project sites currently contain existing water supply equipment such as wells, pumps, and water storage tanks. While the installation of new groundwater treatment vessels may be visible, placement of these structures is consistent with the existing equipment in use at each project site. Therefore, impacts would be less than significant.

#### **d) Create a new source of substantial light or glare which would adversely affect day or nighttime views in the area?**

**Less than Significant.** New utility lighting features would be installed at each site for security and safety. The lighting features would be adjusted such that they would not point directly into neighboring buildings. The new lighting would match the character of existing surrounding uses. Therefore, the impacts would be less than significant.

## 3.2 AGRICULTURE AND FORESTRY RESOURCES

### Would the Project:

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
a) Convert prime farmland, unique farmland, or farmland of statewide importance (farmland), as shown on the maps prepared pursuant to the farmland mapping and monitoring program of the California resources agency, to nonagricultural use?				X
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?				X
c) Conflict with existing zoning for, or cause rezoning of, forest land (per PRC Section 12220(g)), timberland (per PRC Section 4526), or timberland zoned				X

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	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
timberland production (as defined by Government Code Section 51104(g))?				
d) Result in the loss of forest land or conversion of forest land to nonforest use?				X
e) Involve other changes in the existing environment that, due to their location or nature, could result in conversion of farmland, to nonagricultural use or conversion of forest land to nonforest use?				X

**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?**

**No Impact.** The California Department of Conservation (CDOC), Farmland Mapping, and Monitoring Program (FMMP), compiles farmland maps pursuant to the provisions of Section 65570 of the California Government Code. These maps utilize data from the United States Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS) soil survey, and current land use information and represent an inventory of agricultural resources within Orange County. The maps depict currently urbanized lands and a qualitative sequence of agricultural designations. Maps and statistics are produced using a process that integrates aerial photo interpretation, field mapping, a computerized mapping system, and public review. Mapping of farmland categories is conducted every two years. Information is compiled and available in the California Important Farmland Finder (CIFF) application (CDOC, 2020). Based on these resources, all Project locations are designated as “Urban and Built-up Land”. There is no existing prime farmland, unique farmland, or farmland of statewide importance within or adjacent to the Project sites and no agricultural activities take place on the Project sites. No agricultural use or agricultural zones are proposed. Therefore, no impacts would occur.

**b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?**

**No Impact.** Williamson Act contracts restrict land development of contract lands. The contracts typically limit land use in contract lands to agriculture, recreation, and open space, unless otherwise stated in the contract. According to the City General Plan (City of Anaheim, 2004a), none of the Project locations are zoned for agricultural uses. The Projects would not conflict with a Williamson Act contract and no impacts would occur.

**c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Protection (as defined by Government Code section 51104(g))?**

**No Impact.** The Project sites are located in urbanized developed areas and are not located near or adjacent to forestland, timberland, or timberland zoned Timberland Production. According to the City General Plan (City of Anaheim, 2004a), none of the projects locations are zoned for forestry or similar uses. Therefore, no impacts would occur.



**d) Result in the loss of forest land or conversion of forest land to non-forest use?**

**No Impact.** There is no forestland within or adjacent to the Project sites. According to the City General Plan (City of Anaheim, 2004a), none of the projects locations are zoned for forestry or similar uses. Therefore, no impacts would occur.

**e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland to non-agricultural use or conversion of forest land to non-forest use?**

**No Impact.** There is no farmland near the Project sites. According to the City General Plan (City of Anaheim, 2004a), none of the Project locations are zoned for agriculture, forestry, or similar uses. The Project would not result in conversion of farmland to non-agricultural uses. Therefore, no impacts would occur.

### **3.2.1 FEDERAL ANALYSIS**

#### **Farmland Protection Policy Act**

**Is any portion of the project site located on important farmland?**

**No.** None of the Project sites are located on important farmland.

## **3.3 AIR QUALITY**

An air quality analysis was conducted, which is incorporated as Appendix A. The results of the air quality study are summarized in the following sections.

**Would the Project:**

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
a) Conflict with or obstruct implementation of the applicable air quality plan?		X		
b) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?		X		
c) Expose sensitive receptors to substantial pollutant concentrations?			X	
d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people)?			X	

**a) Conflict with or obstruct implementation of the applicable air quality plan?**

The purpose of a consistency finding is to determine if a project is inconsistent with the assumptions and objectives of the regional air quality plans, and, thus, if it would interfere with the region's ability to comply with federal and state air quality standards. The South Coast Air Quality Management District (SCAQMD) has established criteria for determining consistency with



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the currently applicable air quality management plan (AQMP) in Chapter 12, Sections 12.2 and 12.3, in the SCAQMD CEQA Air Quality Handbook. The criteria are as follows (SCAQMD, 1993):

- Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP.
- Whether the project would exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

To address the first criterion regarding the project's potential to result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP, project-generated criteria air pollutant emissions were estimated and analyzed for significance and are described below. Detailed results of this analysis are included in the California Emissions Estimator Model (CalEEMod) Emission and Energy Calculations within Appendix A. As presented below, project construction would not generate criteria air pollutant emissions that would exceed the SCAQMD thresholds with implementation of mitigation measure MM-AQ-1, which helps reduce fugitive dust emissions generated during construction. Furthermore, the project is not anticipated to generate substantial operational criteria air pollutant emissions.

The second criterion regarding the project's potential to exceed the assumptions in the AQMP or increments based on the year of project buildout and phase is primarily assessed by determining consistency between the project's land use designations and potential to generate population growth. In general, projects are considered consistent with and would not conflict with or obstruct implementation of the AQMP if the growth in socioeconomic factors is consistent with the underlying regional plans used to develop the AQMP (per Consistency Criterion No. 2 of the SCAQMD CEQA Air Quality Handbook). The SCAQMD primarily uses demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by the Southern California Association of Governments (SCAG) for its Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) (SCAG, 2016), which is based on general plans for cities and counties in the South Coast Air Basin (SCAB), for the development of the AQMP emissions inventory (SCAQMD, 2017). The SCAG 2016 RTP/SCS, and associated Regional Growth Forecast, are generally consistent with the local plans; therefore, the 2016 AQMP is generally consistent with local government plans.

The project does not include a change in zoning designation; no housing is proposed; and no additional employees would be required. The project would serve an existing need in the City and is proposed in order to reduce the City's current reliance on imported water supplies; however, the project is not being purposed in order to expand capacity or facilitate future growth. Accordingly, the project is consistent with the SCAG RTP/SCS forecasts used in the SCAQMD AQMP development and does not propose activities that would induce additional population in the project area.

In summary, based on the considerations presented for the two criteria, impacts relating to the project's potential to conflict with or obstruct implementation of the applicable AQMP would be less than significant.

#### **b) Result in a cumulatively considerable net increase of any criteria pollutant for which the Project region is non-attainment under an applicable federal or state ambient air quality standard?**

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and the SCAQMD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level

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thresholds of significance for criteria pollutants are used in the determination of whether a project's individual emissions would have a cumulatively considerable contribution on air quality. If a project's emissions would exceed the SCAQMD significance thresholds, it would be considered to have a cumulatively considerable contribution. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant (SCAQMD, 2003). This impact evaluation focuses on regional mass daily criteria air pollutant emissions; therefore, this assessment evaluates the project actions on the whole similar to the threshold analyzed above.

A quantitative analysis was conducted to determine whether proposed construction activities would result in a cumulatively considerable net increase in emissions of criteria air pollutants for which the SCAB is designated as nonattainment under the National Ambient Air Quality Standard (NAAQS) or California Ambient Air Quality Standard (CAAQS).

Appendix G of the CEQA Guidelines indicates that, where available, the significance criteria established by the applicable air district may be relied upon to determine whether a project would have a significant impact on air quality. The SCAQMD has established Air Quality Significance Thresholds, as revised in April 2019, which set forth quantitative emissions significance thresholds below which a project would not have a significant impact on ambient air quality (SCAQMD, 2019). The quantitative air quality analysis provided herein applies the SCAQMD thresholds to determine the potential for the project to result in a significant impact under CEQA. The SCAQMD mass daily construction and operational thresholds are shown in Table 1, below:

**Table 1 – SCAQMD Air Quality Significance Thresholds**

Threshold Type	VOC	NO <sub>x</sub>	Pounds Per Day		PM <sub>10</sub>	PM <sub>2.5</sub>
			CO	SO <sub>x</sub>		
Construction	75	100	550	150	150	55
Operational	55	55	550	150	150	55

Notes: VOC = volatile organic compounds, NO<sub>x</sub> = nitrogen oxides, CO = carbon monoxide, SO<sub>x</sub> = sulfur oxides, PM<sub>10</sub> = coarse particulate matter, PM<sub>2.5</sub> = fine particulate matter. See Appendix A for complete results.

The following discussion quantitatively evaluates project-generated impacts associated with construction and operational of the Project.

### **Construction Emissions**

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment and soil disturbance) and off-site sources (i.e., on-road haul trucks, delivery trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity; the specific type of operation; and, for dust, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts.

CalEEMod Version 2016.3.2 was used to estimate emissions for construction of the project. CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant emissions associated with construction activities from a variety of land use projects, such as residential, commercial, and industrial facilities. CalEEMod input parameters, including the land use type used to represent the project and size, construction schedule, and anticipated construction equipment utilization, were based on information provided and default model assumptions when project-specific data was not available.

Table 2, below, presents the estimated maximum daily construction emissions generated during construction of the project. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emission calculations are provided in Appendix A.

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**Table 2 – Estimated Maximum Daily Construction Criteria Air Pollutants**

Year	VOC	NO <sub>x</sub>	Pounds per Day			
			CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
2021	7.14	39.75	27.90	0.07	3.35	2.33
2022	4.05	5.53	7.61	0.01	0.43	0.30
2023	5.08	11.78	18.93	0.03	0.78	0.60
<b>Maximum Daily Emissions</b>	<b>7.14</b>	<b>39.75</b>	<b>27.90</b>	<b>0.07</b>	<b>3.35</b>	<b>2.33</b>
SCAQMD Threshold	75	100	550	150	150	55
<b>Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Notes: See Appendix A for complete results. These estimates reflect control of fugitive dust (watering two times daily) required by SCAQMD Rule 403, which is shown in the “mitigated” portion of the CalEEMod output, included in Appendix A.

As shown in Table 2, daily construction emissions would not exceed the SCAQMD significance thresholds for VOCs, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub> during project construction. Notably, the project would be required to adhere to SCAQMD Rule 403 to reduce fugitive dust emissions. The measures are included in mitigation measure MM-AQ-1 and would be implemented during project construction.

Therefore, with the incorporation of mitigation, project construction would not result in a cumulatively considerable increase in emissions of nonattainment pollutants, and impacts would be less than significant.

### Operational Emissions

Once construction associated with the water treatment facilities are completed, minimal operational activities associated with these components would occur (e.g., routine daily maintenance vehicle trips would be required and periodic testing of the emergency generator). Table 3, below, presents the maximum daily emissions associated with operation of the project. The values shown are the maximum summer and winter daily emissions results from CalEEMod for area, energy, mobile, and stationary source emissions. Complete details of the emissions calculations are provided in Appendix A.

**Table 3 – Estimated Maximum Daily Operational Criteria Air Pollutant Emissions**

Activity	VOC	NO <sub>x</sub>	Pounds per Day			
			CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Area	0.02	0.00	<0.01	0.00	0.00	0.00
Energy	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Mobile	0.01	0.02	0.24	<0.01	0.07	0.02
Emergency Generator Testing (Stationary)	3.48	9.72	8.87	0.02	0.51	0.51
<b>Total</b>	<b>3.51</b>	<b>9.74</b>	<b>9.11</b>	<b>0.02</b>	<b>0.58</b>	<b>0.53</b>
SCAQMD Threshold	55	55	550	150	150	55
<b>Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

Notes: See Appendix A for complete results. The values shown are the maximum summer or winter daily emissions results from CalEEMod.

As shown in Table 3, maximum daily operational emissions of VOCs, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> generated by the Project would not exceed the SCAQMD’s significance thresholds.

The SCAB has been designated as a federal nonattainment area for ozone (O<sub>3</sub>) and PM<sub>2.5</sub>, and a state nonattainment area for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SCAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction and operational activities of the project would generate VOCs and NO<sub>x</sub> emissions (precursors to O<sub>3</sub>) and emissions of PM<sub>10</sub> and PM<sub>2.5</sub>. However, as indicated in the above tables,

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project-generated emissions resulting from construction and operations would not exceed the SCAQMD emission-based significance thresholds for VOCs, NO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub>.

Cumulative localized impacts would potentially occur if a project were to occur concurrently with another off-site project. Schedules for potential future projects near the project component areas are currently unknown; therefore, potential impacts associated with two or more simultaneous projects would be considered speculative<sup>1</sup>. However, future projects would be subject to CEQA and would require air quality analysis and, where necessary, mitigation. Criteria air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by the SCAQMD. Cumulative PM<sub>10</sub> and PM<sub>2.5</sub> emissions would be reduced because all future projects would be subject to SCAQMD Rule 403 (Fugitive Dust), which sets forth general and specific requirements for all sites in the SCAQMD. In addition, cumulative VOC emissions would be subject to SCAQMD Rule 1113 (Architectural Coatings). Installation and operation of the emergency backup generator at the Linda Vista Site would also be subject to SCAQMD rules including Rule 201 (Permit to Construct), Rule 203 (Permit to Operate), Rule 1470 (Requirements for Stationary Diesel-Fueled Internal Combustion Engines), and Rule 1110.2 (Emissions from Gaseous and Liquid-fueled Engines).

Therefore, project operations would not result in a cumulatively considerable increase in emissions of nonattainment pollutants, and impacts would be less than significant during operation.

#### **Health Effects of Criteria Air Pollutants**

Construction and operational emissions of the project would not exceed the SCAQMD thresholds for any criteria air pollutants, including VOCs, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>.

Health effects associated with O<sub>3</sub> include respiratory symptoms, worsening of lung disease leading to premature death, and damage to lung tissue (California Air Resources Board [CARB], 2019). VOCs and NO<sub>x</sub> are precursors to O<sub>3</sub>, for which the SCAB is designated as nonattainment with respect to the NAAQS and CAAQS. The contribution of VOCs and NO<sub>x</sub> to regional ambient O<sub>3</sub> concentrations is the result of complex photochemistry. The increases in O<sub>3</sub> concentrations in the SCAB due to O<sub>3</sub> precursor emissions tend to be found downwind of the source location because of the time required for the photochemical reactions to occur. Further, the potential for exacerbating excessive O<sub>3</sub> concentrations would also depend on the time of year that the VOC emissions would occur, because exceedances of the O<sub>3</sub> NAAQS and CAAQS tend to occur between April and October when solar radiation is highest. Due to the lack of quantitative methods to assess this complex photochemistry, the holistic effect of a single project's emissions of O<sub>3</sub> precursors is speculative. That being said, because the project would not exceed the SCAQMD thresholds, the project would not contribute to health effects associated with O<sub>3</sub>.

Health effects associated with NO<sub>x</sub> include lung irritation and enhanced allergic responses (CARB, 2019). Because project-related NO<sub>x</sub> emissions would not exceed the SCAQMD mass daily thresholds, and because the SCAB is a designated attainment area for nitrogen dioxide (NO<sub>2</sub>) (and NO<sub>2</sub> is a constituent of NO<sub>x</sub>) and the existing NO<sub>2</sub> concentrations in the area are well below the NAAQS and CAAQS standards, it is not anticipated that the project would cause an exceedance of the NAAQS and CAAQS for NO<sub>2</sub> or result in potential health effects associated with NO<sub>2</sub> and NO<sub>x</sub>.

Health effects associated with CO include chest pain in patients with heart disease, headache, light-headedness, and reduced mental alertness (CARB, 2019). CO tends to be a localized impact associated with congested intersections. The associated potential for CO hotspots is discussed below (in the potential to expose sensitive receptors to substantial pollutant concentrations

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<sup>1</sup> The CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145).

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evaluation) and determined to be less than significant. Thus, the project's CO emissions would not contribute to significant health effects associated with CO.

Health effects associated with PM<sub>10</sub> include premature death and hospitalization, primarily for worsening of respiratory disease (CARB, 2019). Construction of the project would not exceed thresholds for PM<sub>10</sub> or PM<sub>2.5</sub>, would not contribute to exceedances of the NAAQS and CAAQS for particulate matter, and would not obstruct the SCAB from coming into attainment for these pollutants. The project would not result in substantial diesel particulate matter emissions during construction. Additionally, the project would be required to comply with SCAQMD Rule 403, which limits the amount of fugitive dust generated during construction. Due to the minimal contribution of particulate matter during construction, the project is not anticipated to result in health effects associated with PM<sub>10</sub> or PM<sub>2.5</sub>.

In summary, construction and operation of the project would not result in exceedances of the SCAQMD significance thresholds for criteria pollutants, and potential health effects associated with criteria air pollutants would be less than significant.

### Clean Air Act Conformity

The first step in the Clean Air Act General Conformity analysis is the applicability analysis where project-generated emissions are compared to the appropriate de minimis thresholds. Table 4, below presents the estimated annual criteria air pollutant emissions generated during construction of the project in 2021, 2022, and 2023. Notably, while there are no applicable de minimis thresholds for SO<sub>x</sub> because the SCAB is in attainment of the NAAQS, estimated annual emissions for SO<sub>x</sub> has been provided for disclosure.

**Table 4 – Estimated Annual Operational Criteria Air Pollutant Emissions**

Year	VOC	NO <sub>x</sub>	Tons per Year			
			CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
2021	0.07	0.72	0.64	<0.01	0.05	0.03
2022	0.09	0.81	0.92	<0.01	0.07	0.05
2023	0.07	0.40	0.58	<0.01	0.03	0.02
<b>De Minimis Threshold</b>	<b>10</b>	<b>10</b>	<b>100</b>	<b>N/A</b>	<b>100</b>	<b>70</b>
<b>Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>N/A</b>	<b>No</b>	<b>No</b>

Notes: See Appendix A for complete results. <0.01 = values less than reported 0.01. N/A = not applicable.

As shown in Table 4, estimated project-generated construction emissions would not exceed the de minimis thresholds, and no additional General Conformity analysis is required.

Table 5, below, presents the estimated annual criteria air pollutant emissions generated during operation of the Project. Estimated annual emissions for SO<sub>x</sub> has been provided for disclosure.

**Table 5 – Estimated Annual Operational Criteria Air Pollutant Emissions**

Activity	VOC	NO <sub>x</sub>	Tons per Year			
			CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
Area	<0.01	0.00	<0.01	0.00	0.00	0.00
Energy	<0.01	<0.01	<0.01	0.00	<0.01	<0.01
Mobile	<0.01	<0.01	0.04	<0.01	0.01	<0.01
Emergency Generator Testing (Stationary)	0.09	0.24	0.22	<0.01	0.01	0.01
<b>Total</b>	<b>0.09</b>	<b>0.24</b>	<b>0.26</b>	<b>&lt;0.01</b>	<b>0.02</b>	<b>0.01</b>
De Minimis Threshold	10	10	100	N/A	100	70
<b>Threshold Exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>N/A</b>	<b>No</b>	<b>No</b>

Notes: See Appendix A for complete results. <0.01 = values less than reported 0.01. N/A = not applicable.



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As shown in the table above, the annual operational emissions would not exceed the de minimis thresholds; therefore, further analysis is not required. As such, the project would be in compliance with the general conformity requirements and would not conflict with local air quality attainment or maintenance plans to achieve or maintain federal ambient air quality standards.

#### **c) Expose sensitive receptors to substantial pollutant concentrations?**

##### **Localized Significance Thresholds Analysis**

People most likely to be affected by air pollution include children, the elderly, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD, 1993). The nearest sensitive-receptor land uses differ for each of the four proposed sites, with the closest (single-family residences) immediately adjacent to the La Palma site to the south.

A localized significant threshold (LST) analysis has been prepared to determine potential impacts to nearby sensitive receptors during construction of the project. The SCAQMD also recommends the evaluation of localized NO<sub>2</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub> impacts as a result of construction activities to sensitive receptors in the immediate vicinity of the project site. The impacts were analyzed using methods consistent with those in the SCAQMD's Final Localized Significance Threshold Methodology (2009).

According to the Final Localized Significance Threshold Methodology, "off-site mobile emissions from the project should not be included in the emissions compared to the LSTs" (SCAQMD, 2009). Hauling of soils and construction materials associated with the project construction are not expected to cause substantial air quality impacts to sensitive receptors along off-site roadways. Emissions from the trucks would be relatively brief in nature and would cease once the trucks pass through the main streets.

Construction activities associated with the project would result in temporary sources of on-site fugitive dust and construction equipment emissions. Off-site emissions from vendor trucks, haul trucks, and worker vehicle trips are not included in the LST analysis. The maximum allowable daily emissions that would satisfy the SCAQMD localized significance criteria for Source Receptor Area (SRA) 17 are presented in Table 6, below and compared to the maximum daily on-site construction emissions generated during the project, which are rounded up to the nearest whole number.

**Table 6 – Localized Significance Thresholds Analysis for Project Construction**

<b>Pollutant</b>	<b>Project Construction Emissions (pounds per day)</b>	<b>LST Criteria (pounds per day)</b>	<b>Exceeds LST?</b>
NO <sub>2</sub>	39.47	81	No
CO	27.83	485	No
PM <sub>10</sub>	3.50	4	No
PM <sub>2.5</sub>	2.41	3	No

Notes: See Appendix A for complete results. <0.01 = values less than reported 0.01. N/A = not applicable. Localized significance thresholds are shown for 1-acre project sites corresponding to a distance to a sensitive receptor of 25 meters for SRA 17 (Central Orange County). These estimates reflect control of fugitive dust required by Rule 403. Source: SCAQMD, 2009.

As shown in Table 6, construction activities would not generate emissions in excess of site-specific LSTs; therefore, site-specific construction impacts during construction of the project would remain less than significant.

### **Health Impacts of Toxic Air Contaminants**

In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the state and federal government as toxic air contaminants (TACs) or hazardous air pollutants. State law has established the framework for California's TAC identification and control program, which is generally more stringent than the federal program and aimed at TACs that are a problem in California. The state has formally identified more than 200 substances as TACs, including the federal hazardous air pollutants, and is adopting appropriate control measures for sources of these TACs. The following measures are required by state law to reduce diesel particulate emissions:

- Fleet owners of mobile construction equipment are subject to the CARB Regulation for In-Use Off-road Diesel Vehicles (California Code of Regulations [CCR] Title 13 Section 2449), the purpose of which is to reduce diesel particulate matter (DPM) and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles.
- All commercial diesel vehicles are subject to CCR Title 13 Section 2485, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to 5 minutes; electric auxiliary power units should be used whenever possible.

The greatest potential for TAC emissions during construction would be diesel particulate emissions from heavy equipment operations and heavy-duty trucks during construction of the Project and the associated health impacts to sensitive receptors. The closest sensitive receptors are existing residences located immediately adjacent to the La Palma site. As shown in Table 2, maximum daily particulate matter (PM<sub>10</sub> or PM<sub>2.5</sub>) and TAC emissions generated by construction equipment operation and from hauling of soil during excavation of the well (exhaust particulate matter, or DPM), combined with fugitive dust generated by equipment operation and vehicle travel, would be well below the SCAQMD significance thresholds. Moreover, construction activities would be temporary, after which project-related TAC emissions would cease.

No residual TAC emissions and corresponding cancer risk are anticipated after construction, and no long-term sources of TAC emissions are anticipated during operation of the project. Thus, the project would not result in a long-term (i.e., 9-year, 30-year, or 70-year) source of TAC emissions. Therefore, the exposure of project-related TAC emission impacts to sensitive receptors would be less than significant.

### **Health Impacts of Carbon Monoxide**

Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed federal and/or state standards for CO are termed "CO hotspots." The transport of CO is extremely limited, as it disperses rapidly with distance from the source. Under certain extreme meteorological conditions, however, CO concentrations near a congested roadway or intersection may reach unhealthy levels, affecting sensitive receptors. Typically, high CO concentrations are associated with severely congested intersections operating at an unacceptable level of service (LOS) (LOS E or worse is unacceptable). Projects contributing to adverse traffic impacts may result in the formation of a CO hotspot. Additional analysis of CO hotspot impacts would be conducted if a project would result in a significant impact or contribute to an adverse traffic impact at a signalized intersection that would potentially subject sensitive receptors to CO hotspots.

At the time that the SCAQMD 1993 Handbook was published, the SCAB was designated nonattainment under the CAAQS and NAAQS for CO. In 2007, the SCAQMD was designated in attainment for CO under both the CAAQS and NAAQS as a result of the steady decline in CO concentrations in the SCAB due to turnover of older vehicles, introduction of cleaner fuels, and

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implementation of control technology on industrial facilities. The SCAQMD conducted CO modeling for the 2003 AQMP (Appendix V, Modeling and Attainment Demonstrations, of SCAQMD, 2003b) for the four worst-case intersections in the SCAB: (1) Wilshire Boulevard and Veteran Avenue, (2) Sunset Boulevard and Highland Avenue, (3) La Cienega Boulevard and Century Boulevard, and (4) Long Beach Boulevard and Imperial Highway. At the time the 2003 AQMP was prepared, the intersection of Wilshire Boulevard and Veteran Avenue was the most congested intersection in Los Angeles County, with an average daily traffic volume of about 100,000 vehicles per day. Using CO emission factors for 2002, the peak modeled CO 1-hour concentration was estimated to be 4.6 parts per million (ppm) at the intersection of Wilshire Boulevard and Veteran Avenue. The 1-hour CO CAAQS is 20 ppm; therefore, even when adding the background CO concentrations to the added CO concentrations at the study intersections, CO emissions did not exceed the 1-hour CO CAAQS. The 2003 AQMP also projected 8-hour CO concentrations at these four intersections for 1997 and from 2002 through 2005. From years 2002 through 2005, the maximum 8-hour CO concentration was 3.8 ppm at the Sunset Boulevard and Highland Avenue intersection in 2002; the maximum 8-hour CO concentration was 3.4 ppm at the Wilshire Boulevard and Veteran Avenue in 2002.

Accordingly, CO concentrations at intersections would not exceed the 1-hour or 8-hour CO CAAQS unless projected daily traffic would be at least over 100,000 vehicles per day. Because operation of the project would result in a maximum of one vehicle (two one-way trips) per day for maintenance activities at each site, it would not increase daily traffic volumes at any study intersection to more than 100,000 vehicles per day, a CO hotspot is not anticipated to occur, and associated impacts would be less than significant. In addition, due to continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SCAB is steadily decreasing. Based on these considerations, the project would result in a less-than-significant impact to air quality with regard to potential CO hotspots.

#### **d) Result in other emissions (such as those leading to odors adversely affecting a substantial number of people)?**

The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the project. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment, architectural coatings, and asphalt pavement application. Such odors would disperse rapidly from the Project site and generally occur at magnitudes that would not affect substantial numbers of people. Additionally, the Project would comply with SCAQMD Rule 1113 (Architectural Coatings). Therefore, impacts associated with odors during construction would be less than significant.

Land uses and industrial operations associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (SCAQMD, 1993). The project entails operation of water treatment facilities and equipment for the treatment of groundwater (not wastewater), which would not result in the creation of a land use that is commonly associated with odors. Therefore, project operations would result in an odor impact that is less than significant.

The Project would involve demolition of two structures at the Linda Vista site. SCAQMD Rule 1403 regulates the emissions of asbestos during demolition and renovation activities. Prior to conducting demolition, the contractor would be required to conduct a survey for the presence of asbestos, submit pre-demolition notification to the SCAQMD, and follow established procedures



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for safe handling, transport, and disposal of asbestos, if present. Compliance with Rule 1403 (Asbestos Emissions from Demolition / Renovation Activities) would ensure impacts from asbestos would be less than significant.

#### 3.3.1 MITIGATION MEASURES

Mitigation Measure	Description
MM-AQ-1	<p>The project contractor would be required to implement the following measures into construction plans and specifications as in accordance with South Coast Air Quality Management District (SCAQMD) Rule 403:</p> <ul style="list-style-type: none"> <li>All clearing, grading, earth-moving, or excavation activities shall cease or best management practices outlined in SCAQMD Rule 403(g)(2) shall be implemented when winds exceed 25 miles per hour (mph) per SCAQMD guidelines in order to limit fugitive dust emissions.</li> <li>Prior to the commencement of construction activities, the City shall require its construction contractor to water any exposed soils and/or soil stockpiles at least three times daily, or utilize another SCAQMD-approved dust control non-toxic agent in accordance with the manufacturer's instructions.</li> <li>The contractor shall ensure that traffic speeds on unpaved roads and Project site areas are reduced to 15 mph or less.</li> </ul>

#### 3.4 BIOLOGICAL RESOURCES

A biological resources study was conducted, which is incorporated as Appendix B. The results of the biological resources study are summarized in the following sections.

##### Would the Project:

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?		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 Wildlife or U.S. Fish and Wildlife Service?				X
c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?		X		

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	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?				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

**a) Have a substantial adverse effect, either directly or through habitat modifications, on any species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?**

**Less Than Significant Impact with Mitigation.**

**Special-Status Plant Species**

The four project sites do not provide suitable habitat to support any special-status plant species known to occur in the region. All four sites are significantly disturbed or developed and do not contain any native habitats or soils capable of supporting special-status species. The undeveloped areas at all four sites have been graded and disturbed so that the observed surface soils are now compacted and contain little to no native species. Therefore, the project would not result in impacts to any special-status plant species, and no mitigation is required.

**Special-Status Wildlife Species**

The four project sites do not provide suitable habitat to support any special-status wildlife species known to occur in the region. All four sites are significantly disturbed or developed and do not contain any native habitats capable of supporting special-status wildlife. All four sites are disturbed, surrounded by developed areas, and isolated from any undisturbed native habitat. Additionally, there are no linkages to the project site that could support special-status wildlife from moving onto the site. A permitted fairy shrimp biologist conducted a habitat assessment of Anaheim Lake and the adjacent inlet basin and depressional area and determined that no suitable habitat for listed fairy shrimp species occurs on the Linda Vista site. However, the aquatic habitat and surrounding upland areas located within Anaheim Lake at the Linda Vista site provides moderate quality habitat for two special-status wildlife species including osprey and coast horned lizard. The proposed project footprint of the Linda Vista site is limited to disturbed areas characterized by bare ground; however, upland areas adjacent to the project footprint may provide suitable habitat for coast horned lizard and aquatic areas associated with the basin may provide suitable habitat for osprey. Therefore, if these species are determined to occur in the immediate vicinity of the project site, potential indirect impacts may occur.

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Potential project-related impacts to coast horned lizard and osprey is expected to be minimal; however, if a population of coast horned lizards is found on the Linda Vista site, project impacts would be considered significant. Therefore, mitigation measure MM-BIO-1 would be required, which involves conducting a pre-construction clearance survey at the Linda Vista site within 3 calendar days prior to the start of construction activities to reduce potential impacts to non-listed special-status wildlife species such as coast horned lizard.

Lastly, the four project sites provide suitable nesting habitat for a number of common and migratory bird species, such as ospreys, which are known to occur within upland suburban and urban settings and will nest within ornamental trees and on disturbed bare ground. Therefore, project activities that take place at any of the four sites during the avian nesting season of February through August may result in potential impacts to nesting birds, which would be considered significant without mitigation. Therefore, implementation of mitigation measure MM-BIO-2 is required to reduce potential impacts to nesting birds to a less than significant level.

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

**No Impact.** The proposed project will not result in impacts to any sensitive natural community because none were observed within any of the four project sites. There are no native vegetation communities or riparian/wetland habitats located within or immediately adjacent to any of the project sites. Therefore, the proposed project will have no impact on sensitive vegetation communities.

#### **c) Have a substantial adverse effect on state or federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?**

**Less Than Significant Impact with Mitigation.** No potentially jurisdictional wetlands or waters occur within any of the four project sites. A concrete-lined flood control channel occurs adjacent to but outside of the project impact area for the La Palma site and Energy Field site. No project activities would occur to adjacent channels for these two project sites and no impact would occur. Additionally, no potential impacts to jurisdictional features would occur at the Boysen Park site.

However, the Linda Vista project site occurs adjacent to Anaheim Lake and within a concrete-lined inlet basin, which may be considered jurisdictional features by the regulatory agencies. The project would include construction of an outfall structure within the inlet basin, which would result in an impact to a potentially jurisdictional feature.

The concrete inlet basin connected to Anaheim Lake is a cement structure that contains little to no water most of the year, has no connectivity to a relatively permanent water, has no ordinary high water mark, and no vegetation of any kind. As such, this inlet basin is not considered a jurisdictional feature regulated by the United States Army Corps of Engineers. However, it may still be considered a jurisdictional feature by the RWQCB and CDFW due to the presence of water that could affect downstream water quality and provide habitat for local wildlife species, especially birds. Project-related impacts to a regulated water of the state may be considered significant without mitigation. Therefore, MM-BIO-3 will be required to reduce potential impacts to a less-than-significant level.

#### **d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?**

**No Impact.** The project would not result in significant direct or indirect permanent impacts with regard to wildlife movement or use of native wildlife nursery sites. Existing habitat linkages and

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wildlife corridor functions in the region would remain intact while project activities are conducted and following completion. Project activities would not result in impacts to wildlife movement because construction of the proposed residence would not impede wildlife movement through the area due to the relatively limited size of the project footprint and lack of movement opportunities. Therefore, construction of the proposed project would result in no impact to wildlife corridors and migratory routes.

#### **e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?**

**Less than significant impact.** The City protects street trees and significant trees within the Scenic Corridor Overlay Zone. The project may involve the removal of ornamental trees and vegetation along the perimeter of the Linda Vista site and at the Boysen Park Site. Per the Anaheim Municipal Code, the project would involve the replacement of removed trees, where feasible, with trees that are included on the Official Tree Species List and Tree Master Plan, in coordination with the Director of Community Services or his or her designee. Additionally, the project sites are not located within the Scenic Corridor Overlay Zone. Adherence to the Anaheim Municipal Code and coordination with the Director of Community Services would ensure that the project would have a less-than-significant impact with regard to local policies and ordinances protecting biological resources such as street and significant trees protected by the City. No mitigation would be required.

#### **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?**

**No Impact.** The proposed project is not located within any local or regional Natural Community Conservation Plan (NCCP), including the Orange County NCCP/Habitat Conservation Plan (HCP), as the project occurs outside of the boundaries of the Central/Coastal subarea plan of the Orange County NCCP/HCP. Therefore, the project is not required to comply with the goals and provisions of the any NCCP/HCP and the project will result in no impact to any local or regional NCCPs, and no mitigation is required.

### **3.4.1 MITIGATION MEASURES**

<b>Mitigation Measure</b>	<b>Description</b>
MM-BIO-1	In order to avoid potential impacts to coast horned lizards within the Linda Vista site, a biologist shall conduct a pre-construction clearance survey within 3 calendar days prior to the start of construction activities. If this species is observed during the pre-construction survey, the project biologist shall require additional measures to reduce potential impacts such as establishing an appropriate buffer around an active nest, on-site construction monitoring by a qualified biological monitor, and/or moving individuals to off-site areas out of harm's way.
MM-BIO-2	In order to avoid potential direct and indirect impacts to nesting birds, including ospreys, project activities within all four project sites shall avoid the bird nesting season (generally February 1 through August 30) to ensure compliance with the Migratory Bird Treaty Act and California Fish and Game Code Section 3500 et seq. If avoidance of the nesting season is not feasible, then a pre-construction nesting bird survey shall be conducted by a qualified biologist within 3 calendar days prior to the start of construction activities to ensure that birds are not engaged in active nesting within 500 feet of the project's construction limits.

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Mitigation Measure	Description
	If nesting birds are discovered during pre-construction surveys, then the biologist shall identify an appropriate buffer where no project activities are allowed to occur until after the birds have fledged from the nest. Construction activities may continue only at the discretion of an on-site monitoring biologist, or when the nest is no longer active.
MM-BIO-3	<p>In order to determine if the concrete inlet basin is considered jurisdictional, a formal jurisdictional delineation should be conducted to map the limits and extent of potential regulatory agency jurisdiction. The Regional Water Quality Control Board (RWQCB) and California Department of Fish and Wildlife (CDFW) could exert jurisdiction over the inlet basin due to the presence of water that could affect downstream water quality and provide habitat for local wildlife species, especially birds. Project-related impacts may require 401 Certification or Waste Discharge Requirement (WDR) from the RWQCB and a Streambed Alteration Agreement from CDFW under Section 1600 of California Fish and Game Code.</p> <p>After consultation with RWQCB and CDFW, which may include a preliminary site visit and the sharing of Project information, if permits are determined to be required by the resources agencies, these permits may require mitigation for impacts to wetlands and waters that ensure no net loss of jurisdictional aquatic resources. A conceptual wetlands mitigation and monitoring plan may be required as part of the permit applications. This plan shall be prepared and shall prescribe site preparation, planting, irrigation, and a multi-year maintenance and monitoring program with qualitative and quantitative evaluation of the revegetation effort and specific criteria to determine successful revegetation. Mitigation may also be carried out through the purchase of in-lieu fee credits from an agency-approved mitigation bank in the same watershed. In addition, permit conditions may include other avoidance and minimization measures that could constrain the project. The appropriate mitigation approach and ratio shall be determined through agency consultation.</p>

### 3.5 CULTURAL RESOURCES

A cultural resources assessment and historic property search was conducted, which is incorporated as Appendix C. The results of the assessments are summarized in the following sections.

**Would the Project:**

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?			X	



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	Potentially Significant Impact	Less-Than- Significant Impact with Mitigation	Less-Than- Significant Impact	No Impact
b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?			X	
c) Disturb any human remains, including those interred outside of dedicated cemeteries?			X	

**a) Cause a substantial adverse change in the significance of a historical resource pursuant to § 15064.5?**

**Less Than Significant Impact.** Under CEQA, a project may have a significant effect on the environment if it may cause “a substantial adverse change in the significance of an historical resource” (PRC Section 21084.1; CEQA Guidelines Section 15064.5(b)). An “historical resource” is any site listed or eligible for listing in the California Register of Historical Resources (CRHR). The CRHR listing criteria are intended to examine whether the resource in question:

- Is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage;
- Is associated with the lives of persons important in our past;
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or
- Has yielded, or may be likely to yield, information important in pre-history or history.

The term “historical resource” also includes any site described in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of PRC Section 5024.1(q)).

As described in Appendix C, a California Historical Resources Information System (CHRIS) records search was completed by staff at the South Central Coastal Information Center (SCCIC) on January 22, 2021. The CHRIS search included a review of all recorded archaeological and built-environment resources as well as a review of cultural resource reports on file. In addition, the California Points of Historical Interest, the California Historical Landmarks, the CRHR, the National Register of Historic Places, and the California State Built Environment Resources Directory listings. The records search identified 22 previously conducted cultural resource technical investigations within the records search area. None of these studies overlap/intersect the Project area of potential effect (APE). Additionally, the SCCIC records indicate that one prehistoric archaeological site and one built environment resource were identified within the records search area; none of these resources are within the Project APE. A search of the Native American Heritage Commission’s (NAHC) Sacred Lands File (SLF) of the proposed Project APE was completed October 22, 2020. The result of that search was negative for Native American resources at the La Palma, Boysen Park, and Energy Field Sites, and with positive results for Linda Vista Site. The NAHC also provided a list of 11 Native American groups and individuals who may have knowledge of the presence of Native American resources in the proposed Project APE or Project vicinity. Details of the SLF results are presented in Appendix C. The proposed

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Project is subject to compliance with Assembly Bill (AB) 52. Native American consultation pursuant to AB 52 was completed by the City, and is described further in Section 3.18.

An archaeological pedestrian survey of the Project APE was conducted on December 16, 2020. As a result of existing Project site conditions, an opportunistic approach was employed, that involved walking parallel transects, spaced no more than 3-5 meters apart (approximately 9-16 feet), in areas of exposed ground surface when possible and visually inspecting areas that were physically inaccessible or obscured by buildings, structures, large metal containers, and parked vehicles. No cultural material was observed within the Project APE during the pedestrian survey.

No newly or previously recorded cultural resources were identified within the direct APE as a result of the CHRIS records search, Native American coordination, or pedestrian survey. The APE has been subject to consistent ground disturbance as previously discussed above. Therefore, the impacts to cultural resources would be less than significant.

#### **b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to § 15064.5?**

**Less Than Significant Impact With Mitigation.** CEQA applies to “unique archaeological resources.” California Public Resources Code Section 21083.2(g) defines a “unique archaeological resource” as any archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

- Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
- Has a special and particular quality such as being the oldest of its type or the best available example of its type.
- Is directly associated with a scientifically recognized important prehistoric or historic event or person.

As described above, and further in Appendix C, no newly or previously recorded cultural resources were identified within the direct APE as a result of the CHRIS records search, Native American coordination, or pedestrian survey. The APE has been subject to consistent ground disturbance as previously discussed above. Therefore, the likelihood of encountering an archaeological resource is low. However, there is always a chance that unanticipated resources could be encountered. Implementing MM-CUL-1 would ensure that the impacts to archaeological resources would be less than significant.

#### **c) Disturb any human remains, including those interred outside of dedicated cemeteries?**

**Less Than Significant Impact.** As described in Appendix C, no human remains or cemeteries are known to exist within or near the Project sites. While unlikely, in accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be notified within 24 hours of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined, within two working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the remains are determined to be Native American, the Coroner shall notify the NAHC in Sacramento within 24 hours of the determination. In accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the most likely descendant (MLD) from the deceased Native American. The MLD shall complete their inspection within 48 hours of being

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granted access to the site. The MLD shall then determine, in consultation with the property owner, a plan for disposition of the human remains. If no descendants can be identified, the NAHC shall select the representative responsible for the disposition of the remains. All arrangements pertaining to treatment and disposition Native American human remains shall be made in consultation between the MLD/Tribal representative and the landowner.

#### **3.5.1 MITIGATION MEASURES**

<b>Mitigation Measure</b>	<b>Description</b>
MM-CUL-1	<p>All construction personnel and monitors who are not trained archaeologists shall be briefed regarding inadvertent discoveries prior to the start of construction activities. A presentation and handout or pamphlet shall be prepared in order to ensure proper identification and treatment of inadvertent discoveries. The purpose of the Workers Environmental Awareness Program (WEAP) training is to provide specific details on the kinds of archaeological materials that may be identified during construction of the Project and explain the importance of and legal basis for the protection of significant archaeological resources. Each worker shall also learn the proper procedures to follow in the event that cultural resources or human remains are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection, and the immediate contact of the site supervisor and archaeological monitor.</p> <p>A qualified archaeologist shall be retained and on-call to respond and address any inadvertent discoveries identified during initial excavation in native soil. Initial excavation is defined as initial construction-related earth moving of sediments from their place of deposition. As it pertains to archaeological monitoring, this definition excludes movement of sediments after they have been initially disturbed or displaced by project-related construction. A qualified archaeological principal investigator, meeting the Secretary of the Interior's Professional Qualification Standards, shall oversee and adjust monitoring efforts as needed (increase, decrease, or discontinue monitoring frequency) based on the observed potential for construction activities to encounter cultural deposits or material. The archaeological monitor shall be responsible for maintaining daily monitoring logs.</p> <p>In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed Project, all construction work occurring within 100 feet of the find shall immediately stop and a qualified archaeologist notified immediately to assess the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find, the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.</p> <p>If monitoring is ultimately required, an archaeological monitoring report shall be prepared within 60 days following completion of ground disturbance. This report shall document compliance with approved mitigation and all monitoring efforts as well as include an appendix with copies of all daily monitoring logs. The final report shall be submitted to the SCCIC.</p>

## 3.6 ENERGY

An energy analysis was conducted, which is incorporated as Appendix A. The results of the energy analysis are summarized in the following sections. The significance criteria used to evaluate the project impacts to energy is based on the recommendations provided in Appendix G of the CEQA Guidelines. For the purposes of this energy analysis, a significant impact would occur if the project would (14 CCR 15000 et seq.):

- Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
- Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

### Would the Project:

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?			X	
b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?			X	

### a) Result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

**Less Than Significant Impact.** Implementation of the project would minimally increase the demand for electricity and natural gas at the project site and gasoline consumption in the region during construction and operation.

### Electricity

#### **Construction Use**

Temporary electric power for as-necessary lighting and electronic equipment (such as computers inside temporary construction trailers, and heating, ventilation, and air conditioning) would be provided by City. The amount of electricity used during construction would be minimal; typical demand would stem from the use of electrically powered hand tools and several construction trailers by managerial staff during the hours of construction activities. The majority of the energy used during construction would be from petroleum. The electricity used for construction activities would be temporary and minimal; therefore, impacts would be less than significant.

#### **Operational Use**

The operational phase of the project would require electricity for multiple purposes including building heating and cooling, lighting, water treatment processes, and for water and wastewater conveyance. The project is subject to statewide mandatory energy requirements as outlined in CCR Title 24, Part 6. CCR Title 24, Part 11 contains additional energy measures that are applicable to the project under the California Green Building Standards Code (CALGreen). This would apply to the new operations building in addition to the new pumps. Overall, due to the



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inherent increase in efficiency of building code regulations, the project would not result in a wasteful use of energy. Impacts related to operational energy use would be less than significant.

#### **Natural Gas**

##### ***Construction Use***

Natural gas is not anticipated to be required during construction of the project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed under the subsection “Petroleum,” below. Any minor amounts of natural gas that may be consumed as a result of project construction would be temporary and negligible, and would not have an adverse effect; therefore, impacts would be less than significant.

##### ***Operational Use***

The project is subject to statewide mandatory energy requirements as outlined in CCR Title 24, Part 6. CCR Title 24, Part 11 contains additional energy measures that are applicable to the project under CALGreen. Prior to project approval, the contractor would ensure that the project would meet Title 24 requirements applicable at that time, as required by state regulations through their plan review process. Thus, the natural gas consumption of the project would not be considered inefficient or wasteful, and impacts would be less than significant.

#### **Petroleum**

##### ***Construction Use***

Petroleum would be consumed throughout construction of the project. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, and vehicle miles traveled (VMT) associated with the transportation of construction materials and construction worker commutes would also result in petroleum consumption. Heavy-duty construction equipment associated with construction activities and on-site haul trucks involved in relocating dirt around the project site would rely on diesel fuel. Construction workers would travel to and from the project site throughout the duration of construction. It is assumed that construction workers would travel to and from the project site in gasoline-powered vehicles.

Heavy-duty construction equipment of various types would be used during construction. CalEEMod was used to estimate construction equipment usage; results are included in Appendix A. Based on that analysis, diesel-fueled construction equipment would operate for an estimated 12,726 hours, as summarized in Table 7, below:

**Table 7 – Estimated Hours of Operation for Construction Equipment**

<b>Project Site</b>	<b>Hours of Equipment Use</b>
La Palma	3,692
Linda Vista	5,596
Boysen Park	924
Energy Field	2,514
<b>Total</b>	<b>12,726</b>

**Notes:**

See Appendix A.

Fuel consumption from construction equipment was estimated by converting the total carbon dioxide (CO<sub>2</sub>) emissions from each construction phase to gallons using conversion factors for CO<sub>2</sub> to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kilograms (kg) per metric ton (MT) CO<sub>2</sub> per gallon, and the conversion factor for diesel is 10.21 kg per MT CO<sub>2</sub> per gallon (The Climate Registry, 2020). The estimated diesel fuel use from construction equipment is shown in Table 8, below:

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**Table 8 – Estimated Construction Equipment Diesel Demand**

Project Site	Pieces of Equipment	Equipment CO <sub>2</sub> (MT)	Kg CO <sub>2</sub> /Gallon*	Gallons
La Palma	23	137.33	10.21	13,450.88
Linda Vista	26	144.98	10.21	14,200.09
Boysen Park	15	15.61	10.21	1,651.24
Energy Field	15	351.37	10.21	5,356.90
<b>Total</b>				<b>34,659.12</b>

Notes:

\* The Climate Registry 2020.

See Appendix A. CO<sub>2</sub> = carbon dioxide; kg = kilogram; MT = metric ton

Fuel consumption from worker and vendor trips was estimated by converting the total CO<sub>2</sub> emissions from the construction phase to gallons using the conversion factors for CO<sub>2</sub> to gallons of gasoline or diesel. Worker vehicles are assumed to be gasoline fueled, and vendor vehicles are assumed to be diesel fueled. Calculations for total worker, vendor, and haul truck fuel consumption are provided in Table 9, below:

**Table 9 – Estimated Construction Vehicle Fuel Demand**

Project Site	Trips	Vehicle CO <sub>2</sub> (MT)	Kg CO <sub>2</sub> /Gallon*	Gallons
<b>Construction Worker Vehicle Gasoline Demand</b>				
La Palma	1,754	8.34	8.78	950.08
Linda Vista	2,920	13.15	8.78	1,497.55
Boysen Park	602	2.67	8.78	608.86
Energy Field	1,286	5.70	8.78	954.37
<b>Subtotal</b>				<b>4,010.87</b>
<b>Construction Vendor Truck Diesel Demand</b>				
La Palma	446	5.44	10.21	532.63
Linda Vista	2,920	13.15	10.21	1,497.55
Boysen Park	154	1.81	10.21	357.28
Energy Field	392	4.60	10.21	644.60
<b>Subtotal</b>				<b>3,032.07</b>
<b>Construction Haul Truck Diesel Demand</b>				
La Palma	40	1.49	10.21	146.27
Linda Vista	66	2.43	10.21	238.48
Boysen Park	8	0.28	10.21	174.03
Energy Field	6	0.14	10.21	160.15
<b>Subtotal</b>				<b>718.92</b>
<b>Petroleum Total</b>				<b>7,761.85</b>

Notes:

\* The Climate Registry 2020.

See Appendix A.

As shown in Tables 8 and 9, the project is estimated to consume 42,421 gallons of petroleum during the construction phase. By comparison, approximately 56 billion gallons of petroleum would be consumed in California over the course of the project's construction phase based on the California daily petroleum consumption estimate of approximately 78.6 million gallons per day (Energy Information Administration [EIA], 2019). Furthermore, the project would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. Therefore, because petroleum use during construction would be temporary and relatively minimal, and would not be wasteful or inefficient, impacts would be less than significant.

### ***Operational Use***

The fuel consumption resulting from the project's operational phase would be attributable to daily maintenance vehicle trips to each site. Similar to construction worker and truck trips, fuel consumption for operation was estimated by converting the total CO<sub>2</sub> emissions from the worker truck trips to gallons using the conversion factors for CO<sub>2</sub> to gallons of gasoline or diesel. Based on use of light duty trucks and the countywide proportion of gasoline and diesel on-road VMT. The estimated annual fuel use from project operational mobile sources is shown in Table 10, below:

**Table 10 – Petroleum Consumption – Operation**

<b>Fuel</b>	<b>Vehicle MT CO<sub>2</sub></b>	<b>Kg CO<sub>2</sub>/Gallon*</b>	<b>Gallons</b>
Gasoline	10.61	8.78	1,208.34

Notes:

\* The Climate Registry 2020.

See Appendix A.

As shown in Table 10, mobile sources from the project would result in approximately 1,208 gallons of petroleum fuel usage per year. For context only, California as a whole consumes approximately 28.7 billion gallons of petroleum per year (EIA, 2019). Over the lifetime of the project, the fuel efficiency of the vehicles being used by the vendor trucks is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time due to advances in fuel economy.

In summary, although the project would increase petroleum use during operation as a result of employees and visitors traveling to and from the project site, the use would be a small fraction of the statewide use and, due to efficiency increases, would diminish over time. Given these considerations, petroleum consumption associated with the project would not be considered inefficient or wasteful and would result in a less than significant impact.

### **b) Conflict with or obstruct a state or local plan for renewable energy or energy efficiency?**

**Less Than Significant Impact.** CCR Title 24, Part 6 was established in 1978 and serves to enhance and regulate California's building standards. Part 6 establishes energy efficiency standards for residential and nonresidential buildings constructed in California to reduce energy demand and consumption. Part 6 is updated periodically (every 3 years) to incorporate and consider new energy efficiency technologies and methodologies. CCR Title 24 also includes Part 11, CALGreen. CALGreen institutes mandatory minimum environmental performance standards for all ground-up, new construction buildings. As applicable, the project would meet Title 24 and CALGreen standards to reduce energy demand and increase energy efficiency. Furthermore, as discussed above, the project would not conflict with the various regulations and plans that would reduce energy use. Overall, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, impacts during construction and operation of the project would be less than significant.

## 3.7 GEOLOGY AND SOILS

### Would the Project:

	Potentially Significant Impact	Less-Than- Significant Impact with Mitigation	Less-Than- Significant Impact	No Impact
a) Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			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 direct or indirect 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	
f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?		X		



**a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving?**

**i. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?**

**Less Than Significant Impact.** Preliminary geotechnical investigations were conducted at each of the four Project locations (AESCO 2020a, 2020b, 2020c, and 2020d). Copies of the geotechnical reports are provided in Appendix D. The geotechnical reports state that the Project sites are not located within a currently designated Alquist-Priolo Earthquake Zone and no active or potentially active faults or fault traces are known to be located in the Project sites vicinity. The geotechnical reports indicate that the closest fault to the Project sites is the Puente Hills (Coyote Hills) fault, which is located approximately 1.8 miles from the La Palma Site, and further from the other sites. The Project sites are not in a Seismic Hazard Zone as specified by the State of California. In addition, aside from construction activities and occasional maintenance activities, the Project sites would not be subject to continuous occupancy. Because there are no known faults on the Project sites, the impacts would be less than significant.

**ii. Strong seismic ground shaking?**

**Less Than Significant Impact.** Like all of Southern California, the Project sites would be subject to ground shaking generated from earthquakes on local and regional faults. However, as described above, the sites are not within mapped earthquake fault zones and the closest known fault is approximately 1.8 miles away. The Project sites have the potential for ground shaking and failure during major earthquakes along faults throughout Southern California, including the Whittier Fault, Newport-Inglewood Fault Zone, San Andreas Fault System, and others. The intensity of the ground shaking would depend on the distance to the epicenter and the geology of the areas between the epicenter and the Project area. However, no continuously occupied structures would be built for the Project. In addition, construction would be conducted in accordance with the latest approved building codes and would be subject to conditions imposed by building permits. Therefore, impacts would be less than significant.

**iii. Seismic-related ground failure, including liquefaction?**

**Less Than Significant Impact.** Soil liquefaction is a seismically induced form of ground failure that has been a cause of earthquake damage in Southern California. Liquefaction takes place when saturated granular materials lose strength and transform from a solid to a liquid. The California Geological Survey (CGS) has designated certain areas within Southern California as potential liquefaction hazard zones. These are areas considered at a risk of liquefaction-related ground failure during a seismic event. Preliminary geotechnical investigations were conducted at each of the four Project locations (AESCO 2020a, 2020b, 2020c, and 2020d). Copies of the geotechnical reports are provided in Appendix D. With the exception of the Linda Vista Site, AESCO concluded that the potential for liquefaction was low. AESCO noted that the Linda Vista Site was mapped within a liquefaction hazard zone by CGS and conducted additional analysis. AESCO concluded that the potential for liquefaction at the Linda Vista Site would be high.

However, the Project activities do not include construction of any new continuously occupied structures. In addition, construction would be conducted in accordance with the latest approved building codes and would be subject to conditions imposed by building permits. Therefore, impacts would be less than significant.

**iv. Landslides?**

**No Impact.** None of the sites contains major landforms. All Project areas are relatively flat with no nearby slopes. A review of the CGS Seismic Hazards Zones maps (CGS, 1998a and 1998b)

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indicates that the Project sites are not located in “Earthquake-Induced Landslides” zones, which is defined as an area where previous occurrence of landslide movement or local topographic, geological, geotechnical, and subsurface water conditions indicate a potential for permanent ground displacement such that mitigation as defined in PRC Section 2693(c) would be required. Because topography conducive to landslides is not present, there would be no impact.

#### **b) Result in substantial soil erosion or the loss of topsoil?**

**Less Than Significant Impact.** Grading and earthwork during construction would expose soil to potential short-term erosion by wind and water. The Project would be required to comply with erosion and siltation control measures during construction as required by the Anaheim Municipal Code and in compliance with grading permits. Additionally, the Project must comply with the NPDES permitting process. Construction impacts would be minimized through compliance with the General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Construction General Permit). This would require developing and implementing a SWPPP. The SWPPP would include erosion and sediment-control Best Management Practices (BMPs) to control the release of sediment. Complying with these requirements would ensure that potential Project impacts are less than significant.

#### **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?**

**Less Than Significant Impact.** As noted above, there is always a risk for seismic shaking in Southern California. However, the Project sites are generally flat with no topographic features. No structures would be continuously occupied which could be impacted by landslide, lateral spreading, subsidence, liquefaction, or collapse. In addition, construction would be completed in accordance with building codes. Therefore, impacts would be less than significant.

#### **d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?**

**No Impact.** Soil borings were drilled at each Project site as described in the preliminary geotechnical investigations (AESCO 2020a, 2020b, 2020c, and 2020d). Copies of the geotechnical reports are included in Appendix D. The soil borings indicated that the sites are underlain by sand, silty sand, clayey sand, silt, and silty gravel. No prominent clay layers were reported in the geotechnical reports. Therefore, expansive soil do not pose a direct or indirect risk to life or property and there would be no impact.

#### **e) Have soils incapable of adequately supporting the use of septic tanks or alternative waste water disposal systems where sewers are not available for the disposal of waste water?**

**No Impact.** Some water would be discharged into Anaheim Lake, or into flood control / stormwater channels during system startup, shutdown, testing, and maintenance. Discharges to the flood control system would be permitted by Orange County Public Works to ensure adequate capacity is available. Anaheim Lake is designed to facilitate groundwater recharge, and is capable of receiving water discharged from the Project. The new operations building at the Linda Vista Site would have a new restroom. However, it would be connected to an existing sewer and no septic sites would be necessary. Therefore, impacts would be less than significant.

#### **f) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?**

**Less Than Significant Impact with Mitigation.** The Project sites are located in previously developed urban areas subject to extensive ground disturbance. Most excavation activities would be limited to soil within 10 feet of the ground surface. The ground surface at each Project site has

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been mapped as Quaternary young (Holocene) alluvial fan deposits (United States Geological Survey [USGS], 2004). The Anaheim General Plan Environmental Impact Report (the EIR) (City of Anaheim, 2004b) discusses the occurrence of paleontological resources within the City. The EIR notes areas with moderate to high fossil sensitivity may be found in Paleocene, Eocene, and older rocks, and are predominantly located in the hill and canyon areas east of the Project sites. The EIR does not report areas of elevated paleontological sensitivity in Quaternary soils found within the proposed Project sites. Additionally, a record search conducted by the Natural History Museum of Los Angeles County (Appendix E). No paleontological resources were identified on any of the Project sites. However, the record search reported sheep fossils have been encountered in Pleistocene alluvium in the City. The Proposed Project would be required to comply with PRC Section 5097.5, which prohibits persons from knowingly and willfully excavating upon, or removing, destroying, injuring, or defacing any vertebrate paleontological site, including fossilized footprints or other paleontological features. In addition, all Project sites are flat, and lack any visible geologic features. While the likelihood of encountering fossils is low, incorporating mitigation measure MM-GEO-1 would ensure the impacts would be less than significant.

#### 3.7.1 MITIGATION MEASURES

Mitigation Measure	Description
MM-GEO-1	Unanticipated Discovery of Paleontological Resources. In the event that paleontological resources are inadvertently unearthed during excavation activities, the contractor shall immediately cease all earth-disturbing activities within a 100-foot radius of the area of discovery and the contractor shall immediately notify the City. The contractor shall retain a qualified professional paleontologist to evaluate the significance of the find, and in consultation with the City, determine an appropriate course of action. If the paleontological resources are found to be significant, the paleontologist, in consultation with the City, shall determine appropriate actions for exploration and salvage. After the find has been appropriately avoided or mitigated, work in the area may resume.

### 3.8 GREENHOUSE GAS EMISSIONS

A greenhouse gas (GHG) emissions analysis was conducted, which is incorporated as Appendix A. The results of the GHG emissions analysis are summarized in the following sections.

#### Would the Project:

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?			X	
b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?			X	

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- a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

**Less Than Significant Impact.**

#### Construction Emissions

Construction of the project would result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road vendor trucks, and worker vehicles. The SCAQMD Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold (2008) recommends that “construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies.” Thus, the total construction GHG emissions were calculated, amortized over 30 years, and added to the total operational emissions for comparison with the GHG significance threshold of 3,000 MT CO<sub>2</sub>e per year. The determination of significance, therefore, is addressed in the operational emissions discussion following the estimated construction emissions.

CalEEMod was used to estimate the annual GHG emissions. Construction of the project is anticipated to commence in September 2021. On-site sources of GHG emissions include off-road equipment, and off-site sources include vendor trucks and worker vehicles. Table 11, below, presents construction GHG emissions for the project in 2021, 2022, and 2023 from on-site and off-site emission sources:

**Table 11 – Estimated Annual Construction Greenhouse Gas Emissions**

Year	Metric Tons			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> E
2021	143.11	0.04	0.00	114.08
2022	172.34	0.04	0.00	173.39
2023	90.89	0.04	0.00	91.39
<b>Total</b>				<b>408.86</b>
<b>Amortized Over 30 Years</b>				<b>13.63</b>

Notes: CH<sub>4</sub> = methane; N<sub>2</sub>O = nitrous oxide; CO<sub>2</sub>E = carbon dioxide equivalent.  
See Appendix A for complete results.

As shown in Table 11, the estimated total GHG emissions during construction would be approximately 144 MT CO<sub>2</sub>e in 2021, 173 MT CO<sub>2</sub>e in 2022, and 91 MT CO<sub>2</sub>e in 2023, for a total of 409 MT CO<sub>2</sub>E over the construction period. Estimated project-generated construction emissions amortized over 30 years would be approximately 14 MT CO<sub>2</sub>E per year. As with project-generated construction air quality pollutant emissions, GHG emissions generated during construction of the project would be short-term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. As stated above, construction emissions are amortized and added to operational emissions to estimate total project-generated GHG emissions.

#### Operational Emissions

For long-term operations, the project would require a mobile trip (two one-way trips) per day for each site, primarily associated with routine inspection and maintenance activities by district staff. Indirect GHG emissions associated with energy to supply the new facilities was also estimated for the project. Operational emissions associated with on-road vehicles, energy consumption, water supply and wastewater, solid waste, and stationary sources were estimated and are depicted in Table 12, below:



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**Table 12 – Estimated Annual Operational Greenhouse Gas Emissions**

Emission Source	Metric Tons			
	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> E
Area	0.00	0.00	0.00	0.00
Energy	7.03	<0.01	<0.01	7.05
Mobile	10.61	<0.01	0.00	10.62
Solid Waste	0.25	0.01	0.00	0.62
Water Supply and Wastewater	2.18	0.01	<0.01	2.43
Emergency Generator Testing (Stationary)	40.36	<0.01	0.00	40.51
			Total	61.23
			Amortized Construction Emissions	13.63
			<b>Operation + Amortized Construction Total</b>	<b>74.86</b>

Notes: <0.01 = value less than reported 0.01.  
See Appendix A for complete results.

As shown in Table 12, the project would result in approximately 61 MT CO<sub>2</sub>E per year as a result of project operations. After summing the project's amortized construction emissions, total GHGs generated by the project would be approximately 75 MT CO<sub>2</sub>E per year. As such, annual operational GHG emissions with amortized construction emissions would not exceed the applied threshold of 3,000 MT CO<sub>2</sub>E per year. Therefore, the project's GHG emissions would be less than significant.

**b) Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?**

**Less Than Significant Impact.** Applicable plans adopted for the purpose of reducing GHG emissions including the City of Anaheim's Greenhouse Gas Reduction Plan (GHG Reduction Plan), SCAG's 2020-2045 RTP/SCS, CARB's Scoping Plan, Senate Bill (SB) 32, and Executive Order (EO) S-3-05. A consistency analysis with these regulations and plans are presented below.

**Project Consistency with City of Anaheim Greenhouse Gas Reduction Plan**

The GHG Reduction Plan demonstrates the City's commitment to pursue energy efficiency and reduce GHGs across the community and municipal operations and establishes new revised and new goals for 2030 and 2045 (APU, 2020). The GHG Reduction plan presents the City's goals in achieving GHG reductions in several categories including from power supplies, renewable power supplies, water conservation and drought resiliency, energy efficiency, shade trees, street lighting, distributed solar energy systems, transportation electrification, and electric fleet vehicles. The project would divert as much waste during construction as required in accordance with state law.

In addition, the project would not inhibit the City from reducing water demand or per-capita water use, the project would include the construction of new groundwater wells, water pipelines, and water treatment facilities. Therefore, the project does not conflict with any of the GHG-reducing measures of the GHG Reduction Plan, and thus, is consistent with this plan.

**Project Consistency with SCAG's 2020 RTP/SCS**

At the regional level, SCAG has adopted the 2020–2045 RTP/SCS for the purpose of reducing GHG emissions attributable to passenger vehicles in the City and surrounding areas. Although the RTP/SCS does not regulate land use or supersede the exercise of land use authority by SCAG's member jurisdictions (e.g., the City), the RTP/SCS is a relevant regional reference document for purposes of evaluating the connection of land use and transportation patterns and the corresponding GHG emissions. The 2020 RTP/SCS provides broad direction and guidance for future development – encouraging the development of new uses in areas well served by transit, and in urban infill areas.

### **Project Consistency with CARB's Scoping Plan**

The Scoping Plan (approved by CARB in 2008 and updated in 2014 and 2017) provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects, nor is it intended to be used for project-level evaluations.<sup>3</sup> Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., Low Carbon Fuel Standard), among others.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of Assembly Bill (AB) 32 and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. Appendix A, Table 12 highlights measures that have been, or will be, developed under the Scoping Plan and presents the project's consistency with Scoping Plan measures. The project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent required by law and to the extent that they are applicable to the project. The project would not conflict with any of the Scoping Plan measures, and therefore, the project is consistent with this plan.

### **Project Consistency with SB 32 and EO S-3-05**

The project would not impede the attainment of the most recent state GHG reduction goals identified in SB 32 and EO S-3-05 and. SB 32 establishes a statewide goal of reducing GHG emissions to 40% below 1990 levels by 2030, while EO S-3-05 establishes a statewide goal of reducing GHG emissions to 80% below 1990 levels by 2050. While there are no established protocols or thresholds of significance for that future year analysis, CARB forecasts that compliance with the current Scoping Plan puts the state on a trajectory of meeting these long-term GHG goals, although the specific path to compliance is unknown (CARB, 2014).

CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan that "California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32" (CARB, 2014, p. ES2). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update to the Climate Change Scoping Plan states the following (CARB, 2014, p. 34):

This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions.

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, EO B-30-15, and EO S-3-05. This is confirmed in the 2017 Scoping Plan, which states the following (CARB, 2017):

The Scoping Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while also identifying new, technologically feasible, and cost-effective strategies to ensure that California meets its GHG reduction targets in a way that

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promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities.

As discussed previously, the project is consistent with the SCAG's 2020 RTP/SCS and CARB's 2017 Scoping Plan, and would not conflict with the state's trajectory toward future GHG reductions. In September 2018, EO B-55-18 was signed which commits the state to total carbon neutrality by 2045. However, since the specific path to compliance for the state in regards to the long-term goals will likely require development of technology or other changes that are not currently known or available, specific additional mitigation measures for the project would be speculative and cannot be identified at this time. The project's consistency would assist in meeting the City's contribution to GHG emission reduction targets in California.

With respect to future GHG targets under SB 32 and EO S-3-05, CARB has also made clear its legal interpretation is that it has the requisite authority to adopt whatever regulations are necessary, beyond the AB 32 horizon year of 2020, to meet SB 32's 40% reduction target by 2030 and EO S-3-05's 80% reduction target by 2050; this legal interpretation by an expert agency provides evidence that future regulations will be adopted to continue the state on its trajectory toward meeting these future GHG targets.

#### Summary

Based on the considerations previously outlined, the project would not generate substantial GHG emissions or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and no mitigation is required. This impact would be less than significant.

## 3.9 HAZARDS AND HAZARDOUS MATERIALS

### Would the Project:

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?			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

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	Potentially Significant Impact	Less-Than- Significant Impact with Mitigation	Less-Than- Significant Impact	No Impact
d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?				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 or excessive noise for people residing or working in the Project area?				X
f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
g) Expose people or structures either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?				X

**a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?**

**Less Than Significant Impact.**

**Construction**

Minor amounts of hazardous materials such as fuels, oils, lubricants, paints, and solvents may be used during construction of the Project. Exposure to these material could result from the improper handling or use of hazardous substances or an inadvertent release resulting from an unforeseen event (e.g., fire, flood, or earthquake). The small quantities of hazardous materials that would be transported, used, or disposed of would likely be well below reportable quantities. Construction activities would be conducted with standard construction practices and in accordance with all applicable California Division of Occupational Safety and Health (Cal/OSHA) and other safety regulations to minimize the risk to the public. Compliance with federal, State, and local hazardous materials laws and regulations would minimize the risk to the public presented by these potential hazards during construction of the Project.

**Operation**

Sodium hypochlorite (bleach) is used to disinfect water at each of the Sites. Sodium hypochlorite would continue to be used at each of the Site, and tanks and pumping equipment would be expanded at the La Palma and Linda Vista Sites to disinfect the increased flow of treated water. New storage tanks would be located in areas with secondary containment, and compatible for storing the sodium hypochlorite. The pumping equipment would be installed in an equipment room, and tanks would be equipped with berms to capture spills. Resin containing PFOS and PFOA would be generated. However, because the PFOS and PFOA would be bound to the resin, any spills of resin material could be cleaned and removed without creating a significant hazard to the public or the environment. Spent resin would be transported by truck to an appropriately

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permitted facility for regeneration or disposal in accordance with California Department of Toxic Substances Control (DTSC) and USEPA requirements.

Operation activities would be conducted with standard construction practices and in accordance with all applicable Cal/OSHA and other safety regulations to minimize the risk to the public. Compliance with federal, State, and local hazardous materials laws and regulations would minimize the risk to the public presented by these potential hazards during construction of the Project. A Hazardous Materials Business Plan would be filed with the Anaheim Fire and Rescue Department (AFD) in accordance with Certified Unified Program Agencies (CUPA) requirements.

Compliance with existing law, regulations, and widely-accepted industry standards would minimize the hazard to the public and the environment. Therefore, potential impacts associated with the transport, use, storage, handling and disposal of hazardous materials during operation of the proposed Project would be less than significant.

#### **b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?**

**Less Than Significant Impact.** As noted above, minor amounts of hazardous materials may be used during construction. However, they would not pose a threat to the public. During operation, resin containing PFOS and PFOA would be generated. However, because the PFOS and PFOA would be bound to the resin, any spills of resin material could be cleaned and removed without creating a significant hazard to the public or the environment. Any hazardous materials stored at the sites would be described in a Hazardous Materials Business Plan and submitted to AFD as required by existing regulations. These plans would ensure that the locations, quantities, and cleanup procedures are available to emergency personnel. Additionally, a search of APU records did not reveal historical spills in the Project work areas. Complying with existing environmental and safety regulations and industry standards would minimize the hazard to the public and the environment.

It is possible that asbestos or lead would be encountered while demolishing two buildings at the Linda Vista site. Lead exposure is regulated by CalOSHA under CCR Title 8, Section 1532.1. Asbestos exposure is regulated at the federal, state, and local levels under Code of Federal Regulations (CFR) Title 40 Part 61 Subpart M, CCR Title 8, Section 1529, and SCAQMD Rule 1403. Adhering to these existing regulations would reduce the potential impacts to a less than significant level.

Therefore, the Project would not result in a significant hazard to the public or the environment through a reasonably foreseeable upset or accident condition related to the release of hazardous materials. This impact would be less than significant.

#### **c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?**

**No Impact.** Schools are not located within one-quarter mile of the Linda Vista or Energy Field Sites. Horace Mann Elementary School is located approximately 0.15 miles east of the La Palma Site and Thomas Jefferson Elementary School is adjacent to the Boysen Park Site. However, none of the sites will emit hazardous emissions, or handle acutely hazardous substances or wastes. Complying with existing environmental and safety regulations and industry standards would ensure that the Project would not emit hazardous emissions. This impact would be less than significant.



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**d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?**

**No Impact.** The Project sites are not included on any hazardous materials sites compiled pursuant to Government Code Section 65962.5 commonly referred to as the "Cortese List" (California Environmental Protection Agency [CalEPA], 2020). There are no active hazardous materials facilities on or adjacent to the Project sites that are listed in the DTSC EnviroStor Database (DTSC, 2020) or the SWRCB GeoTracker databases (SWRCB, 2020). Therefore, no impacts would occur.

**e) For a Project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project result in a safety hazard or excessive noise for people residing or working in the Project area?**

**No Impact.** Fullerton Municipal Airport is the closest public airport, and is located approximately three miles northwest of the La Palma site, and further from the other Project sites. None of the Project sites are located within two miles of a public airport and are not located within an airport land use plan. This condition precludes the possibility of the Project exposing persons residing or working in the Project vicinity to aviation hazards. No impact would occur.

**f) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?**

**Less Than Significant Impact.** Most Project activities would be conducted within the limits of the existing treatment sites. Work in these area would have no impact on emergency response or evacuation plans. Construction activities would be conducted in public roadways which would cause temporary traffic impacts, such as lane closures. Traffic control devices would be installed in accordance with the California Manual for Uniform Traffic Control Devices (MUTCD) (Caltrans, 2020a) and would be conducted in accordance with City Public Works Department requirements which would include obtaining a City Right of Way Construction Permit. Therefore, these temporary impacts would be less than significant.

**g) Expose people or structures either directly or indirectly, to a significant risk of loss, injury or death involving wildland fires?**

**No Impact.** The Project sites are not located within the wildfire hazard zone as specified by the City General Plan. Areas surrounding the Project site consist of urban development with minimal ground cover or vegetation. The lack of abundant vegetation and the amount of development on or near the Project sites does not support a wildfire. Therefore, the Project does not have the potential to expose people or structures to a significant risk of loss, injury or death involving wildland fires. No impact would occur.

### **3.10 HYDROLOGY**

**Would the Project:**

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
a) Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or groundwater quality?			X	

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	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?			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 or through the addition of impervious surfaces, in a manner which would:				
i) result in substantial erosion or siltation on- or off-site;			X	
ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site;			X	
iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; or			X	
d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?			X	
e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?			X	

**a) Violate any water quality standards or water discharge requirements or otherwise substantially degrade surface or groundwater quality?**

**Less Than Significant Impact.** The City has adopted a Local Implementation Plan (LIP) based upon Orange County's Drainage Area Management Plan (DAMP). Using the LIP as a guide, the City approves project-specific Water Quality Management Plans (WQMPs) as part of the project approval process prior to the issuance of permits. WQMPs are required for new development or significant redevelopment projects in the City. A WQMP must address:

- Regional or watershed programs,
- Source control BMPs,
- Site design BMPs,
- Low impact development BMPs,
- Treatment control BMPs, and
- Mechanism by which long-term operation and maintenance of all structural BMPs would be maintained.

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The La Palma, Linda Vista, and Boysen Park Sites have existing WQMPs. To comply with these existing City requirements, the WQMPs for these sites would be updated to reflect the proposed site conditions. A new WQMP will be developed for the Energy Field Site.

To comply with the Clean Water Act, the SWRCB issued the statewide NPDES Construction General Permit (Order 2009-0009-DWQ). Under this permit, construction sites with a disturbed area of one or more acres are required to submit a Notice of Intent, risk assessment, site map, SWPPP, and signed certification statement to the SWRCB. The SWPPP must list BMPs that will be implemented to prevent stormwater from carrying pollutants to receiving waters. It must also describe a visual monitoring program; a chemical monitoring program for “non-visible” pollutants to be implemented based on the risk level of the site, and inspection, reporting, training, and recordkeeping requirements. The City requires projects that disturb less than one acre to include an Erosion and Sediment Control Plan (ESCP) with the grading or building plan submittal. The exact area of disturbance will be calculated prior to development as grading plans are finalized. If the total ground disturbance areas exceed one acre, a SWPPP would be prepared to comply with the existing state requirements. If the total ground disturbance area is less than one acre, an ESCP would be prepared. BMPs required by either plan will be implemented as required.

Occasionally, water might need to be flushed to waste from each of the new treatment sites, and from the new water supply well during construction and routine operation. These discharges might need to occur during startup, shutdown, testing, and water quality sampling. The City is allowed to conduct discharges from the drinking water system pursuant to the NPDES Permit for Drinking Water system Discharges to Waters of the United States (Order 2014-0194-DWQ). Compliance with this existing permit would ensure that discharged waters are free of sediment and chlorine, and do not pose a threat to Waters of the United States. These discharges would occur directly into Anaheim Lake at the Linda Vista Site. The other sites would discharge into the existing City storm drain system or into flood control channels.

Compliance with these existing requirements will cause the impacts to water quality to be less than significant.

#### **b) Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?**

**Less Than Significant Impact.** The Project would result in construction of a new well at the La Palma site, which would be capable of extracting groundwater at approximately 4,000 GPM. The wells would extract groundwater from the Orange County Groundwater Basin (the Basin). Sustainability of the Basin is managed by the OCWD. OCWD manages the total pumping establishing a Basin Production Percentage (BPP). The BPP determines the sustainable amount of water a water supplier may obtain from groundwater, as opposed to imported water. Because the APU pumping rates are established system-wide using the BPP established by OCWD, operation of the new well would cause minimal increases in groundwater extraction from the basin and the impacts would be less than significant.

**c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:**

- i) result in substantial erosion or siltation on- or off-site;**
- ii) substantially increase the rate or amount of surface runoff in a manner which would result in flooding on-or off-site;**
- iii) create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?**

**Less Than Significant Impact.** Minor grading will be necessary for construction of the treatment plants and associated piping. The Project sites have existing storm drain connections and catch basins that would continue to accept runoff, and the Project would not result in additional surface runoff flooding on or off-site. If needed, the catch basins and piping would be resized or relocated to ensure each site would drain properly. Some impervious material, such as concrete foundations, would be installed. Complying with the BMP requirements in the Construction General Permit would ensure that erosion and sediment controls would be in place during construction. Complying with building permit requirements would ensure that storm drains and catch basins can accommodate the runoff at each Project site, and we ensure that there would be no significant impacts after construction. Therefore, impacts would be less than significant.

**d) In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation?**

**Less Than Significant Impact.** The Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Maps were reviewed for each Project site (FEMA 2009a, 2009b, 2009c, and 2009d). The Boysen Park La Palma, and Energy Field Sites are identified as "Zone X", meaning they have a 0.2 percent annual chance of flood and are not within 100-year flood hazard zones. The water treatment portion of the Linda Vista Site is in an area with reduced flood risk due to levee. Therefore, the flood risk would be less than significant.

Tsunamis and seiches are large waves created when a body of water shakes. The treatment sites are located approximately 10 to 16 miles inland from the ocean, at elevations ranging from approximately 120 to 250 feet above mean sea level, outside the reach of a tsunami. The La Palma and Linda Vista Sites have existing reservoirs. However, the reservoirs were designed to accommodate ground shaking that could reasonably be expected with low risk of seiche affects. Therefore, the impacts would be less than significant.

**e) Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?**

**Less Than Significant Impact.** The Santa Ana RWQCB and its Basin Plan regulate water quality in the City and at the Project sites. The Basin Plan contains water quality goals and policies and identifies beneficial uses for receiving waters, along with water quality criteria and standards consistent with federal and state water quality laws. The Project would not violate any water quality standards and would therefore not obstruct the implementation of the Basin Plan. The Project would comply with the NPDES Construction General Permit and SWPPP requirements and implement necessary BMPs. Any water discharges would be in conformance with the NPDES Permit for Drinking Water system Discharges to Waters of the United States (Order 2014-0194-DWQ). Therefore, impacts would be less than significant.

The Project would result in construction of a new well at the La Palma Site, which would be capable of extracting groundwater at approximately 4,000 GPM. The well would extract groundwater from the Orange County Groundwater Basin (the Basin). Sustainability of the Basin is managed by the OCWD. OCWD manages the total pumping establishing a Basin Production

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Percentage (BPP). The BPP determines the sustainable amount of water a water supplier may obtain from groundwater, as opposed to imported water. Because the APU pumping rates are established system-wide using the BPP established by the OCWD, operation of the new well would cause minimal increases in groundwater extraction from the basin and the impacts would be less than significant.

#### **3.10.1 FEDERAL EVALUATIONS**

##### **Floodplain Management – Executive Order 11988**

**Is any portion of the project site located within a 100-year floodplain as depicted on a floodplain map or otherwise designated by FEMA?**

**No.** The FEMA Flood Insurance Rate Maps were reviewed for each Project site (FEMA 2009a, 2009b, 2009c, and 2009d). None of the Project sites are within 100-year floodplains.

##### **Wild and Scenic Rivers Act**

**Is any portion of the project located within a wild and scenic river?**

**No.** The Nationwide Rivers Inventory (NPS, 2021) was consulted. There are no wild and scenic rivers within the City.

**Identify watershed where the Project is located.**

The Boysen Park, Energy Field, and Linda Vista Project sites are located within the Santa Ana River watershed. The La Palma Project site is located within the San Gabriel River watershed.

##### **Safe Drinking Water Act, Sole Source Water Protection**

**Is the Project located within a sole source aquifer as designated by the EPA?**

**No.** There are no sole source aquifers in the City. (USEPA, 2021).

### **3.11 LAND USE AND PLANNING**

**Would the Project:**

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
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

#### **a) Physically divide an established community?**

**No Impact.** The Project would involve constructing groundwater treatment facilities in existing City properties. The Project would not physically divide an established community and there would be no impact.



**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?**

**No Impact.** The Project sites are existing City properties. These properties contain existing water production and distribution infrastructure, and the Project is consistent with the existing land uses. Further, the Project sites would be exempt from the Anaheim Zoning Code (AMC 18.90.040). Therefore, there would be no impact.

### 3.11.1 FEDERAL EVALUATIONS

#### Coastal Barrier Resources Act and Coastal Zone Management Act

**Is any portion of the project site within a Coastal Barrier Resource Zone or Coastal Zone?**

**No.** The Project sites range from approximately 10 to 16 miles from the Pacific Ocean. None of the Project sites are located within a Coastal Barrier Resources Zone or Coastal Zone.

## 3.12 MINERAL RESOURCES

**Would the Project:**

	Potentially Significant Impact	Less-Than- Significant Impact with Mitigation	Less-Than- Significant Impact	No Impact
a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				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

**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?**

**No Impact.** The Project sites are located in developed areas, limiting the potential for mineral resource conservation or extraction. No mineral resource extraction, recovery, or processing activities underway on or adjacent to the Project sites. The sites are not designated in the City's General Plan (City of Anaheim, 2004a) or Zoning Code for any extractive use. Implementation of the Project would have no impact on the availability of known mineral resources.

**b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?**

**No Impact.** The Project sites are located in developed areas, limiting its potential for mineral resource conservation or extraction. The Project sites are not classified as areas of locally important mineral resource recovery and are not zoned for mineral use (City of Anaheim, 2004a). Therefore, no impact would occur.

## 3.13 NOISE

A noise analysis was conducted, which is incorporated as Appendix F. The results of the noise analysis are summarized in the following sections.

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### Would the Project result in the:

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?		X		
b) Generation of excessive groundborne vibration or groundborne noise levels?			X	
c) For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?			X	

### a) Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

**Less Than Significant Impact with Mitigation.**

### On-Site Construction Noise

Construction activities under the project would generate noise from the use of heavy equipment (tractors, backhoes, cement and mortar mixers, drilling rigs, and other similar equipment) at the sites or from vehicles transporting material to or from the project sites. Equipment anticipated for the project would typically not include those with substantially higher noise-generation characteristics (e.g., pile drivers, rock drills, or blasting equipment). This type of equipment would not be necessary for implementation of the project. However, at the La Palma project site, construction of the new water well would necessitate the operation of a drilling rig continuously (24 hours per day).

As described in Appendix F, Approach and Methodology, the Federal Highway Administration's Roadway Construction Noise Model (RCNM) (FHWA, 2008) and equipment assumptions, based on input from project engineers and operations staff, were used to estimate noise levels at the nearest receivers, as well as at typical noise source-receiver distances. The input and output from the RCNM analyses are included in Appendix F, and the results are summarized in the following sections.

### **La Palma Site**

The construction activity noise levels at the La Palma Site are summarized in Table 13, below:

**Table 13 – Construction Noise Summary of Results (dBA Leq), La Palma Site**

Activity	Residences to the South	Residences to the West	Residences to the North
<b>Water Well Construction</b>			
Grading	73	67	59

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Activity	Residences to the South	Residences to the West	Residences to the North
Well Construction	76	69	62
Equipment Installation	68	62	54
<b>Pipeline Construction</b>			
Grading, Installation	88	72	66
Pipeline Construction, Final Paving	81	65	60
<b>Water Treatment Plant Construction</b>			
Site Preparation and Grading	87	68	63
Building Construction and Equipment Installation	82	68	63
Security, Entrance, and Landscaping	81	68	63
Architectural Coating	78	68	63
Paving	80	64	66

Notes:

See Appendix F.

dBA = A-weighted decibel; Leq = equivalent continuous sound level (time-averaged sound level).

As shown in Table 13, construction activity noise levels at the nearest source-receiver distances (residences to the south) are estimated to range from approximately 73 dBA Leq during water well construction grading to approximately 88 dBA Leq during pipeline construction grading and installation. At further locations such as the residences to the west and the north, construction noise levels would be considerably lower. Work would typically occur between the hours of 7:00 a.m. and 7:00 p.m., and thus, would not exceed applicable local noise standards.

However, well construction activities would take place 24 hours per day until well drilling is complete. During well construction, the estimated noise level is approximately 76 dBA Leq at the nearest noise-sensitive receivers (residences to the south). At the residences to the west and to the north, well construction noise is estimated to be approximately 69 and 62 dBA Leq, respectively. Because the well drilling activities would take place outside of the hours (7:00 a.m. to 7:00 p.m.) for which construction noise is exempted from the noise standard of 60 dBA per Section 6.70.010 of the AMC, this would be a potentially significant noise impact.

Additionally, daytime construction noise levels would exceed the Federal Transit Administration (FTA) noise standard of 80 dBA Leq at nearby noise-sensitive land uses. Implementation of mitigation measures MM-NOI-1 and MM-NOI-2 would be required to reduce the noise impacts from construction activities to less than significant with mitigation.

***Linda Vista Site***

The construction activity noise levels at the Linda Vista Site are summarized in Table 14, below:

**Table 14 – Construction Noise Summary of Results (dBA Leq), Linda Vista Site**

Activity	Residences to the North
<b>Pipeline Construction</b>	
Grading, Installation	63
Pipeline Construction, Final Paving	57
<b>Water Treatment Plant Construction</b>	
Demolition	56
Site Preparation and Grading	57
Building Construction and Equipment Installation	53
Security, Entrance, and Landscaping	50
Architectural Coating	46
Paving	49

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See Appendix F.

As shown in Table 14, construction activity noise levels at the nearest source-receiver distances (residences to the north) are estimated to range from approximately 46 dBA  $L_{eq}$  during water treatment plant architectural coating to approximately 63 dBA  $L_{eq}$  during pipeline grading and installation. Work would typically occur between the hours of 7:00 a.m. and 7:00 p.m., and thus, would not exceed applicable local noise standards or the FTA's advisory noise standard. Therefore, construction impacts would be less than significant at this site; no mitigation is required.

#### **Boysen Park Site**

The construction activity noise levels at the Boysen Park Site are summarized in Table 15, below:

**Table 15 – Construction Noise Summary of Results (dBA Leq), Boysen Park Site**

Activity	Tennis Courts to the South	Baseball Field to the North	Residences to the South
<b>Pipeline Construction</b>			
Grading, Installation	80	78	66
Pipeline Construction, Final Paving	74	71	60
<b>Water Treatment Plant Construction</b>			
Demolition	77	69	57
Site Preparation and Grading	78	71	58
Building Construction and Equipment Installation	76	70	59
Security, Entrance, and Landscaping	76	73	61
Architectural Coating	77	69	57
Paving	79	71	60

Notes:  
See Appendix F.

As shown in Table 15, construction activity noise levels at the nearest source-receiver distances (the tennis courts to the south) are estimated to range from approximately 74 dBA  $L_{eq}$  during the paving phase of pipeline construction to approximately 80 dBA  $L_{eq}$  during pipeline construction grading and installation. At further locations such as the baseball field to the north and residences to the south, construction noise levels would be lower. At the nearest residences, construction noise would range from approximately 57 dBA  $L_{eq}$  to 66 dBA  $L_{eq}$ . Work would typically occur between the hours of 7:00 a.m. and 7:00 p.m., and thus, would not exceed applicable local noise standards; however, maximum noise levels would be equivalent to the FTA's advisory noise standard (80 dBA  $L_{eq}$ ), and would approach this standard during other construction activities. Implementation of mitigation measure MM-NOI-1 would be required to ensure that noise impacts from construction activities are less than significant with mitigation.

#### **Energy Field Site**

The construction activity noise levels at the Energy Field Site are summarized in Table 16, below:

**Table 16 – Construction Noise Summary of Results (dBA Leq), Energy Field Site**

Activity	Playground and Picnic Benches	Residences to the West	Residences to the South
<b>Pipeline Construction</b>			
Grading, Installation	91	81	66

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Activity	Playground and Picnic Benches	Residences to the West	Residences to the South
Pipeline Construction, Final Paving	83	74	60
<b>Water Treatment Plant Construction</b>			
Demolition	91	74	66
Building Construction and Equipment Installation	86	74	63
Security, Entrance, and Landscaping	77	63	63
Architectural Coating	86	74	65
Paving	77	74	61

Notes:

See Appendix F.

As shown in Table 16, construction activity noise levels at the nearest source-receiver distances (the playground and picnic benches) are estimated to range from approximately 77 dBA Leq during the paving and landscaping phases of water treatment plant construction to approximately 91 dBA Leq during pipeline construction grading and installation and the demolition phase of water treatment plant construction. At further locations such as the residences to the west and to the south, construction noise levels would be lower. At the nearest residences, construction noise would range from approximately 63 dBA Leq to 81 dBA Leq. Work would typically occur between the hours of 7:00 a.m. and 7:00 p.m., and thus, would not exceed applicable local noise standards; however, maximum noise levels would exceed the FTA's advisory noise standard (80 dBA Leq). Implementation of mitigation measure MM-NOI-1 would be required to reduce the noise impacts from construction activities to less than significant with mitigation.

### **Off-Site Construction Noise**

As described in Appendix F, construction-related vehicle trips would be relatively low. During the peak of construction worker vehicle activity (water well grading for the La Palma site, pipeline grading and installation for the Boysen Park and Energy Field sites), 12 daily worker vehicle trips are estimated, and 4 to 6 daily vendor truck trips are estimated. At the Linda Vista site, up to 4 daily haul truck trips are also estimated.

The existing traffic volumes (City of Anaheim, 2008) near the project sites are much higher in comparison to these project-related trips. For example, La Palma Avenue in the vicinity of the La Palma site has an average daily traffic (ADT) volume of 23,800 and West Street has an ADT of 6,500. Tustin Avenue, the access route to the Linda Vista site, has an ADT of 247,000, and State College (access to the Boysen Park site) has an ADT of 254,000. South 9<sup>th</sup> Street, the access route to Energy Field Park, has an ADT of 7,600. Thus, the very small incremental increase associated with project-related construction would amount to a small fraction of a percentage point along the project roadways. Based upon the fundamentals of acoustics, a doubling (a 100% increase) would be needed to result in a 3 dB increase in traffic noise levels, which is the level corresponding to an audible change to the typical human listener (Caltrans, 2013). Therefore, given that construction trips would represent only a small fraction of the existing ADTs on the surrounding roadways, there would be no audible change in the ambient noise environment, and off-site construction noise would be less than significant.

### **Operational Noise**

**Ion Exchange Water Treatment System.** The ion exchange systems are passive and produce a negligible amount of noise, aside from a water pump (which except for the La Palma site, already exist). At the La Palma site, one additional water pump would be added to the three existing pumps. This additional pump could result in an overall noise increase of approximately 1 dBA at



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the La Palma site. However, an 8-foot-high solid-masonry wall would be constructed around the project site, which would substantially reduce noise levels from any and all stationary equipment on site. Depending upon the specific equipment and the eventual site design, noise levels from the 8-foot-high wall would reduce noise levels by approximately 7 to 13 dB. At the other project sites (Linda Vista, Boysen Park, and Energy Field), the noise from the ion exchange system would be negligible because the water pump (which is the only major noise source associated with these systems) already operates on site and is only used periodically to charge (or “boost”) the system.

**Upgraded Electrical Transformer.** At all four project sites, an upgraded electrical transformer would be added to the site to reliably power the pumping equipment. It is anticipated that the transformer would be a relatively small, 12-kilovolt unit. Such a unit would produce very low noise levels (approximately 45 dBA at a distance of 1 foot, per NEMA Standard ST-20) and would be negligible at nearby noise-sensitive land uses.

**Backup Generator.** In the event of a power outage at the La Palma, Boysen Park, and Energy Field sites, a portable emergency backup generator would be used to provide power. Because such portable units would only be operated on site in the event of emergency, the noise levels from such generators would be exempt from applicable standards.

At the Linda Vista site, a 350 kW backup generator would be permanently installed in the event of a power outage. Such a unit would be required to undergo periodic testing (typically once per month) to ensure proper operation. Details on the emergency generator were not available at this stage of the project design. Because noise emission levels for backup generators can vary widely depending upon manufacturer, enclosure type, and silencer grade, the potential exists that the backup generator could exceed the City’s 60 dBA noise standard. A mitigation measure (MM-NOI-3) is provided to ensure that this potentially significant noise impact is reduced to a less-than-significant level.

#### **b) Generation of excessive groundborne vibration or groundborne noise levels?**

**Less Than Significant Impact.** Groundborne vibration from heavy equipment operations during the course of construction activities under the proposed project was evaluated using the methodology contained in Section 7.2 of the Transit Noise and Vibration Impact Assessment Manual (FTA, 2018) and compared with relevant vibration impact criteria. Groundborne vibration information related to construction activities (including demolition) has been collected by the California Department of Transportation (Caltrans, 2020b). Information from Caltrans indicates that continuous vibrations with a peak particle velocity (ppv) of approximately 0.1 inches per second begin to annoy people. The heavier pieces of construction equipment, such as bulldozers, would have ppvs of approximately 0.089 inches per second or less at a distance of 25 feet (FTA, 2018). Groundborne vibration is typically attenuated over short distances. As shown in Table 17, below, at the nearest vibration-sensitive receivers (residences at the La Palma site) to construction activities (approximately 30 feet away during pipeline installation and treatment plant construction), and with the anticipated construction equipment, the ppv would be approximately 0.068 inches/second. At the closest sensitive receptors, vibration levels would not exceed the vibration threshold of potential annoyance of 0.1 inches/second.

Note that at Energy Field Park, vibration levels during pipeline construction activities would exceed 0.1 inches per second at the playground and picnic table areas; however, these land uses (i.e., public use outdoor recreation areas) are not classified as being vibration-sensitive for temporary activities such as pipeline construction.

The major concern with regards to construction vibration is related to building damage, which typically occurs at vibration levels of 0.5 inches per second or greater for buildings of reinforced-concrete, steel or timber construction. The anticipated vibration levels associated with project construction would range from approximately 0.000 to 0.124 inches per second, which is well

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below the threshold of 0.5 inches per second for building damage. Therefore, potential vibration impacts would be less than significant.

**Table 17 – Vibration Summary of Results**

Location	Land Use	PPV (inches per second)					Standard Exceeded?
		Water Well Construction	Pipeline Construction	Treatment Construction	Applicable Standard (Annoyance / Damage)		
La Palma Site							
Residences to the south	Res	0.013	0.068	0.068	0.1 / 0.5	No	
Residences to the West	Res	0.004	0.004	0.004	0.1 / 0.5	No	
Residences to the North	Res	0.001	0.001	0.001	0.1 / 0.5	No	
Linda Vista Site							
Residences to the North	Res	N/A	0.001	0.000	0.1 / 0.5	No	
Boysen Park Site							
Tennis Courts to the South	Rec	N/A	0.017	0.054	N/S	N/S	
Baseball Field to the North	Rec	N/A	0.011	0.014	N/S	N/S	
Residences to the South	Res	N/A	0.001	0.002	0.1 / 0.5	No	
Energy Field Site							
Playground / Picnic Tables	Rec	N/A	0.124	0.054	N/S	N/S	
Residences to the West	Rec	N/A	0.019	0.005	N/S	N/S	
Residences to the South	Res	N/A	0.001	0.003	0.1 / 0.5	No	

Notes:

See Appendix F.

Source: FTA, 2018

N/A: Not applicable, the construction activity type would not take place at this site.

N/S: No standard for this land use type.

Rec: Recreational

Res: Residential

**c) For a Project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Project expose people residing or working in the Project area to excessive noise levels?**

**No Impact.** There are no private airstrips within the vicinity of the project (AirNav, 2020). Fullerton Municipal Airport is the nearest airport to the project sites, the nearest being the La Palma site, located approximately 3 miles southeast of the airport. None of the proposed project sites are located within Fullerton Municipal Airport's Planning Area Boundary (i.e., the 60 dBA community noise equivalent level [CNEL] noise contour) or any other airport Planning Area Boundary (Airport Land Use Commission for Orange County [ALUC], 2004). Further, the project would not result in construction of facilities or structures that would create permanent, long-term exposure of residents or workers to increased levels of airport-related noise. Thus, noise impacts would be less than significant.

### 3.13.1 FEDERAL EVALUATIONS

#### Noise Control Act

**Will construction or operation of the project result in the generation of noise levels that could affect the health, welfare, or well-being of people?**

**No.** Construction noise would cause a temporary, periodic increase in the ambient noise levels above the existing levels within the project vicinity. Compliance with mitigations measures MM-NOI-1, MM-NOI-2, and MM-NOI-3 would minimize temporary increases in noise levels from construction and operation activities.

### 3.13.2 MITIGATION MEASURES

Mitigation Measure	Description
MM-NOI-1	<p><b>All Project Construction Activities.</b> The contractor, as well as any on-site subcontractor, shall use equipment, in compliance with City of Anaheim Municipal Code (AMC) noise limitation requirements at all property boundaries, when operating in all modes. The contractor and subcontractors shall refer to the noise ordinance restrictions as described in the Anaheim Municipal Code Chapter 6.70 Sound Pressure Levels.</p> <p>Equipment operated on shall include noise attenuation features, as available at time of construction. The contractor shall train all employees and subcontractors on applicable noise control requirements, including applicable noise limits, disallowed activities, use of portable noise barriers, and techniques for reducing construction noise.</p> <p>The contractor and subcontractors shall follow City of Anaheim normal work hours per AMC Chapter 6.70 Sound Pressure Levels. For impact generating equipment, work hours shall be further restricted to start no earlier than 9:00 a.m. and finish no later than 4:00 p.m., Monday through Friday. Any work in street rights-of-way shall be further restricted from 8:30 a.m. to 3:30 p.m. Work shall not be permitted on City holidays.</p>
MM-NOI-2	<p><b>Well Drilling Activities.</b> During the well drilling phase of construction, noise suppression shall be practiced at all times to minimize disturbance to persons living or working nearby, and to the general public. The measures to be used in effecting noise suppression shall include, but are not limited to, equipping all internal combustion engines with critical residential silencers (mufflers), shielding noise-producing equipment from nearest areas of human occupancy by locating the equipment in such positions as to direct the greatest noise emissions away from such areas, and conducting operations in the most effective manner to minimize noise generation, consistent with the execution of the project in a timely and economic manner.</p> <p>Noise levels shall be controlled in such a manner that they do not exceed 60 decibels dBA at the property line of the nearest residences. If noise emanating from the site exceeds acceptable levels at the nearest property line, then the contractor shall not be allowed to proceed with operations until the condition(s) causing the excessive noise has been corrected.</p>

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Mitigation Measure	Description
	<p>To mitigate noise emanating from the drill sites and impact on local residences, noise attenuation barrier walls shall completely enclose the drilling rig. Noise barrier wall material shall consist of fiberglass-filled acoustical curtains or panels with a Sound Transmission Class STC rating of at least 22. Noise Control Corporation or an equivalent shall manufacture the noise attenuation barrier walls. All noise attenuation barrier walls shall be designed to preclude structural failure due to such factors as wind loads (up to 70 MPH), shear, shallow soil failure, earthquakes, and erosion. The length, height, and location of noise attenuation barrier walls shall be adequate to ensure proper acoustical performance and shall be subject to the approval of the City.</p> <p>The contractor shall submit to the City for approval, a noise abatement plan (including designs and calculations) showing the equipment noise level measurements, noise abatement equipment and performance, drilling equipment locations and layout, and calculations of predicted noise levels to bring noise levels within the limit specified herein. The noise abatement plan shall be prepared and certified by a qualified acoustical specialist prior to constructing noise-control-barrier walls.</p> <p>Prior to commencing the actual drilling operation, the contractor shall demonstrate on-site compliance with actual noise level measurements. Those noise level measurements shall be performed using a sound level meter, an instrument meeting ANSI Standard S1.4 – 1971 for Type 1 or Type 2 sound level meters or an instrument and the associated equivalent data. The location for measuring the noise levels shall be at any point at the City’s discretion along the perimeter (City’s property line). The contractor shall submit the name and qualifications of the firm proposed to conduct the actual noise level measurements prior to commencement of noise measurement activities. The contractor shall be required to demonstrate on-site compliance a minimum of three additional times during the 24-hour drilling period of the work. The City shall establish times for those field tests at the pre-construction meeting. If, at any time prior to or during the drilling operation, the noise limits are exceeded, immediate corrective action shall be taken through the drilling equipment modifications, addition of noise abatement equipment, additional noise attenuation barrier walls (increase in height or thickness) or change in operating procedures. Once the corrective action has been taken, the contractor shall demonstrate through actual noise level measurements that they are in compliance.</p> <p>In addition to the barrier walls, the contractor shall provide adequate equipment noise control. Diesel engine acoustical enclosure of steel framed, fiberglass-filled panels shall be required for all drill rigs, compressors, and pumps. Design noise reduction shall be 20 dBA measured at equipment height. Where these engines are not properly isolated to prevent noise in the supporting structure, this secondary noise shall be treated, such as the use of acoustic skirts for drill rig trailers. High performance mufflers shall be used on all diesel engines in regular use on the drill site. Truck engines are excluded from this requirement. The use of air impact wrenches or similar equipment used on drill pipe flange bolts shall not be allowed.</p>

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Mitigation Measure	Description
MM-NOI-3	<b>Backup Generator at Linda Vista Site.</b> Prior to installation of the proposed backup generator at the Linda Vista site, the contractor shall provide documentation to the City that the generator selected will comply with applicable City of Anaheim noise standards (i.e., 60 dBA) at the residential property line).

### 3.14 POPULATION AND HOUSING

**Would the Project:**

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?				X

**a) Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?**

**No Impact.** The Project would only involve construction of water infrastructure equipment on existing City properties, and would not result in the construction of any new residences or businesses. The Project would not result in the generation of additional population or provide additional long-term employment opportunities. Therefore, the Project would not generate additional population or cumulatively exceed official regional or local population projections, nor would it induce substantial growth in the area either directly or indirectly. Therefore, there would be no impact.

**b) Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?**

**No Impact.** The Project would not result in the removal or demolition of any existing residential units because there are no existing residential uses on the properties. Therefore, no impacts would occur.

#### 3.14.1 FEDERAL EVALUATIONS

**Environmental Justice – EO 12898**

**Would the Project cause impacts to minority or low-income populations that are disproportionately high and adverse, either directly, indirectly, or cumulatively?**



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**No.** The California Office of Environmental Health Hazard Assessment (OEHHA) maintains the California Communities Environmental Health Screening Tool (CalEnviroScreen) (OEHHA, 2018). The CalEnviroScreen tool evaluates how individual census tracts are impacted by pollution exposure and environmental effects. It also evaluates the sensitive populations and socioeconomic factors in these census tracts, to calculate a score. The CalEnviroScreen scores for the four Project sites, and the citywide average are shown in Table 18, below:

**Table 18 – CalEnviroScreen Scores**

Site	Census Tract	CalEnviroScreen Score
La Palma	6059086602	42
Linda Vista	6059011714	40
Boysen Park	6059086303	30
Energy Field	6059087602	32
<b>Anaheim Average</b>		<b>34</b>

The CalEnviroScreen scores for the four projects sites are similar to the citywide average, indicating that the Project sites would be located in areas with population characteristics that are typical of the City. Additionally, as discussed throughout this IS/MND, implementing the Project with the mitigations described herein would not result in any significant environmental impacts. There would be no adverse human health or environmental effects on any population; therefore, implementing the Project would not have a significant or disproportionately negative impact on low-income or minority individuals within the project area.

## 3.15 PUBLIC SERVICES

### Would the Project:

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				X
a) Fire protection?				
b) Police protection?				X
c) Schools?				X
d) Parks?			X	
e) Other public facilities?				X

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**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:**

#### **a) Fire protection?**

**No Impact.** The Project would not adversely impact fire protection because no population increase or shifts in population would occur and no new structures would be built as a result of the Project. The Project would not include any residential population or increase the number of employees at the facilities. Therefore, the Project would have no impact.

#### **b) Police protection?**

**No Impact.** The Project would not adversely impact police protection because no population increase or shifts in population would occur and no new structures would be built as a result of the Project. The Project would not include any residential population or increase the number of employees at the facilities. Therefore, the Project would have no impact.

#### **c) Schools?**

**No Impact.** The Project would not adversely impact schools because no population increase or shifts in population would occur and no new structures would be built as a result of the Project. The Project would not include any residential population or increase the number of employees at the facilities. Therefore, the Project would have no impact.

#### **d) Parks?**

**Less Than Significant Impact.** The La Palma and Linda Vista Sites are not located near parks and would have no impact. The Energy Field Site would involve building a water treatment system north of the existing Energy Field Park. The system would be installed in an area that is closed to the public with no park equipment, and would have no impact on the use of the park. The Boysen Park Site would involve construction of a treatment system within the existing park. The treatment system would be fenced and would not interfere with use of the tennis courts after construction is complete. Some park benches and barbecue grills would need to be relocated to accommodate construction. Replacement of these features would be coordinated with the City Community Services Department to ensure adequate facilities remain available to the public. Some trees and vegetation would need to be removed to facilitate construction of the system. However, the work would not change the overall character of the park. In addition, a water well is already present at the park and installation of additional water distribution equipment is compatible with the existing land use. There would be some short-term disruption to the parking lots during construction of the treatment system and conveyance piping. However these impacts would be temporary and the parking lot would be restored upon completion. Therefore, impacts would be less than significant.

#### **e) Other Public Facilities?**

**No Impact.** The Project would not adversely impact other public facilities, such as libraries and community centers, because no population increase or shifts in population would occur and no new structures would be built as a result of the Project. The Project would not include any residential population or increase the number of employees at the facilities. Therefore, the Project would have no impact.

### 3.16 RECREATION

Would the Project:

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?			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	

**a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?**

**Less Than Significant Impact.** The Project would not increase the use of parks because no population increase or shifts in population would occur and no occupied structures would be built as a result of the Project. The Project would not include any residential population or increase the number of employees at the facilities. Some picnic benches and barbecue grills would need to be relocated within the Boysen Park Site, and an existing walkway may need to be reconfigured. However, this work would be coordinated with the City's Community Services Department to ensure adequate public access. Therefore, impacts would be less than significant.

**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?**

**Less Than Significant Impact.** The Project would not require the construction or expansion of recreational facilities because no population increase or shifts in population would occur and no new structures would be built as a result of the Project. The Project would not include any residential population or increase the number of employees at the facilities. Any park benches and barbecue grills that are removed from the Boysen Park site would be relocated within the existing property, eliminating the need for new or expanded facilities. Therefore, impacts would be less than significant.

### 3.17 TRANSPORTATION

Would the Project:

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
a) Conflict with an applicable plan, ordinance or policy addressing the circulation system, including transit roadway, bicycle and pedestrian facilities?			X	

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	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?			X	
c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
d) Result in inadequate emergency access?			X	

**a) Conflict with an applicable plan, ordinance or policy addressing the circulation system, including transit roadway, bicycle and pedestrian facilities?**

**Less Than Significant Impact.** Project construction could temporarily increase vehicular traffic on the surrounding street system due to worker trips, off-site staging areas, as well as haul truck and delivery trips. However, these impacts would be short in duration. Truck routes are defined in the City General Plan (City of Anaheim, 2004a) and AMC Chapter 14.48. The Project would comply with these existing requirements. Some temporary construction may need to take place on South 9<sup>th</sup> Street to install new buried pipes and temporary lane closures may be needed to allow construction equipment to safely enter and exit the properties during construction. If lane closures are necessary, a Right of Way Construction Permit would be obtained from the City Public Works Department and temporary traffic control devices would be implemented in accordance with the MUTCD to minimize traffic disruptions.

After construction, each site would generally be visited daily for routine operation and maintenance activities and trips to the site would be largely unchanged from the existing operations. Each site would require the resin to be extracted and replaced periodically. However, most of this work would occur on site, and would only result in a few trucks driving to and from each site.

The Orange County Transportation Authority (OCTA) operates public busses in the City. Bus stops nearest to the sites are located:

Site	Location
La Palma Site	Intersection of N. West St. and W. La Palma Ave Intersection of W. La Palma Ave. and N. Citron St.
Linda Vista Site	Intersection of Tustin Ave. and Miraloma Ave.
Energy Field Site	Intersection of Katella Ave. and 9 <sup>th</sup> St.
Boysen Park Site	Intersection of State College Blvd. and E. Wagner Ave. Intersection of State College Blvd. and Vermont Ave. Intersection of State College Blvd. and E. Cortney Way

The Project is not expected to conflict with bus operations. Additionally, a standard condition of the City's Right of Way Construction Permit requires permittees to notify OCTA prior to implementing any lane closure. This existing requirement would ensure impacts to bus routes would be minimized.

The traffic impacts from these activities would be minimal, and disruptions to bus operations would be minimized by routine compliance with Right of Way Construction Permits and coordination with OCTA. Therefore, impacts would be less than significant.

**b) Would the project conflict or be inconsistent with CEQA Guidelines section 15064.3, subdivision (b)?**

**Less Than Significant Impact.** CEQA Guidelines Section 15064.3 allows the lead agency to establish appropriate methodologies to evaluate the significance of VMT caused by a project. The City developed and adopted Traffic Impact Analysis Guidelines (City of Anaheim, 2020). These guidelines establish threshold of significance for projects conducted within the City. The adopted guidelines define “Public Services” and “Projects generating less than 110 daily vehicle trips” as activities that are presumed to have a less than significant transportation impact. The Project would be implemented to benefit the municipal water system, a public service. In addition, it is estimated that during construction, approximately 30 workers would be on site on a given day, which would result in far fewer than 110 daily vehicle trips. During operation, each site would be visited by one vehicle per day, on average. Therefore, the transportation impacts would be less than significant.

**c) Substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?**

**No Impact.** The Project would require no new roadway construction. Any work conducted in the roadway (e.g., pipeline installation) would return the road to its existing condition upon completion. There would be no impact.

**d) Result in inadequate emergency access?**

**Less Than Significant Impact.** The Project would result in the construction and operation of groundwater treatment equipment and water wells at existing City properties. Lane closures might be necessary to facilitate pipeline construction in adjacent City streets. A City Right of Way Construction Permit would be obtained prior to installing any temporary traffic control devices, and work would be conducted in accordance with the MUTCD (Caltrans, 2020). The Project would not result in any population increase that would affect emergency access. Therefore, impacts would be less than significant.

## **3.18 TRIBAL RESOURCES**

**Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code § 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:**

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or			X	

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	Potentially Significant Impact	Less-Than- Significant Impact with Mitigation	Less-Than- Significant Impact	No Impact
b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe		X		

APU submitted a request to the Native American Heritage Commission (NAHC) on October 21, 2020 to review the Sacred Lands File (SLF) database regarding the possibility of Native American cultural resources and/or sacred places in the vicinity of the Project sites. The results from the NAHC were received on October 22, 2020. The SLF search did not identify any known resources or sacred lands within the La Palma, Energy Field, or Boysen Park Project sites. However, the NAHC reported a positive result for the Linda Vista Site, with a recommendation to contact the Juaneño Band of Mission Indians Acjachemen Nation-Belardes. Additionally, the NAHC recommended contacting other tribes that are traditionally and culturally affiliated with the geographic area. As required by AB 52, the City sent letters and email to interested tribal organizations on November 4, 2020. Two tribes responded with a desire to have a consultation regarding the project: the Juaneño Band of Mission Indians Acjachemen Nation-Belardes and the Gabrieleno Band of Mission Indians - Kizh Nation. The City sent a second email to the other tribes identified by NAHC on January 8, 2021. However, no other tribes requested consultation regarding the Project.

On January 7, 2021, a teleconference consultation meeting was held with Andy Salas and Matthew Teutimez of the Gabrieleno Band of Mission Indians - Kizh Nation. On February 8, 2021, a consultation by email with Joyce Perry on behalf of the Juaneño Band of Mission Indians – Acjachemen Nation-Belardes. Neither tribal representative identified any specific tribal resources on any of the four project sites. However, due to the project's regional setting, both tribes expressed a desire for monitoring during ground disturbing activities.

**Would the project cause a substantial adverse change in the significance of the tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, scared place, or object with cultural value to a California Native American tribe, and that is:**

**a) Listed or eligible for listing in the California Register of Historical Resources (CRHR), or in a local register of historical resources as defined in Public Resources Code section 5020.1(k).**

**Less Than Significant Impact.** For the purposes of impact analysis, a tribal cultural resource is considered a site, feature, place, cultural landscape, sacred place, or object which is of cultural value to a California Native American Tribe and is either eligible for the CRHR or a local register. As indicated in Section 3.5 of this IS/MND, based on 2020 SCCIC record search results (Appendix

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C), there are no resources on the Project Site that are currently listed on the CRHR. Therefore, the Proposed Project would not have an impact on a tribal cultural resource that is listed or eligible for listing on the CRHR or a local register. No significant impacts were identified, and mitigation is not required.

**b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code § 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code § 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.**

**Less Than Significant Impact with Mitigation.** If the Proposed Project would impact a tribal cultural resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1, the lead agency shall consider the significance of the resource to a Native American tribe. Subdivision (c) states:

A resource may be listed as an historical resource in the California Register if it meets any of the following CRHR criteria:

- Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- Is associated with the lives of persons important in our past.
- Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- Has yielded, or may be likely to yield, information important in prehistory or history.

Based on information available through the record searches at the SCCIC and the NAHC, and the long-term past use of the Project area, and as discussed in Section 3.5, there is no information available that indicates there are significant tribal resources within the Project area that would be significant pursuant to criteria set forth in subdivision (c) of PRC Section 5024.1. However, as noted above, the City consulted with the Gabrieleno Band of Mission Indians - Kizh Nation and the Juaneño Band of Mission Indians – Acjachemen Nation. Based on consultation with representatives from both tribes, the parties agreed to implement monitoring for the presence of tribal resources during ground disturbing activities. Implementing MM-TR-1, as outlined below, which would reduce potential impacts related to tribal cultural resources to a less than significant level.

#### 3.18.1 MITIGATION MEASURES

Mitigation Measure	Description
MM-TR-1	Prior to the issuance of grading permits, the contractor shall retain a Native American monitor/consultant. The tribal monitor/consultant will only be present on-site during the construction phases that involve ground-disturbing activities. Ground-disturbing activities are defined as activities that may include, but are not limited to, pavement removal, potholing or auguring, grubbing, tree removals, boring, grading, excavation, drilling, and trenching within the project area. Monitoring shall not be required while working within the location of the former underground reservoirs at the La Palma and Linda Vista sites, or while conducting drilling activities with drilling fluids. During well drilling, monitoring shall not be required after the first spoils have been removed from the boring.

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Mitigation Measure	Description
	<p>The tribal monitor/consultant will complete daily monitoring logs that will provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site monitoring shall end when the Project Site grading and excavation activities are completed, or when the tribal representatives and monitor/consultant have indicated that the Project Site has a low potential for affecting tribal cultural resources. Upon discovery of any archaeological resources, construction activities shall cease in the immediate vicinity of the find until a qualified archaeologist and/or tribal monitor/consultant can assess the find.</p> <p>The evaluation of all archaeological resources unearthed by project construction activities shall be evaluated by the qualified archaeologist and tribal monitor/consultant approved by the Gabrieleño Band of Mission Indians - Kizh Nation and the Juaneño Band of Mission Indians, Acjachemen Nation-Belardes. If the resources are Native American in origin, the contractor shall coordinate with the Gabrieleño Band of Mission Indians - Kizh Nation and the Juaneño Band of Mission Indians, Acjachemen Nation regarding treatment and curation of these resources. Typically, the tribe will request reburial or preservation for educational purposes. The contractor may continue work on other parts of the Project Site while evaluation and, if necessary, mitigation takes place (CEQA Guidelines Section 15064.5[f]). If a qualified archaeologist determines a resource to constitute a "historical resource" or "unique archaeological resource," time allotment and funding sufficient to allow for implementation of avoidance measures or appropriate mitigation must be available. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and PRC Section 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. The Contractor or City shall be responsible for ensuring that a public, nonprofit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material, curate any historic archaeological material that is not Native American in origin. If no institution accepts the archaeological material, the Contractor or City shall offer it to a local school or historical society in the area for educational purposes.</p>

### 3.19 UTILITIES AND SERVICE SYSTEMS

#### Would the Project:

	Potentially Significant Impact	Less-Than- Significant Impact with Mitigation	Less-Than- Significant Impact	No Impact
a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?			X	
b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?			X	
c) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's Projected demand in addition to the provider's existing commitments?			X	
d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?			X	
e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?			X	

**a) Require or result in the relocation or construction of new or expanded water, wastewater treatment, or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?**

**Less Than Significant Impact.** The Project activities would include minor electrical upgrades, such as installing new transformers, switchgear, and larger-capacity electrical cabinets to accommodate the new pumping equipment. However, the Project would not require upgrading distribution electrical equipment or other utility services. The impact would be less than significant.

**b) Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry and multiple dry years?**

**Less Than Significant Impact.** The Project would be implemented to return existing groundwater wells to active use and install one new groundwater well. The groundwater basin is actively managed by OCWD (OCWD, 2015). Groundwater extraction rates are reported to OCWD to ensure the groundwater basin is not over-extracted. The Project would be implemented for

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improved reliability of the water system and to serve existing customers. The Project would reduce reliance on distant water sources supplied by MWD. The impact would be less than significant.

**c) Result in a determination by the wastewater treatment provider which serves or may serve the Project that it has adequate capacity to serve the Project's Projected demand in addition to the provider's existing commitments?**

**Less Than Significant Impact.** It is anticipated that most stormwater and other discharges permitted to flow to the storm drain system from the Project sites would be conveyed to existing storm drains, flood control channels, and Anaheim Lake as allowed by an existing NPDES permit (Order 2014-0194-DWQA new operations building at the Linda Vista Site would be equipped with a replacement restroom that would be connected to an existing sewer connection. The volume of wastewater would be consistent with the existing conditions. Additionally, the onsite sewer system connections would be built in accordance with state and local building and plumbing codes and impacts would be less than significant.

**d) Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?**

**Less Than Significant Impact.** The Project would generate temporary construction debris such as concrete, asphalt, and other miscellaneous materials. These materials would be recycled and salvaged to the extent practicable, but some material will require transportation and disposal at landfills or other disposal sites. Daily operation of the sites would result in minor amount of generated waste. The impacts would be less than significant.

**e) Comply with federal, state, and local management and reduction statutes and regulations related to solid waste?**

**Less Than Significant Impact.** The Project would generate temporary construction debris such as concrete, asphalt, and other miscellaneous materials. The Project would be required to follow all federal, state, and local management and reduction statutes and regulations. Spent resin waste would be characterized and handled and transported in accordance with USEPA and DTSC requirements. Complying with existing laws and regulations would result in the impacts being less than significant.

## 3.20 WILDFIRE

**If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the project:**

	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
a) Substantially impair an adopted emergency response plan or emergency evacuation plan?				X
b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?				X



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	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	Less-Than-Significant Impact	No Impact
c) Require the installation or maintenance of associated infrastructure (such as road, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?				X
d) Expose people or structures to significant risks, including downslope or downstream flooding or landslides, as a result of runoff post-fire slope instability, or drainage changes?				X

**a) Substantially impair an adopted emergency response plan or emergency evacuation plan?**

**b) Due to slope, prevailing winds, and other factors, exacerbate wildfire risks, and thereby expose project occupants to, pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?**

**c) Require the installation or maintenance of associated infrastructure (such as road, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?**

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

**No Impact.** The Project sites are located in urban areas generally lacking vegetation. According all Project sites would be located outside of Very High Fire Hazard Severity Zones and Special Protection Areas designated in the City General Plan (City of Anaheim, 2004a) or by the Office of the State Fire Marshall (OSM, 2011). Therefore, the questions are not applicable and there would be no impact.

### 3.21 MANDATORY FINDINGS OF SIGNIFICANCE

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

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	Potentially Significant Impact	Less-Than-Significant Impact with Mitigation	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	

**a) Does the Project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?**

**Less Than Significant Impact with Mitigation.** None of the Project sites contain any special status or sensitive biological resources. The Project would not 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 sensitive plant or animal community, or substantially reduce the number or restrict the range of a rare or endangered plant or animal. As discussed in Section 3.5, Cultural Resources, the Project would not eliminate important examples of the major periods of California history and would not have an adverse impact on California's prehistoric cultural resources with incorporation of mitigation. The mitigation measures provided in this IS/MND, including MM-CUL-1 and MM-TR-1 described in Sections 3.5 and 3.18, would result in impacts being less than significant.

**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)?**

**Less Than Significant Impact.** As discussed throughout this Initial Study, the Project has been considered as a whole, and would have no significant impacts with the mitigation measures described herein. All impacts are individually limited and would not result in any cumulatively significant impact. No additional mitigation measures are required.

**c) Does the Project have environmental effects which will cause substantial adverse effects on human beings, either directly or indirectly?**

**Less Than Significant Impact.** As discussed in this Initial Study, the Project would not result in significant direct or indirect adverse impacts or result in substantial adverse effects on human beings. Impacts would be less than significant, and no additional mitigation measures are required.

## 4.0 MITIGATION MONITORING PROGRAM

Mitigation Measure	Description	Timing	Responsible Party	Monitoring Requirements	Monitoring Agency
<b>Air Quality</b>					
MM-AQ-1	<p>The project contractor would be required to implement the following measures into construction plans and specifications as in accordance with South Coast Air Quality Management District (SCAQMD) Rule 403:</p> <ul style="list-style-type: none"> <li>• All clearing, grading, earth-moving, or excavation activities shall cease or best management practices outlined in SCAQMD Rule 403(g)(2) shall be implemented when winds exceed 25 miles per hour (mph) per SCAQMD guidelines in order to limit fugitive dust emissions.</li> <li>• Prior to the commencement of construction activities, the City shall require its construction contractor to water any exposed soils and/or soil stockpiles at least three times daily, or utilize another SCAQMD-approved dust control non-toxic agent in accordance with the manufacturer's instructions.</li> <li>• The contractor shall ensure that traffic speeds on unpaved roads and Project site areas are reduced to 15 mph or less.</li> </ul>	Ongoing during construction.	Construction contractor	Periodic site inspections during construction.	City of Anaheim Public Utilities Department

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Mitigation Measure	Description	Timing	Responsible Party	Monitoring Requirements	Monitoring Agency
<b>Biological Resources</b>					
MM-BIO-1	In order to avoid potential impacts to coast horned lizards within the Linda Vista site, a biologist shall conduct a pre-construction clearance survey within 3 calendar days prior to the start of construction activities. If this species is observed during the pre-construction survey, the project biologist shall require additional measures to reduce potential impacts such as establishing an appropriate buffer around an active nest, on-site construction monitoring by a qualified biological monitor, and/or moving individuals to off-site areas out of harm's way.	Prior to commencing construction at Linda Vista Site	Construction contractor	Review written summary of survey from biologist.	City of Anaheim Public Utilities Department
MM-BIO-2	In order to avoid potential direct and indirect impacts to nesting birds, including ospreys, project activities within all four project sites shall avoid the bird nesting season (generally February 1 through August 30) to ensure compliance with the Migratory Bird Treaty Act and California Fish and Game Code Section 3500 et seq. If avoidance of the nesting season is not feasible, then a pre-construction nesting bird survey shall be conducted by a qualified biologist within 3 calendar days prior to the start of construction activities to ensure that birds are not engaged in active nesting within 500 feet of the project's construction limits.	Prior to commencing construction	Construction contractor	Review written summary of survey from biologist.	City of Anaheim Public Utilities Department

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Mitigation Measure	Description	Timing	Responsible Party	Monitoring Requirements	Monitoring Agency
	If nesting birds are discovered during pre-construction surveys, then the biologist shall identify an appropriate buffer where no project activities are allowed to occur until after the birds have fledged from the nest. Construction activities may continue only at the discretion of an on-site monitoring biologist, or when the nest is no longer active.				
MM-BIO-3	<p>In order to determine if the concrete inlet basin is considered jurisdictional, a formal jurisdictional delineation should be conducted to map the limits and extent of potential regulatory agency jurisdiction. The Regional Water Quality Control Board (RWQCB) and California Department of Fish and Wildlife (CDFW) could exert jurisdiction over the inlet basin due to the presence of water that could affect downstream water quality and provide habitat for local wildlife species, especially birds. Project-related impacts may require 401 Certification or Waste Discharge Requirement (WDR) from the RWQCB and a Streambed Alteration Agreement from CDFW under Section 1600 of California Fish and Game Code.</p> <p>After consultation with RWQCB and CDFW, which may include a preliminary site visit and the sharing of Project information, if permits are determined to be required by the resources agencies,</p>	Prior to construction discharge connection to Anaheim Lake	Construction contractor and Anaheim Public Utilities	Review of any permit submittals and approved permits, if necessary.	City of Anaheim Public Utilities Department



**DRAFT Initial Study and Mitigated Negative Declaration**  
**Groundwater Treatment at La Palma, Linda Vista, Boysen Park, and Energy Field Sites**

Mitigation Measure	Description	Timing	Responsible Party	Monitoring Requirements	Monitoring Agency
	these permits may require mitigation for impacts to wetlands and waters that ensure no net loss of jurisdictional aquatic resources. A conceptual wetlands mitigation and monitoring plan may be required as part of the permit applications. This plan shall be prepared and shall prescribe site preparation, planting, irrigation, and a multi-year maintenance and monitoring program with qualitative and quantitative evaluation of the revegetation effort and specific criteria to determine successful revegetation. Mitigation may also be carried out through the purchase of in-lieu fee credits from an agency-approved mitigation bank in the same watershed. In addition, permit conditions may include other avoidance and minimization measures that could constrain the project. The appropriate mitigation approach and ratio shall be determined through agency consultation.				
<b>Cultural Resources</b>					
MM-CUL-1	All construction personnel and monitors who are not trained archaeologists shall be briefed regarding inadvertent discoveries prior to the start of construction activities. A presentation and handout or pamphlet shall be prepared in order to ensure proper identification and treatment of inadvertent discoveries. The purpose of the Workers Environmental Awareness	Prior to and ongoing during ground disturbing activities	Construction contractor	Review of WEAP materials and written evidence from Contractor of a retained archaeologist.  Periodic site inspections during construction.	City of Anaheim Public Utilities Department

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Mitigation Measure	Description	Timing	Responsible Party	Monitoring Requirements	Monitoring Agency
	<p>Program (WEAP) training is to provide specific details on the kinds of archaeological materials that may be identified during construction of the Project and explain the importance of and legal basis for the protection of significant archaeological resources. Each worker shall also learn the proper procedures to follow in the event that cultural resources or human remains are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection, and the immediate contact of the site supervisor and archaeological monitor.</p> <p>A qualified archaeologist shall be retained and on-call to respond and address any inadvertent discoveries identified during initial excavation in native soil. Initial excavation is defined as initial construction-related earth moving of sediments from their place of deposition. As it pertains to archaeological monitoring, this definition excludes movement of sediments after they have been initially disturbed or displaced by project-related construction. A qualified archaeological principal investigator, meeting the Secretary of the Interior's Professional Qualification Standards, shall oversee and adjust monitoring efforts as needed (increase, decrease, or discontinue monitoring frequency) based on the observed potential for construction activities to</p>				

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Mitigation Measure	Description	Timing	Responsible Party	Monitoring Requirements	Monitoring Agency
	<p>encounter cultural deposits or material. The archaeological monitor shall be responsible for maintaining daily monitoring logs.</p> <p>In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed Project, all construction work occurring within 100 feet of the find shall immediately stop and a qualified archaeologist notified immediately to assess the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find, the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.</p> <p>If monitoring is ultimately required, an archaeological monitoring report shall be prepared within 60 days following completion of ground disturbance. This report shall document compliance with approved mitigation and all monitoring efforts as well as include an appendix with copies of all daily monitoring logs. The final report shall be submitted to the SCCIC.</p>				

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Mitigation Measure	Description	Timing	Responsible Party	Monitoring Requirements	Monitoring Agency
<b>Geology and Soils</b>					
MM-GEO-1	Unanticipated Discovery of Paleontological Resources. In the event that paleontological resources are inadvertently unearthed during excavation activities, the contractor shall immediately cease all earth-disturbing activities within a 100-foot radius of the area of discovery and the contractor shall immediately notify the City. The contractor shall retain a qualified professional paleontologist to evaluate the significance of the find, and in consultation with the City, determine an appropriate course of action. If the paleontological resources are found to be significant, the paleontologist, in consultation with the City, shall determine appropriate actions for exploration and salvage. After the find has been appropriately avoided or mitigated, work in the area may resume.	Ongoing during ground disturbing activities	Construction contractor	Review of written evidence from Contractor of a retained paleontologist.  Periodic site inspections during construction.	City of Anaheim Public Utilities Department
<b>Noise</b>					
MM-NOI-1	<b>All Project Construction Activities.</b> The contractor, as well as any on-site subcontractor, shall use equipment, in compliance with City of Anaheim Municipal Code (AMC) noise limitation requirements at all property boundaries, when operating in all modes. The contractor and subcontractors shall refer to the noise ordinance restrictions as described in the Anaheim Municipal	Ongoing during construction	Construction contractor	Periodic site inspections during construction	City of Anaheim Public Utilities Department

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Mitigation Measure	Description	Timing	Responsible Party	Monitoring Requirements	Monitoring Agency
	<p>Code Chapter 6.70 Sound Pressure Levels.</p> <p>Equipment operated on shall include noise attenuation features, as available at time of construction. The contractor shall train all employees and subcontractors on applicable noise control requirements, including applicable noise limits, disallowed activities, use of portable noise barriers, and techniques for reducing construction noise.</p> <p>The contractor and subcontractors shall follow City of Anaheim normal work hours per AMC Chapter 6.70 Sound Pressure Levels. For impact generating equipment, work hours shall be further restricted to start no earlier than 9:00 a.m. and finish no later than 4:00 p.m., Monday through Friday. Any work in street rights-of-way shall be further restricted from 8:30 a.m. to 3:30 p.m. Work shall not be permitted on City holidays.</p>				
MM-NOI-2	<p><b>Well Drilling Activities.</b> During the well drilling phase of construction, noise suppression shall be practiced at all times to minimize disturbance to persons living or working nearby, and to the general public. The measures to be used in effecting noise suppression shall include, but are not limited to, equipping all internal combustion engines with</p>	Ongoing during well drilling activities	Well drilling contractor	Periodic site inspections during construction	City of Anaheim Public Utilities Department



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Mitigation Measure	Description	Timing	Responsible Party	Monitoring Requirements	Monitoring Agency
	<p>critical residential silencers (mufflers), shielding noise-producing equipment from nearest areas of human occupancy by locating the equipment in such positions as to direct the greatest noise emissions away from such areas, and conducting operations in the most effective manner to minimize noise generation, consistent with the execution of the project in a timely and economic manner.</p> <p>Noise levels shall be controlled in such a manner that they do not exceed 60 decibels dBA at the property line of the nearest residences. If noise emanating from the site exceeds acceptable levels at the nearest property line, then the contractor shall not be allowed to proceed with operations until the condition(s) causing the excessive noise has been corrected.</p> <p>To mitigate noise emanating from the drill sites and impact on local residences, noise attenuation barrier walls shall completely enclose the drilling rig. Noise barrier wall material shall consist of fiberglass-filled acoustical curtains or panels with a Sound Transmission Class STC rating of at least 22. Noise Control Corporation or an equivalent shall manufacture the noise attenuation barrier walls. All noise attenuation barrier walls shall be designed to preclude</p>				

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Mitigation Measure	Description	Timing	Responsible Party	Monitoring Requirements	Monitoring Agency
	<p>structural failure due to such factors as wind loads (up to 70 MPH), shear, shallow soil failure, earthquakes, and erosion. The length, height, and location of noise attenuation barrier walls shall be adequate to ensure proper acoustical performance and shall be subject to the approval of the City.</p> <p>The contractor shall submit to the City for approval, a noise abatement plan (including designs and calculations) showing the equipment noise level measurements, noise abatement equipment and performance, drilling equipment locations and layout, and calculations of predicted noise levels to bring noise levels within the limit specified herein. The noise abatement plan shall be prepared and certified by a qualified acoustical specialist prior to constructing noise-control-barrier walls.</p> <p>Prior to commencing the actual drilling operation, the contractor shall demonstrate on-site compliance with actual noise level measurements. Those noise level measurements shall be performed using a sound level meter, an instrument meeting ANSI Standard S1.4 – 1971 for Type 1 or Type 2 sound level meters or an instrument and the associated equivalent data. The location for measuring the noise levels shall be at any point at the City's discretion along</p>				

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Mitigation Measure	Description	Timing	Responsible Party	Monitoring Requirements	Monitoring Agency
	<p>the perimeter (City's property line). The contractor shall submit the name and qualifications of the firm proposed to conduct the actual noise level measurements prior to commencement of noise measurement activities. The contractor shall be required to demonstrate on-site compliance a minimum of three additional times during the 24-hour drilling period of the work. The City shall establish times for those field tests at the pre-construction meeting.</p> <p>If, at any time prior to or during the drilling operation, the noise limits are exceeded, immediate corrective action shall be taken through the drilling equipment modifications, addition of noise abatement equipment, additional noise attenuation barrier walls (increase in height or thickness) or change in operating procedures. Once the corrective action has been taken, the contractor shall demonstrate through actual noise level measurements that they are in compliance.</p> <p>In addition to the barrier walls, the contractor shall provide adequate equipment noise control. Diesel engine acoustical enclosure of steel framed, fiberglass-filled panels shall be required for all drill rigs, compressors, and pumps. Design noise reduction shall be 20 dBA measured at equipment height. Where</p>				

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Mitigation Measure	Description	Timing	Responsible Party	Monitoring Requirements	Monitoring Agency
	these engines are not properly isolated to prevent noise in the supporting structure, this secondary noise shall be treated, such as the use of acoustic skirts for drill rig trailers. High performance mufflers shall be used on all diesel engines in regular use on the drill site. Truck engines are excluded from this requirement. The use of air impact wrenches or similar equipment used on drill pipe flange bolts shall not be allowed.				
MM-NOI-3	<b>Backup Generator at Linda Vista Site.</b> Prior to installation of the proposed backup generator at the Linda Vista site, the contractor shall provide documentation to the City that the generator selected will comply with applicable City of Anaheim noise standards (i.e., 60 dBA) at the residential property line).	Prior to installing emergency backup generator	Construction contractor	Review of generator specifications.	City of Anaheim Public Utilities Department
<b>Tribal Resources</b>					
MM-TR-1	Prior to the issuance of grading permits, the contractor shall retain a Native American monitor/consultant. The tribal monitor/consultant will only be present on-site during the construction phases that involve ground-disturbing activities. Ground-disturbing activities are defined as activities that may include, but are not limited to, pavement removal, potholing or auguring, grubbing, tree removals, boring, grading, excavation, drilling, and trenching within the project area.	Prior to issuance of grading permits and ongoing during construction	Construction contractor	Periodic site inspections during construction	City of Anaheim Public Utilities Department

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Mitigation Measure	Description	Timing	Responsible Party	Monitoring Requirements	Monitoring Agency
	<p>Monitoring shall not be required while working within the location of the former underground reservoirs at the La Palma and Linda Vista sites, or while conducting drilling activities with drilling fluids. During well drilling, monitoring shall not be required after the first spoils have been removed from the boring.</p> <p>The tribal monitor/consultant will complete daily monitoring logs that will provide descriptions of the day's activities, including construction activities, locations, soil, and any cultural materials identified. The on-site monitoring shall end when the Project Site grading and excavation activities are completed, or when the tribal representatives and monitor/consultant have indicated that the Project Site has a low potential for affecting tribal cultural resources. Upon discovery of any archaeological resources, construction activities shall cease in the immediate vicinity of the find until a qualified archaeologist and/or tribal monitor/consultant can assess the find.</p> <p>The evaluation of all archaeological resources unearthed by project construction activities shall be evaluated by the qualified archaeologist and tribal monitor/consultant approved by the Gabrieleño Band of Mission Indians - Kizh Nation and the Juaneño Band of</p>				



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Mitigation Measure	Description	Timing	Responsible Party	Monitoring Requirements	Monitoring Agency
	<p>Mission Indians, Acjachemen Nation - Belardes. If the resources are Native American in origin, the contractor shall coordinate with the Gabrieleño Band of Mission Indians - Kizh Nation and the Juaneño Band of Mission Indians, Acjachemen Nation - Belardes regarding treatment and curation of these resources. Typically, the tribe will request reburial or preservation for educational purposes. The contractor may continue work on other parts of the Project Site while evaluation and, if necessary, mitigation takes place (CEQA Guidelines Section 15064.5[f]). If a qualified archaeologist determines a resource to constitute a “historical resource” or “unique archaeological resource,” time allotment and funding sufficient to allow for implementation of avoidance measures or appropriate mitigation must be available. The treatment plan established for the resources shall be in accordance with CEQA Guidelines Section 15064.5(f) for historical resources and PRC Section 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) is the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis. The</p>				

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Mitigation Measure	Description	Timing	Responsible Party	Monitoring Requirements	Monitoring Agency
	Contractor or City shall be responsible for ensuring that a public, nonprofit institution with a research interest in the materials, such as the Natural History Museum of Los Angeles County or the Fowler Museum, if such an institution agrees to accept the material, curate any historic archaeological material that is not Native American in origin. If no institution accepts the archaeological material, the Contractor or City shall offer it to a local school or historical society in the area for educational purposes.				

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## **Appendix A**

Air Quality, Greenhouse Gas Emissions, and Energy Analysis



## MEMORANDUM

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**To:** Jonathan Sanks, Anaheim Public Utilities  
**From:** Ian McIntire, Dudek  
**Subject:** Air Quality, Greenhouse Gas Emissions, and Energy Analysis Technical Memorandum for the Well and Water Treatment Facilities Project, City of Anaheim, Orange County, California  
**Date:** February 11, 2021  
**cc:** Collin Ramsey, Dudek  
Patrick Cruz, Dudek  
**Attachment:** A CalEEMod Emission and Energy Calculations

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Dudek is pleased to submit this air quality, greenhouse gas (GHG) emissions, and energy assessment to assist the City of Anaheim (City) and Anaheim Public Utilities (APU) with initial environmental planning requirements for the proposed Well and Water Treatment Facilities Project (project) in Anaheim, California.

The purpose of this memorandum is to assess the air quality, GHG, and energy impacts of the project. Accordingly, this assessment uses the significance thresholds in Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.) and is based on the emissions-based significance thresholds recommended by the South Coast Air Quality Management District (SCAQMD).

The contents and organization of this memorandum are as follows: Project description, general analysis and methodology, thresholds of significance and impact analyses for the air quality assessment, GHG emissions assessment, energy assessment, conclusions, and references cited.

## 1 Project Description

### 1.1 Regional Setting

The project sites are located in Orange County, and all work will be conducted within the City. The City is approximately 7 miles northwest of downtown Santa Ana and 23 miles southeast of downtown Los Angeles. The cities of Yorba Linda, Placentia, Fullerton, Buena Park, Cypress, Stanton, Garden Grove, and Orange and unincorporated Orange County border the City. Interstate 5 and State Routes 39, 55, 57, 90, 91, and 241 provide regional access to the City.

### 1.2 Project Overview

Ion exchange treatment is commonly used to remove perfluoroalkyl substances (PFOS and PFOA) from groundwater. Treatment vessels are filled with polymer-based ion exchange resin that removes the PFOS and PFOA compounds as water passes over it. The resins are small plastic beads with affixed charges balanced by counter ions. The PFOS and PFOA is removed when the counter ion is exchanged for the changed contaminant ion. The rate of removal depends on initial concentration of the contaminant, the concentration of competing ions, loading rate, size and

## Memorandum

*Subject: Air Quality, Greenhouse Gas Emissions, and Energy Analysis Technical Memorandum for the Well and Water Treatment Facilities Project, City of Anaheim, Orange County, California*

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types of resin beads, and the water chemistry. Over time, the resin becomes loaded with PFOS and PFOA. When saturated, the resin is removed from the vessel and transported to a disposal or incineration facility. Fresh resin is added to the treatment vessels, and treatment continues.

The project involves installation of water treatment facilities at four sites, as described below. The number and size of vessels at each treatment site will depend on the volume of water that will require treatment at each location. While estimated dimensions are included in this memorandum, exact sizes may vary to ensure the treatment systems can adequately supply the necessary volume of water. To ensure continuous availability of water, the treatment systems would operate up to 24 hours per day. To most efficiently distribute the treated water, a new water supply well would be installed at the La Palma site, and several other wells would be rehabilitated to improve their water production capacity.

### 1.3 La Palma Site

The La Palma site would include a new treatment plant, water well, piping, and security features.

#### 1.4.1 Current Use

A water treatment system would be installed at the location of the existing La Palma Reservoir. The La Palma site is located southeast of the intersection of West La Palma Avenue and North West Street. The site is located within a heavily urbanized area. It is bound to the north by Carbon Creek Channel, to the east by a small strip mall with retail stores and restaurants, to the south by single-family homes, and to the west by North West Street.

The site currently contains a water supply well, a water reservoir, water disinfection equipment, a 2,000 gallon diesel fuel tank, a restroom, control buildings, and various piping, valves, pumps, and other water distribution equipment. The site is surrounded by a chain-link fence. A gate is located on North West Street to allow vehicles to enter and exit the site. The ground surface is primarily soil, some areas paved with asphalt, and some areas paved with permeable concrete.

#### 1.4.2 Proposed Use

##### 1.4.2.1 Treatment Plant

The project would include installation of a new treatment system in a vacant area of the site east of the existing reservoir and pump station. The system would be designed to treat water at a rate of approximately 8,700 gallons per minute (gpm). Approximately 12 ion exchange resin vessels would be installed at the site. While exact dimensions might vary, the vessels are expected to be approximately 17 feet tall and 12 feet in diameter. The vessels would be installed on the eastern portion of the property. Additional smaller treatment equipment would be installed such as pre-treatment filters, pumps, pipes, valves, and other appurtenant structures. Upgraded disinfection equipment consisting of pumps and tanks would be installed to store additional sodium hypochlorite (bleach) to disinfect the water leaving the treatment plant. An upgraded electrical transformer would be added to the site to reliably power the pumping equipment. Electrical equipment connections would be installed to allow the facility to operate off a portable emergency backup generator. The treatment plant equipment would be set back from West La Palma Avenue to reduce visibility above the site walls or fences.

## Memorandum

**Subject:** Air Quality, Greenhouse Gas Emissions, and Energy Analysis Technical Memorandum for the Well and Water Treatment Facilities Project, City of Anaheim, Orange County, California

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### 1.4.2.2 Water Well Installation and Rehabilitation

One new groundwater well would be installed in the southeast corner of the site. The well would be drilled to a depth in excess of 1,000 feet and would be designed to extract up to approximately 4,000 gpm of groundwater that would be available for the City's water system. The well would be equipped with an electric pump. The pump is anticipated to be sized at approximately 500 horsepower (HP). However, the exact sizing will be determined based on the depth to groundwater and the rate at which water can be reliably extracted from the well.

A new booster pump would be installed onsite to convey water into the treatment and distribution systems.

The existing water supply well at the La Palma site would be rehabilitated. This would include conducting an initial video survey, using downhole instrumentation to study the vertical alignment, installing a liner casing, and using chemical processes to remove built up scaling and improve performance of the well. New pumps and control equipment would be installed.

### 1.4.2.3 Piping

Buried piping would be installed within the project site to convey water from the new well into the treatment system and reservoir and distribution system. Existing piping on North West Street and piping on La Palma Avenue would be upgraded with larger piping to better accommodate anticipated water demands.

The replacement pipe would be installed by boring beneath the existing channel. A new buried pipe would be installed connecting the reservoir to existing piping beneath West Street.

The site has an existing pipe that discharges water into Carbon Creek Channel. These discharges occur during well startup and shutdown, and while conducting maintenance on the reservoir. The new treatment system and well would be connected to this existing discharge point to accommodate flushing water when starting, stopping, or conducting maintenance on the site equipment.

New catch basins and storm drain piping would be installed as necessary to accommodate site grade changes.

### 1.4.2.4 Security, Entrance, and Landscaping

To promote site security and better screen the new treatment equipment from view, the existing chain-link fence would be replaced with a new 10-foot-high block wall. The wall would extend along the entire north, south, and east sides of the site. A new entrance gate would be installed on the northeast corner of the property, which would connect to West La Palma Avenue. The gate would be used to allow construction and maintenance vehicles to access the site. The existing site entrance on North West Street would be unchanged. New security lighting would be installed throughout the site. New landscaping would be installed on the north portion of the property, near Carbon Creek Channel. Vines or similar landscaping would be planted along the southern wall for aesthetic improvement and to reduce graffiti. The existing chain link fence has been damaged by trees and vegetation, and some existing trees located along the existing fence may need to be removed to facilitate construction of the new block wall. Additionally, overhead electrical and communication lines are located along the southern boundary of the site. These existing utilities would be removed and relocated underground.

## 1.5 Linda Vista Site

The Linda Vista site would include a new treatment plant, piping, operations building, and security features.

### 1.5.1 Current Use

A water treatment system would be installed at the location of the existing Linda Vista Reservoir. The Linda Vista site is located northwest of the intersection of Miraloma Avenue and North Tustin Avenue. The site is located within a commercial/industrial area. It is bound to the east by Tustin Avenue and commercial properties, to the south by additional commercial properties, and to the north and west by Anaheim Lake. Anaheim Lake is a groundwater recharge facility operated by the Orange County Water District (OCWD). It receives water from MWD, sourced from the Colorado River Aqueduct and State Water Project. It also receives water from the Santa Ana River.

The site currently contains a pump station, a large storage tank, water disinfection equipment, storage buildings, and various piping, valves, and other water distribution equipment. The site also has a 2,220 HP diesel-fueled emergency backup generator and a weather station. Several water supply wells are installed around Anaheim Lake. The southern portion of the site is surrounded by a block wall, with chain-link fence on the northern portion. Entrances on North Tustin Avenue allow vehicles to enter and exit the site.

The site formerly contained a 4-million-gallon partially underground reservoir. The reservoir previously extended approximately 15 feet below the current ground surface. The upper 5 feet was demolished and removed. However, portions of the reservoir walls and floors are believed to remain in place at depths ranging from five feet to 15 feet below ground surface. The ground surface in the construction area is primarily soil and weed-type vegetation.

### 1.5.2 Proposed Use

#### 1.5.2.1 Treatment Plant

The project would include installation of a new treatment system in a vacant area of the site north of the existing tank. All existing vegetation within the treatment system area would be removed. The system would be designed to treat produced water at up to approximately 20,000 gpm. Approximately 20 ion exchange resin vessels would be installed at the site. While exact dimensions might vary, the vessels are expected to be approximately 17 feet tall and 12 feet in diameter. Additional smaller treatment equipment would be installed such as pre-treatment filters, pumps, pipes, valves, and other appurtenant structures. An upgraded electrical transformer and switchgear would be added to the site to reliably power the pumping equipment. A new 350 kilowatt (kW) diesel emergency backup generator would be installed to power the treatment plant, pumps, operations building, and associated equipment in the event of a power outage. Upgraded disinfection equipment consisting of pumps and tanks would be installed to store additional sodium hypochlorite (bleach) to disinfect the water leaving the treatment plant. Portions of the abandoned underground reservoir may need to be demolished to facilitate construction. The treatment plant equipment would be set back from North Tustin Avenue, to reduce visibility above the site walls or fences.

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### 1.5.2.2 Water Well

Three existing water supply wells near the Linda Vista site would require rehabilitation. This would include conducting an initial video survey, using downhole instrumentation to study the vertical alignment, installing a liner casing, and using chemical processes to remove built up scaling and improve performance of the well. New pumps and control equipment would be installed.

### 1.5.2.3 Piping

Approximately 4,000 feet of undersized piping located on the western and southern sides of Anaheim Lake would be replaced with larger piping to ensure adequate capacity for reliable operation of the well and treatment facility.

It is anticipated that the treatment system and well would have connections to Anaheim Lake to accommodate flushing water when starting, stopping, or conducting maintenance on the site equipment. New pipes would be connected to existing discharge connections to avoid construction within the Lake boundary. Alternatively, the treatment system and well may be connected to storm drains or sewers. In this case, piping would need to be installed beneath Tustin Avenue or Miraloma Avenue to accommodate these connections. If a sewer connection is deemed necessary, an Industrial Waste Discharge Permit would be obtained from the Orange County Sanitation District. Any piping connections leading to Anaheim Lake would be coordinated with OCWD, to ensure any discharges do not affect OCWD's groundwater recharge operations.

New catch basins and storm drain piping would be installed as necessary to accommodate site grade changes.

### 1.5.2.4 Security, Entrance, and Landscaping

To promote site security and better screen the new treatment equipment from view, the existing chain-link fence located along Tustin Avenue would be replaced with a new 10-foot-high block wall, designed to match the existing block wall to the south. The existing chain-link fence that would not be replaced would be equipped with a new green screen. A new access gate would be installed on the north end of the site, which would connect to Tustin Avenue. New security lighting would be installed throughout the site. New landscaping would be installed along Tustin Avenue, similar to the landscaping currently located near the existing block wall. New security cameras would also be installed. New on-site parking would be constructed for APU staff and site visitors. New on-site access paths and roadways would be replaced.

### 1.5.2.5 Operations Building

An existing operations center and storage building would be demolished and replaced. The new building would be approximately 45 by 50 feet in size. It would be used by maintenance staff and would contain an electrical room, mechanical room, server room, control room, storage, break areas, and restrooms. The operations building would be connected to the site's existing sewer connection. A weather station is located on site, which is operated by the National Oceanic and Atmospheric Administration (NOAA). Prior to the start of construction, the weather station would be temporarily relocated by NOAA onto an existing site building and would later be installed on the new operations building.

## 1.6 Boysen Park Site

The Boysen Park site would include a new treatment plant, piping, and security features.

### 1.6.1 Current Use

An additional water treatment system would be installed within existing Boysen Park. Boysen Park consists of grassy fields, baseball fields, parking areas, playgrounds, and tennis courts. Boysen Park is located southwest of the intersection of South State College Boulevard and Vermont Avenue. The site is bound to the north, south, and east by residences, and to the west by Theodore Roosevelt Elementary School. A tennis center is located immediately south of the site. An existing water supply well is located north of the proposed treatment plant location. The well site includes disinfection equipment and electric and control equipment. Vehicles enter the project area through the intersection of South State College Boulevard and East Wagner Avenue. The ground surface at the project area is currently grass and a concrete walkway.

### 1.6.2 Proposed Use

#### 1.6.2.1 Treatment Plant

The project would include installation of a new water treatment system in a mostly vacant area located between an existing baseball field and tennis courts, west of the park's parking lot, approximately 200 feet southwest of an existing groundwater well and approximately 375 feet south of Theodore Roosevelt Elementary School. The system would be designed to treat produced water at up to approximately 4,400 gpm. Approximately six ion exchange resin vessels would be installed at the site. While exact dimensions might vary, the vessels are expected to be approximately 17 feet tall and 12 feet in diameter. Additional smaller treatment equipment would be installed, such as pre-treatment filters, pumps, pipes, valves, and other appurtenant structures.

An upgraded electrical transformer would be added to the site to reliably power the pumping equipment. Electrical equipment connections would be installed to allow the facility to operate off a portable emergency backup generator. Upgraded disinfection equipment consisting of pumps and tanks would be installed near the existing well to store additional sodium hypochlorite (bleach) to disinfect the water leaving the treatment plant.

Some picnic benches, barbecue grills, and a concrete walkway would need to be relocated from outside the proposed treatment area. These features would be relocated to a location approved by the City's Community Services Department to ensure future public access. Trees, grass, and other vegetation would need to be removed from the footprint of the treatment plant to facilitate construction. Trees would be replanted in new locations approved by the City's Community Services Department.

#### 1.6.2.2 Well Rehabilitation

An existing water supply well at the Boysen Park site would be rehabilitated. This would include conducting an initial video survey, using downhole instrumentation to study the vertical alignment, installing a liner casing, and using chemical processes to remove built up scaling and improve performance of the well. New pumps and control equipment would be installed.



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### 1.6.2.3 Piping

New buried piping would be installed beneath the existing parking lot to convey water from the existing well into the treatment system and City water system.

The treatment system and well would be connected to the storm drain system located near the existing well. This connection would be used to accommodate flushing water when starting, stopping, or conducting maintenance on the site equipment.

New catch basins and storm drain piping would be installed as necessary to accommodate site grade changes.

### 1.6.2.4 Security, Entrance, and Landscaping

To promote site security and better screen the new treatment equipment from view, a new 10-foot-high no-climb fence would be installed surrounding the new treatment site and the existing water well. Existing fences around the park's tennis courts would be increased in height to up to 12-feet tall. A driveway would be connected to the existing park parking lot. Retractable bollards, or similar security structures would be used to prevent unauthorized vehicles from entering the project site. New security lighting would be installed around the treatment site and existing well.

Some parking areas might be temporarily disrupted during construction and some trees and vegetation would need to be removed from the project area prior to constructing the new treatment system. Activities affecting park usage would be coordinated with the City Community Services Department to minimize the impacts.

## 1.7 Energy Field Site

The Energy Field site would include a new treatment plant, piping, and security features.

### 1.7.1 Current Use

An additional water treatment system would be installed approximately 400 feet southwest of an existing City water supply well. The site is located north of Energy Field Park, west of an existing City street sweeping station and electrical substation, and south and west of Anaheim Barber Channel, an Orange County flood control channel. An unused control building is located at the site, along with unused solar panel foundations. The park contains a walking path, restrooms, playground, covered benches, and an artificial turf field. An existing water supply well is located north of the proposed treatment plant location.

### 1.7.2 Proposed Use

#### 1.7.2.1 Treatment Plant

The project would include installation of a new water treatment system in a mostly vacant area located north of the Energy Field Park. The system would be designed to treat produced water at up to approximately 3,000 gpm. Approximately four ion exchange resin vessels would be installed at the site. While exact dimensions might vary, the vessels are expected to be approximately 17 feet tall and 12 feet in diameter. Additional smaller treatment equipment would be installed, such as pre-treatment filters, pumps, piping, valves, and other appurtenant

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structures. An existing unused control building may be repurposed to hold treatment system equipment. Alternatively, it may be demolished and removed. The unused solar panel foundations would also be removed.

An upgraded electrical transformer would be added to the site to reliably power the pumping equipment. Electrical equipment connections would be installed to allow the facility to operate off a portable emergency backup generator. Upgraded disinfection equipment consisting of pumps and tanks would be installed near the existing well to store additional sodium hypochlorite (bleach) to disinfect the water leaving the treatment plant.

### 1.7.2.2 Piping

New buried piping would be installed to convey water from the existing well into the treatment system and City water system. The piping would either be installed to the northwest, beneath an existing City street sweeping station and electrical substation, toward the existing well, or to the east, beneath the Energy Field Park, and then north beneath South 9th Street.

The treatment system might require a new piped connection to the adjacent Anaheim Barber Channel. This connection would be used to accommodate flushing water when starting, stopping, or conducting maintenance on the site equipment. An encroachment permit would be obtained from Orange County Public Works prior to installing new connections to the flood control channel.

### 1.7.2.3 Security, Entrance, and Landscaping

To promote site security and better screen the new treatment equipment from view, a new 10-foot-high no-climb fence would be installed surrounding the new treatment site. This would require demolition of an existing portion of fence on the south portion of the treatment property. A concrete walkway and new access road would be constructed connecting to the existing site entrance on South 9th Street, extending along the southern park boundary, extending further northeast along the adjacent flood control channel. The new driveway would allow access by construction and maintenance vehicles, and also allow increased pedestrian access through the park. New security lighting would be installed around the treatment site and existing well.

## 1.8 Treatment System Construction

At all four treatment system sites, minor grading activities would be necessary to prepare the location for vessel installation. This would involve ensuring the ground surface is level and properly compacted to support the vessels. A concrete foundation slab would be installed to accommodate the vessels. Equipment and materials would be transported to each site by truck and would be lifted in place by crane and anchored to the foundation. Piping would be installed to receive water from existing water wells, move it through the treatment process, and pump the treated water into the water distribution system. In most cases, excavation would be conducted at depths of 5 feet or less. However, deeper excavations (up to approximately 10 or more feet) may be necessary for activities such as installing valve vaults. It is anticipated that approximately 100 cubic yards of soil would be excavated from each site to facilitate construction. Work would generally be conducted from 7:00 AM to 7:00 PM, Monday through Friday. For impact generating equipment, work hours would be further restricted to between 9:00 AM and 4:00 PM, Monday through Friday. Any work in street right-of-way would be conducted from 8:30 AM to 3:30 PM. However, project work may occasionally occur outside of these hours. Work outside these hours would be subject to approval by APU.

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Typical construction equipment would be used during this project. This would include pickup trucks, dump trucks, backhoes, excavators, air-driven equipment (such as jackhammers), cranes, soil compactors, cement mixers, and other similar equipment. Equipment would be rotated in and out as construction progresses. To expedite construction, multiple treatment sites may be constructed concurrently.

A drinking water permit amendment would be obtained from the State Water Resources Control Board Division of Drinking Water prior to operating the treatment plants. All construction activities would be conducted in accordance with local, state, and federal requirements. All additives that come in contact with water would meet the requirements of NSF-61 to ensure they are compatible with drinking water.

### 1.9 Water Well Construction

A new groundwater well would be installed at the La Palma Site. A well drilling permit would be obtained from APU prior to commencing drilling activities. Anaheim Municipal Code Section 10.20 requires that water wells be constructed in accordance with California Department of Water Resources Bulletin 74 (California Water Well Standards).

A drill rig would be used to drill a borehole and install a steel casing at both sites. When completed, the well would be constructed of steel and cement would be used to prevent contamination from entering the well. Construction and development of the well will be conducted 24 hours per day 7 days per week for several weeks. Because work will be conducted at night, sound walls up to approximately 24 feet high would be installed to reduce noise during drilling and development activities.

Groundwater and drilling fluid will be pumped from the borehole and well during construction. These fluids will be pumped through settling tanks to reduce sediment. Once the sediment has been reduced to an acceptable level and chlorine has been neutralized, the water would be discharged into the storm drain system, in accordance with National Pollutant Discharge Elimination System permit requirements.

Some water treatment chemicals would be temporarily stored on site during well construction. This would include sodium hypochlorite (bleach) for well disinfecting, drilling fluid dispersants, and dechlorination agents.

Upon completion, the well would be equipped with a pump and connected to the water distribution system. The well water would be sampled and tested, and a drinking water permit amendment would be obtained from the State Water Resources Control Board Division of Drinking Water prior to operating the well. All well construction activities would be conducted in accordance with local, state, and federal requirements.

Construction equipment used during this phase is expected to include a drill rig, backhoe, air compressor, diesel-powered test pump, cement mixers and pumps, flatbed trucks, and other similar equipment. Equipment would be rotated in and out as construction progresses.

### 1.10 Water Well Rehabilitation

Existing water supply wells at the La Palma, Linda Vista, and Boysen Park sites would be rehabilitated. This would entail conducting a downhole video inspection to evaluate the well condition and a survey would be conducted to

verify the well's vertical alignment. A brush would be lowered into the well casing to clean the screen. A steel liner would be lowered into the existing well casing and sealed in place with materials such as gravel, sand, bentonite, and/or cement.

Groundwater would be pumped from the well during rehabilitation. These fluids will be pumped through settling tanks to reduce sediment. Once the sediment has been reduced to an acceptable level and chlorine has been neutralized, the water would be discharged into the storm drain system or Anaheim Lake, in accordance with National Pollutant Discharge Elimination System (NPDES) permit requirements.

Some water treatment chemicals would be temporarily stored on site during well construction. This would include sodium hypochlorite (bleach) for well disinfecting, drilling fluid dispersants, dechlorination agents, hydrochloric acid (to break down accumulated scale in the well), and other similar well rehabilitation products. All products used in the well would comply with NSF-61 to ensure they are safe for use in the water distribution system.

Upon completion, the well would be equipped with a pump and connected to the water distribution system. The well water would be sampled and tested, and a drinking water permit amendment would be obtained from DDW prior to operating the well. All well construction activities would be conducted in accordance with local, state, and federal requirements.

Construction equipment used during this phase is expected to include a development rig (similar to a crane), backhoe, air compressor, diesel-powered test pump, cement mixers and pumps, flatbed trucks, and other similar equipment. Equipment would be rotated in and out as construction progresses.

## 1.11 Treatment System and Well Operation

Operation and maintenance activities will be conducted to ensure the treatment systems operate safely and efficiently. APU technicians would generally visit each treatment and well site daily to verify the system is operated as designed. The workers would typically be able to conduct their activities using an ordinary pickup truck or similar vehicle. In most cases, maintenance work would be conducted during daytime. However, it is possible that unplanned repairs would need to be conducted at night.

Resin change-out would need to be conducted at each treatment site. Change-outs would be scheduled when the resin becomes saturated and cannot effectively treat the water. This is expected to occur once per year at each treatment site. However, the exact frequency will vary based on the flow through the treatment plants and the chemistry of the water. A water hose would be used to flush the spent resin from the treatment vessels into a tanker truck for transportation. The resin would be taken to an appropriately permitted facility for incineration or disposal. State, local, and federal laws pertaining to waste transportation and disposal would be followed.

## 2 General Analysis and Methodology

The project is located within the South Coast Air Basin (SCAB) and is within the jurisdictional boundaries of the SCAQMD, which has jurisdiction over the City and County where the project is located. The California Emissions Estimator Model (CalEEMod) Version 2016.3.2 was used to estimate emissions from construction of the project (CAPCOA 2017). CalEEMod is a statewide computer model developed in cooperation with air districts throughout

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the state to quantify criteria air pollutant and GHG emissions associated with construction activities and operation of a variety of land use projects, such as residential, commercial, and industrial facilities. CalEEMod input parameters, including the land use type used to represent the project and its size, construction schedule, and anticipated use of construction equipment, were based on information provided by the City or default model assumptions if project specifics were unavailable.

Criteria air pollutants are defined as pollutants for which the federal and state governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. Criteria air pollutants that are evaluated include reactive organic gases (also referred to as volatile organic compounds [VOCs]), oxides of nitrogen ( $\text{NO}_x$ ), carbon monoxide (CO), sulfur oxides ( $\text{SO}_x$ ), particulate matter with an aerodynamic diameter less than or equal to 10 microns in size (coarse particulate matter or  $\text{PM}_{10}$ ), and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns in size (fine particulate matter or  $\text{PM}_{2.5}$ ). VOCs and  $\text{NO}_x$  are precursors to ozone ( $\text{O}_3$ ). Criteria air pollutant emissions associated with construction of the project were estimated for the following emission sources: operation of off-road construction equipment, paving, architectural coating, on-road vendor (material delivery) trucks, and worker vehicles.

GHGs are gases that absorb infrared radiation in the atmosphere. The greenhouse effect is a natural process that contributes to regulating the Earth's temperature. Global climate change concerns are focused on whether human activities are leading to an enhancement of the greenhouse effect. Principal GHGs include carbon dioxide ( $\text{CO}_2$ ), methane ( $\text{CH}_4$ ), nitrous oxide ( $\text{N}_2\text{O}$ ),  $\text{O}_3$ , and water vapor. If the atmospheric concentrations of GHGs rise, the average temperature of the lower atmosphere will gradually increase. Globally, climate change has the potential to impact numerous environmental resources. Although climate change is driven by global atmospheric conditions, climate change impacts are felt locally. Climate change is already affecting California: average temperatures have increased, leading to more extreme hot days and fewer cold nights; shifts in the water cycle have been observed, with less winter precipitation falling as snow, and both snowmelt and rainwater running off earlier in the year; sea levels have risen; and wildland fires are becoming more frequent and intense due to dry seasons that start earlier and end later (CAT 2010).

The effect each GHG has on climate change is measured as a combination of the mass of its emissions and the potential of a gas or aerosol to trap heat in the atmosphere, known as its global warming potential (GWP), which varies among GHGs. Total GHG emissions are expressed as a function of how much warming would be caused by the same mass of  $\text{CO}_2$ . Thus, GHG emissions are typically measured in terms of metric tons (MT) of  $\text{CO}_2$  equivalent ( $\text{CO}_2\text{e}$ ). The  $\text{CO}_2\text{e}$  for a gas is derived by multiplying the mass of the gas by the associated GWP, such that  $\text{MT of CO}_2\text{e} = (\text{MT of a GHG}) \times (\text{GWP of the GHG})$ . CalEEMod assumes that the GWP for  $\text{CH}_4$  is 25, which means that emissions of 1 MT of  $\text{CH}_4$  are equivalent to emissions of 25 MT of  $\text{CO}_2$ , and the GWP for  $\text{N}_2\text{O}$  is 298, based on the Intergovernmental Panel on Climate Change's Fourth Assessment Report (IPCC 2007).

GHG emissions associated with construction of the project were estimated for the following emission sources: operation of off-road construction equipment, on-road vendor trucks, and worker vehicles. The detailed project assumptions are included in Attachment A. CalEEMod was used to estimate potential project-generated GHG emissions during construction, which were then used to estimate energy consumption. The estimated GHGs were back-calculated based on carbon content (i.e., kilograms of  $\text{CO}_2$  per gallon) in order to estimate fuel usage during project construction. The conversion factor for gasoline is 8.78 kilograms per metric ton  $\text{CO}_2$  per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton  $\text{CO}_2$  per gallon (The Climate Registry 2020).

## 2.1 Construction

Emissions from the construction phase of the Project were estimated using CalEEMod, Version 2016.3.2. CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant emissions associated with construction activities from a variety of land use projects, such as residential, commercial, and industrial facilities. For the project, all project components (La Palma, Linda Vista, Boysen Park, and Energy Field sites) were modeled.

A construction assumptions scenario was developed for each of the project components modeled based on the best available information at this time. Key construction assumptions include phase types, phase timing and duration, off-road equipment use (e.g., type, quantity, and hours of operation per day), number of vehicle trips (e.g., haul trucks, vendor trucks, and worker vehicles) and trip distance, ground disturbance acreage, amount of demolition debris, and paving area. See Attachment A for complete construction assumption details.

A summary of anticipated project components construction schedules is listed below. For purposes of modeling the project's emissions, the following construction schedule was assumed. Construction activities are anticipated to occur from September 2021 through 2023.

- **La Palma Site:**
  - Water Well: Grading – September 1, 2021, to September 14, 2021
  - Water Well: Well Construction – September 15, 2021, to November 23, 2021
  - Water Well: Equipment Installation – November 24, 2021, to November 30, 2021
  - Pipeline: Installation – September 1, 2021, to September 28, 2021
  - Pipeline: Final Paving – September 29, 2021, to October 5, 2021
  - Pipeline: Pavement Striping – October 6, 2021
  - Water Treatment Plant (WTP): Site Preparation and Grading – October 7, 2021, to October 20, 2021
  - WTP: Equipment Installation – October 14, 2021, to January 13, 2022
  - WTP: Security, Entrance, Landscaping – January 14, 2022, to January 27, 2022
  - WTP: Paving – January 28, 2022, to February 3, 2022
  - WTP: Architectural Coating – January 28, 2022, to February 3, 2022
- **Linda Vista Site:**
  - Pipeline: Installation – February 4, 2022, to May 12, 2022
  - Pipeline: Final Paving – May 13, 2022, to May 19, 2022
  - WTP: Demolition – May 20, 2022, to June 6, 2022
  - WTP: Site Preparation and Grading – June 3, 2022, to June 9, 2022
  - WTP: Equipment Installation – June 10, 2022, to December 10, 2022
  - WTP: Security, Entrance, Landscaping – December 11, 2022, to January 8, 2023
  - WTP: Paving – January 9, 2023, to January 20, 2023
  - WTP: Architectural Coating – January 9, 2023, to January 20, 2023



- **Boysen Park Site:**
  - Pipeline: Installation – January 21, 2023, to January 27, 2023
  - Pipeline: Final Paving – January 28, 2023, to February 3, 2023
  - Pipeline: Pavement Striping – February 4, 2023, to February 10, 2023
  - WTP: Demolition – January 21, 2023, to January 28, 2023
  - WTP: Site Preparation and Grading – January 29, 2023, to February 10, 2023
  - WTP: Equipment Installation – February 11, 2023, to March 24, 2023
  - WTP: Security, Entrance, Landscaping – March 25, 2023, to April 14, 2023
  - WTP: Paving – April 17, 2023
  - WTP: Architectural Coating – April 17, 2023
- **Energy Field Site:**
  - Pipeline: Installation – April 18, 2023, to June 12, 2023
  - Pipeline: Final Paving – June 13, 2023, to July 10, 2023
  - Pipeline: Pavement Striping – July 11, 2023, to July 12, 2023
  - WTP: Demolition – April 18, 2023, to April 24, 2023
  - WTP: Equipment Installation – April 25, 2023, to June 26, 2023
  - WTP: Security, Entrance, Landscaping – June 27, 2023, to July 27, 2023
  - WTP: Paving – July 28, 2023, to July 31, 2023
  - WTP: Architectural Coating – July 28, 2023, to July 31, 2023

Off-road equipment emissions were estimated in CalEEMod based on the type of equipment, the number of pieces of each equipment, and the hours of operation. CalEEMod default values for equipment horsepower and load factor were applied. The majority of equipment was assumed to be in operation for 8 hours per day. However, for well drilling and construction, some pieces of equipment would need to operate up to 24 hours per day.

Emissions from vehicle trips are estimated in CalEEMod based on the number of trips, the trip distance, and emission factors for the vehicle category. Regarding the vehicle categories, and consistent with CalEEMod default values, worker trips are assumed to be passenger vehicles and light-duty trucks, vendor truck trips are assumed to be a mix of medium- and heavy-heavy duty trucks, and haul truck trips are assumed to be heavy-heavy duty trucks. Each worker, vendor, and haul truck was estimated to result in two one-way trips. Haul truck trips during the demolition phase were based on the square footage of the building being demolished and CalEEMod defaults. Construction equipment was based on input from the City and CalEEMod default inputs, which take into account the activity and construction duration. The construction equipment mix and vehicle trips used for estimating the Project-generated construction emissions are shown in Table 1.

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**Table 1. Construction Scenario Assumptions**

Construction Phase	One-Way Trips			Equipment	Quantity	Hours Per Day
	Daily Workers	Daily Vendor Trucks	Total Haul Trucks			
La Palma Site						
Water Well – Grading	12	6	0	Cement and Mortar Mixers	1	4
				Excavator	1	4
Water Well – Well Construction	8	2	40	Bore/Drill Rig	1	24
				Excavators	1	8
Water Well – Equipment Installation	8	2	0	Rough Terrain Forklifts	1	8
				Cranes	1	4
Pipeline – Installation	12	4	0	Concrete/Industrial Saws	1	8
				Excavators	1	8
				Tractors/Loaders/Backhoes	1	8
Pipeline – Final Paving	6	4	0	Pavers	1	8
				Rollers	1	8
				Paving Equipment	1	8
Pipeline – Pavement Striping	4	4	0	N/A	N/A	N/A
WTP – Site Preparation and Grading	12	0	0	Graders	1	8
				Rubber-Tired Dozers	1	8
				Tractors/Loaders/Backhoes	1	8
WTP – Equipment Installation	10	2	0	Cranes	1	4
				Rough Terrain Forklifts	1	4
				Air Compressors	1	8
				Tractors/Loaders/Backhoes	1	8
WTP – Security, Entrance, and Landscaping	8	2	0	Skid Steer Loaders	1	4
				Cement and Mortar Mixers	1	8
WTP – Paving	6	2	0	Pavers	1	8
				Rollers	1	8
WTP – Architectural Coating	6	2	0	Air Compressors	1	8
Linda Vista Site						
Pipeline – Installation	12	4	0	Concrete/Industrial Saws	1	8
				Excavators	1	8

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**Table 1. Construction Scenario Assumptions**

Construction Phase	One-Way Trips			Equipment	Quantity	Hours Per Day
	Daily Workers	Daily Vendor Trucks	Total Haul Trucks			
Pipeline – Final Paving	6	4	0	Tractors/Loaders/Backhoes	1	8
				Pavers	1	8
				Rollers	1	8
				Paving Equipment	1	8
WTP – Demolition	4	0	6	Concrete/Industrial Saws	1	8
				Tractors/Loaders/Backhoes	1	8
WTP – Site Preparation and Grading	12	0	0	Graders	1	8
				Rubber-Tired Dozers	1	8
				Tractors/Loaders/Backhoes	2	8
WTP – Equipment Installation	10	2	0	Cranes	1	4
				Rough Terrain Forklifts	1	4
				Air Compressors	1	8
WTP – Security, Entrance, and Landscaping	8	2	0	Skid Steer Loaders	1	4
				Cement and Mortar Mixers	1	8
WTP – Paving	6	2	0	Pavers	1	8
				Rollers	1	8
WTP – Architectural Coating	6	2	0	Air Compressors	1	8
<b>Boysen Park Site</b>						
Pipeline – Installation	12	4	4	Concrete/Industrial Saws	1	8
				Excavators	1	8
				Tractors/Loaders/Backhoes	1	8
Pipeline – Final Paving	6	4	0	Pavers	1	8
				Rollers	1	8
				Paving Equipment	1	8
Pipeline – Pavement Striping	4	4	0	N/A	N/A	N/A
WTP – Demolition	4	0	4	Tractors/Loaders/Backhoes	1	8
WTP – Site Preparation	4	0	0	Tractors/Loaders/Backhoes	1	8
	10	2	0	Rough Terrain Forklifts	1	4

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**Table 1. Construction Scenario Assumptions**

Construction Phase	One-Way Trips			Equipment	Quantity	Hours Per Day
	Daily Workers	Daily Vendor Trucks	Total Haul Trucks			
WTP – Equipment Installation				Tractors/Loaders/Backhoes	1	8
WTP – Security, Entrance, and Landscaping	8	2	0	Skid Steer Loaders	1	4
				Cement and Mortar Mixers	1	8
WTP – Paving	6	2	0	Pavers	1	8
				Rollers	1	8
WTP – Architectural Coating	6	2	0	Air Compressors	1	8
<b>Energy Field Site</b>						
Pipeline – Installation	12	4	2	Concrete/Industrial Saws	1	8
				Excavators	1	8
				Tractors/Loaders/Backhoes	1	8
Pipeline – Final Paving	6	4	0	Pavers	1	8
				Rollers	1	8
				Paving Equipment	1	8
Pipeline – Pavement Striping	4	4	0	N/A	N/A	N/A
WTP – Demolition	4	0	4	Concrete/Industrial Saws	1	8
				Excavators	1	8
				Tractors/Loaders/Backhoes	1	8
WTP – Equipment Installation	10	2	0	Cranes	1	2
				Rough Terrain Forklifts	1	4
				Tractors/Loaders/Backhoes	1	8
WTP – Security, Entrance, and Landscaping	8	2	0	Skid Steer Loaders	1	4
				Cement and Mortar Mixers	1	8
WTP – Paving	6	2	0	Pavers	1	8
				Rollers	1	8
WTP – Architectural Coating	6	2	0	Air Compressors	1	8

**Notes:** N/A = not applicable; WTP = water treatment plant.

See Attachment A.

Dates may vary from the exact dates listed here; however, the analysis assumes a construction start date of September 2021, which represents the earliest date construction would initiate. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant and GHG emissions because equipment and vehicle emission factors for later years would be slightly

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less due to more stringent standards for in-use off-road equipment and heavy-duty trucks, as well as fleet turnover replacing older equipment and vehicles in later years.

CalEEMod Version 2016.3.2 was used to estimate emissions from construction of the project. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation, and for particulate matter, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated. Details of the emission calculations are provided in Attachment A.

## 2.2 Operation

Operation of the new well and water treatment facilities would generate minimal VOCs, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions. Specifically, operation and maintenance activities will be conducted to ensure the treatment systems operate safely and efficiently. APU technicians would generally visit each treatment and well site daily to verify the system is operated as designed. The worker would typically conduct their activities using an ordinary pickup truck or similar vehicle. In most cases, maintenance work would be conducted during daytime. However, it is possible that unplanned repairs would need to be conducted at night. Other emissions associated with operation of the project would include area sources (consumer products and architectural coatings for repainting) and energy sources associated with the operations building's electricity and natural gas usage (non-hearth). Electricity use would contribute indirectly to criteria air pollutant emissions; however, the emissions from electricity use are only quantified for GHGs in CalEEMod, since criteria pollutant emissions occur at the power plant, which is typically off site. Notably, the project would not result in a net increase in landscape maintenance equipment activity compared to the existing conditions at the project sites. In order to estimate the project's mobile emissions, it was assumed that one worker vehicle (two one-way trips) for maintenance activities would occur at each site daily.

As previously discussed in the Project Description, emergency backup generators are anticipated to be required at each site in the event of a power outage. While use of a generator during an emergency is not included in the emissions inventory as they are speculative, emissions associated with testing and maintenance of the generator is included. The project would include a 350-kW emergency generator. Accordingly, it was assumed that the generators would be tested for 1 hour per day, and 50 hours per year based on SCAQMD Rule 1470.<sup>1</sup> CalEEMod was used to estimate emissions from emergency generator testing and maintenance.

## 3 Air Quality Assessment

### 3.1 Thresholds of Significance

The significance criteria used to evaluate the project impacts to air quality is based on the recommendations provided in Appendix G of the CEQA Guidelines. For the purposes of this air quality analysis, a significant impact would occur if the project would (14 CCR 15000 et seq.):

1. Conflict with or obstruct implementation of the applicable air quality plan.

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<sup>1</sup> Per SCAQMD Rule 1470 (Requirement for Stationary Diesel-Fueled Internal Combustion and Other Compression Ignition Engines), new stationary emergency standby diesel-fueled engines (greater than 50 brake horsepower) shall not operate more than 50 hours per year for maintenance and testing.

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2. 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.
3. Expose sensitive receptors to substantial pollutant concentrations.
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

Appendix G of the CEQA Guidelines (14 CCR 15000 et seq.) indicates that, where available, the significance criteria established by the applicable air quality management district or pollution control district may be relied upon to determine whether the project would have a significant impact on air quality. The SCAQMD Air Quality Significance Thresholds as revised in March 2019, sets forth quantitative emission significance thresholds below which a project would not have a significant impact on ambient air quality. Project-related air quality impacts estimated in this environmental analysis would be considered significant if any of the applicable significance thresholds presented in Table 2, SCAQMD Air Quality Significance Thresholds, are exceeded.

A project would result in a substantial contribution to an existing air quality violation of the National Ambient Air Quality Standards (NAAQS) or California Ambient Air Quality Standards (CAAQS) for O<sub>3</sub>, which is a nonattainment pollutant, if the project's construction or operational emissions would exceed the SCAQMD VOC or NO<sub>x</sub> thresholds shown in Table 2. These emission-based thresholds for O<sub>3</sub> precursors are intended to serve as a surrogate for an "ozone significance threshold" (i.e., the potential for adverse O<sub>3</sub> impacts to occur) because O<sub>3</sub> itself is not emitted directly and the effects of an individual project's emissions of O<sub>3</sub> precursors (VOC and NO<sub>x</sub>) on O<sub>3</sub> levels in ambient air cannot be determined through air quality models or other quantitative methods.

**Table 2. SCAQMD Air Quality Significance Thresholds**

Criteria Pollutants Mass Daily Thresholds		
Pollutant	Construction (pounds per day)	Operation (pounds per day)
VOCs	75	55
NO <sub>x</sub>	100	55
CO	550	550
SO <sub>x</sub>	150	150
PM <sub>10</sub>	150	150
PM <sub>2.5</sub>	55	55
Lead <sup>a</sup>	3	3
TACs and Odor Thresholds		
TACs <sup>b</sup>	Maximum incremental cancer risk ≥ 10 in 1 million Chronic and acute hazard index ≥ 1.0 (project increment)	
Odor	Project creates an odor nuisance pursuant to SCAQMD Rule 402	
Ambient Air Quality Standards for Criteria Pollutants <sup>c</sup>		
NO <sub>2</sub> 1-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards: 0.18 ppm (state)	
NO <sub>2</sub> annual arithmetic mean	0.030 ppm (state) and 0.0534 ppm (federal)	



**Table 2. SCAQMD Air Quality Significance Thresholds**

CO 1-hour average	SCAQMD is in attainment; project is significant if it causes or contributes to an exceedance of the following attainment standards:
CO 8-hour average	20 ppm (state) and 35 ppm (federal)
PM <sub>10</sub> 24-hour average	9.0 ppm (state/federal)
PM <sub>10</sub> annual average	10.4 µg/m <sup>3</sup> (construction) <sup>d</sup>
	2.5 µg/m <sup>3</sup> (operation)
PM <sub>2.5</sub> 24-hour average	1.0 µg/m <sup>3</sup>
	10.4 µg/m <sup>3</sup> (construction) <sup>d</sup>
	2.5 µg/m <sup>3</sup> (operation)

**Source:** SCAQMD 2019.

**Notes:** µg/m<sup>3</sup> = micrograms per cubic meter; CO = carbon monoxide; NO<sub>2</sub> = nitrogen dioxide; NO<sub>x</sub> = oxides of nitrogen; PM<sub>10</sub> = coarse particulate matter; PM<sub>2.5</sub> = fine particulate matter; ppm = parts per million; SCAQMD = South Coast Air Quality Management District; SO<sub>x</sub> = sulfur oxides; TAC = toxic air contaminant; VOC = volatile organic compounds

GHG emissions thresholds for industrial projects, as added in the March 2015 revision to the SCAQMD Air Quality Significance Thresholds, were not included in Table 2 as they will be addressed within the GHG emissions analysis and not the air quality study.

<sup>a</sup> The phaseout of leaded gasoline started in 1976. Since gasoline no longer contains lead, the project is not anticipated to result in impacts related to lead; therefore, it is not discussed in this analysis.

<sup>b</sup> TACs include carcinogens and noncarcinogens.

<sup>c</sup> Ambient air quality standards for criteria pollutants are based on SCAQMD Rule 1303, Table A-2, unless otherwise stated.

<sup>d</sup> Ambient air quality threshold are based on SCAQMD Rule 403.

In addition to the emission-based thresholds listed in Table 2, SCAQMD also recommends the evaluation of localized air quality impacts to sensitive receptors in the immediate vicinity of the project as a result of construction activities. Such an evaluation is referred to as a localized significance threshold (LST) analysis. For project sites of 5 acres or less, the SCAQMD LST Methodology (2009) includes lookup tables that can be used to determine the maximum allowable daily emissions that would satisfy the localized significance criteria (i.e., the emissions would not cause an exceedance of the applicable concentration limits for NO<sub>2</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub>) without performing project-specific dispersion modeling.

The LST significance thresholds for NO<sub>2</sub> and CO represent the allowable increase in concentrations above background levels in the vicinity of a project that would not cause or contribute to an exceedance of the relevant ambient air quality standards, while the threshold for PM<sub>10</sub> represents compliance with Rule 403 (Fugitive Dust). The LST significance threshold for PM<sub>2.5</sub> is intended to ensure that construction emissions do not contribute substantially to existing exceedances of the PM<sub>2.5</sub> ambient air quality standards. The allowable emission rates depend on the following parameters:

- Source-receptor area (SRA) in which the project is located
- Size of the project site
- Distance between the project site and the nearest sensitive receptor (e.g., residences, schools, hospitals)

The project site is located in SRA 17 (Central Orange County). SCAQMD provides guidance for applying CalEEMod to the LSTs. LST pollutant screening level concentration data is currently published for 1-, 2-, and 5-acre sites for varying distances. The maximum number of acres disturbed on the peak day was estimated using the “Fact Sheet for Applying CalEEMod to Localized Significance Thresholds” (SCAQMD 2011), which provides estimated acres per 8-hour day for crawler tractors, graders, rubber-tired dozers, and scrapers. Based on the SCAQMD guidance, and

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assuming an excavator can grade 0.5 acres per 8-hour day (similar to graders, dozers, and tractors), it was estimated that the maximum acres on the project site that would be disturbed by off-road equipment would be 1 acre per day (two excavators operating during the grading phase). Because the total disturbed acreage would be 10 acres over approximately 40 days, the estimate of 1 acre per day of disturbance is conservative. Because the SCAQMD does not provide lookup table values for sites less than 1 acre, the LST values for a 1 acre within SRA 17 were used.

The nearest sensitive-receptor land use differs for each proposed site with the closest (single-family residences) immediately adjacent to the La Palma site to the south. As such, the LST receptor distance was assumed to be 82 feet (25 meters), which is the shortest distance provided by the SCAQMD lookup tables. The LST values from the SCAQMD lookup tables for SRA 17 (Central Orange County) for a 1-acre project site and a receptor distance of 25 meters are shown in Table 3.

**Table 3. Localized Significance Thresholds for Source Receptor Area 17 (Central Orange County)**

Pollutant	Threshold (pounds/day)
NO <sub>2</sub>	81
CO	485
PM <sub>10</sub>	4
PM <sub>2.5</sub>	3

**Source:** SCAQMD 2009.

**Notes:** CO = carbon monoxide; NO<sub>2</sub> = nitrogen dioxide; PM<sub>10</sub> = coarse particulate matter; PM<sub>2.5</sub> = fine particulate matter; ppm = parts per million. LST thresholds were determined based on the values for 1-acre site at a distance of 25 meters from the nearest sensitive receptor.

## General Conformity

The first step in the general conformity analysis is the applicability analysis. The National Highway System Designation Act of 1995, (Pub. L. 104–59) added section 176(c)(5) to the Clean Air Act to limit applicability of the conformity programs to areas designated as nonattainment under section 107 of the Clean Air Act and maintenance areas under section 175A of the Clean Air Act only. Therefore, only actions in designated nonattainment and maintenance areas are subject to the regulation. In addition, the regulations recognize that the vast majority of federal actions do not result in significant increase in emissions and, therefore, include a number of exemptions such as *de minimis* emission levels based on the type and severity of the nonattainment problem. In the applicability analysis phase, the federal agency determines:

1. Whether the action will occur in a nonattainment or maintenance area;
2. Whether one of the specific exemptions apply to the action;
3. Whether the federal agency has included the action on its list of “presumed to conform” actions; or
4. Whether the total direct and indirect emissions are below or above the *de minimis* levels.

Because the SCAB, where the project is located, is a nonattainment and maintenance area for some pollutants, the conformity analysis is applicable per item 1 above. In addition, no exemptions apply to the project (item 2)

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and the federal agency has not presumed the project would confirm at this time (item 3). Therefore, the applicability analysis focuses on item 4.

Regarding item 4, a conformity determination is required for each criteria pollutant or precursor where the total of direct and indirect emissions of the criteria pollutant or precursor in a federal nonattainment or maintenance area would equal or exceed specified annual emission rates, referred to as “*de minimis*” thresholds or would be “regionally significant.” A project’s direct and indirect emissions are regionally significant if they exceed 10% or more of a nonattainment or maintenance area’s emissions inventory for that pollutant. For ozone precursors, PM<sub>10</sub>, and PM<sub>2.5</sub>, the *de minimis* thresholds depend on the severity of the nonattainment classification; for other pollutants, the threshold is set at 100 tons per year. The SCAB is designated as extreme nonattainment for ozone, serious nonattainment for PM<sub>2.5</sub>, and attainment/maintenance for CO and PM<sub>10</sub> under the NAAQS. The relevant *de minimis* thresholds for the SCAB are shown in Table 4.

**Table 4. General Conformity De Minimis Thresholds**

Pollutant	NAAQS Attainment Status	Annual Emissions (tons/year)
NO <sub>x</sub>	Extreme Nonattainment (O <sub>3</sub> )	10
VOC	Extreme Nonattainment (O <sub>3</sub> )	10
CO	Attainment/Maintenance	100
PM <sub>10</sub>	Attainment/Maintenance	100
PM <sub>2.5</sub> (direct)	Serious Nonattainment	70
PM <sub>2.5</sub> (NO <sub>x</sub> ) <sup>1</sup>	(Serious Nonattainment)	70
PM <sub>2.5</sub> (VOC and NH <sub>3</sub> ) <sup>2</sup>	(Serious Nonattainment)	70
PM <sub>2.5</sub> (SO <sub>x</sub> )	(Serious Nonattainment)	70

**Notes:**

- <sup>1</sup> NO<sub>x</sub> is included unless determined not to be a significant precursor. However, the NO<sub>x</sub> threshold based on its contribution to ozone is more stringent.
- <sup>2</sup> VOC and ammonia (NH<sub>3</sub>) are not included unless determined to be a significant precursor. However, the VOC threshold based on their contribution to ozone is more stringent. Ammonia would not be emitted as a result of the proposed action.

## 3.2 Air Quality Impact Analysis

### ***Would the project conflict with or obstruct implementation of the applicable air quality plan?***

The purpose of a consistency finding is to determine if a project is inconsistent with the assumptions and objectives of the regional air quality plans, and, thus, if it would interfere with the region’s ability to comply with federal and state air quality standards. The SCAQMD has established criteria for determining consistency with the currently applicable air quality management plan (AQMP) in Chapter 12, Sections 12.2 and 12.3, in the SCAQMD CEQA Air Quality Handbook. The criteria are as follows (SCAQMD 1993):

- Whether the project would result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP.

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- Whether the project would exceed the assumptions in the AQMP or increments based on the year of project buildout and phase.

To address the first criterion regarding the project's potential to result in an increase in the frequency or severity of existing air quality violations, cause or contribute to new violations, or delay timely attainment of the ambient air quality standards or interim emission reductions in the AQMP, project-generated criteria air pollutant emissions were estimated and analyzed for significance and are addressed under Section 3.3.2, below. Detailed results of this analysis are included in Attachment A, CalEEMod Emission and Energy Calculations. As presented in Section 3.3.2, project construction would not generate criteria air pollutant emissions that would exceed the SCAQMD thresholds with implementation of mitigation measure MM-AQ-1, which helps reduce fugitive dust emissions generated during construction. Furthermore, the project is not anticipated to generate substantial operational criteria air pollutant emissions.

The second criterion regarding the project's potential to exceed the assumptions in the AQMP or increments based on the year of project buildout and phase is primarily assessed by determining consistency between the project's land use designations and potential to generate population growth. In general, projects are considered consistent with and would not conflict with or obstruct implementation of the AQMP if the growth in socioeconomic factors is consistent with the underlying regional plans used to develop the AQMP (per Consistency Criterion No. 2 of the SCAQMD CEQA Air Quality Handbook). The SCAQMD primarily uses demographic growth forecasts for various socioeconomic categories (e.g., population, housing, employment by industry) developed by the Southern California Association of Governments (SCAG) for its Regional Transportation Plan (RTP)/Sustainable Communities Strategy (SCS) (SCAG 2016), which is based on general plans for cities and counties in the SCAB, for the development of the AQMP emissions inventory (SCAQMD 2017).<sup>2</sup> The SCAG 2016 RTP/SCS, and associated Regional Growth Forecast, are generally consistent with the local plans; therefore, the 2016 AQMP is generally consistent with local government plans.

The project does not include a change in zoning designation; no housing is proposed; and no additional employees would be required. The project would serve an existing need in the City and is proposed in order to reduce the City's current reliance on imported water supplies; however, the project is not being purposed in order to expand capacity or facilitate future growth. Accordingly, the project is consistent with the SCAG RTP/SCS forecasts used in the SCAQMD AQMP development and does not propose activities that would induce additional population in the project area.

In summary, based on the considerations presented for the two criteria, impacts relating to the project's potential to conflict with or obstruct implementation of the applicable AQMP would be less than significant.

## Mitigation Measures

Compliance with mitigation measure MM-AQ-1.

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<sup>2</sup> Information necessary to produce the emission inventory for the SCAB is obtained from the SCAQMD and other governmental agencies, including the California Air Resources Board (CARB), the California Department of Transportation, and SCAG. Each of these agencies is responsible for collecting data (e.g., industry growth factors, socioeconomic projections, travel activity levels, emission factors, emission speciation profile, and emissions) and developing methodologies (e.g., model and demographic forecast improvements) required to generate a comprehensive emissions inventory. SCAG incorporates these data into its Travel Demand Model for estimating/projecting vehicle miles traveled (VMT) and driving speeds. SCAG's socioeconomic and transportation activities projections in their 2016 RTP/SCS are integrated in the 2016 AQMP (SCAQMD 2017).

### Level of Significance after Mitigation

Impacts would be less than significant with mitigation.

#### ***Would the project 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?***

Air pollution is largely a cumulative impact. The nonattainment status of regional pollutants is a result of past and present development, and the SCAQMD develops and implements plans for future attainment of ambient air quality standards. Based on these considerations, project-level thresholds of significance for criteria pollutants are used in the determination of whether a project's individual emissions would have a cumulatively considerable contribution on air quality. If a project's emissions would exceed the SCAQMD significance thresholds, it would be considered to have a cumulatively considerable contribution. Conversely, projects that do not exceed the project-specific thresholds are generally not considered to be cumulatively significant (SCAQMD 2003a). This impact evaluation focuses on regional mass daily criteria air pollutant emissions; therefore, this assessment evaluates the project actions on the whole similar to the threshold analyzed above in Section 3.3.1.

A quantitative analysis was conducted to determine whether proposed construction activities would result in a cumulatively considerable net increase in emissions of criteria air pollutants for which the SCAB is designated as nonattainment under the NAAQS or CAAQS.

Appendix G of the CEQA Guidelines indicates that, where available, the significance criteria established by the applicable air district may be relied upon to determine whether a project would have a significant impact on air quality. The SCAQMD has established Air Quality Significance Thresholds, as revised in April 2019, which set forth quantitative emissions significance thresholds below which a project would not have a significant impact on ambient air quality (SCAQMD 2019). The quantitative air quality analysis provided herein applies the SCAQMD thresholds to determine the potential for the project to result in a significant impact under CEQA. The SCAQMD mass daily construction thresholds are as follows: 75 pounds per day for VOC, 100 pounds per day for NO<sub>x</sub>, 550 pounds per day for CO, 150 pounds per day for SO<sub>x</sub>, 150 pounds per day for PM<sub>10</sub>, and 55 pounds per day for PM<sub>2.5</sub>. The SCAQMD mass daily operational thresholds are as follows: 55 pounds per day for VOC, 55 pounds per day for NO<sub>x</sub>, 550 pounds per day for CO, 150 pounds per day for SO<sub>x</sub>, 150 pounds per day for PM<sub>10</sub>, and 55 pounds per day for PM<sub>2.5</sub>.

The following discussion quantitatively evaluates project-generated impacts associated with construction and operational of the Project.

### Construction Emissions

Proposed construction activities would result in the temporary addition of pollutants to the local airshed caused by on-site sources (i.e., off-road construction equipment and soil disturbance) and off-site sources (i.e., on-road haul trucks, delivery trucks, and worker vehicle trips). Construction emissions can vary substantially from day to day, depending on the level of activity; the specific type of operation; and, for dust, the prevailing weather conditions. Therefore, such emission levels can only be approximately estimated with a corresponding uncertainty in precise ambient air quality impacts.

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CalEEMod Version 2016.3.2 was used to estimate emissions for construction of the project. CalEEMod is a statewide computer model developed in cooperation with air districts throughout the state to quantify criteria air pollutant emissions associated with construction activities from a variety of land use projects, such as residential, commercial, and industrial facilities. CalEEMod input parameters, including the land use type used to represent the project and size, construction schedule, and anticipated construction equipment utilization, were based on information provided and default model assumptions when project-specific data was not available.

Table 5 presents the estimated maximum daily construction emissions generated during construction of the project. The values shown are the maximum summer or winter daily emissions results from CalEEMod. Details of the emission calculations are provided in Attachment A.

**Table 5. Estimated Maximum Daily Construction Criteria Air Pollutant Emissions**

Year	VOC	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
	Pounds per day					
2021	7.14	39.75	27.90	0.07	3.35	2.33
2022	4.05	5.53	7.61	0.01	0.43	0.30
2023	5.08	11.78	18.93	0.03	0.78	0.60
<b>Maximum Daily Emissions</b>	<b>7.14</b>	<b>39.75</b>	<b>27.90</b>	<b>0.07</b>	<b>3.35</b>	<b>2.33</b>
SCAQMD Threshold	75	100	550	150	150	55
<b>Threshold exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>No</b>

**Notes:** VOC = volatile organic compound; NO<sub>x</sub> = oxides of nitrogen; CO = carbon monoxide; SO<sub>x</sub> = sulfur oxides; PM<sub>10</sub> = coarse particulate matter; PM<sub>2.5</sub> = fine particulate matter; SCAQMD = South Coast Air Quality Management District.

See Attachment A for detailed results.

These estimates reflect control of fugitive dust (watering two times daily) required by SCAQMD Rule 403, which is shown in the "mitigated" portion of the CalEEMod output.

As shown in Table 5, daily construction emissions would not exceed the SCAQMD significance thresholds for VOC, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub> during project construction. Notably, the project would be required to adhere with SCAQMD Rule 403 to reduce fugitive dust emissions. The measures are included in mitigation measure MM-AQ-1 and would be implemented during project construction.

Therefore, with the incorporation of mitigation, project construction would not result in a cumulatively considerable increase in emissions of nonattainment pollutants, and impacts would be less than significant.

### Operational Emissions

Once construction associated with the water treatment facilities are completed, minimal operational activities associated with these components would occur (e.g., routine daily maintenance vehicle trips would be required and periodic testing of the emergency generators). Table 6 presents the maximum daily emissions associated with operation of the project. The values shown are the maximum summer and winter daily emissions results from CalEEMod for area, energy, mobile, and stationary source emissions. Complete details of the emissions calculations are provided in Attachment A.



**Table 6. Estimated Maximum Daily Operational Criteria Air Pollutant Emissions**

Emission Source	VOC	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
	Pounds per day					
Area	0.02	0.00	<0.01	0.00	0.00	0.00
Energy	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Mobile	0.01	0.02	0.24	<0.01	0.07	0.02
Emergency Generator Testing (Stationary)	3.48	9.72	8.87	0.02	0.51	0.51
<b>Total</b>	<b>3.51</b>	<b>9.74</b>	<b>9.11</b>	<b>0.02</b>	<b>0.58</b>	<b>0.53</b>
SCAQMD Threshold	55	55	550	150	150	55
Threshold Exceeded?	No	No	No	No	No	No

**Notes:** VOC = volatile organic compound; NO<sub>x</sub> = oxides of nitrogen; CO = carbon monoxide; SO<sub>x</sub> = sulfur oxides; PM<sub>10</sub> = coarse particulate matter; PM<sub>2.5</sub> = fine particulate matter; SCAQMD = South Coast Air Quality Management District; <0.01 = value less than reported 0.01.

See Attachment A complete results.

The values shown are the maximum summer or winter daily emissions results from CalEEMod.

As shown in Table 6, maximum daily operational emissions of VOC, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> generated by the Project would not exceed the SCAQMD's significance thresholds.

As previously discussed, the SCAB has been designated as a federal nonattainment area for O<sub>3</sub> and PM<sub>2.5</sub>, and a state nonattainment area for O<sub>3</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>. The nonattainment status is the result of cumulative emissions from various sources of air pollutants and their precursors within the SCAB, including motor vehicles, off-road equipment, and commercial and industrial facilities. Construction and operational activities of the project would generate VOC and NO<sub>x</sub> emissions (precursors to O<sub>3</sub>) and emissions of PM<sub>10</sub> and PM<sub>2.5</sub>. However, as indicated in Tables 5 and 6, project-generated emissions resulting from construction and operations would not exceed the SCAQMD emission-based significance thresholds for VOCs, NO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub>.

Cumulative localized impacts would potentially occur if a project were to occur concurrently with another off-site project. Schedules for potential future projects near the project component areas are currently unknown; therefore, potential impacts associated with two or more simultaneous projects would be considered speculative.<sup>3</sup> However, future projects would be subject to CEQA and would require air quality analysis and, where necessary, mitigation. Criteria air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by the SCAQMD. Cumulative PM<sub>10</sub> and PM<sub>2.5</sub> emissions would be reduced because all future projects would be subject to SCAQMD Rule 403 (Fugitive Dust), which sets forth general and specific requirements for all sites in the SCAQMD. In addition, cumulative VOC emissions would be subject to SCAQMD Rule 1113 (Architectural Coatings).

Therefore, project operations would not result in a cumulatively considerable increase in emissions of nonattainment pollutants, and impacts would be less than significant during operation.

<sup>3</sup> The CEQA Guidelines state that if a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (14 CCR 15145).

## Health Effects of Criteria Air Pollutants

Construction and operational emissions of the project would not exceed the SCAQMD thresholds for any criteria air pollutants, including VOC, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub>.

Health effects associated with O<sub>3</sub> include respiratory symptoms, worsening of lung disease leading to premature death, and damage to lung tissue (CARB 2019). VOCs and NO<sub>x</sub> are precursors to O<sub>3</sub>, for which the SCAB is designated as nonattainment with respect to the NAAQS and CAAQS. The contribution of VOCs and NO<sub>x</sub> to regional ambient O<sub>3</sub> concentrations is the result of complex photochemistry. The increases in O<sub>3</sub> concentrations in the SCAB due to O<sub>3</sub> precursor emissions tend to be found downwind of the source location because of the time required for the photochemical reactions to occur. Further, the potential for exacerbating excessive O<sub>3</sub> concentrations would also depend on the time of year that the VOC emissions would occur, because exceedances of the O<sub>3</sub> NAAQS and CAAQS tend to occur between April and October when solar radiation is highest. Due to the lack of quantitative methods to assess this complex photochemistry, the holistic effect of a single project's emissions of O<sub>3</sub> precursors is speculative. That being said, because the project would not exceed the SCAQMD thresholds, the project would not contribute to health effects associated with O<sub>3</sub>.

Health effects associated with NO<sub>x</sub> include lung irritation and enhanced allergic responses (CARB 2019). Because project-related NO<sub>x</sub> emissions would not exceed the SCAQMD mass daily thresholds, and because the SCAB is a designated attainment area for NO<sub>2</sub> (and NO<sub>2</sub> is a constituent of NO<sub>x</sub>) and the existing NO<sub>2</sub> concentrations in the area are well below the NAAQS and CAAQS standards, it is not anticipated that the project would cause an exceedance of the NAAQS and CAAQS for NO<sub>2</sub> or result in potential health effects associated with NO<sub>2</sub> and NO<sub>x</sub>.

Health effects associated with CO include chest pain in patients with heart disease, headache, light-headedness, and reduced mental alertness (CARB 2019). CO tends to be a localized impact associated with congested intersections. The associated potential for CO hotspots is discussed below (in the potential to expose sensitive receptors to substantial pollutant concentrations evaluation) and determined to be less than significant. Thus, the project's CO emissions would not contribute to significant health effects associated with CO.

Health effects associated with PM<sub>10</sub> include premature death and hospitalization, primarily for worsening of respiratory disease (CARB 2019). Construction of the project would not exceed thresholds for PM<sub>10</sub> or PM<sub>2.5</sub>, would not contribute to exceedances of the NAAQS and CAAQS for particulate matter, and would not obstruct the SCAB from coming into attainment for these pollutants. The project would not result in substantial diesel particulate matter emissions during construction. Additionally, the project would be required to comply with SCAQMD Rule 403, which limits the amount of fugitive dust generated during construction. Due to the minimal contribution of particulate matter during construction, the project is not anticipated to result in health effects associated with PM<sub>10</sub> or PM<sub>2.5</sub>.

In summary, construction and operation of the project would not result in exceedances of the SCAQMD significance thresholds for criteria pollutants, and potential health effects associated with criteria air pollutants would be less than significant.

### Clean Air Act General Conformity

The first step in the Clean Air Act General Conformity analysis is the applicability analysis where project-generated emissions are compared to the appropriate *de minimis* thresholds. Table 7 presents the estimated annual criteria air pollutant emissions generated during construction of the project in 2021, 2022, and 2023. Notably, while there are no applicable *de minimis* thresholds for SO<sub>x</sub> because the SCAB is in attainment of the NAAQS, estimated annual emissions for SO<sub>x</sub> has been provided in Table 7 for disclosure.

**Table 7. Estimated Annual Construction Criteria Air Pollutant Emissions**

Year	VOC	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
	Tons per year					
2021	0.07	0.72	0.64	<0.01	0.05	0.03
2022	0.09	0.81	0.92	<0.01	0.07	0.05
2023	0.07	0.40	0.58	<0.01	0.03	0.02
<i>De Minimis Threshold</i>	10	10	100	N/A	100	70
<b>Threshold exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>N/A</b>	<b>No</b>	<b>No</b>

**Notes:** VOC = volatile organic compound; NO<sub>x</sub> = oxides of nitrogen; CO = carbon monoxide; SO<sub>x</sub> = sulfur oxides; PM<sub>10</sub> = coarse particulate matter; PM<sub>2.5</sub> = fine particulate matter; N/A = not applicable; <0.01 = value less than reported 0.01. See Attachment A for detailed results.

As shown in Table 7, estimated project-generated construction emissions would not exceed the *de minimis* thresholds, and no additional General Conformity analysis is required.

Table 8 presents the estimated annual criteria air pollutant emissions generated during operation of the Project. Estimated annual emissions for SO<sub>x</sub> has been provided in Table 8 for disclosure.

**Table 8. Estimated Annual Operational Criteria Air Pollutant Emissions**

Emission Source	VOC	NO <sub>x</sub>	CO	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>
	Tons per year					
Area	<0.01	0.00	<0.01	0.00	0.00	0.00
Energy	<0.01	<0.01	<0.01	0.00	<0.01	<0.01
Mobile	<0.01	<0.01	0.04	<0.01	0.01	<0.01
Emergency Generator Testing (Stationary)	0.09	0.24	0.22	<0.01	0.01	0.01
<b>Total</b>	<b>0.09</b>	<b>0.24</b>	<b>0.26</b>	<b>&lt;0.01</b>	<b>0.02</b>	<b>0.01</b>
<i>De Minimis Threshold</i>	10	10	100	N/A	100	70
<b>Threshold exceeded?</b>	<b>No</b>	<b>No</b>	<b>No</b>	<b>N/A</b>	<b>No</b>	<b>No</b>

**Notes:** VOC = volatile organic compound; NO<sub>x</sub> = oxides of nitrogen; CO = carbon monoxide; SO<sub>x</sub> = sulfur oxides; PM<sub>10</sub> = coarse particulate matter; PM<sub>2.5</sub> = fine particulate matter; N/A = not applicable; <0.01 = value less than reported 0.01. See Attachment A for detailed results.

As shown in Table 8, the annual operational emissions would not exceed the *de minimis* thresholds; therefore, further analysis is not required. As such, the project would be in compliance with the general conformity

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requirements and would not conflict with local air quality attainment or maintenance plans to achieve or maintain federal ambient air quality standards.

### Mitigation Measures

**MM-AQ-1** The project contractor would be required to implement the following measures into construction plans and specifications as in accordance with South Coast Air Quality Management District (SCAQMD) Rule 403:

1. All clearing, grading, earth-moving, or excavation activities shall cease or best management practices outlined in SCAQMD Rule 403(g)(2) shall be implemented when winds exceed 25 miles per hour (mph) per SCAQMD guidelines in order to limit fugitive dust emissions.
2. Prior to the commencement of construction activities, the City shall require its construction contractor to water any exposed soils and/or soil stockpiles at least three times daily, or utilize another SCAQMD-approved dust control non-toxic agent in accordance with the manufacturer's instructions.
3. The contractor shall ensure that traffic speeds on unpaved roads and Project site areas are reduced to 15 mph or less.

### Level of Significance after Mitigation

Impacts would be less than significant with mitigation.

***Would the project expose sensitive receptors to substantial pollutant concentrations?***

### Localized Significance Thresholds Analysis

People most likely to be affected by air pollution include children, the elderly, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, childcare centers, long-term healthcare facilities, rehabilitation centers, convalescent centers, and retirement homes (SCAQMD 1993). The nearest sensitive-receptor land uses differ for each of the four proposed sites, with the closest (single-family residences) immediately adjacent to the La Palma site to the south.

An LST analysis has been prepared to determine potential impacts to nearby sensitive receptors during construction of the project. As indicated in the discussion of the thresholds of significance (Section 3.1), the SCAQMD also recommends the evaluation of localized NO<sub>2</sub>, CO, PM<sub>10</sub>, and PM<sub>2.5</sub> impacts as a result of construction activities to sensitive receptors in the immediate vicinity of the project site. The impacts were analyzed using methods consistent with those in the SCAQMD's Final Localized Significance Threshold Methodology (2009). According to the Final Localized Significance Threshold Methodology, "off-site mobile emissions from the project should not be included in the emissions compared to the LSTs" (SCAQMD 2009). Hauling of soils and construction materials associated with the project construction are not expected to cause substantial air quality impacts to sensitive receptors along off-site roadways. Emissions from the trucks would be relatively brief in nature and would cease once the trucks pass through the main streets.

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Construction activities associated with the project would result in temporary sources of on-site fugitive dust and construction equipment emissions. Off-site emissions from vendor trucks, haul trucks, and worker vehicle trips are not included in the LST analysis. The maximum allowable daily emissions that would satisfy the SCAQMD localized significance criteria for SRA 17 are presented in Table 9 and compared to the maximum daily on-site construction emissions generated during the project, which are rounded up to the nearest whole number.

**Table 9. Localized Significance Thresholds Analysis for Project Construction**

Pollutant	Project Construction Emissions (pounds/day)	LST Criteria (pounds/day)	Exceeds LST?
NO <sub>2</sub>	39.47	81	No
CO	27.83	485	No
PM <sub>10</sub>	3.50	4	No
PM <sub>2.5</sub>	2.41	3	No

**Source:** SCAQMD 2009.

**Notes:**

NO<sub>2</sub> = nitrogen dioxide; CO = carbon monoxide; PM<sub>10</sub> = coarse particulate matter; PM<sub>2.5</sub> = fine particulate matter; SCAQMD = South Coast Air Quality Management District. See Attachment A for detailed results.

Localized significance thresholds are shown for 1-acre project sites corresponding to a distance to a sensitive receptor of 25 meters for SRA 17 (Central Orange County).

These estimates reflect control of fugitive dust required by Rule 403.

As shown in Table 9, construction activities would not generate emissions in excess of site-specific LSTs; therefore, site-specific construction impacts during construction of the project would remain less than significant.

### Health Impacts of Toxic Air Contaminants

In addition to impacts from criteria pollutants, project impacts may include emissions of pollutants identified by the state and federal government as toxic air contaminants (TACs) or hazardous air pollutants. State law has established the framework for California's TAC identification and control program, which is generally more stringent than the federal program and aimed at TACs that are a problem in California. The state has formally identified more than 200 substances as TACs, including the federal hazardous air pollutants, and is adopting appropriate control measures for sources of these TACs. The following measures are required by state law to reduce diesel particulate emissions:

- Fleet owners of mobile construction equipment are subject to the California Air Resources Board (CARB) Regulation for In-Use Off-road Diesel Vehicles (Title 13 California Code of Regulations, Chapter 9, Section 2449), the purpose of which is to reduce diesel particulate matter (DPM) and criteria pollutant emissions from in-use (existing) off-road diesel-fueled vehicles.
- All commercial diesel vehicles are subject to Title 13, Section 2485 of the California Code of Regulations, limiting engine idling time. Idling of heavy-duty diesel construction equipment and trucks during loading and unloading shall be limited to 5 minutes; electric auxiliary power units should be used whenever possible.

The greatest potential for TAC emissions during construction would be diesel particulate emissions from heavy equipment operations and heavy-duty trucks during construction of the Project and the associated health impacts to sensitive receptors. The closest sensitive receptors are existing residences located immediately adjacent to the La Palma site. As shown in Table 5, maximum daily particulate matter (PM<sub>10</sub> or PM<sub>2.5</sub>) and TAC emissions generated

by construction equipment operation and from hauling of soil during excavation of the well (exhaust particulate matter, or DPM), combined with fugitive dust generated by equipment operation and vehicle travel, would be well below the SCAQMD significance thresholds. Moreover, construction activities would be temporary, after which project-related TAC emissions would cease.

No residual TAC emissions and corresponding cancer risk are anticipated after construction, and no long-term sources of TAC emissions are anticipated during operation of the project. Thus, the project would not result in a long-term (i.e., 9-year, 30-year, or 70-year) source of TAC emissions. Therefore, the exposure of project-related TAC emission impacts to sensitive receptors would be less than significant.

### **Health Impacts of Carbon Monoxide**

Traffic-congested roadways and intersections have the potential to generate localized high levels of CO. Localized areas where ambient concentrations exceed federal and/or state standards for CO are termed “CO hotspots.” The transport of CO is extremely limited, as it disperses rapidly with distance from the source. Under certain extreme meteorological conditions, however, CO concentrations near a congested roadway or intersection may reach unhealthy levels, affecting sensitive receptors. Typically, high CO concentrations are associated with severely congested intersections operating at an unacceptable level of service (LOS) (LOS E or worse is unacceptable). Projects contributing to adverse traffic impacts may result in the formation of a CO hotspot. Additional analysis of CO hotspot impacts would be conducted if a project would result in a significant impact or contribute to an adverse traffic impact at a signalized intersection that would potentially subject sensitive receptors to CO hotspots.

At the time that the SCAQMD 1993 Handbook was published, the SCAB was designated nonattainment under the CAAQS and NAAQS for CO. In 2007, the SCAQMD was designated in attainment for CO under both the CAAQS and NAAQS as a result of the steady decline in CO concentrations in the SCAB due to turnover of older vehicles, introduction of cleaner fuels, and implementation of control technology on industrial facilities. The SCAQMD conducted CO modeling for the 2003 AQMP (Appendix V, Modeling and Attainment Demonstrations, of SCAQMD 2003b) for the four worst-case intersections in the SCAB: (1) Wilshire Boulevard and Veteran Avenue, (2) Sunset Boulevard and Highland Avenue, (3) La Cienega Boulevard and Century Boulevard, and (4) Long Beach Boulevard and Imperial Highway. At the time the 2003 AQMP was prepared, the intersection of Wilshire Boulevard and Veteran Avenue was the most congested intersection in Los Angeles County, with an average daily traffic volume of about 100,000 vehicles per day. Using CO emission factors for 2002, the peak modeled CO 1-hour concentration was estimated to be 4.6 parts per million (ppm) at the intersection of Wilshire Boulevard and Veteran Avenue. The 1-hour CO CAAQS is 20 ppm; therefore, even when adding the background CO concentrations to the added CO concentrations at the study intersections, CO emissions did not exceed the 1-hour CO CAAQS. The 2003 AQMP also projected 8-hour CO concentrations at these four intersections for 1997 and from 2002 through 2005. From years 2002 through 2005, the maximum 8-hour CO concentration was 3.8 ppm at the Sunset Boulevard and Highland Avenue intersection in 2002; the maximum 8-hour CO concentration was 3.4 ppm at the Wilshire Boulevard and Veteran Avenue in 2002.

Accordingly, CO concentrations at intersections would not exceed the 1-hour or 8-hour CO CAAQS unless projected daily traffic would be at least over 100,000 vehicles per day. Because operation of the project would result in a maximum of one vehicle (two one-way trips) per day for maintenance activities at each site, it would not increase daily traffic volumes at any study intersection to more than 100,000 vehicles per day, a CO hotspot is not



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anticipated to occur, and associated impacts would be less than significant. In addition, due to continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, the potential for CO hotspots in the SCAB is steadily decreasing. Based on these considerations, the project would result in a less-than-significant impact to air quality with regard to potential CO hotspots.

### Mitigation Measures

No mitigation measures are required.

### Level of Significance after Mitigation

Impacts would be less than significant; therefore, no mitigation is required.

***Would the project result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?***

The occurrence and severity of potential odor impacts depends on numerous factors. The nature, frequency, and intensity of the source; the wind speeds and direction; and the sensitivity of receiving location each contribute to the intensity of the impact. Although offensive odors seldom cause physical harm, they can be annoying and cause distress among the public and generate citizen complaints.

Odors would be potentially generated from vehicles and equipment exhaust emissions during construction of the project. Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment, architectural coatings, and asphalt pavement application. Such odors would disperse rapidly from the Project site and generally occur at magnitudes that would not affect substantial numbers of people. Therefore, impacts associated with odors during construction would be less than significant.

Land uses and industrial operations associated with odor complaints include agricultural uses, wastewater treatment plants, food-processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding (SCAQMD 1993). The project entails operation of water treatment facilities and equipment for the treatment of groundwater (not wastewater), which would not result in the creation of a land use that is commonly associated with odors. Therefore, project operations would result in an odor impact that is less than significant.

### Mitigation Measures

No mitigation measures are required.

### Level of Significance after Mitigation

Impacts would be less than significant; therefore, no mitigation is required.

## 4 Greenhouse Gas Emissions Assessment

### 4.1 Thresholds of Significance

#### 4.1.1 CEQA Guidelines

The California Natural Resources Agency adopted amendments to the CEQA Guidelines on December 30, 2009, which became effective on March 18, 2010. With respect to GHG emissions, the amended CEQA Guidelines state in Section 15064.4(a) that lead agencies should “make a good faith effort, to the extent possible on scientific and factual data, to describe, calculate or estimate” GHG emissions. Section 15064.7(c) of the CEQA Guidelines specifies that “[w]hen adopting thresholds of significance, a lead agency may consider thresholds of significance previously adopted or recommended by other public agencies, or recommended by experts, provided the decision of the lead agency to adopt such thresholds is supported by substantial evidence.” Similarly, the revisions to Appendix G, Environmental Checklist Form, which is often used as a basis for lead agencies’ selection of significance thresholds, do not prescribe specific thresholds.

Rather, the CEQA Guidelines establish two CEQA thresholds related to GHGs, which will be used in this memorandum to discuss the significance of project impacts (14 CCR 15000 et seq., Appendix G):

1. Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?
2. Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Accordingly, the CEQA Guidelines do not prescribe specific methodologies for performing an assessment, establish specific thresholds of significance, or mandate specific mitigation measures. Rather, the CEQA Guidelines emphasize the lead agency’s discretion to determine the appropriate methodologies and thresholds of significance that are consistent with the manner in which other impact areas are handled in CEQA (CNRA 2009).

#### 4.1.2 Local Guidance

##### SCAQMD

The SCAQMD has not adopted recommended numeric CEQA significance thresholds for GHG emissions for lead agencies to use in assessing GHG impacts of residential and commercial development projects. In October 2008, SCAQMD presented to the Governing Board the Draft Guidance Document – Interim CEQA Greenhouse Gas (GHG) Significance Threshold (2008). The guidance document was not adopted or approved by the Governing Board. This document, which builds on the previous guidance prepared by the California Air Pollution Control Officers Association, explored various approaches for establishing a significance threshold for GHG emissions.

The SCAQMD formed a GHG CEQA Significance Threshold Working Group to work with SCAQMD staff on developing GHG CEQA significance thresholds until statewide significance thresholds or guidelines are established. In December 2008, the SCAQMD adopted an interim 10,000 MT CO<sub>2</sub>e per year screening level threshold for stationary

source/industrial projects for which the SCAQMD is the lead agency. From December 2008 to September 2010, the SCAQMD hosted working group meetings and revised the draft threshold proposal several times, although it did not officially provide these proposals in a subsequent document. The SCAQMD has continued to consider adoption of significance thresholds for residential and general land use development projects. The most recent proposal, issued in September 2010, uses the following tiered approach to evaluate potential GHG impacts from various uses (SCAQMD 2010):

- Tier 1** Determine if CEQA categorical exemptions are applicable. If not, move to Tier 2.
- Tier 2** Consider whether or not the Project is consistent with a locally adopted GHG reduction plan that has gone through public hearing and CEQA review, that has an approved inventory, includes monitoring, etc. If not, move to Tier 3.
- Tier 3** Consider whether the project generates GHG emissions in excess of screening thresholds for individual land uses. The 10,000 MT CO<sub>2</sub>e per year threshold for industrial uses would be recommended for use by all lead agencies. Under option 1, separate screening thresholds are proposed for residential projects (3,500 MT CO<sub>2</sub>e per year), commercial projects (1,400 MT CO<sub>2</sub>e per year), and mixed-use projects (3,000 MT CO<sub>2</sub>e per year). Under option 2, a single numerical screening threshold of 3,000 MT CO<sub>2</sub>e per year would be used for all non-industrial projects. If the project generates emissions in excess of the applicable screening threshold, move to Tier 4.
- Tier 4** Consider whether the project generates GHG emissions in excess of applicable performance standards for the project service population (population plus employment). The efficiency targets were established based on the goal of Assembly Bill (AB) 32 to reduce statewide GHG emissions to 1990 levels by 2020. The 2020 efficiency targets are 4.8 MT CO<sub>2</sub>e per service population for project level analyses and 6.6 MT CO<sub>2</sub>e per service population for plan level analyses. If the project generates emissions in excess of the applicable efficiency targets, move to Tier 5.
- Tier 5** Consider the implementation of CEQA mitigation (including the purchase of GHG offsets) to reduce the project efficiency target to Tier 4 levels.

Although the project does not fall into one of the specific land use categories mentioned in Tier 3 (i.e., residential, commercial, mixed-use, industrial), the recommended SCAQMD threshold to apply to the project is the 3,000 MT CO<sub>2</sub>e per year for all land use types. Per the SCAQMD guidance, construction emissions should be amortized over the operational life of the project, which is assumed to be 30 years (SCAQMD 2008). This impact analysis, therefore, adds amortized construction emissions to the estimated annual operational emissions and then compares operational emissions to the proposed SCAQMD threshold of 3,000 MT CO<sub>2</sub>e per year.

## 4.2 GHG Emissions Impact Analysis

***Would the project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?***

### Construction Emissions

Construction of the project would result in GHG emissions, which are primarily associated with use of off-road construction equipment, on-road vendor trucks, and worker vehicles. The SCAQMD Draft Guidance Document –

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Interim CEQA Greenhouse Gas (GHG) Significance Threshold (2008) recommends that “construction emissions be amortized over a 30-year project lifetime, so that GHG reduction measures will address construction GHG emissions as part of the operational GHG reduction strategies.” Thus, the total construction GHG emissions were calculated, amortized over 30 years, and added to the total operational emissions for comparison with the GHG significance threshold of 3,000 MT CO<sub>2</sub>e per year. The determination of significance, therefore, is addressed in the operational emissions discussion following the estimated construction emissions.

CalEEMod was used to calculate the annual GHG emissions based on the construction scenario described in Section 2.1. Construction of the project is anticipated to commence in September 2021. On-site sources of GHG emissions include off-road equipment, and off-site sources include vendor trucks and worker vehicles. Table 10 presents construction GHG emissions for the project in 2021, 2022, and 2023 from on-site and off-site emission sources.

**Table 10. Estimated Annual Construction GHG Emissions**

Year	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
	Metric Tons			
2021	143.11	0.04	0.00	144.08
2022	172.34	0.04	0.00	173.39
2023	90.89	0.02	0.00	91.39
Total				408.86
Amortized over 30 years				13.63

**Notes:** CO<sub>2</sub> = carbon dioxide; CH<sub>4</sub> = methane; N<sub>2</sub>O = nitrous oxide; CO<sub>2</sub>e = carbon dioxide equivalent.  
See Attachment A for complete results.

As shown in Table 10, the estimated total GHG emissions during construction would be approximately 144 MT CO<sub>2</sub>e in 2021, 173 MT CO<sub>2</sub>e in 2022, and 91 MT CO<sub>2</sub>e in 2023, for a total of 409 MT CO<sub>2</sub>e over the construction period. Estimated project-generated construction emissions amortized over 30 years would be approximately 14 MT CO<sub>2</sub>e per year. As with project-generated construction air quality pollutant emissions, GHG emissions generated during construction of the project would be short-term in nature, lasting only for the duration of the construction period, and would not represent a long-term source of GHG emissions. As stated above, construction emissions are amortized and added to operational emissions to estimate total project-generated GHG emissions.

### Operational Emissions

For long-term operations, the project would require a mobile trip (two one-way trips) per day for each site, primarily associated with routine inspection and maintenance activities by district staff. Indirect GHG emissions associated with energy to supply the new facilities was also estimated for the project. Operational emissions associated with on-road vehicles, energy consumption, water supply and wastewater, solid waste, and stationary sources were estimated and are depicted in Table 11.

**Table 11. Estimated Annual Operational GHG Emissions**

Emission Source	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
	Metric Tons			
Area	0.00	0.00	0.00	0.00
Energy	7.03	<0.01	<0.01	7.05
Mobile	10.61	<0.01	0.00	10.62
Solid waste	0.25	0.01	0.00	0.62
Water supply and wastewater	2.18	0.01	<0.01	2.43
Emergency Generator Testing (Stationary)	40.36	<0.01	0.00	40.51
<b>Total</b>				<b>61.23</b>
<i>Amortized Construction Emissions</i>				<i>13.63</i>
<b>Operation + Amortized Construction Total</b>				<b>74.86</b>

**Notes:** CO<sub>2</sub> = carbon dioxide; CH<sub>4</sub> = methane; N<sub>2</sub>O = nitrous oxide; CO<sub>2</sub>e = carbon dioxide equivalent; <0.01 = value less than reported 0.01. See Attachment A for complete results.

As shown in Table 11, the project would result in approximately 61 MT CO<sub>2</sub>e per year as a result of project operations. After summing the project's amortized construction emissions, total GHGs generated by the project would be approximately 75 MT CO<sub>2</sub>e per year. As such, annual operational GHG emissions with amortized construction emissions would not exceed the applied threshold of 3,000 MT CO<sub>2</sub>e per year. Therefore, the project's GHG emissions would be less than significant.

### Mitigation Measures

No mitigation measures are required.

### Level of Significance after Mitigation

Impacts would be less than significant; therefore, no mitigation is required.

### ***Would the project conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?***

Applicable plans adopted for the purpose of reducing GHG emissions including the City of Anaheim's Greenhouse Gas Reduction Plan (GHG Reduction Plan), SCAG's 2020-2045 RTP/SCS, CARB's Scoping Plan, Senate Bill (SB) 32, and Executive Order (EO) S-3-05. A consistency analysis with these regulations and plans are presented below:

### **Project Consistency with City of Anaheim Greenhouse Gas Reduction Plan**

The GHG Reduction Plan demonstrates the City's commitment to pursue energy efficiency and reduce GHGs across the community and municipal operations and establishes new revised and new goals for 2030 and 2045 (APU 2020). The GHG Reduction plan presents the City's goals in achieving GHG reductions in several categories including from power supplies, renewable power supplies, water conservation and drought resiliency, energy

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efficiency, shade trees, street lighting, distributed solar energy systems, transportation electrification, and electric fleet vehicles. The project would divert as much waste during construction as required in accordance with state law. In addition, the project would not inhibit the City from reducing water demand or per-capita water use, the project would include the construction of new groundwater wells, water pipelines, and water treatment facilities. Therefore, the project does not conflict with any of the GHG-reducing measures of the GHG Reduction Plan, and thus, is consistent with this plan.

### **Project Consistency with SCAG's 2020 RTP/SCS**

At the regional level, SCAG has adopted the 2020–2045 RTP/SCS for the purpose of reducing GHG emissions attributable to passenger vehicles in the City and surrounding areas. Although the RTP/SCS does not regulate land use or supersede the exercise of land use authority by SCAG's member jurisdictions (e.g., the City), the RTP/SCS is a relevant regional reference document for purposes of evaluating the connection of land use and transportation patterns and the corresponding GHG emissions. The 2020 RTP/SCS provides broad direction and guidance for future development – encouraging the development of new uses in areas well served by transit, and in urban infill areas.

### **Project Consistency with CARB's Scoping Plan**

The Scoping Plan (approved by CARB in 2008 and updated in 2014 and 2017) provides a framework for actions to reduce California's GHG emissions and requires CARB and other state agencies to adopt regulations and other initiatives to reduce GHGs. The Scoping Plan is not directly applicable to specific projects, nor is it intended to be used for project-level evaluations.<sup>4</sup> Under the Scoping Plan, however, there are several state regulatory measures aimed at the identification and reduction of GHG emissions. CARB and other state agencies have adopted many of the measures identified in the Scoping Plan. Most of these measures focus on area source emissions (e.g., energy usage, high-GWP GHGs in consumer products) and changes to the vehicle fleet (i.e., hybrid, electric, and more fuel-efficient vehicles) and associated fuels (e.g., Low Carbon Fuel Standard), among others.

The Scoping Plan recommends strategies for implementation at the statewide level to meet the goals of AB 32 and establishes an overall framework for the measures that will be adopted to reduce California's GHG emissions. Table 12 highlights measures that have been, or will be, developed under the Scoping Plan and presents the project's consistency with Scoping Plan measures. The project would comply with all regulations adopted in furtherance of the Scoping Plan to the extent required by law and to the extent that they are applicable to the project.

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<sup>4</sup> The Final Statement of Reasons for the amendments to the CEQA Guidelines reiterates the statement in the Initial Statement of Reasons that "[t]he Scoping Plan may not be appropriate for use in determining the significance of individual projects because it is conceptual at this stage and relies on the future development of regulations to implement the strategies identified in the Scoping Plan" (CNRA 2009).



Table 12. Estimated Annual Operational GHG Emissions

Scoping Plan Measure	Measure Number	Project Consistency
<b>Transportation Sector</b>		
Advanced Clean Cars	T-1	<i>No conflict.</i> The project would result in a nominal net increase in vehicle trips to the site relating to deliveries. Nonetheless, the owner of the delivery trucks would purchase vehicles in compliance with CARB vehicle standards that are in effect at the time of vehicle purchase.
Low Carbon Fuel Standard	T-2	<i>No conflict.</i> This is a statewide measure that cannot be implemented by a project applicant or lead agency. Nonetheless, this standard would be applicable to the fuel used by vehicles that would access the project site (i.e., motor vehicles driven during operation of the project would use compliant fuels).
Regional Transportation-Related GHG Targets	T-3	<i>Not applicable.</i> The project is not related to developing GHG emission reduction targets. To meet the goals of SB 375, the 2020–2040 RTP/SCS is applicable to the project. The project would not preclude the implementation of this strategy.
Advanced Clean Transit	N/A	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
Last-Mile Delivery	N/A	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
Reduction in VMT	N/A	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
Vehicle Efficiency Measures 1. Tire Pressure 2. Fuel Efficiency Tire Program 3. Low-Friction Oil 4. Solar-Reflective Automotive Paint and Window Glazing	T-4	<i>No conflict.</i> The project would not result in an increase in light-duty vehicles that would access the Project site. In addition, the Project would not prevent CARB from implementing this measure.
Ship Electrification at Ports (Shore Power)	T-5	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.

**Table 12. Estimated Annual Operational GHG Emissions**

Scoping Plan Measure	Measure Number	Project Consistency
<b>Goods Movement Efficiency Measures</b> <ol style="list-style-type: none"> <li>1. Port Drayage Trucks</li> <li>2. Transport Refrigeration Units Cold Storage Prohibition</li> <li>3. Cargo Handling Equipment, Anti-Idling, Hybrid, Electrification</li> <li>4. Goods Movement Systemwide Efficiency Improvements</li> <li>5. Commercial Harbor Craft Maintenance and Design Efficiency</li> <li>6. Clean Ships</li> <li>7. Vessel Speed Reduction</li> </ol>		<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
<b>Heavy-Duty Vehicle GHG Emission Reduction</b> <ul style="list-style-type: none"> <li>• Tractor-Trailer GHG Regulation</li> </ul> <b>Heavy-Duty Greenhouse Gas Standards for New Vehicle and Engines (Phase I)</b>	T-7	<i>Not applicable.</i> Heavy-duty vehicles traveling to and from the site for deliveries would be required to comply with CARB GHG reduction measures. In addition, the project would not prevent CARB from implementing this measure.
<b>Medium- and Heavy-Duty Vehicle Hybridization Voucher Incentive Proposed Project</b>	T-8	<i>Not applicable.</i> The project medium- and heavy-duty vehicles (e.g., delivery trucks) could take advantage of the vehicle hybridization action, which would reduce GHG emissions through increased fuel efficiency. In addition, the project would not prevent CARB from implementing this measure.
<b>Medium and Heavy-Duty GHG Phase 2</b>	N/A	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
<b>High-Speed Rail</b>	T-9	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
<b>Electricity and Natural Gas Sector</b>		
<b>Energy Efficiency Measures (Electricity)</b>	E-1	<i>No conflict.</i> The project would not prevent CARB from implementing this measure.
<b>Energy Efficiency (Natural Gas)</b>	CR-1	<i>No conflict.</i> The project would not prevent CARB from implementing this measure.
<b>Solar Water Heating (California Solar Initiative Thermal Program)</b>	CR-2	<i>No conflict.</i> The project is not anticipated to require use hot water to make solar water heating feasible.
<b>Combined Heat and Power</b>	E-2	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.

**Table 12. Estimated Annual Operational GHG Emissions**

Scoping Plan Measure	Measure Number	Project Consistency
Renewables Portfolio Standard (33% by 2020)	E-3	<i>No conflict.</i> The electricity used by the project would benefit from reduced GHG emissions resulting from increased use of renewable energy sources.
Renewables Portfolio Standard (50% by 2050)	N/A	<i>No conflict.</i> The electricity used by the project would benefit from reduced GHG emissions resulting from increased use of renewable energy sources.
SB 1 Million Solar Roofs (California Solar Initiative, New Solar Home Partnership, Public Utility Programs) and Earlier Solar Programs	E-4	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure. The project would involve the equipping and installation of groundwater wells, installation of piping, and construction of new water treatment facilities. As an infrastructure project, installation of solar would not be feasible.
<b>Water Sector</b>		
Water Use Efficiency	W-1	<i>No conflict.</i> The project would increase overall efficiency in the water supply system.
Water Recycling	W-2	<i>No conflict.</i> The project would not prevent CARB from implementing this measure.
Water System Energy Efficiency	W-3	<i>No conflict.</i> As with W-1, the project increase overall efficiency in the water supply system.
Reuse Urban Runoff	W-4	<i>No Conflict.</i> The project would not prevent CARB from implementing this measure.
Renewable Energy Production	W-5	<i>No conflict.</i> The project would not prevent CARB from implementing this measure. Additionally, the project would reduce the City's carbon footprint by contributing to the reduction/elimination of imported water.
<b>Green Buildings</b>		
State Green Building Initiative: Leading the Way with State Buildings (Greening New and Existing State Buildings)	GB-1	<i>No conflict.</i> The project would be required to be constructed in compliance with state or local green building standards in effect at the time of building construction.

**Table 12. Estimated Annual Operational GHG Emissions**

Scoping Plan Measure	Measure Number	Project Consistency
Green Building Standards Code (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	<i>No conflict.</i> The project's buildings would meet green building standards that are in effect at the time of design and construction.
Beyond Code: Voluntary Programs at the Local Level (Greening New Public Schools, Residential and Commercial Buildings)	GB-1	<i>No conflict.</i> The project's buildings would meet green building standards that are in effect at the time of design and construction.
Greening Existing Buildings (Greening Existing Homes and Commercial Buildings)	GB-1	<i>Not applicable.</i> This is applicable for existing buildings only.
<b>Industry Sector</b>		
Energy Efficiency and Co-Benefits Audits for Large Industrial Sources	I-1	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
Oil and Gas Extraction GHG Emission Reduction	I-2	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
Reduce GHG Emissions by 20% in Oil Refinery Sector	N/A	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
GHG Emissions Reduction from Natural Gas Transmission and Distribution	I-3	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
Refinery Flare Recovery Process Improvements	I-4	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
Work with the Local Air Districts to Evaluate Amendments to Their Existing Leak Detection and Repair Rules for Industrial Facilities to Include Methane Leaks	I-5	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
<b>Recycling and Waste Management Sector</b>		
Landfill Methane Control Measure	RW-1	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
Increasing the Efficiency of Landfill Methane Capture	RW-2	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
Mandatory Commercial Recycling	RW-3	<i>Consistent.</i> During both construction and operation of the project, the project would comply with all state regulations related to solid waste generation, storage, and disposal, including the California Integrated Waste Management Act, as amended.

**Table 12. Estimated Annual Operational GHG Emissions**

Scoping Plan Measure	Measure Number	Project Consistency
Increase Production and Markets for Compost and Other Organics	RW-3	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
Anaerobic/Aerobic Digestion	RW-3	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
Extended Producer Responsibility	RW-3	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
Environmentally Preferable Purchasing	RW-3	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
<b>Forests Sector</b>		
Sustainable Forest Target	F-1	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
<b>High GWP Gases Sector</b>		
Motor Vehicle Air Conditioning Systems: Reduction of Refrigerant Emissions from Non-Professional Servicing	H-1	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
SF <sub>6</sub> Limits in Non-Utility and Non-Semiconductor Applications	H-2	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
Reduction of Perfluorocarbons (PFCs) in Semiconductor Manufacturing	H-3	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
Limit High Global Warming Potential (GWP) Use in Consumer Products	H-4	<i>Consistent.</i> The project's employees would use consumer products that would comply with the regulations that are in effect at the time of manufacture.
Air Conditioning Refrigerant Leak Test During Vehicle Smog Check	H-5	<i>Consistent.</i> Motor vehicles driven by the project would comply with the leak test requirements during smog checks.
Stationary Equipment Refrigerant Management Program – Refrigerant Tracking/Reporting/Repair Program	H-6	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
Stationary Equipment Refrigerant Management Program – Specifications for Commercial and Industrial Refrigeration	H-6	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
SF <sub>6</sub> Leak Reduction Gas Insulated Switchgear	H-6	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
40% Reduction in Methane and Hydrofluorocarbon (HFC) Emissions	N/A	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.

**Table 12. Estimated Annual Operational GHG Emissions**

Scoping Plan Measure	Measure Number	Project Consistency
50% Reduction in Black Carbon Emissions	N/A	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.
<b>Agriculture Sector</b>		
Methane Capture at Large Dairies	A-1	<i>Not applicable.</i> The project would not prevent CARB from implementing this measure.

**Notes:** GHG = greenhouse gas; CARB = California Air Resources Board; VMT = vehicle miles traveled; SB = Senate Bill; N/A = not applicable; SF<sub>6</sub> = sulfur hexafluoride.

As shown in Table 12, the project would not conflict with any of the Scoping Plan measures, and therefore, the project is consistent with this plan.

#### **Project Consistency with Senate Bill 32 and Executive Order S-3-05**

The project would not impede the attainment of the most recent state GHG reduction goals identified in SB 32 and EO S-3-05 and. SB 32 establishes a statewide goal of reducing GHG emissions to 40% below 1990 levels by 2030, while EO S-3-05 establishes a statewide goal of reducing GHG emissions to 80% below 1990 levels by 2050. While there are no established protocols or thresholds of significance for that future year analysis, CARB forecasts that compliance with the current Scoping Plan puts the state on a trajectory of meeting these long-term GHG goals, although the specific path to compliance is unknown (CARB 2014).

CARB has expressed optimism with regard to both the 2030 and 2050 goals. It states in the First Update to the Climate Change Scoping Plan that “California is on track to meet the near-term 2020 GHG emissions limit and is well positioned to maintain and continue reductions beyond 2020 as required by AB 32” (CARB 2014, p. ES2). With regard to the 2050 target for reducing GHG emissions to 80% below 1990 levels, the First Update to the Climate Change Scoping Plan states the following (CARB 2014, p. 34):

This level of reduction is achievable in California. In fact, if California realizes the expected benefits of existing policy goals (such as 12,000 megawatts of renewable distributed generation by 2020, net zero energy homes after 2020, existing building retrofits under AB 758, and others) it could reduce emissions by 2030 to levels squarely in line with those needed in the developed world and to stay on track to reduce emissions to 80% below 1990 levels by 2050. Additional measures, including locally driven measures and those necessary to meet federal air quality standards in 2032, could lead to even greater emission reductions.

In other words, CARB believes that the state is on a trajectory to meet the 2030 and 2050 GHG reduction targets set forth in AB 32, EO B-30-15, and EO S-3-05. This is confirmed in the 2017 Scoping Plan, which states the following (CARB 2017):

The Scoping Plan builds upon the successful framework established by the Initial Scoping Plan and First Update, while also identifying new, technologically feasible, and cost-effective strategies to



ensure that California meets its GHG reduction targets in a way that promotes and rewards innovation, continues to foster economic growth, and delivers improvements to the environment and public health, including in disadvantaged communities.

As discussed previously, the project is consistent with the SCAG's 2020 RTP/SCS and CARB's 2017 Scoping Plan, and would not conflict with the state's trajectory toward future GHG reductions. In September 2018, EO B-55-18 was signed which commits the state to total carbon neutrality by 2045. However, since the specific path to compliance for the state in regards to the long-term goals will likely require development of technology or other changes that are not currently known or available, specific additional mitigation measures for the project would be speculative and cannot be identified at this time. The project's consistency would assist in meeting the City's contribution to GHG emission reduction targets in California.

With respect to future GHG targets under SB 32 and EO S-3-05, CARB has also made clear its legal interpretation is that it has the requisite authority to adopt whatever regulations are necessary, beyond the AB 32 horizon year of 2020, to meet SB 32's 40% reduction target by 2030 and EO S-3-05's 80% reduction target by 2050; this legal interpretation by an expert agency provides evidence that future regulations will be adopted to continue the state on its trajectory toward meeting these future GHG targets.

## Summary

Based on the considerations previously outlined, the project would not generate substantial GHG emissions or conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs, and no mitigation is required. This impact would be less than significant.

## Mitigation Measures

No mitigation measures are required.

## Level of Significance after Mitigation

Impacts would be less than significant; therefore, no mitigation is required.

# 5 Energy Analysis

## 5.1 Thresholds of Significance

The significance criteria used to evaluate the project impacts to energy is based on the recommendations provided in Appendix G of the CEQA Guidelines. For the purposes of this energy analysis, a significant impact would occur if the project would (14 CCR 15000 et seq.):

1. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.
2. Conflict with or obstruct a state or local plan for renewable energy or energy efficiency.

## 5.2 Energy Impact Analysis

***Would the project result in potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?***

Implementation of the project would increase the demand for electricity and natural gas at the project site and gasoline consumption in the region during construction and operation.

### Electricity

#### Construction Use

Temporary electric power for as-necessary lighting and electronic equipment (such as computers inside temporary construction trailers, and heating, ventilation, and air conditioning) would be provided by City. The amount of electricity used during construction would be minimal; typical demand would stem from the use of electrically powered hand tools and several construction trailers by managerial staff during the hours of construction activities. The majority of the energy used during construction would be from petroleum. The electricity used for construction activities would be temporary and minimal; therefore, impacts would be less than significant.

#### Operational Use

The operational phase of the project would require electricity for multiple purposes including building heating and cooling, lighting, water treatment processes, and for water and wastewater conveyance. The project is subject to statewide mandatory energy requirements as outlined in Title 24, Part 6, of the California Code of Regulations. Title 24, Part 11, contains additional energy measures that are applicable to the project under the California Green Building Standards Code (CALGreen). This would apply to the new operations building in addition to the new pumps. Overall, due to the inherent increase in efficiency of building code regulations, the project would not result in a wasteful use of energy. Impacts related to operational energy use would be less than significant.

### Natural Gas

#### Construction Use

Natural gas is not anticipated to be required during construction of the project. Fuels used for construction would primarily consist of diesel and gasoline, which are discussed under the subsection "Petroleum," below. Any minor amounts of natural gas that may be consumed as a result of project construction would be temporary and negligible, and would not have an adverse effect; therefore, impacts would be less than significant.

#### Operational Use

The project is subject to statewide mandatory energy requirements as outlined in Title 24, Part 6, of the California Code of Regulations. Title 24, Part 11, contains additional energy measures that are applicable to the project under CALGreen. Prior to project approval, the contractor would ensure that the project would meet Title 24 requirements applicable at that time, as required by state regulations through their plan review process. Thus, the natural gas consumption of the project would not be considered inefficient or wasteful, and impacts would be less than significant.

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### Petroleum

#### Construction Use

Petroleum would be consumed throughout construction of the project. Fuel consumed by construction equipment would be the primary energy resource expended over the course of construction, and vehicle miles traveled (VMT) associated with the transportation of construction materials and construction worker commutes would also result in petroleum consumption. Heavy-duty construction equipment associated with construction activities and on-site haul trucks involved in relocating dirt around the project site would rely on diesel fuel. Construction workers would travel to and from the project site throughout the duration of construction. It is assumed that construction workers would travel to and from the project site in gasoline-powered vehicles.

Heavy-duty construction equipment of various types would be used during construction. CalEEMod was used to estimate construction equipment usage; results are included in Attachment A. Based on that analysis, diesel-fueled construction equipment would operate for an estimated 12,726 hours, as summarized in Table 13.

**Table 13. Hours of Operation for Construction Equipment**

Phase	Hours of Equipment Use
La Palma	3,692
Linda Vista	5,596
Boysen Park	924
Energy Field	2,514
<b>Total</b>	<b>12,726</b>

**Note:** See Attachment A.

Fuel consumption from construction equipment was estimated by converting the total CO<sub>2</sub> emissions from each construction phase to gallons using conversion factors for CO<sub>2</sub> to gallons of gasoline or diesel. The conversion factor for gasoline is 8.78 kilograms per metric ton CO<sub>2</sub> per gallon, and the conversion factor for diesel is 10.21 kilograms per metric ton CO<sub>2</sub> per gallon (The Climate Registry 2020). The estimated diesel fuel use from construction equipment is shown in Table 14.

**Table 14. Construction Equipment Diesel Demand**

Phase	Pieces of Equipment	Equipment CO <sub>2</sub> (MT)	kg CO <sub>2</sub> /Gallon <sup>a</sup>	Gallons
La Palma	23	137.33	10.21	13,450.88
Linda Vista	26	144.98	10.21	14,200.09
Boysen Park	15	15.61	10.21	1,651.24
Energy Field	15	351.37	10.21	5,356.90
<b>Total</b>				<b>34,659.12</b>

**Sources:**

<sup>a</sup> The Climate Registry 2020.

**Notes:** See Attachment A. CO<sub>2</sub> = carbon dioxide; kg = kilogram; MT = metric ton

Fuel consumption from worker and vendor trips was estimated by converting the total CO<sub>2</sub> emissions from the construction phase to gallons using the conversion factors for CO<sub>2</sub> to gallons of gasoline or diesel. Worker vehicles

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are assumed to be gasoline fueled, and vendor vehicles are assumed to be diesel fueled. Calculations for total worker, vendor, and haul truck fuel consumption are provided in Table 15.

**Table 15. Construction Vehicle Fuel Demand**

Phase	Trips	Vehicle CO <sub>2</sub> (MT)	kg CO <sub>2</sub> /Gallon <sup>a</sup>	Gallons
<b>Construction Worker Vehicle Gasoline Demand</b>				
La Palma	1,754	8.34	8.78	950.08
Linda Vista	2,920	13.15	8.78	1,497.55
Boysen Park	602	2.67	8.78	608.86
Energy Field	1,286	5.70	8.78	954.37
<i>Subtotal</i>				4,010.87
<b>Construction Vendor Truck Diesel Demand</b>				
La Palma	446	5.44	10.21	532.63
Linda Vista	2,920	13.15	10.21	1,497.55
Boysen Park	154	1.81	10.21	357.28
Energy Field	392	4.60	10.21	644.60
<i>Subtotal</i>				3,032.07
<b>Construction Haul Truck Diesel Demand</b>				
La Palma	40	1.49	10.21	146.27
Linda Vista	66	2.43	10.21	238.48
Boysen Park	8	0.28	10.21	174.03
Energy Field	6	0.14	10.21	160.15
<i>Subtotal</i>				718.92
<b>Petroleum Total</b>				<b>7,761.85</b>

**Source:**

<sup>a</sup> The Climate Registry 2020.

**Notes:** CO<sub>2</sub> = carbon dioxide; MT = metric ton; kg = kilogram.

As shown in Tables 14 and 15, the project is estimated to consume 42,421 gallons of petroleum during the construction phase. By comparison, approximately 56 billion gallons of petroleum would be consumed in California over the course of the project's construction phase based on the California daily petroleum consumption estimate of approximately 78.6 million gallons per day (EIA 2019). Furthermore, the project would be required to comply with CARB's Airborne Toxics Control Measure, which restricts heavy-duty diesel vehicle idling time to 5 minutes. Therefore, because petroleum use during construction would be temporary and relatively minimal, and would not be wasteful or inefficient, impacts would be less than significant.

**Operational Use**

The fuel consumption resulting from the project's operational phase would be attributable to daily maintenance vehicle trips to each site. Similar to construction worker and truck trips, fuel consumption for operation was estimated by converting the total CO<sub>2</sub> emissions from the worker truck trips to gallons using the conversion factors for CO<sub>2</sub> to gallons of gasoline or diesel. Based on use of light duty trucks and the countywide proportion of gasoline and diesel on-road VMT. The estimated fuel use from project operational mobile sources is shown in Table 16.

**Table 16. Petroleum Consumption – Operation**

Fuel	Vehicle MT CO <sub>2</sub>	kg CO <sub>2</sub> /Gallon <sup>a</sup>	Gallons
Gasoline	10.61	8.78	1,208.34

**Source:**

<sup>a</sup> The Climate Registry 2020.

**Notes:** CO<sub>2</sub> = carbon dioxide; MT = metric ton; kg = kilogram.

As depicted in Table 16, mobile sources from the project would result in approximately 1,208 gallons of petroleum fuel usage per year. For context only, California as a whole consumes approximately 28.7 billion gallons of petroleum per year (EIA 2019). Over the lifetime of the project, the fuel efficiency of the vehicles being used by the vendor trucks is expected to increase. As such, the amount of petroleum consumed as a result of vehicular trips to and from the project site during operation would decrease over time due to advances in fuel economy.

In summary, although the project would increase petroleum use during operation as a result of employees and visitors traveling to and from the project site, the use would be a small fraction of the statewide use and, due to efficiency increases, would diminish over time. Given these considerations, petroleum consumption associated with the project would not be considered inefficient or wasteful and would result in a less than significant impact.

**Mitigation Measures**

No mitigation measures are required.

**Level of Significance after Mitigation**

Impacts would be less than significant; therefore, no mitigation is required.

***Would the project conflict with or obstruct a state or local plan for renewable energy or energy efficiency?***

Part 6 of Title 24 of the California Code of Regulations was established in 1978 and serves to enhance and regulate California's building standards. Part 6 establishes energy efficiency standards for residential and nonresidential buildings constructed in California to reduce energy demand and consumption. Part 6 is updated periodically (every 3 years) to incorporate and consider new energy efficiency technologies and methodologies. Title 24 also includes Part 11, CALGreen. CALGreen institutes mandatory minimum environmental performance standards for all ground-up, new construction buildings. As applicable, the project would meet Title 24 and CALGreen standards to reduce energy demand and increase energy efficiency. Furthermore, as discussed in Section 4.2.2, the project would not conflict with the various regulations and plans that would reduce energy use.

Overall, the project would not conflict with or obstruct a state or local plan for renewable energy or energy efficiency; therefore, impacts during construction and operation of the project would be less than significant.

**Mitigation Measures**

No mitigation measures are required.

### Level of Significance after Mitigation

Impacts would be less than significant; therefore, no mitigation is required.

## 6 Conclusions

Following incorporation of mitigation measure MM-AQ-1, emissions generated during construction of the project would not exceed SCAQMD's significance thresholds for VOC, NO<sub>x</sub>, CO, SO<sub>x</sub>, PM<sub>10</sub>, and PM<sub>2.5</sub> emissions. Long-term emissions produced during project operations would not exceed regional emissions thresholds set forth by SCAQMD. In addition, the project would not conflict with the AQMP with implementation of mitigation measure MM-AQ-1. Other potential impacts related to TACs and odors would be less than significant.

Estimated total GHG emissions generated during construction would be approximately 409 MT CO<sub>2</sub>e, equating to approximately 14 MT CO<sub>2</sub>e per year when amortized over 30 years. Estimated project-generated operational GHG emissions and amortized construction emissions would be approximately 75 MT CO<sub>2</sub>e per year, which is below the SCAQMD threshold of 3,000 MT CO<sub>2</sub>e per year. The project would not conflict with applicable GHG reduction plans. Accordingly, potential cumulative GHG impacts would be less than significant.

Energy use associated with construction and operation of the project would not result in wasteful, inefficient, or unnecessary consumption of energy resources. The project would also not conflict with or obstruct a state or local plan for renewable energy or energy efficiency. Therefore, the project's energy use would result in a less-than-significant impact.

## 7 References Cited

14 CCR 15000–15387 and Appendices A–L. Guidelines for Implementation of the California Environmental Quality Act, as amended.

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*Memorandum*

*Subject: Air Quality, Greenhouse Gas Emissions, and Energy Analysis Technical Memorandum for the Well and Water Treatment Facilities Project, City of Anaheim, Orange County, California*

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# Attachment A

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CalEEMod Emission and Energy Calculations

**APU Well and Water Treatment Facilities Project (La Palma Site)**  
**South Coast AQMD Air District, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.00	0.00	0
Other Asphalt Surfaces	0.50	Acre	0.50	21,780.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2024
<b>Utility Company</b>	Anaheim Public Utilities				
<b>CO2 Intensity (lb/MW hr)</b>	1543.28	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - APU Well and Water Treatment Facilities Project - La Palma Site. SCAQMD.

Land Use - Surrogate land uses for pipeline and pavement for water treatment facility location.

Construction Phase - Construction schedule based on estimated duration of activities, September 2021 through 2023.

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

### Off-road Equipment - Equipment based on default assumptions

Demolition - Demolition of existing 1,200 foot building

Construction Off-road Equipment Mitigation - Water exposed area 3x per day to represent fugitive dust construction practices

[illegible]

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Annual

tblOffRoadEquipment	PhaseName		Water Well - Well Construction
tblOffRoadEquipment	PhaseName		Water Well - Grading Well Pad
tblOffRoadEquipment	PhaseName		Water Well - Grading Well Pad
tblOffRoadEquipment	PhaseName		Pipeline - Installation
tblOffRoadEquipment	PhaseName		Water Well - Well Construction
tblOffRoadEquipment	PhaseName		Pipeline - Final Paving
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	4.00	2.00
tblTripsAndVMT	VendorTripNumber	4.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	5.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	2.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00



## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Annual

tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	2.00	4.00
tblTripsAndVMT	WorkerTripNumber	10.00	12.00
tblTripsAndVMT	WorkerTripNumber	9.00	10.00
tblTripsAndVMT	WorkerTripNumber	9.00	8.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00

## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0744	0.7179	0.6433	1.6200e-003	0.0263	0.0302	0.0565	0.0111	0.0282	0.0393	0.0000	143.1113	143.1113	0.0386	0.0000	144.0760
2022	9.3500e-003	0.0501	0.0576	1.1000e-004	1.4400e-003	2.3500e-003	3.7900e-003	3.9000e-004	2.2200e-003	2.6100e-003	0.0000	9.4885	9.4885	1.9000e-003	0.0000	9.5361
Maximum	0.0744	0.7179	0.6433	1.6200e-003	0.0263	0.0302	0.0565	0.0111	0.0282	0.0393	0.0000	143.1113	143.1113	0.0386	0.0000	144.0760

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2021	0.0744	0.7179	0.6433	1.6200e-003	0.0163	0.0302	0.0465	5.9500e-003	0.0282	0.0342	0.0000	143.1111	143.1111	0.0386	0.0000	144.0758
2022	9.3500e-003	0.0501	0.0576	1.1000e-004	1.4400e-003	2.3500e-003	3.7900e-003	3.9000e-004	2.2200e-003	2.6100e-003	0.0000	9.4885	9.4885	1.9000e-003	0.0000	9.5361
Maximum	0.0744	0.7179	0.6433	1.6200e-003	0.0163	0.0302	0.0465	5.9500e-003	0.0282	0.0342	0.0000	143.1111	143.1111	0.0386	0.0000	144.0758

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	36.00	0.00	16.56	44.77	0.00	12.24	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Water Well - Grading Well Pad	Grading	9/1/2021	9/14/2021	5	10	
2	Pipeline - Installation	Grading	9/1/2021	9/28/2021	5	20	
3	Water Well - Well Construction	Grading	9/15/2021	11/23/2021	5	50	
4	Pipeline - Final Paving	Paving	9/29/2021	10/5/2021	5	5	
5	Pipeline - Pavement Striping	Architectural Coating	10/6/2021	10/6/2021	5	1	
6	WTP - Site Preparation and Grading	Grading	10/7/2021	10/20/2021	5	10	
7	WTP - Equipment Installation	Building Construction	10/14/2021	1/13/2022	5	66	
8	Water Well - Equipment Installation	Building Construction	11/24/2021	11/30/2021	5	5	
9	WTP - Security, Entrance, and Landscaping	Site Preparation	1/14/2022	1/27/2022	5	10	
10	WTP - Paving	Paving	1/28/2022	2/3/2022	5	5	
11	WTP - Architectural Coating	Architectural Coating	1/28/2022	2/3/2022	5	5	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0.5**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,307**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Water Well - Grading Well Pad	Cement and Mortar Mixers	1	4.00	9	0.56
Water Well - Grading Well Pad	Excavators	1	4.00	158	0.38
Pipeline - Installation	Concrete/Industrial Saws	1	8.00	81	0.73
Pipeline - Installation	Excavators	1	8.00	158	0.38
Pipeline - Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Water Well - Well Construction	Bore/Drill Rigs	1	24.00	221	0.50
Water Well - Well Construction	Excavators	1	8.00	158	0.38
Pipeline - Final Paving	Pavers	1	8.00	130	0.42
Pipeline - Final Paving	Paving Equipment	1	8.00	132	0.36
Pipeline - Final Paving	Rollers	1	8.00	80	0.38
Pipeline - Pavement Striping	Air Compressors	0	0.00	78	0.48
WTP - Site Preparation and Grading	Graders	1	8.00	187	0.41
WTP - Site Preparation and Grading	Rubber Tired Dozers	1	8.00	247	0.40
WTP - Site Preparation and Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
WTP - Equipment Installation	Air Compressors	1	8.00	78	0.48
WTP - Equipment Installation	Cranes	1	4.00	231	0.29
WTP - Equipment Installation	Rough Terrain Forklifts	1	4.00	100	0.40
WTP - Equipment Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Water Well - Equipment Installation	Cranes	1	4.00	231	0.29
Water Well - Equipment Installation	Rough Terrain Forklifts	1	8.00	100	0.40
WTP - Security, Entrance, and Landscaping	Cement and Mortar Mixers	1	8.00	9	0.56
WTP - Security, Entrance, and Landscaping	Skid Steer Loaders	1	4.00	65	0.37
WTP - Paving	Pavers	1	8.00	130	0.42
WTP - Paving	Rollers	1	8.00	80	0.38
WTP - Architectural Coating	Air Compressors	1	8.00	78	0.48

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Annual

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Water Well - Grading	2	12.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Well Pad										
Pipeline - Installation	3	12.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Water Well - Well Construction	2	8.00	2.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Final Paving	3	6.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Pavement Stripping	0	4.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Site Preparation and	4	12.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Equipment Installation	4	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Water Well - Equipment Installation	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Security, Entrance and	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Paving	2	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Architectural Coating	1	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area

**3.2 Water Well - Grading Well Pad - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2000e-004	6.3000e-003	8.9500e-003	1.0000e-005		3.0000e-004	3.0000e-004		2.8000e-004	2.8000e-004	0.0000	1.2490	1.2490	3.8000e-004	0.0000	1.2585
<b>Total</b>	<b>7.2000e-004</b>	<b>6.3000e-003</b>	<b>8.9500e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-004</b>	<b>3.0000e-004</b>	<b>0.0000</b>	<b>2.8000e-004</b>	<b>2.8000e-004</b>	<b>0.0000</b>	<b>1.2490</b>	<b>1.2490</b>	<b>3.8000e-004</b>	<b>0.0000</b>	<b>1.2585</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.0000e-005	2.9000e-003	7.2000e-004	1.0000e-005	1.9000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.7324	0.7324	5.0000e-005	0.0000	0.7336
Worker	2.5000e-004	1.8000e-004	2.0900e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5734	0.5734	2.0000e-005	0.0000	0.5738
<b>Total</b>	<b>3.4000e-004</b>	<b>3.0800e-003</b>	<b>2.8100e-003</b>	<b>2.0000e-005</b>	<b>8.5000e-004</b>	<b>1.0000e-005</b>	<b>8.5000e-004</b>	<b>2.2000e-004</b>	<b>1.0000e-005</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>1.3058</b>	<b>1.3058</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>1.3074</b>



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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.2000e-004	6.3000e-003	8.9500e-003	1.0000e-005		3.0000e-004	3.0000e-004		2.8000e-004	2.8000e-004	0.0000	1.2490	1.2490	3.8000e-004	0.0000	1.2585
<b>Total</b>	<b>7.2000e-004</b>	<b>6.3000e-003</b>	<b>8.9500e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-004</b>	<b>3.0000e-004</b>	<b>0.0000</b>	<b>2.8000e-004</b>	<b>2.8000e-004</b>	<b>0.0000</b>	<b>1.2490</b>	<b>1.2490</b>	<b>3.8000e-004</b>	<b>0.0000</b>	<b>1.2585</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.0000e-005	2.9000e-003	7.2000e-004	1.0000e-005	1.9000e-004	1.0000e-005	1.9000e-004	5.0000e-005	1.0000e-005	6.0000e-005	0.0000	0.7324	0.7324	5.0000e-005	0.0000	0.7336
Worker	2.5000e-004	1.8000e-004	2.0900e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5734	0.5734	2.0000e-005	0.0000	0.5738
<b>Total</b>	<b>3.4000e-004</b>	<b>3.0800e-003</b>	<b>2.8100e-003</b>	<b>2.0000e-005</b>	<b>8.5000e-004</b>	<b>1.0000e-005</b>	<b>8.5000e-004</b>	<b>2.2000e-004</b>	<b>1.0000e-005</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>1.3058</b>	<b>1.3058</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>1.3074</b>

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Annual

**3.3 Pipeline - Installation - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0100e-003	0.0709	0.0921	1.5000e-004		3.8900e-003	3.8900e-003		3.7200e-003	3.7200e-003	0.0000	12.6440	12.6440	2.6600e-003	0.0000	12.7105
<b>Total</b>	<b>8.0100e-003</b>	<b>0.0709</b>	<b>0.0921</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>3.8900e-003</b>	<b>3.8900e-003</b>	<b>0.0000</b>	<b>3.7200e-003</b>	<b>3.7200e-003</b>	<b>0.0000</b>	<b>12.6440</b>	<b>12.6440</b>	<b>2.6600e-003</b>	<b>0.0000</b>	<b>12.7105</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	3.8700e-003	9.6000e-004	1.0000e-005	2.5000e-004	1.0000e-005	2.6000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.9766	0.9766	6.0000e-005	0.0000	0.9781
Worker	5.0000e-004	3.7000e-004	4.1800e-003	1.0000e-005	1.3200e-003	1.0000e-005	1.3300e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.1468	1.1468	3.0000e-005	0.0000	1.1476
<b>Total</b>	<b>6.1000e-004</b>	<b>4.2400e-003</b>	<b>5.1400e-003</b>	<b>2.0000e-005</b>	<b>1.5700e-003</b>	<b>2.0000e-005</b>	<b>1.5900e-003</b>	<b>4.2000e-004</b>	<b>2.0000e-005</b>	<b>4.4000e-004</b>	<b>0.0000</b>	<b>2.1234</b>	<b>2.1234</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>2.1257</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.0100e-003	0.0709	0.0921	1.5000e-004		3.8900e-003	3.8900e-003		3.7200e-003	3.7200e-003	0.0000	12.6439	12.6439	2.6600e-003	0.0000	12.7105
<b>Total</b>	<b>8.0100e-003</b>	<b>0.0709</b>	<b>0.0921</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>3.8900e-003</b>	<b>3.8900e-003</b>	<b>0.0000</b>	<b>3.7200e-003</b>	<b>3.7200e-003</b>	<b>0.0000</b>	<b>12.6439</b>	<b>12.6439</b>	<b>2.6600e-003</b>	<b>0.0000</b>	<b>12.7105</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.1000e-004	3.8700e-003	9.6000e-004	1.0000e-005	2.5000e-004	1.0000e-005	2.6000e-004	7.0000e-005	1.0000e-005	8.0000e-005	0.0000	0.9766	0.9766	6.0000e-005	0.0000	0.9781
Worker	5.0000e-004	3.7000e-004	4.1800e-003	1.0000e-005	1.3200e-003	1.0000e-005	1.3300e-003	3.5000e-004	1.0000e-005	3.6000e-004	0.0000	1.1468	1.1468	3.0000e-005	0.0000	1.1476
<b>Total</b>	<b>6.1000e-004</b>	<b>4.2400e-003</b>	<b>5.1400e-003</b>	<b>2.0000e-005</b>	<b>1.5700e-003</b>	<b>2.0000e-005</b>	<b>1.5900e-003</b>	<b>4.2000e-004</b>	<b>2.0000e-005</b>	<b>4.4000e-004</b>	<b>0.0000</b>	<b>2.1234</b>	<b>2.1234</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>2.1257</b>

**3.4 Water Well - Well Construction - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0251	0.2805	0.2373	8.4000e-004		9.4800e-003	9.4800e-003		8.7200e-003	8.7200e-003	0.0000	73.3999	73.3999	0.0237	0.0000	73.9933
<b>Total</b>	<b>0.0251</b>	<b>0.2805</b>	<b>0.2373</b>	<b>8.4000e-004</b>	<b>0.0000</b>	<b>9.4800e-003</b>	<b>9.4800e-003</b>	<b>0.0000</b>	<b>8.7200e-003</b>	<b>8.7200e-003</b>	<b>0.0000</b>	<b>73.3999</b>	<b>73.3999</b>	<b>0.0237</b>	<b>0.0000</b>	<b>73.9933</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.5000e-004	5.2100e-003	1.1100e-003	2.0000e-005	3.4000e-004	2.0000e-005	3.6000e-004	9.0000e-005	2.0000e-005	1.1000e-004	0.0000	1.4934	1.4934	1.0000e-004	0.0000	1.4960
Vendor	1.4000e-004	4.8400e-003	1.2000e-003	1.0000e-005	3.2000e-004	1.0000e-005	3.2000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	1.2207	1.2207	8.0000e-005	0.0000	1.2227
Worker	8.3000e-004	6.2000e-004	6.9700e-003	2.0000e-005	2.1900e-003	2.0000e-005	2.2100e-003	5.8000e-004	2.0000e-005	6.0000e-004	0.0000	1.9113	1.9113	5.0000e-005	0.0000	1.9126
<b>Total</b>	<b>1.1200e-003</b>	<b>0.0107</b>	<b>9.2800e-003</b>	<b>5.0000e-005</b>	<b>2.8500e-003</b>	<b>5.0000e-005</b>	<b>2.8900e-003</b>	<b>7.6000e-004</b>	<b>5.0000e-005</b>	<b>8.1000e-004</b>	<b>0.0000</b>	<b>4.6255</b>	<b>4.6255</b>	<b>2.3000e-004</b>	<b>0.0000</b>	<b>4.6312</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0251	0.2805	0.2373	8.4000e-004		9.4800e-003	9.4800e-003		8.7200e-003	8.7200e-003	0.0000	73.3998	73.3998	0.0237	0.0000	73.9932
<b>Total</b>	<b>0.0251</b>	<b>0.2805</b>	<b>0.2373</b>	<b>8.4000e-004</b>	<b>0.0000</b>	<b>9.4800e-003</b>	<b>9.4800e-003</b>	<b>0.0000</b>	<b>8.7200e-003</b>	<b>8.7200e-003</b>	<b>0.0000</b>	<b>73.3998</b>	<b>73.3998</b>	<b>0.0237</b>	<b>0.0000</b>	<b>73.9932</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.5000e-004	5.2100e-003	1.1100e-003	2.0000e-005	3.4000e-004	2.0000e-005	3.6000e-004	9.0000e-005	2.0000e-005	1.1000e-004	0.0000	1.4934	1.4934	1.0000e-004	0.0000	1.4960
Vendor	1.4000e-004	4.8400e-003	1.2000e-003	1.0000e-005	3.2000e-004	1.0000e-005	3.2000e-004	9.0000e-005	1.0000e-005	1.0000e-004	0.0000	1.2207	1.2207	8.0000e-005	0.0000	1.2227
Worker	8.3000e-004	6.2000e-004	6.9700e-003	2.0000e-005	2.1900e-003	2.0000e-005	2.2100e-003	5.8000e-004	2.0000e-005	6.0000e-004	0.0000	1.9113	1.9113	5.0000e-005	0.0000	1.9126
<b>Total</b>	<b>1.1200e-003</b>	<b>0.0107</b>	<b>9.2800e-003</b>	<b>5.0000e-005</b>	<b>2.8500e-003</b>	<b>5.0000e-005</b>	<b>2.8900e-003</b>	<b>7.6000e-004</b>	<b>5.0000e-005</b>	<b>8.1000e-004</b>	<b>0.0000</b>	<b>4.6255</b>	<b>4.6255</b>	<b>2.3000e-004</b>	<b>0.0000</b>	<b>4.6312</b>

**3.5 Pipeline - Final Paving - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.5700e-003	0.0162	0.0183	3.0000e-005		8.5000e-004	8.5000e-004		7.8000e-004	7.8000e-004	0.0000	2.5029	2.5029	8.1000e-004	0.0000	2.5232
Paving	6.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>2.2300e-003</b>	<b>0.0162</b>	<b>0.0183</b>	<b>3.0000e-005</b>		<b>8.5000e-004</b>	<b>8.5000e-004</b>		<b>7.8000e-004</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>2.5029</b>	<b>2.5029</b>	<b>8.1000e-004</b>	<b>0.0000</b>	<b>2.5232</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	9.7000e-004	2.4000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2442	0.2442	2.0000e-005	0.0000	0.2445
Worker	6.0000e-005	5.0000e-005	5.2000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1434	0.1434	0.0000	0.0000	0.1435
<b>Total</b>	<b>9.0000e-005</b>	<b>1.0200e-003</b>	<b>7.6000e-004</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>2.3000e-004</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.3875</b>	<b>0.3875</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.3880</b>



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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.5700e-003	0.0162	0.0183	3.0000e-005		8.5000e-004	8.5000e-004		7.8000e-004	7.8000e-004	0.0000	2.5029	2.5029	8.1000e-004	0.0000	2.5232
Paving	6.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>2.2300e-003</b>	<b>0.0162</b>	<b>0.0183</b>	<b>3.0000e-005</b>		<b>8.5000e-004</b>	<b>8.5000e-004</b>		<b>7.8000e-004</b>	<b>7.8000e-004</b>	<b>0.0000</b>	<b>2.5029</b>	<b>2.5029</b>	<b>8.1000e-004</b>	<b>0.0000</b>	<b>2.5232</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	9.7000e-004	2.4000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2442	0.2442	2.0000e-005	0.0000	0.2445
Worker	6.0000e-005	5.0000e-005	5.2000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1434	0.1434	0.0000	0.0000	0.1435
<b>Total</b>	<b>9.0000e-005</b>	<b>1.0200e-003</b>	<b>7.6000e-004</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>2.3000e-004</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.3875</b>	<b>0.3875</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.3880</b>

**3.6 Pipeline - Pavement Striping - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.0300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>3.0300e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	1.9000e-004	5.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0488	0.0488	0.0000	0.0000	0.0489
Worker	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0191	0.0191	0.0000	0.0000	0.0191
<b>Total</b>	<b>2.0000e-005</b>	<b>2.0000e-004</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0679</b>	<b>0.0679</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0680</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.0300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>3.0300e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	1.9000e-004	5.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0488	0.0488	0.0000	0.0000	0.0489
Worker	1.0000e-005	1.0000e-005	7.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0191	0.0191	0.0000	0.0000	0.0191
<b>Total</b>	<b>2.0000e-005</b>	<b>2.0000e-004</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>3.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0679</b>	<b>0.0679</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0680</b>

**3.7 WTP - Site Preparation and Grading - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0164	0.0000	0.0164	8.4200e-003	0.0000	8.4200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3700e-003	0.1034	0.0516	1.1000e-004		4.7200e-003	4.7200e-003		4.3400e-003	4.3400e-003	0.0000	9.3932	9.3932	3.0400e-003	0.0000	9.4691
<b>Total</b>	<b>9.3700e-003</b>	<b>0.1034</b>	<b>0.0516</b>	<b>1.1000e-004</b>	<b>0.0164</b>	<b>4.7200e-003</b>	<b>0.0211</b>	<b>8.4200e-003</b>	<b>4.3400e-003</b>	<b>0.0128</b>	<b>0.0000</b>	<b>9.3932</b>	<b>9.3932</b>	<b>3.0400e-003</b>	<b>0.0000</b>	<b>9.4691</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.8000e-004	2.0900e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5734	0.5734	2.0000e-005	0.0000	0.5738
<b>Total</b>	<b>2.5000e-004</b>	<b>1.8000e-004</b>	<b>2.0900e-003</b>	<b>1.0000e-005</b>	<b>6.6000e-004</b>	<b>0.0000</b>	<b>6.6000e-004</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>1.8000e-004</b>	<b>0.0000</b>	<b>0.5734</b>	<b>0.5734</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.5738</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.3900e-003	0.0000	6.3900e-003	3.2800e-003	0.0000	3.2800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	9.3700e-003	0.1034	0.0516	1.1000e-004		4.7200e-003	4.7200e-003		4.3400e-003	4.3400e-003	0.0000	9.3931	9.3931	3.0400e-003	0.0000	9.4691
<b>Total</b>	<b>9.3700e-003</b>	<b>0.1034</b>	<b>0.0516</b>	<b>1.1000e-004</b>	<b>6.3900e-003</b>	<b>4.7200e-003</b>	<b>0.0111</b>	<b>3.2800e-003</b>	<b>4.3400e-003</b>	<b>7.6200e-003</b>	<b>0.0000</b>	<b>9.3931</b>	<b>9.3931</b>	<b>3.0400e-003</b>	<b>0.0000</b>	<b>9.4691</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.5000e-004	1.8000e-004	2.0900e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5734	0.5734	2.0000e-005	0.0000	0.5738
<b>Total</b>	<b>2.5000e-004</b>	<b>1.8000e-004</b>	<b>2.0900e-003</b>	<b>1.0000e-005</b>	<b>6.6000e-004</b>	<b>0.0000</b>	<b>6.6000e-004</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>1.8000e-004</b>	<b>0.0000</b>	<b>0.5734</b>	<b>0.5734</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.5738</b>

**3.8 WTP - Equipment Installation - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0213	0.2041	0.1944	3.3000e-004		0.0105	0.0105		9.9100e-003	9.9100e-003	0.0000	29.0199	29.0199	6.9100e-003	0.0000	29.1927
<b>Total</b>	<b>0.0213</b>	<b>0.2041</b>	<b>0.1944</b>	<b>3.3000e-004</b>		<b>0.0105</b>	<b>0.0105</b>		<b>9.9100e-003</b>	<b>9.9100e-003</b>	<b>0.0000</b>	<b>29.0199</b>	<b>29.0199</b>	<b>6.9100e-003</b>	<b>0.0000</b>	<b>29.1927</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6000e-004	5.5200e-003	1.3700e-003	1.0000e-005	3.6000e-004	1.0000e-005	3.7000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	1.3916	1.3916	9.0000e-005	0.0000	1.3938
Worker	1.1900e-003	8.8000e-004	9.9300e-003	3.0000e-005	3.1300e-003	2.0000e-005	3.1500e-003	8.3000e-004	2.0000e-005	8.5000e-004	0.0000	2.7236	2.7236	7.0000e-005	0.0000	2.7255
<b>Total</b>	<b>1.3500e-003</b>	<b>6.4000e-003</b>	<b>0.0113</b>	<b>4.0000e-005</b>	<b>3.4900e-003</b>	<b>3.0000e-005</b>	<b>3.5200e-003</b>	<b>9.3000e-004</b>	<b>3.0000e-005</b>	<b>9.6000e-004</b>	<b>0.0000</b>	<b>4.1153</b>	<b>4.1153</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>4.1193</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0213	0.2041	0.1944	3.3000e-004		0.0105	0.0105		9.9100e-003	9.9100e-003	0.0000	29.0198	29.0198	6.9100e-003	0.0000	29.1927
<b>Total</b>	<b>0.0213</b>	<b>0.2041</b>	<b>0.1944</b>	<b>3.3000e-004</b>		<b>0.0105</b>	<b>0.0105</b>		<b>9.9100e-003</b>	<b>9.9100e-003</b>	<b>0.0000</b>	<b>29.0198</b>	<b>29.0198</b>	<b>6.9100e-003</b>	<b>0.0000</b>	<b>29.1927</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6000e-004	5.5200e-003	1.3700e-003	1.0000e-005	3.6000e-004	1.0000e-005	3.7000e-004	1.0000e-004	1.0000e-005	1.1000e-004	0.0000	1.3916	1.3916	9.0000e-005	0.0000	1.3938
Worker	1.1900e-003	8.8000e-004	9.9300e-003	3.0000e-005	3.1300e-003	2.0000e-005	3.1500e-003	8.3000e-004	2.0000e-005	8.5000e-004	0.0000	2.7236	2.7236	7.0000e-005	0.0000	2.7255
<b>Total</b>	<b>1.3500e-003</b>	<b>6.4000e-003</b>	<b>0.0113</b>	<b>4.0000e-005</b>	<b>3.4900e-003</b>	<b>3.0000e-005</b>	<b>3.5200e-003</b>	<b>9.3000e-004</b>	<b>3.0000e-005</b>	<b>9.6000e-004</b>	<b>0.0000</b>	<b>4.1153</b>	<b>4.1153</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>4.1193</b>



**3.8 WTP - Equipment Installation - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.0600e-003	0.0287	0.0304	5.0000e-005		1.4000e-003	1.4000e-003		1.3300e-003	1.3300e-003	0.0000	4.5836	4.5836	1.0900e-003	0.0000	4.6108
<b>Total</b>	<b>3.0600e-003</b>	<b>0.0287</b>	<b>0.0304</b>	<b>5.0000e-005</b>		<b>1.4000e-003</b>	<b>1.4000e-003</b>		<b>1.3300e-003</b>	<b>1.3300e-003</b>	<b>0.0000</b>	<b>4.5836</b>	<b>4.5836</b>	<b>1.0900e-003</b>	<b>0.0000</b>	<b>4.6108</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	8.3000e-004	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2178	0.2178	1.0000e-005	0.0000	0.2181
Worker	1.8000e-004	1.3000e-004	1.4500e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4146	0.4146	1.0000e-005	0.0000	0.4149
<b>Total</b>	<b>2.0000e-004</b>	<b>9.6000e-004</b>	<b>1.6500e-003</b>	<b>0.0000</b>	<b>5.5000e-004</b>	<b>0.0000</b>	<b>5.6000e-004</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>0.6324</b>	<b>0.6324</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.6330</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.0600e-003	0.0287	0.0304	5.0000e-005		1.4000e-003	1.4000e-003		1.3300e-003	1.3300e-003	0.0000	4.5836	4.5836	1.0900e-003	0.0000	4.6108
<b>Total</b>	<b>3.0600e-003</b>	<b>0.0287</b>	<b>0.0304</b>	<b>5.0000e-005</b>		<b>1.4000e-003</b>	<b>1.4000e-003</b>		<b>1.3300e-003</b>	<b>1.3300e-003</b>	<b>0.0000</b>	<b>4.5836</b>	<b>4.5836</b>	<b>1.0900e-003</b>	<b>0.0000</b>	<b>4.6108</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	8.3000e-004	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2178	0.2178	1.0000e-005	0.0000	0.2181
Worker	1.8000e-004	1.3000e-004	1.4500e-003	0.0000	4.9000e-004	0.0000	5.0000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4146	0.4146	1.0000e-005	0.0000	0.4149
<b>Total</b>	<b>2.0000e-004</b>	<b>9.6000e-004</b>	<b>1.6500e-003</b>	<b>0.0000</b>	<b>5.5000e-004</b>	<b>0.0000</b>	<b>5.6000e-004</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>0.6324</b>	<b>0.6324</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.6330</b>

**3.9 Water Well - Equipment Installation - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2000e-004	0.0101	8.2100e-003	2.0000e-005		4.0000e-004	4.0000e-004		3.7000e-004	3.7000e-004	0.0000	1.3906	1.3906	4.5000e-004	0.0000	1.4018
<b>Total</b>	<b>8.2000e-004</b>	<b>0.0101</b>	<b>8.2100e-003</b>	<b>2.0000e-005</b>		<b>4.0000e-004</b>	<b>4.0000e-004</b>		<b>3.7000e-004</b>	<b>3.7000e-004</b>	<b>0.0000</b>	<b>1.3906</b>	<b>1.3906</b>	<b>4.5000e-004</b>	<b>0.0000</b>	<b>1.4018</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	4.8000e-004	1.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1221	0.1221	1.0000e-005	0.0000	0.1223
Worker	8.0000e-005	6.0000e-005	7.0000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1911	0.1911	1.0000e-005	0.0000	0.1913
<b>Total</b>	<b>9.0000e-005</b>	<b>5.4000e-004</b>	<b>8.2000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.3132</b>	<b>0.3132</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.3135</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.2000e-004	0.0101	8.2100e-003	2.0000e-005		4.0000e-004	4.0000e-004		3.7000e-004	3.7000e-004	0.0000	1.3906	1.3906	4.5000e-004	0.0000	1.4018
<b>Total</b>	<b>8.2000e-004</b>	<b>0.0101</b>	<b>8.2100e-003</b>	<b>2.0000e-005</b>		<b>4.0000e-004</b>	<b>4.0000e-004</b>		<b>3.7000e-004</b>	<b>3.7000e-004</b>	<b>0.0000</b>	<b>1.3906</b>	<b>1.3906</b>	<b>4.5000e-004</b>	<b>0.0000</b>	<b>1.4018</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	4.8000e-004	1.2000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1221	0.1221	1.0000e-005	0.0000	0.1223
Worker	8.0000e-005	6.0000e-005	7.0000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1911	0.1911	1.0000e-005	0.0000	0.1913
<b>Total</b>	<b>9.0000e-005</b>	<b>5.4000e-004</b>	<b>8.2000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.3132</b>	<b>0.3132</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.3135</b>

**3.10 WTP - Security, Entrance, and Landscaping - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7000e-004	4.1600e-003	5.0100e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.5000e-004	1.5000e-004	0.0000	0.6836	0.6836	1.7000e-004	0.0000	0.6879
<b>Total</b>	<b>4.7000e-004</b>	<b>4.1600e-003</b>	<b>5.0100e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.6000e-004</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>1.5000e-004</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>0.6836</b>	<b>0.6836</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>0.6879</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	9.2000e-004	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2420	0.2420	1.0000e-005	0.0000	0.2424
Worker	1.6000e-004	1.1000e-004	1.2900e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3686	0.3686	1.0000e-005	0.0000	0.3688
<b>Total</b>	<b>1.9000e-004</b>	<b>1.0300e-003</b>	<b>1.5200e-003</b>	<b>0.0000</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>5.0000e-004</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>0.6106</b>	<b>0.6106</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.6112</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.7000e-004	4.1600e-003	5.0100e-003	1.0000e-005		1.6000e-004	1.6000e-004		1.5000e-004	1.5000e-004	0.0000	0.6836	0.6836	1.7000e-004	0.0000	0.6879
<b>Total</b>	<b>4.7000e-004</b>	<b>4.1600e-003</b>	<b>5.0100e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.6000e-004</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>1.5000e-004</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>0.6836</b>	<b>0.6836</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>0.6879</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	9.2000e-004	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2420	0.2420	1.0000e-005	0.0000	0.2424
Worker	1.6000e-004	1.1000e-004	1.2900e-003	0.0000	4.4000e-004	0.0000	4.4000e-004	1.2000e-004	0.0000	1.2000e-004	0.0000	0.3686	0.3686	1.0000e-005	0.0000	0.3688
<b>Total</b>	<b>1.9000e-004</b>	<b>1.0300e-003</b>	<b>1.5200e-003</b>	<b>0.0000</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>5.0000e-004</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>0.6106</b>	<b>0.6106</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.6112</b>

**3.11 WTP - Paving - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.3000e-004	9.5600e-003	0.0119	2.0000e-005		5.0000e-004	5.0000e-004		4.6000e-004	4.6000e-004	0.0000	1.6088	1.6088	5.2000e-004	0.0000	1.6218
Paving	6.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>1.5900e-003</b>	<b>9.5600e-003</b>	<b>0.0119</b>	<b>2.0000e-005</b>		<b>5.0000e-004</b>	<b>5.0000e-004</b>		<b>4.6000e-004</b>	<b>4.6000e-004</b>	<b>0.0000</b>	<b>1.6088</b>	<b>1.6088</b>	<b>5.2000e-004</b>	<b>0.0000</b>	<b>1.6218</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	4.6000e-004	1.1000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1210	0.1210	1.0000e-005	0.0000	0.1212
Worker	6.0000e-005	4.0000e-005	4.8000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1382	0.1382	0.0000	0.0000	0.1383
<b>Total</b>	<b>7.0000e-005</b>	<b>5.0000e-004</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>2.0000e-004</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.2592</b>	<b>0.2592</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2595</b>



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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.3000e-004	9.5600e-003	0.0119	2.0000e-005		5.0000e-004	5.0000e-004		4.6000e-004	4.6000e-004	0.0000	1.6088	1.6088	5.2000e-004	0.0000	1.6218
Paving	6.6000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>1.5900e-003</b>	<b>9.5600e-003</b>	<b>0.0119</b>	<b>2.0000e-005</b>		<b>5.0000e-004</b>	<b>5.0000e-004</b>		<b>4.6000e-004</b>	<b>4.6000e-004</b>	<b>0.0000</b>	<b>1.6088</b>	<b>1.6088</b>	<b>5.2000e-004</b>	<b>0.0000</b>	<b>1.6218</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	4.6000e-004	1.1000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1210	0.1210	1.0000e-005	0.0000	0.1212
Worker	6.0000e-005	4.0000e-005	4.8000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1382	0.1382	0.0000	0.0000	0.1383
<b>Total</b>	<b>7.0000e-005</b>	<b>5.0000e-004</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>2.0000e-004</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.2592</b>	<b>0.2592</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2595</b>

**3.12 WTP - Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.0300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.8000e-004	4.6900e-003	6.0500e-003	1.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	0.8511	0.8511	6.0000e-005	0.0000	0.8525
<b>Total</b>	<b>3.7100e-003</b>	<b>4.6900e-003</b>	<b>6.0500e-003</b>	<b>1.0000e-005</b>		<b>2.7000e-004</b>	<b>2.7000e-004</b>		<b>2.7000e-004</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>0.8511</b>	<b>0.8511</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.8525</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	4.6000e-004	1.1000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1210	0.1210	1.0000e-005	0.0000	0.1212
Worker	6.0000e-005	4.0000e-005	4.8000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1382	0.1382	0.0000	0.0000	0.1383
<b>Total</b>	<b>7.0000e-005</b>	<b>5.0000e-004</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>2.0000e-004</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.2592</b>	<b>0.2592</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2595</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	3.0300e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.8000e-004	4.6900e-003	6.0500e-003	1.0000e-005		2.7000e-004	2.7000e-004		2.7000e-004	2.7000e-004	0.0000	0.8511	0.8511	6.0000e-005	0.0000	0.8525
<b>Total</b>	<b>3.7100e-003</b>	<b>4.6900e-003</b>	<b>6.0500e-003</b>	<b>1.0000e-005</b>		<b>2.7000e-004</b>	<b>2.7000e-004</b>		<b>2.7000e-004</b>	<b>2.7000e-004</b>	<b>0.0000</b>	<b>0.8511</b>	<b>0.8511</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.8525</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	4.6000e-004	1.1000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1210	0.1210	1.0000e-005	0.0000	0.1212
Worker	6.0000e-005	4.0000e-005	4.8000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1382	0.1382	0.0000	0.0000	0.1383
<b>Total</b>	<b>7.0000e-005</b>	<b>5.0000e-004</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>2.0000e-004</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.2592</b>	<b>0.2592</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2595</b>

**APU Well and Water Treatment Facilities Project (La Palma Site)**  
**South Coast AQMD Air District, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.00	0.00	0
Other Asphalt Surfaces	0.50	Acre	0.50	21,780.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2024
<b>Utility Company</b>	Anaheim Public Utilities				
<b>CO2 Intensity (lb/MW hr)</b>	1543.28	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - APU Well and Water Treatment Facilities Project - La Palma Site. SCAQMD.

Land Use - Surrogate land uses for pipeline and pavement for water treatment facility location.

Construction Phase - Construction schedule based on estimated duration of activities, September 2021 through 2023.

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

### Off-road Equipment - Equipment based on default assumptions

Demolition - Demolition of existing 1,200 foot building

Construction Off-road Equipment Mitigation - Water exposed area 3x per day to represent fugitive dust construction practices

[illegible]

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

tblOffRoadEquipment	PhaseName		Water Well - Well Construction
tblOffRoadEquipment	PhaseName		Water Well - Grading Well Pad
tblOffRoadEquipment	PhaseName		Water Well - Grading Well Pad
tblOffRoadEquipment	PhaseName		Pipeline - Installation
tblOffRoadEquipment	PhaseName		Water Well - Well Construction
tblOffRoadEquipment	PhaseName		Pipeline - Final Paving
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	4.00	2.00
tblTripsAndVMT	VendorTripNumber	4.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	5.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	2.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	2.00	4.00
tblTripsAndVMT	WorkerTripNumber	10.00	12.00
tblTripsAndVMT	WorkerTripNumber	9.00	10.00
tblTripsAndVMT	WorkerTripNumber	9.00	8.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	7.1348	39.7376	27.9048	0.0715	3.6511	1.6938	5.3449	1.7839	1.5684	3.3523	0.0000	6,937.1934	6,937.1934	2.0038	0.0000	6,987.2887
2022	2.1775	6.5917	7.6660	0.0136	0.1597	0.3129	0.4695	0.0430	0.2966	0.3367	0.0000	1,320.7763	1,320.7763	0.2721	0.0000	1,327.3621
Maximum	7.1348	39.7376	27.9048	0.0715	3.6511	1.6938	5.3449	1.7839	1.5684	3.3523	0.0000	6,937.1934	6,937.1934	2.0038	0.0000	6,987.2887

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	7.1348	39.7376	27.9048	0.0715	1.6526	1.6938	3.3464	0.7568	1.5684	2.3252	0.0000	6,937.1934	6,937.1934	2.0038	0.0000	6,987.2887
2022	2.1775	6.5917	7.6660	0.0136	0.1597	0.3129	0.4695	0.0430	0.2966	0.3367	0.0000	1,320.7763	1,320.7763	0.2721	0.0000	1,327.3621
Maximum	7.1348	39.7376	27.9048	0.0715	1.6526	1.6938	3.3464	0.7568	1.5684	2.3252	0.0000	6,937.1934	6,937.1934	2.0038	0.0000	6,987.2887



## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	52.44	0.00	34.37	56.22	0.00	27.84	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Water Well - Grading Well Pad	Grading	9/1/2021	9/14/2021	5	10	
2	Pipeline - Installation	Grading	9/1/2021	9/28/2021	5	20	
3	Water Well - Well Construction	Grading	9/15/2021	11/23/2021	5	50	
4	Pipeline - Final Paving	Paving	9/29/2021	10/5/2021	5	5	
5	Pipeline - Pavement Striping	Architectural Coating	10/6/2021	10/6/2021	5	1	
6	WTP - Site Preparation and Grading	Grading	10/7/2021	10/20/2021	5	10	
7	WTP - Equipment Installation	Building Construction	10/14/2021	1/13/2022	5	66	
8	Water Well - Equipment Installation	Building Construction	11/24/2021	11/30/2021	5	5	
9	WTP - Security, Entrance, and Landscaping	Site Preparation	1/14/2022	1/27/2022	5	10	
10	WTP - Paving	Paving	1/28/2022	2/3/2022	5	5	
11	WTP - Architectural Coating	Architectural Coating	1/28/2022	2/3/2022	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 0

Acres of Paving: 0.5

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,307

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Water Well - Grading Well Pad	Cement and Mortar Mixers	1	4.00	9	0.56
Water Well - Grading Well Pad	Excavators	1	4.00	158	0.38
Pipeline - Installation	Concrete/Industrial Saws	1	8.00	81	0.73
Pipeline - Installation	Excavators	1	8.00	158	0.38
Pipeline - Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Water Well - Well Construction	Bore/Drill Rigs	1	24.00	221	0.50
Water Well - Well Construction	Excavators	1	8.00	158	0.38
Pipeline - Final Paving	Pavers	1	8.00	130	0.42
Pipeline - Final Paving	Paving Equipment	1	8.00	132	0.36
Pipeline - Final Paving	Rollers	1	8.00	80	0.38
Pipeline - Pavement Striping	Air Compressors	0	0.00	78	0.48
WTP - Site Preparation and Grading	Graders	1	8.00	187	0.41
WTP - Site Preparation and Grading	Rubber Tired Dozers	1	8.00	247	0.40
WTP - Site Preparation and Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
WTP - Equipment Installation	Air Compressors	1	8.00	78	0.48
WTP - Equipment Installation	Cranes	1	4.00	231	0.29
WTP - Equipment Installation	Rough Terrain Forklifts	1	4.00	100	0.40
WTP - Equipment Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Water Well - Equipment Installation	Cranes	1	4.00	231	0.29
Water Well - Equipment Installation	Rough Terrain Forklifts	1	8.00	100	0.40
WTP - Security, Entrance, and Landscaping	Cement and Mortar Mixers	1	8.00	9	0.56
WTP - Security, Entrance, and Landscaping	Skid Steer Loaders	1	4.00	65	0.37
WTP - Paving	Pavers	1	8.00	130	0.42
WTP - Paving	Rollers	1	8.00	80	0.38
WTP - Architectural Coating	Air Compressors	1	8.00	78	0.48

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Water Well - Grading	2	12.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Well Pad Pipeline - Installation	3	12.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Water Well - Well Construction	2	8.00	2.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Final Paving	3	6.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Pavement Stripping	0	4.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Site Preparation and	4	12.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Equipment Installation	4	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Water Well - Equipment Installation	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Security, Entrance and	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Paving	2	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Architectural Coating	1	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area

**3.2 Water Well - Grading Well Pad - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1440	1.2608	1.7901	2.9400e-003		0.0594	0.0594		0.0552	0.0552		275.3541	275.3541	0.0835		277.4419
<b>Total</b>	<b>0.1440</b>	<b>1.2608</b>	<b>1.7901</b>	<b>2.9400e-003</b>	<b>0.0000</b>	<b>0.0594</b>	<b>0.0594</b>	<b>0.0000</b>	<b>0.0552</b>	<b>0.0552</b>		<b>275.3541</b>	<b>275.3541</b>	<b>0.0835</b>		<b>277.4419</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0167	0.5723	0.1358	1.5300e-003	0.0384	1.1500e-003	0.0396	0.0111	1.1000e-003	0.0122		163.4631	163.4631	9.8900e-003		163.7103
Worker	0.0507	0.0329	0.4521	1.3300e-003	0.1341	9.9000e-004	0.1351	0.0356	9.1000e-004	0.0365		132.8884	132.8884	3.5700e-003		132.9777
<b>Total</b>	<b>0.0674</b>	<b>0.6051</b>	<b>0.5879</b>	<b>2.8600e-003</b>	<b>0.1725</b>	<b>2.1400e-003</b>	<b>0.1747</b>	<b>0.0466</b>	<b>2.0100e-003</b>	<b>0.0486</b>		<b>296.3515</b>	<b>296.3515</b>	<b>0.0135</b>		<b>296.6880</b>

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1440	1.2608	1.7901	2.9400e-003		0.0594	0.0594		0.0552	0.0552	0.0000	275.3541	275.3541	0.0835		277.4419
<b>Total</b>	<b>0.1440</b>	<b>1.2608</b>	<b>1.7901</b>	<b>2.9400e-003</b>	<b>0.0000</b>	<b>0.0594</b>	<b>0.0594</b>	<b>0.0000</b>	<b>0.0552</b>	<b>0.0552</b>	<b>0.0000</b>	<b>275.3541</b>	<b>275.3541</b>	<b>0.0835</b>		<b>277.4419</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0167	0.5723	0.1358	1.5300e-003	0.0384	1.1500e-003	0.0396	0.0111	1.1000e-003	0.0122		163.4631	163.4631	9.8900e-003		163.7103
Worker	0.0507	0.0329	0.4521	1.3300e-003	0.1341	9.9000e-004	0.1351	0.0356	9.1000e-004	0.0365		132.8884	132.8884	3.5700e-003		132.9777
<b>Total</b>	<b>0.0674</b>	<b>0.6051</b>	<b>0.5879</b>	<b>2.8600e-003</b>	<b>0.1725</b>	<b>2.1400e-003</b>	<b>0.1747</b>	<b>0.0466</b>	<b>2.0100e-003</b>	<b>0.0486</b>		<b>296.3515</b>	<b>296.3515</b>	<b>0.0135</b>		<b>296.6880</b>

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

**3.3 Pipeline - Installation - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8013	7.0871	9.2061	0.0145		0.3893	0.3893		0.3720	0.3720		1,393.7567	1,393.7567	0.2935		1,401.0943
<b>Total</b>	<b>0.8013</b>	<b>7.0871</b>	<b>9.2061</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.3893</b>	<b>0.3893</b>	<b>0.0000</b>	<b>0.3720</b>	<b>0.3720</b>		<b>1,393.7567</b>	<b>1,393.7567</b>	<b>0.2935</b>		<b>1,401.0943</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0111	0.3815	0.0905	1.0200e-003	0.0256	7.7000e-004	0.0264	7.3700e-003	7.3000e-004	8.1000e-003		108.9754	108.9754	6.5900e-003		109.1402
Worker	0.0507	0.0329	0.4521	1.3300e-003	0.1341	9.9000e-004	0.1351	0.0356	9.1000e-004	0.0365		132.8884	132.8884	3.5700e-003		132.9777
<b>Total</b>	<b>0.0618</b>	<b>0.4144</b>	<b>0.5426</b>	<b>2.3500e-003</b>	<b>0.1597</b>	<b>1.7600e-003</b>	<b>0.1615</b>	<b>0.0429</b>	<b>1.6400e-003</b>	<b>0.0446</b>		<b>241.8638</b>	<b>241.8638</b>	<b>0.0102</b>		<b>242.1179</b>

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8013	7.0871	9.2061	0.0145		0.3893	0.3893		0.3720	0.3720	0.0000	1,393.7567	1,393.7567	0.2935		1,401.0943
<b>Total</b>	<b>0.8013</b>	<b>7.0871</b>	<b>9.2061</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.3893</b>	<b>0.3893</b>	<b>0.0000</b>	<b>0.3720</b>	<b>0.3720</b>	<b>0.0000</b>	<b>1,393.7567</b>	<b>1,393.7567</b>	<b>0.2935</b>		<b>1,401.0943</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0111	0.3815	0.0905	1.0200e-003	0.0256	7.7000e-004	0.0264	7.3700e-003	7.3000e-004	8.1000e-003		108.9754	108.9754	6.5900e-003		109.1402
Worker	0.0507	0.0329	0.4521	1.3300e-003	0.1341	9.9000e-004	0.1351	0.0356	9.1000e-004	0.0365		132.8884	132.8884	3.5700e-003		132.9777
<b>Total</b>	<b>0.0618</b>	<b>0.4144</b>	<b>0.5426</b>	<b>2.3500e-003</b>	<b>0.1597</b>	<b>1.7600e-003</b>	<b>0.1615</b>	<b>0.0429</b>	<b>1.6400e-003</b>	<b>0.0446</b>		<b>241.8638</b>	<b>241.8638</b>	<b>0.0102</b>		<b>242.1179</b>



**3.4 Water Well - Well Construction - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.0037	11.2217	9.4937	0.0334		0.3793	0.3793		0.3490	0.3490		3,236.379 2	3,236.379 2	1.0467		3,262.547 0
<b>Total</b>	<b>1.0037</b>	<b>11.2217</b>	<b>9.4937</b>	<b>0.0334</b>	<b>0.0000</b>	<b>0.3793</b>	<b>0.3793</b>	<b>0.0000</b>	<b>0.3490</b>	<b>0.3490</b>		<b>3,236.379 2</b>	<b>3,236.379 2</b>	<b>1.0467</b>		<b>3,262.547 0</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.8000e-003	0.2024	0.0428	6.1000e-004	0.0140	6.3000e-004	0.0146	3.8300e-003	6.0000e-004	4.4300e-003		66.3632	66.3632	4.4300e-003		66.4739
Vendor	5.5700e-003	0.1908	0.0453	5.1000e-004	0.0128	3.8000e-004	0.0132	3.6900e-003	3.7000e-004	4.0500e-003		54.4877	54.4877	3.3000e-003		54.5701
Worker	0.0338	0.0219	0.3014	8.9000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243		88.5923	88.5923	2.3800e-003		88.6518
<b>Total</b>	<b>0.0451</b>	<b>0.4150</b>	<b>0.3895</b>	<b>2.0100e-003</b>	<b>0.1162</b>	<b>1.6700e-003</b>	<b>0.1179</b>	<b>0.0312</b>	<b>1.5800e-003</b>	<b>0.0328</b>		<b>209.4431</b>	<b>209.4431</b>	<b>0.0101</b>		<b>209.6958</b>

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.0037	11.2217	9.4937	0.0334		0.3793	0.3793		0.3490	0.3490	0.0000	3,236.379 2	3,236.379 2	1.0467		3,262.547 0
<b>Total</b>	<b>1.0037</b>	<b>11.2217</b>	<b>9.4937</b>	<b>0.0334</b>	<b>0.0000</b>	<b>0.3793</b>	<b>0.3793</b>	<b>0.0000</b>	<b>0.3490</b>	<b>0.3490</b>	<b>0.0000</b>	<b>3,236.379 2</b>	<b>3,236.379 2</b>	<b>1.0467</b>		<b>3,262.547 0</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.8000e-003	0.2024	0.0428	6.1000e-004	0.0140	6.3000e-004	0.0146	3.8300e-003	6.0000e-004	4.4300e-003		66.3632	66.3632	4.4300e-003		66.4739
Vendor	5.5700e-003	0.1908	0.0453	5.1000e-004	0.0128	3.8000e-004	0.0132	3.6900e-003	3.7000e-004	4.0500e-003		54.4877	54.4877	3.3000e-003		54.5701
Worker	0.0338	0.0219	0.3014	8.9000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243		88.5923	88.5923	2.3800e-003		88.6518
<b>Total</b>	<b>0.0451</b>	<b>0.4150</b>	<b>0.3895</b>	<b>2.0100e-003</b>	<b>0.1162</b>	<b>1.6700e-003</b>	<b>0.1179</b>	<b>0.0312</b>	<b>1.5800e-003</b>	<b>0.0328</b>		<b>209.4431</b>	<b>209.4431</b>	<b>0.0101</b>		<b>209.6958</b>

**3.5 Pipeline - Final Paving - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6278	6.4596	7.3266	0.0114		0.3389	0.3389		0.3118	0.3118		1,103.6054	1,103.6054	0.3569		1,112.5286
Paving	0.2620					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.8898</b>	<b>6.4596</b>	<b>7.3266</b>	<b>0.0114</b>		<b>0.3389</b>	<b>0.3389</b>		<b>0.3118</b>	<b>0.3118</b>		<b>1,103.6054</b>	<b>1,103.6054</b>	<b>0.3569</b>		<b>1,112.5286</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0111	0.3815	0.0905	1.0200e-003	0.0256	7.7000e-004	0.0264	7.3700e-003	7.3000e-004	8.1000e-003		108.9754	108.9754	6.5900e-003		109.1402
Worker	0.0253	0.0164	0.2260	6.7000e-004	0.0671	4.9000e-004	0.0676	0.0178	4.5000e-004	0.0182		66.4442	66.4442	1.7900e-003		66.4889
<b>Total</b>	<b>0.0365</b>	<b>0.3979</b>	<b>0.3166</b>	<b>1.6900e-003</b>	<b>0.0927</b>	<b>1.2600e-003</b>	<b>0.0939</b>	<b>0.0252</b>	<b>1.1800e-003</b>	<b>0.0263</b>		<b>175.4196</b>	<b>175.4196</b>	<b>8.3800e-003</b>		<b>175.6291</b>

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6278	6.4596	7.3266	0.0114		0.3389	0.3389		0.3118	0.3118	0.0000	1,103.6054	1,103.6054	0.3569		1,112.5286
Paving	0.2620					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.8898</b>	<b>6.4596</b>	<b>7.3266</b>	<b>0.0114</b>		<b>0.3389</b>	<b>0.3389</b>		<b>0.3118</b>	<b>0.3118</b>	<b>0.0000</b>	<b>1,103.6054</b>	<b>1,103.6054</b>	<b>0.3569</b>		<b>1,112.5286</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0111	0.3815	0.0905	1.0200e-003	0.0256	7.7000e-004	0.0264	7.3700e-003	7.3000e-004	8.1000e-003		108.9754	108.9754	6.5900e-003		109.1402
Worker	0.0253	0.0164	0.2260	6.7000e-004	0.0671	4.9000e-004	0.0676	0.0178	4.5000e-004	0.0182		66.4442	66.4442	1.7900e-003		66.4889
<b>Total</b>	<b>0.0365</b>	<b>0.3979</b>	<b>0.3166</b>	<b>1.6900e-003</b>	<b>0.0927</b>	<b>1.2600e-003</b>	<b>0.0939</b>	<b>0.0252</b>	<b>1.1800e-003</b>	<b>0.0263</b>		<b>175.4196</b>	<b>175.4196</b>	<b>8.3800e-003</b>		<b>175.6291</b>

**3.6 Pipeline - Pavement Striping - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.0580					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>6.0580</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0111	0.3815	0.0905	1.0200e-003	0.0256	7.7000e-004	0.0264	7.3700e-003	7.3000e-004	8.1000e-003		108.9754	108.9754	6.5900e-003		109.1402
Worker	0.0169	0.0110	0.1507	4.4000e-004	0.0447	3.3000e-004	0.0450	0.0119	3.0000e-004	0.0122		44.2961	44.2961	1.1900e-003		44.3259
<b>Total</b>	<b>0.0280</b>	<b>0.3925</b>	<b>0.2412</b>	<b>1.4600e-003</b>	<b>0.0703</b>	<b>1.1000e-003</b>	<b>0.0714</b>	<b>0.0192</b>	<b>1.0300e-003</b>	<b>0.0203</b>		<b>153.2715</b>	<b>153.2715</b>	<b>7.7800e-003</b>		<b>153.4661</b>

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.0580					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>6.0580</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0111	0.3815	0.0905	1.0200e-003	0.0256	7.7000e-004	0.0264	7.3700e-003	7.3000e-004	8.1000e-003		108.9754	108.9754	6.5900e-003		109.1402
Worker	0.0169	0.0110	0.1507	4.4000e-004	0.0447	3.3000e-004	0.0450	0.0119	3.0000e-004	0.0122		44.2961	44.2961	1.1900e-003		44.3259
<b>Total</b>	<b>0.0280</b>	<b>0.3925</b>	<b>0.2412</b>	<b>1.4600e-003</b>	<b>0.0703</b>	<b>1.1000e-003</b>	<b>0.0714</b>	<b>0.0192</b>	<b>1.0300e-003</b>	<b>0.0203</b>		<b>153.2715</b>	<b>153.2715</b>	<b>7.7800e-003</b>		<b>153.4661</b>

**3.7 WTP - Site Preparation and Grading - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.2762	0.0000	3.2762	1.6837	0.0000	1.6837			0.0000			0.0000
Off-Road	1.8739	20.6875	10.3254	0.0214		0.9437	0.9437		0.8682	0.8682		2,070.8365	2,070.8365	0.6698		2,087.5802
<b>Total</b>	<b>1.8739</b>	<b>20.6875</b>	<b>10.3254</b>	<b>0.0214</b>	<b>3.2762</b>	<b>0.9437</b>	<b>4.2199</b>	<b>1.6837</b>	<b>0.8682</b>	<b>2.5519</b>		<b>2,070.8365</b>	<b>2,070.8365</b>	<b>0.6698</b>		<b>2,087.5802</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0507	0.0329	0.4521	1.3300e-003	0.1341	9.9000e-004	0.1351	0.0356	9.1000e-004	0.0365		132.8884	132.8884	3.5700e-003		132.9777
<b>Total</b>	<b>0.0507</b>	<b>0.0329</b>	<b>0.4521</b>	<b>1.3300e-003</b>	<b>0.1341</b>	<b>9.9000e-004</b>	<b>0.1351</b>	<b>0.0356</b>	<b>9.1000e-004</b>	<b>0.0365</b>		<b>132.8884</b>	<b>132.8884</b>	<b>3.5700e-003</b>		<b>132.9777</b>



## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.2777	0.0000	1.2777	0.6567	0.0000	0.6567			0.0000			0.0000
Off-Road	1.8739	20.6875	10.3254	0.0214		0.9437	0.9437		0.8682	0.8682	0.0000	2,070.8365	2,070.8365	0.6698		2,087.5802
<b>Total</b>	<b>1.8739</b>	<b>20.6875</b>	<b>10.3254</b>	<b>0.0214</b>	<b>1.2777</b>	<b>0.9437</b>	<b>2.2214</b>	<b>0.6567</b>	<b>0.8682</b>	<b>1.5249</b>	<b>0.0000</b>	<b>2,070.8365</b>	<b>2,070.8365</b>	<b>0.6698</b>		<b>2,087.5802</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0507	0.0329	0.4521	1.3300e-003	0.1341	9.9000e-004	0.1351	0.0356	9.1000e-004	0.0365		132.8884	132.8884	3.5700e-003		132.9777
<b>Total</b>	<b>0.0507</b>	<b>0.0329</b>	<b>0.4521</b>	<b>1.3300e-003</b>	<b>0.1341</b>	<b>9.9000e-004</b>	<b>0.1351</b>	<b>0.0356</b>	<b>9.1000e-004</b>	<b>0.0365</b>		<b>132.8884</b>	<b>132.8884</b>	<b>3.5700e-003</b>		<b>132.9777</b>

**3.8 WTP - Equipment Installation - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7472	7.1624	6.8221	0.0117		0.3669	0.3669		0.3476	0.3476		1,122.418 2	1,122.418 2	0.2674		1,129.103 1
<b>Total</b>	<b>0.7472</b>	<b>7.1624</b>	<b>6.8221</b>	<b>0.0117</b>		<b>0.3669</b>	<b>0.3669</b>		<b>0.3476</b>	<b>0.3476</b>		<b>1,122.418 2</b>	<b>1,122.418 2</b>	<b>0.2674</b>		<b>1,129.103 1</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5700e-003	0.1908	0.0453	5.1000e-004	0.0128	3.8000e-004	0.0132	3.6900e-003	3.7000e-004	4.0500e-003		54.4877	54.4877	3.3000e-003		54.5701
Worker	0.0422	0.0274	0.3767	1.1100e-003	0.1118	8.2000e-004	0.1126	0.0296	7.6000e-004	0.0304		110.7403	110.7403	2.9800e-003		110.8148
<b>Total</b>	<b>0.0478</b>	<b>0.2181</b>	<b>0.4220</b>	<b>1.6200e-003</b>	<b>0.1246</b>	<b>1.2000e-003</b>	<b>0.1258</b>	<b>0.0333</b>	<b>1.1300e-003</b>	<b>0.0345</b>		<b>165.2280</b>	<b>165.2280</b>	<b>6.2800e-003</b>		<b>165.3849</b>

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7472	7.1624	6.8221	0.0117		0.3669	0.3669		0.3476	0.3476	0.0000	1,122.418 2	1,122.418 2	0.2674		1,129.103 1
<b>Total</b>	<b>0.7472</b>	<b>7.1624</b>	<b>6.8221</b>	<b>0.0117</b>		<b>0.3669</b>	<b>0.3669</b>		<b>0.3476</b>	<b>0.3476</b>	<b>0.0000</b>	<b>1,122.418 2</b>	<b>1,122.418 2</b>	<b>0.2674</b>		<b>1,129.103 1</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5700e-003	0.1908	0.0453	5.1000e-004	0.0128	3.8000e-004	0.0132	3.6900e-003	3.7000e-004	4.0500e-003		54.4877	54.4877	3.3000e-003		54.5701
Worker	0.0422	0.0274	0.3767	1.1100e-003	0.1118	8.2000e-004	0.1126	0.0296	7.6000e-004	0.0304		110.7403	110.7403	2.9800e-003		110.8148
<b>Total</b>	<b>0.0478</b>	<b>0.2181</b>	<b>0.4220</b>	<b>1.6200e-003</b>	<b>0.1246</b>	<b>1.2000e-003</b>	<b>0.1258</b>	<b>0.0333</b>	<b>1.1300e-003</b>	<b>0.0345</b>		<b>165.2280</b>	<b>165.2280</b>	<b>6.2800e-003</b>		<b>165.3849</b>

**3.8 WTP - Equipment Installation - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6799	6.3859	6.7464	0.0117		0.3118	0.3118		0.2955	0.2955		1,122.795 4	1,122.795 4	0.2662		1,129.450 4
<b>Total</b>	<b>0.6799</b>	<b>6.3859</b>	<b>6.7464</b>	<b>0.0117</b>		<b>0.3118</b>	<b>0.3118</b>		<b>0.2955</b>	<b>0.2955</b>		<b>1,122.795 4</b>	<b>1,122.795 4</b>	<b>0.2662</b>		<b>1,129.450 4</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2200e-003	0.1811	0.0428	5.1000e-004	0.0128	3.3000e-004	0.0131	3.6900e-003	3.2000e-004	4.0000e-003		54.0118	54.0118	3.1700e-003		54.0912
Worker	0.0396	0.0247	0.3484	1.0700e-003	0.1118	8.0000e-004	0.1126	0.0296	7.4000e-004	0.0304		106.7724	106.7724	2.6900e-003		106.8397
<b>Total</b>	<b>0.0448</b>	<b>0.2058</b>	<b>0.3911</b>	<b>1.5800e-003</b>	<b>0.1246</b>	<b>1.1300e-003</b>	<b>0.1257</b>	<b>0.0333</b>	<b>1.0600e-003</b>	<b>0.0344</b>		<b>160.7842</b>	<b>160.7842</b>	<b>5.8600e-003</b>		<b>160.9308</b>

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6799	6.3859	6.7464	0.0117		0.3118	0.3118		0.2955	0.2955	0.0000	1,122.7954	1,122.7954	0.2662		1,129.4504
<b>Total</b>	<b>0.6799</b>	<b>6.3859</b>	<b>6.7464</b>	<b>0.0117</b>		<b>0.3118</b>	<b>0.3118</b>		<b>0.2955</b>	<b>0.2955</b>	<b>0.0000</b>	<b>1,122.7954</b>	<b>1,122.7954</b>	<b>0.2662</b>		<b>1,129.4504</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2200e-003	0.1811	0.0428	5.1000e-004	0.0128	3.3000e-004	0.0131	3.6900e-003	3.2000e-004	4.0000e-003		54.0118	54.0118	3.1700e-003		54.0912
Worker	0.0396	0.0247	0.3484	1.0700e-003	0.1118	8.0000e-004	0.1126	0.0296	7.4000e-004	0.0304		106.7724	106.7724	2.6900e-003		106.8397
<b>Total</b>	<b>0.0448</b>	<b>0.2058</b>	<b>0.3911</b>	<b>1.5800e-003</b>	<b>0.1246</b>	<b>1.1300e-003</b>	<b>0.1257</b>	<b>0.0333</b>	<b>1.0600e-003</b>	<b>0.0344</b>		<b>160.7842</b>	<b>160.7842</b>	<b>5.8600e-003</b>		<b>160.9308</b>

**3.9 Water Well - Equipment Installation - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3297	4.0369	3.2856	6.3300e-003		0.1609	0.1609		0.1480	0.1480		613.1387	613.1387	0.1983		618.0962
<b>Total</b>	<b>0.3297</b>	<b>4.0369</b>	<b>3.2856</b>	<b>6.3300e-003</b>		<b>0.1609</b>	<b>0.1609</b>		<b>0.1480</b>	<b>0.1480</b>		<b>613.1387</b>	<b>613.1387</b>	<b>0.1983</b>		<b>618.0962</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5700e-003	0.1908	0.0453	5.1000e-004	0.0128	3.8000e-004	0.0132	3.6900e-003	3.7000e-004	4.0500e-003		54.4877	54.4877	3.3000e-003		54.5701
Worker	0.0338	0.0219	0.3014	8.9000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243		88.5923	88.5923	2.3800e-003		88.6518
<b>Total</b>	<b>0.0393</b>	<b>0.2127</b>	<b>0.3467</b>	<b>1.4000e-003</b>	<b>0.1022</b>	<b>1.0400e-003</b>	<b>0.1033</b>	<b>0.0274</b>	<b>9.8000e-004</b>	<b>0.0284</b>		<b>143.0800</b>	<b>143.0800</b>	<b>5.6800e-003</b>		<b>143.2219</b>

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3297	4.0369	3.2856	6.3300e-003		0.1609	0.1609		0.1480	0.1480	0.0000	613.1387	613.1387	0.1983		618.0962
<b>Total</b>	<b>0.3297</b>	<b>4.0369</b>	<b>3.2856</b>	<b>6.3300e-003</b>		<b>0.1609</b>	<b>0.1609</b>		<b>0.1480</b>	<b>0.1480</b>	<b>0.0000</b>	<b>613.1387</b>	<b>613.1387</b>	<b>0.1983</b>		<b>618.0962</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5700e-003	0.1908	0.0453	5.1000e-004	0.0128	3.8000e-004	0.0132	3.6900e-003	3.7000e-004	4.0500e-003		54.4877	54.4877	3.3000e-003		54.5701
Worker	0.0338	0.0219	0.3014	8.9000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243		88.5923	88.5923	2.3800e-003		88.6518
<b>Total</b>	<b>0.0393</b>	<b>0.2127</b>	<b>0.3467</b>	<b>1.4000e-003</b>	<b>0.1022</b>	<b>1.0400e-003</b>	<b>0.1033</b>	<b>0.0274</b>	<b>9.8000e-004</b>	<b>0.0284</b>		<b>143.0800</b>	<b>143.0800</b>	<b>5.6800e-003</b>		<b>143.2219</b>

**3.10 WTP - Security, Entrance, and Landscaping - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0936	0.8325	1.0021	1.7500e-003		0.0316	0.0316		0.0302	0.0302		150.7119	150.7119	0.0377		151.6532
<b>Total</b>	<b>0.0936</b>	<b>0.8325</b>	<b>1.0021</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0316</b>	<b>0.0316</b>	<b>0.0000</b>	<b>0.0302</b>	<b>0.0302</b>		<b>150.7119</b>	<b>150.7119</b>	<b>0.0377</b>		<b>151.6532</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2200e-003	0.1811	0.0428	5.1000e-004	0.0128	3.3000e-004	0.0131	3.6900e-003	3.2000e-004	4.0000e-003		54.0118	54.0118	3.1700e-003		54.0912
Worker	0.0317	0.0198	0.2787	8.6000e-004	0.0894	6.4000e-004	0.0901	0.0237	5.9000e-004	0.0243		85.4179	85.4179	2.1500e-003		85.4717
<b>Total</b>	<b>0.0369</b>	<b>0.2009</b>	<b>0.3215</b>	<b>1.3700e-003</b>	<b>0.1022</b>	<b>9.7000e-004</b>	<b>0.1032</b>	<b>0.0274</b>	<b>9.1000e-004</b>	<b>0.0283</b>		<b>139.4297</b>	<b>139.4297</b>	<b>5.3200e-003</b>		<b>139.5629</b>



## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0936	0.8325	1.0021	1.7500e-003		0.0316	0.0316		0.0302	0.0302	0.0000	150.7119	150.7119	0.0377		151.6532
<b>Total</b>	<b>0.0936</b>	<b>0.8325</b>	<b>1.0021</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0316</b>	<b>0.0316</b>	<b>0.0000</b>	<b>0.0302</b>	<b>0.0302</b>	<b>0.0000</b>	<b>150.7119</b>	<b>150.7119</b>	<b>0.0377</b>		<b>151.6532</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2200e-003	0.1811	0.0428	5.1000e-004	0.0128	3.3000e-004	0.0131	3.6900e-003	3.2000e-004	4.0000e-003		54.0118	54.0118	3.1700e-003		54.0912
Worker	0.0317	0.0198	0.2787	8.6000e-004	0.0894	6.4000e-004	0.0901	0.0237	5.9000e-004	0.0243		85.4179	85.4179	2.1500e-003		85.4717
<b>Total</b>	<b>0.0369</b>	<b>0.2009</b>	<b>0.3215</b>	<b>1.3700e-003</b>	<b>0.1022</b>	<b>9.7000e-004</b>	<b>0.1032</b>	<b>0.0274</b>	<b>9.1000e-004</b>	<b>0.0283</b>		<b>139.4297</b>	<b>139.4297</b>	<b>5.3200e-003</b>		<b>139.5629</b>

**3.11 WTP - Paving - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3732	3.8248	4.7443	7.3300e-003		0.1992	0.1992		0.1833	0.1833		709.3618	709.3618	0.2294		715.0973
Paving	0.2620					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.6352</b>	<b>3.8248</b>	<b>4.7443</b>	<b>7.3300e-003</b>		<b>0.1992</b>	<b>0.1992</b>		<b>0.1833</b>	<b>0.1833</b>		<b>709.3618</b>	<b>709.3618</b>	<b>0.2294</b>		<b>715.0973</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2200e-003	0.1811	0.0428	5.1000e-004	0.0128	3.3000e-004	0.0131	3.6900e-003	3.2000e-004	4.0000e-003		54.0118	54.0118	3.1700e-003		54.0912
Worker	0.0238	0.0148	0.2090	6.4000e-004	0.0671	4.8000e-004	0.0676	0.0178	4.4000e-004	0.0182		64.0634	64.0634	1.6100e-003		64.1038
<b>Total</b>	<b>0.0290</b>	<b>0.1959</b>	<b>0.2518</b>	<b>1.1500e-003</b>	<b>0.0799</b>	<b>8.1000e-004</b>	<b>0.0807</b>	<b>0.0215</b>	<b>7.6000e-004</b>	<b>0.0222</b>		<b>118.0753</b>	<b>118.0753</b>	<b>4.7800e-003</b>		<b>118.1950</b>

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3732	3.8248	4.7443	7.3300e-003		0.1992	0.1992		0.1833	0.1833	0.0000	709.3618	709.3618	0.2294		715.0973
Paving	0.2620					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.6352</b>	<b>3.8248</b>	<b>4.7443</b>	<b>7.3300e-003</b>		<b>0.1992</b>	<b>0.1992</b>		<b>0.1833</b>	<b>0.1833</b>	<b>0.0000</b>	<b>709.3618</b>	<b>709.3618</b>	<b>0.2294</b>		<b>715.0973</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2200e-003	0.1811	0.0428	5.1000e-004	0.0128	3.3000e-004	0.0131	3.6900e-003	3.2000e-004	4.0000e-003		54.0118	54.0118	3.1700e-003		54.0912
Worker	0.0238	0.0148	0.2090	6.4000e-004	0.0671	4.8000e-004	0.0676	0.0178	4.4000e-004	0.0182		64.0634	64.0634	1.6100e-003		64.1038
<b>Total</b>	<b>0.0290</b>	<b>0.1959</b>	<b>0.2518</b>	<b>1.1500e-003</b>	<b>0.0799</b>	<b>8.1000e-004</b>	<b>0.0807</b>	<b>0.0215</b>	<b>7.6000e-004</b>	<b>0.0222</b>		<b>118.0753</b>	<b>118.0753</b>	<b>4.7800e-003</b>		<b>118.1950</b>

**3.12 WTP - Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.2116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2727	1.8780	2.4181	3.9600e-003		0.1090	0.1090		0.1090	0.1090		375.2641	375.2641	0.0244		375.8749
<b>Total</b>	<b>1.4843</b>	<b>1.8780</b>	<b>2.4181</b>	<b>3.9600e-003</b>		<b>0.1090</b>	<b>0.1090</b>		<b>0.1090</b>	<b>0.1090</b>		<b>375.2641</b>	<b>375.2641</b>	<b>0.0244</b>		<b>375.8749</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2200e-003	0.1811	0.0428	5.1000e-004	0.0128	3.3000e-004	0.0131	3.6900e-003	3.2000e-004	4.0000e-003		54.0118	54.0118	3.1700e-003		54.0912
Worker	0.0238	0.0148	0.2090	6.4000e-004	0.0671	4.8000e-004	0.0676	0.0178	4.4000e-004	0.0182		64.0634	64.0634	1.6100e-003		64.1038
<b>Total</b>	<b>0.0290</b>	<b>0.1959</b>	<b>0.2518</b>	<b>1.1500e-003</b>	<b>0.0799</b>	<b>8.1000e-004</b>	<b>0.0807</b>	<b>0.0215</b>	<b>7.6000e-004</b>	<b>0.0222</b>		<b>118.0753</b>	<b>118.0753</b>	<b>4.7800e-003</b>		<b>118.1950</b>

## APU Well and Water Treatment Facilities Project (La Palma Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.2116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2727	1.8780	2.4181	3.9600e-003		0.1090	0.1090		0.1090	0.1090	0.0000	375.2641	375.2641	0.0244		375.8749
<b>Total</b>	<b>1.4843</b>	<b>1.8780</b>	<b>2.4181</b>	<b>3.9600e-003</b>		<b>0.1090</b>	<b>0.1090</b>		<b>0.1090</b>	<b>0.1090</b>	<b>0.0000</b>	<b>375.2641</b>	<b>375.2641</b>	<b>0.0244</b>		<b>375.8749</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2200e-003	0.1811	0.0428	5.1000e-004	0.0128	3.3000e-004	0.0131	3.6900e-003	3.2000e-004	4.0000e-003		54.0118	54.0118	3.1700e-003		54.0912
Worker	0.0238	0.0148	0.2090	6.4000e-004	0.0671	4.8000e-004	0.0676	0.0178	4.4000e-004	0.0182		64.0634	64.0634	1.6100e-003		64.1038
<b>Total</b>	<b>0.0290</b>	<b>0.1959</b>	<b>0.2518</b>	<b>1.1500e-003</b>	<b>0.0799</b>	<b>8.1000e-004</b>	<b>0.0807</b>	<b>0.0215</b>	<b>7.6000e-004</b>	<b>0.0222</b>		<b>118.0753</b>	<b>118.0753</b>	<b>4.7800e-003</b>		<b>118.1950</b>

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**APU Well and Water Treatment Facilities Project (La Palma Site)**  
**South Coast AQMD Air District, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.00	0.00	0
Other Asphalt Surfaces	0.50	Acre	0.50	21,780.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2024
<b>Utility Company</b>	Anaheim Public Utilities				
<b>CO2 Intensity (lb/MW hr)</b>	1543.28	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - APU Well and Water Treatment Facilities Project - La Palma Site. SCAQMD.

Land Use - Surrogate land uses for pipeline and pavement for water treatment facility location.

Construction Phase - Construction schedule based on estimated duration of activities, September 2021 through 2023.

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

### Off-road Equipment - Equipment based on default assumptions

### Off-road Equipment - Equipment based on default assumptions

### Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

### Off-road Equipment - Equipment based on default assumptions

### Off-road Equipment - Equipment based on default assumptions

### Off-road Equipment - Equipment based on default assumptions

Trips and VMT - Based on default assumptions. Assumed 0.19 mile for haul and vendor trips.

Demolition - Demolition of existing 1,200 foot building

Architectural Coating - Default coating EF

Construction Off-road Equipment Mitigation - Water exposed area 3x per day to represent fugitive dust construction practices

[illegible]

tblOffRoadEquipment	PhaseName		Water Well - Well Construction
tblOffRoadEquipment	PhaseName		Water Well - Grading Well Pad
tblOffRoadEquipment	PhaseName		Water Well - Grading Well Pad
tblOffRoadEquipment	PhaseName		Pipeline - Installation
tblOffRoadEquipment	PhaseName		Water Well - Well Construction
tblOffRoadEquipment	PhaseName		Pipeline - Final Paving
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	1.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	4.00	2.00
tblTripsAndVMT	VendorTripNumber	4.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	5.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	2.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00



tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	2.00	4.00
tblTripsAndVMT	WorkerTripNumber	10.00	12.00
tblTripsAndVMT	WorkerTripNumber	9.00	10.00
tblTripsAndVMT	WorkerTripNumber	9.00	8.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	7.1405	39.7466	27.8042	0.0712	3.6511	1.6939	5.3449	1.7839	1.5684	3.3523	0.0000	6,911.289 9	6,911.289 9	2.0039	0.0000	6,961.386 9
2022	2.1825	6.5933	7.6331	0.0135	0.1597	0.3129	0.4695	0.0430	0.2966	0.3367	0.0000	1,309.327 9	1,309.327 9	0.2721	0.0000	1,315.919 7
Maximum	7.1405	39.7466	27.8042	0.0712	3.6511	1.6939	5.3449	1.7839	1.5684	3.3523	0.0000	6,911.289 9	6,911.289 9	2.0039	0.0000	6,961.386 9

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2021	7.1405	39.7466	27.8042	0.0712	1.6526	1.6939	3.3465	0.7568	1.5684	2.3252	0.0000	6,911.289 9	6,911.289 9	2.0039	0.0000	6,961.386 9
2022	2.1825	6.5933	7.6331	0.0135	0.1597	0.3129	0.4695	0.0430	0.2966	0.3367	0.0000	1,309.327 9	1,309.327 9	0.2721	0.0000	1,315.919 7
Maximum	7.1405	39.7466	27.8042	0.0712	1.6526	1.6939	3.3465	0.7568	1.5684	2.3252	0.0000	6,911.289 9	6,911.289 9	2.0039	0.0000	6,961.386 9

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	52.44	0.00	34.37	56.22	0.00	27.84	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Water Well - Grading Well Pad	Grading	9/1/2021	9/14/2021	5	10	
2	Pipeline - Installation	Grading	9/1/2021	9/28/2021	5	20	
3	Water Well - Well Construction	Grading	9/15/2021	11/23/2021	5	50	
4	Pipeline - Final Paving	Paving	9/29/2021	10/5/2021	5	5	
5	Pipeline - Pavement Striping	Architectural Coating	10/6/2021	10/6/2021	5	1	
6	WTP - Site Preparation and Grading	Grading	10/7/2021	10/20/2021	5	10	
7	WTP - Equipment Installation	Building Construction	10/14/2021	1/13/2022	5	66	
8	Water Well - Equipment Installation	Building Construction	11/24/2021	11/30/2021	5	5	
9	WTP - Security, Entrance, and Landscaping	Site Preparation	1/14/2022	1/27/2022	5	10	
10	WTP - Paving	Paving	1/28/2022	2/3/2022	5	5	
11	WTP - Architectural Coating	Architectural Coating	1/28/2022	2/3/2022	5	5	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0.5**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 1,307**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Water Well - Grading Well Pad	Cement and Mortar Mixers	1	4.00	9	0.56
Water Well - Grading Well Pad	Excavators	1	4.00	158	0.38
Pipeline - Installation	Concrete/Industrial Saws	1	8.00	81	0.73
Pipeline - Installation	Excavators	1	8.00	158	0.38
Pipeline - Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Water Well - Well Construction	Bore/Drill Rigs	1	24.00	221	0.50
Water Well - Well Construction	Excavators	1	8.00	158	0.38
Pipeline - Final Paving	Pavers	1	8.00	130	0.42
Pipeline - Final Paving	Paving Equipment	1	8.00	132	0.36
Pipeline - Final Paving	Rollers	1	8.00	80	0.38
Pipeline - Pavement Striping	Air Compressors	0	0.00	78	0.48
WTP - Site Preparation and Grading	Graders	1	8.00	187	0.41
WTP - Site Preparation and Grading	Rubber Tired Dozers	1	8.00	247	0.40
WTP - Site Preparation and Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
WTP - Equipment Installation	Air Compressors	1	8.00	78	0.48
WTP - Equipment Installation	Cranes	1	4.00	231	0.29
WTP - Equipment Installation	Rough Terrain Forklifts	1	4.00	100	0.40
WTP - Equipment Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Water Well - Equipment Installation	Cranes	1	4.00	231	0.29
Water Well - Equipment Installation	Rough Terrain Forklifts	1	8.00	100	0.40
WTP - Security, Entrance, and Landscaping	Cement and Mortar Mixers	1	8.00	9	0.56
WTP - Security, Entrance, and Landscaping	Skid Steer Loaders	1	4.00	65	0.37
WTP - Paving	Pavers	1	8.00	130	0.42
WTP - Paving	Rollers	1	8.00	80	0.38
WTP - Architectural Coating	Air Compressors	1	8.00	78	0.48

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Water Well - Grading	2	12.00	6.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Well Pad Pipeline - Installation	3	12.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Water Well - Well Construction	2	8.00	2.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Final Paving	3	6.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Pavement Stripping	0	4.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Site Preparation and	4	12.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Equipment Installation	4	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Water Well - Equipment Installation	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Security, Entrance and	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Paving	2	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Architectural Coating	1	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area

**3.2 Water Well - Grading Well Pad - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1440	1.2608	1.7901	2.9400e-003		0.0594	0.0594		0.0552	0.0552		275.3541	275.3541	0.0835		277.4419
<b>Total</b>	<b>0.1440</b>	<b>1.2608</b>	<b>1.7901</b>	<b>2.9400e-003</b>	<b>0.0000</b>	<b>0.0594</b>	<b>0.0594</b>	<b>0.0000</b>	<b>0.0552</b>	<b>0.0552</b>		<b>275.3541</b>	<b>275.3541</b>	<b>0.0835</b>		<b>277.4419</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0176	0.5704	0.1520	1.4900e-003	0.0384	1.1900e-003	0.0396	0.0111	1.1400e-003	0.0122		158.7301	158.7301	0.0106		158.9956
Worker	0.0553	0.0360	0.4063	1.2500e-003	0.1341	9.9000e-004	0.1351	0.0356	9.1000e-004	0.0365		124.2801	124.2801	3.3300e-003		124.3634
<b>Total</b>	<b>0.0729</b>	<b>0.6064</b>	<b>0.5582</b>	<b>2.7400e-003</b>	<b>0.1725</b>	<b>2.1800e-003</b>	<b>0.1747</b>	<b>0.0466</b>	<b>2.0500e-003</b>	<b>0.0487</b>		<b>283.0103</b>	<b>283.0103</b>	<b>0.0140</b>		<b>283.3590</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1440	1.2608	1.7901	2.9400e-003		0.0594	0.0594		0.0552	0.0552	0.0000	275.3541	275.3541	0.0835		277.4419
<b>Total</b>	<b>0.1440</b>	<b>1.2608</b>	<b>1.7901</b>	<b>2.9400e-003</b>	<b>0.0000</b>	<b>0.0594</b>	<b>0.0594</b>	<b>0.0000</b>	<b>0.0552</b>	<b>0.0552</b>	<b>0.0000</b>	<b>275.3541</b>	<b>275.3541</b>	<b>0.0835</b>		<b>277.4419</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0176	0.5704	0.1520	1.4900e-003	0.0384	1.1900e-003	0.0396	0.0111	1.1400e-003	0.0122		158.7301	158.7301	0.0106		158.9956
Worker	0.0553	0.0360	0.4063	1.2500e-003	0.1341	9.9000e-004	0.1351	0.0356	9.1000e-004	0.0365		124.2801	124.2801	3.3300e-003		124.3634
<b>Total</b>	<b>0.0729</b>	<b>0.6064</b>	<b>0.5582</b>	<b>2.7400e-003</b>	<b>0.1725</b>	<b>2.1800e-003</b>	<b>0.1747</b>	<b>0.0466</b>	<b>2.0500e-003</b>	<b>0.0487</b>		<b>283.0103</b>	<b>283.0103</b>	<b>0.0140</b>		<b>283.3590</b>

**3.3 Pipeline - Installation - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8013	7.0871	9.2061	0.0145		0.3893	0.3893		0.3720	0.3720		1,393.7567	1,393.7567	0.2935		1,401.0943
<b>Total</b>	<b>0.8013</b>	<b>7.0871</b>	<b>9.2061</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.3893</b>	<b>0.3893</b>	<b>0.0000</b>	<b>0.3720</b>	<b>0.3720</b>		<b>1,393.7567</b>	<b>1,393.7567</b>	<b>0.2935</b>		<b>1,401.0943</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0117	0.3803	0.1013	9.9000e-004	0.0256	7.9000e-004	0.0264	7.3700e-003	7.6000e-004	8.1300e-003		105.8201	105.8201	7.0800e-003		105.9971
Worker	0.0553	0.0360	0.4063	1.2500e-003	0.1341	9.9000e-004	0.1351	0.0356	9.1000e-004	0.0365		124.2801	124.2801	3.3300e-003		124.3634
<b>Total</b>	<b>0.0671</b>	<b>0.4163</b>	<b>0.5076</b>	<b>2.2400e-003</b>	<b>0.1597</b>	<b>1.7800e-003</b>	<b>0.1615</b>	<b>0.0429</b>	<b>1.6700e-003</b>	<b>0.0446</b>		<b>230.1002</b>	<b>230.1002</b>	<b>0.0104</b>		<b>230.3605</b>



**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8013	7.0871	9.2061	0.0145		0.3893	0.3893		0.3720	0.3720	0.0000	1,393.7567	1,393.7567	0.2935		1,401.0943
<b>Total</b>	<b>0.8013</b>	<b>7.0871</b>	<b>9.2061</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.3893</b>	<b>0.3893</b>	<b>0.0000</b>	<b>0.3720</b>	<b>0.3720</b>	<b>0.0000</b>	<b>1,393.7567</b>	<b>1,393.7567</b>	<b>0.2935</b>		<b>1,401.0943</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0117	0.3803	0.1013	9.9000e-004	0.0256	7.9000e-004	0.0264	7.3700e-003	7.6000e-004	8.1300e-003		105.8201	105.8201	7.0800e-003		105.9971
Worker	0.0553	0.0360	0.4063	1.2500e-003	0.1341	9.9000e-004	0.1351	0.0356	9.1000e-004	0.0365		124.2801	124.2801	3.3300e-003		124.3634
<b>Total</b>	<b>0.0671</b>	<b>0.4163</b>	<b>0.5076</b>	<b>2.2400e-003</b>	<b>0.1597</b>	<b>1.7800e-003</b>	<b>0.1615</b>	<b>0.0429</b>	<b>1.6700e-003</b>	<b>0.0446</b>		<b>230.1002</b>	<b>230.1002</b>	<b>0.0104</b>		<b>230.3605</b>

**3.4 Water Well - Well Construction - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.0037	11.2217	9.4937	0.0334		0.3793	0.3793		0.3490	0.3490		3,236.379 2	3,236.379 2	1.0467		3,262.547 0
<b>Total</b>	<b>1.0037</b>	<b>11.2217</b>	<b>9.4937</b>	<b>0.0334</b>	<b>0.0000</b>	<b>0.3793</b>	<b>0.3793</b>	<b>0.0000</b>	<b>0.3490</b>	<b>0.3490</b>		<b>3,236.379 2</b>	<b>3,236.379 2</b>	<b>1.0467</b>		<b>3,262.547 0</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.9700e-003	0.2048	0.0460	6.0000e-004	0.0140	6.4000e-004	0.0146	3.8300e-003	6.1000e-004	4.4400e-003		65.1356	65.1356	4.6100e-003		65.2510
Vendor	5.8600e-003	0.1902	0.0507	5.0000e-004	0.0128	4.0000e-004	0.0132	3.6900e-003	3.8000e-004	4.0600e-003		52.9100	52.9100	3.5400e-003		52.9985
Worker	0.0369	0.0240	0.2708	8.3000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243		82.8534	82.8534	2.2200e-003		82.9089
<b>Total</b>	<b>0.0487</b>	<b>0.4189</b>	<b>0.3675</b>	<b>1.9300e-003</b>	<b>0.1162</b>	<b>1.7000e-003</b>	<b>0.1179</b>	<b>0.0312</b>	<b>1.6000e-003</b>	<b>0.0328</b>		<b>200.8991</b>	<b>200.8991</b>	<b>0.0104</b>		<b>201.1585</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	1.0037	11.2217	9.4937	0.0334		0.3793	0.3793		0.3490	0.3490	0.0000	3,236.379 2	3,236.379 2	1.0467		3,262.547 0
<b>Total</b>	<b>1.0037</b>	<b>11.2217</b>	<b>9.4937</b>	<b>0.0334</b>	<b>0.0000</b>	<b>0.3793</b>	<b>0.3793</b>	<b>0.0000</b>	<b>0.3490</b>	<b>0.3490</b>	<b>0.0000</b>	<b>3,236.379 2</b>	<b>3,236.379 2</b>	<b>1.0467</b>		<b>3,262.547 0</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	5.9700e-003	0.2048	0.0460	6.0000e-004	0.0140	6.4000e-004	0.0146	3.8300e-003	6.1000e-004	4.4400e-003		65.1356	65.1356	4.6100e-003		65.2510
Vendor	5.8600e-003	0.1902	0.0507	5.0000e-004	0.0128	4.0000e-004	0.0132	3.6900e-003	3.8000e-004	4.0600e-003		52.9100	52.9100	3.5400e-003		52.9985
Worker	0.0369	0.0240	0.2708	8.3000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243		82.8534	82.8534	2.2200e-003		82.9089
<b>Total</b>	<b>0.0487</b>	<b>0.4189</b>	<b>0.3675</b>	<b>1.9300e-003</b>	<b>0.1162</b>	<b>1.7000e-003</b>	<b>0.1179</b>	<b>0.0312</b>	<b>1.6000e-003</b>	<b>0.0328</b>		<b>200.8991</b>	<b>200.8991</b>	<b>0.0104</b>		<b>201.1585</b>

**3.5 Pipeline - Final Paving - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6278	6.4596	7.3266	0.0114		0.3389	0.3389		0.3118	0.3118		1,103.6054	1,103.6054	0.3569		1,112.5286
Paving	0.2620					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.8898</b>	<b>6.4596</b>	<b>7.3266</b>	<b>0.0114</b>		<b>0.3389</b>	<b>0.3389</b>		<b>0.3118</b>	<b>0.3118</b>		<b>1,103.6054</b>	<b>1,103.6054</b>	<b>0.3569</b>		<b>1,112.5286</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0117	0.3803	0.1013	9.9000e-004	0.0256	7.9000e-004	0.0264	7.3700e-003	7.6000e-004	8.1300e-003		105.8201	105.8201	7.0800e-003		105.9971
Worker	0.0277	0.0180	0.2031	6.2000e-004	0.0671	4.9000e-004	0.0676	0.0178	4.5000e-004	0.0182		62.1401	62.1401	1.6700e-003		62.1817
<b>Total</b>	<b>0.0394</b>	<b>0.3983</b>	<b>0.3044</b>	<b>1.6100e-003</b>	<b>0.0927</b>	<b>1.2800e-003</b>	<b>0.0940</b>	<b>0.0252</b>	<b>1.2100e-003</b>	<b>0.0264</b>		<b>167.9602</b>	<b>167.9602</b>	<b>8.7500e-003</b>		<b>168.1788</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6278	6.4596	7.3266	0.0114		0.3389	0.3389		0.3118	0.3118	0.0000	1,103.6054	1,103.6054	0.3569		1,112.5286
Paving	0.2620					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.8898</b>	<b>6.4596</b>	<b>7.3266</b>	<b>0.0114</b>		<b>0.3389</b>	<b>0.3389</b>		<b>0.3118</b>	<b>0.3118</b>	<b>0.0000</b>	<b>1,103.6054</b>	<b>1,103.6054</b>	<b>0.3569</b>		<b>1,112.5286</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0117	0.3803	0.1013	9.9000e-004	0.0256	7.9000e-004	0.0264	7.3700e-003	7.6000e-004	8.1300e-003		105.8201	105.8201	7.0800e-003		105.9971
Worker	0.0277	0.0180	0.2031	6.2000e-004	0.0671	4.9000e-004	0.0676	0.0178	4.5000e-004	0.0182		62.1401	62.1401	1.6700e-003		62.1817
<b>Total</b>	<b>0.0394</b>	<b>0.3983</b>	<b>0.3044</b>	<b>1.6100e-003</b>	<b>0.0927</b>	<b>1.2800e-003</b>	<b>0.0940</b>	<b>0.0252</b>	<b>1.2100e-003</b>	<b>0.0264</b>		<b>167.9602</b>	<b>167.9602</b>	<b>8.7500e-003</b>		<b>168.1788</b>

**3.6 Pipeline - Pavement Striping - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.0580					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>6.0580</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0117	0.3803	0.1013	9.9000e-004	0.0256	7.9000e-004	0.0264	7.3700e-003	7.6000e-004	8.1300e-003		105.8201	105.8201	7.0800e-003		105.9971
Worker	0.0185	0.0120	0.1354	4.2000e-004	0.0447	3.3000e-004	0.0450	0.0119	3.0000e-004	0.0122		41.4267	41.4267	1.1100e-003		41.4545
<b>Total</b>	<b>0.0302</b>	<b>0.3923</b>	<b>0.2367</b>	<b>1.4100e-003</b>	<b>0.0703</b>	<b>1.1200e-003</b>	<b>0.0714</b>	<b>0.0192</b>	<b>1.0600e-003</b>	<b>0.0203</b>		<b>147.2468</b>	<b>147.2468</b>	<b>8.1900e-003</b>		<b>147.4516</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	6.0580					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>6.0580</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0117	0.3803	0.1013	9.9000e-004	0.0256	7.9000e-004	0.0264	7.3700e-003	7.6000e-004	8.1300e-003		105.8201	105.8201	7.0800e-003		105.9971
Worker	0.0185	0.0120	0.1354	4.2000e-004	0.0447	3.3000e-004	0.0450	0.0119	3.0000e-004	0.0122		41.4267	41.4267	1.1100e-003		41.4545
<b>Total</b>	<b>0.0302</b>	<b>0.3923</b>	<b>0.2367</b>	<b>1.4100e-003</b>	<b>0.0703</b>	<b>1.1200e-003</b>	<b>0.0714</b>	<b>0.0192</b>	<b>1.0600e-003</b>	<b>0.0203</b>		<b>147.2468</b>	<b>147.2468</b>	<b>8.1900e-003</b>		<b>147.4516</b>

**3.7 WTP - Site Preparation and Grading - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.2762	0.0000	3.2762	1.6837	0.0000	1.6837			0.0000			0.0000
Off-Road	1.8739	20.6875	10.3254	0.0214		0.9437	0.9437		0.8682	0.8682		2,070.8365	2,070.8365	0.6698		2,087.5802
<b>Total</b>	<b>1.8739</b>	<b>20.6875</b>	<b>10.3254</b>	<b>0.0214</b>	<b>3.2762</b>	<b>0.9437</b>	<b>4.2199</b>	<b>1.6837</b>	<b>0.8682</b>	<b>2.5519</b>		<b>2,070.8365</b>	<b>2,070.8365</b>	<b>0.6698</b>		<b>2,087.5802</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0553	0.0360	0.4063	1.2500e-003	0.1341	9.9000e-004	0.1351	0.0356	9.1000e-004	0.0365		124.2801	124.2801	3.3300e-003		124.3634
<b>Total</b>	<b>0.0553</b>	<b>0.0360</b>	<b>0.4063</b>	<b>1.2500e-003</b>	<b>0.1341</b>	<b>9.9000e-004</b>	<b>0.1351</b>	<b>0.0356</b>	<b>9.1000e-004</b>	<b>0.0365</b>		<b>124.2801</b>	<b>124.2801</b>	<b>3.3300e-003</b>		<b>124.3634</b>



**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.2777	0.0000	1.2777	0.6567	0.0000	0.6567			0.0000			0.0000
Off-Road	1.8739	20.6875	10.3254	0.0214		0.9437	0.9437		0.8682	0.8682	0.0000	2,070.8365	2,070.8365	0.6698		2,087.5802
<b>Total</b>	<b>1.8739</b>	<b>20.6875</b>	<b>10.3254</b>	<b>0.0214</b>	<b>1.2777</b>	<b>0.9437</b>	<b>2.2214</b>	<b>0.6567</b>	<b>0.8682</b>	<b>1.5249</b>	<b>0.0000</b>	<b>2,070.8365</b>	<b>2,070.8365</b>	<b>0.6698</b>		<b>2,087.5802</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0553	0.0360	0.4063	1.2500e-003	0.1341	9.9000e-004	0.1351	0.0356	9.1000e-004	0.0365		124.2801	124.2801	3.3300e-003		124.3634
<b>Total</b>	<b>0.0553</b>	<b>0.0360</b>	<b>0.4063</b>	<b>1.2500e-003</b>	<b>0.1341</b>	<b>9.9000e-004</b>	<b>0.1351</b>	<b>0.0356</b>	<b>9.1000e-004</b>	<b>0.0365</b>		<b>124.2801</b>	<b>124.2801</b>	<b>3.3300e-003</b>		<b>124.3634</b>

**3.8 WTP - Equipment Installation - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7472	7.1624	6.8221	0.0117		0.3669	0.3669		0.3476	0.3476		1,122.418 2	1,122.418 2	0.2674		1,129.103 1
<b>Total</b>	<b>0.7472</b>	<b>7.1624</b>	<b>6.8221</b>	<b>0.0117</b>		<b>0.3669</b>	<b>0.3669</b>		<b>0.3476</b>	<b>0.3476</b>		<b>1,122.418 2</b>	<b>1,122.418 2</b>	<b>0.2674</b>		<b>1,129.103 1</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.8600e-003	0.1902	0.0507	5.0000e-004	0.0128	4.0000e-004	0.0132	3.6900e-003	3.8000e-004	4.0600e-003		52.9100	52.9100	3.5400e-003		52.9985
Worker	0.0461	0.0300	0.3385	1.0400e-003	0.1118	8.2000e-004	0.1126	0.0296	7.6000e-004	0.0304		103.5668	103.5668	2.7800e-003		103.6362
<b>Total</b>	<b>0.0520</b>	<b>0.2201</b>	<b>0.3892</b>	<b>1.5400e-003</b>	<b>0.1246</b>	<b>1.2200e-003</b>	<b>0.1258</b>	<b>0.0333</b>	<b>1.1400e-003</b>	<b>0.0345</b>		<b>156.4768</b>	<b>156.4768</b>	<b>6.3200e-003</b>		<b>156.6347</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.7472	7.1624	6.8221	0.0117		0.3669	0.3669		0.3476	0.3476	0.0000	1,122.418 2	1,122.418 2	0.2674		1,129.103 1
<b>Total</b>	<b>0.7472</b>	<b>7.1624</b>	<b>6.8221</b>	<b>0.0117</b>		<b>0.3669</b>	<b>0.3669</b>		<b>0.3476</b>	<b>0.3476</b>	<b>0.0000</b>	<b>1,122.418 2</b>	<b>1,122.418 2</b>	<b>0.2674</b>		<b>1,129.103 1</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.8600e-003	0.1902	0.0507	5.0000e-004	0.0128	4.0000e-004	0.0132	3.6900e-003	3.8000e-004	4.0600e-003		52.9100	52.9100	3.5400e-003		52.9985
Worker	0.0461	0.0300	0.3385	1.0400e-003	0.1118	8.2000e-004	0.1126	0.0296	7.6000e-004	0.0304		103.5668	103.5668	2.7800e-003		103.6362
<b>Total</b>	<b>0.0520</b>	<b>0.2201</b>	<b>0.3892</b>	<b>1.5400e-003</b>	<b>0.1246</b>	<b>1.2200e-003</b>	<b>0.1258</b>	<b>0.0333</b>	<b>1.1400e-003</b>	<b>0.0345</b>		<b>156.4768</b>	<b>156.4768</b>	<b>6.3200e-003</b>		<b>156.6347</b>

**3.8 WTP - Equipment Installation - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6799	6.3859	6.7464	0.0117		0.3118	0.3118		0.2955	0.2955		1,122.795 4	1,122.795 4	0.2662		1,129.450 4
<b>Total</b>	<b>0.6799</b>	<b>6.3859</b>	<b>6.7464</b>	<b>0.0117</b>		<b>0.3118</b>	<b>0.3118</b>		<b>0.2955</b>	<b>0.2955</b>		<b>1,122.795 4</b>	<b>1,122.795 4</b>	<b>0.2662</b>		<b>1,129.450 4</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5000e-003	0.1803	0.0479	4.9000e-004	0.0128	3.4000e-004	0.0131	3.6900e-003	3.3000e-004	4.0100e-003		52.4388	52.4388	3.4100e-003		52.5240
Worker	0.0434	0.0271	0.3125	1.0000e-003	0.1118	8.0000e-004	0.1126	0.0296	7.4000e-004	0.0304		99.8537	99.8537	2.5100e-003		99.9163
<b>Total</b>	<b>0.0489</b>	<b>0.2074</b>	<b>0.3604</b>	<b>1.4900e-003</b>	<b>0.1246</b>	<b>1.1400e-003</b>	<b>0.1257</b>	<b>0.0333</b>	<b>1.0700e-003</b>	<b>0.0344</b>		<b>152.2925</b>	<b>152.2925</b>	<b>5.9200e-003</b>		<b>152.4403</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6799	6.3859	6.7464	0.0117		0.3118	0.3118		0.2955	0.2955	0.0000	1,122.7954	1,122.7954	0.2662		1,129.4504
<b>Total</b>	<b>0.6799</b>	<b>6.3859</b>	<b>6.7464</b>	<b>0.0117</b>		<b>0.3118</b>	<b>0.3118</b>		<b>0.2955</b>	<b>0.2955</b>	<b>0.0000</b>	<b>1,122.7954</b>	<b>1,122.7954</b>	<b>0.2662</b>		<b>1,129.4504</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5000e-003	0.1803	0.0479	4.9000e-004	0.0128	3.4000e-004	0.0131	3.6900e-003	3.3000e-004	4.0100e-003		52.4388	52.4388	3.4100e-003		52.5240
Worker	0.0434	0.0271	0.3125	1.0000e-003	0.1118	8.0000e-004	0.1126	0.0296	7.4000e-004	0.0304		99.8537	99.8537	2.5100e-003		99.9163
<b>Total</b>	<b>0.0489</b>	<b>0.2074</b>	<b>0.3604</b>	<b>1.4900e-003</b>	<b>0.1246</b>	<b>1.1400e-003</b>	<b>0.1257</b>	<b>0.0333</b>	<b>1.0700e-003</b>	<b>0.0344</b>		<b>152.2925</b>	<b>152.2925</b>	<b>5.9200e-003</b>		<b>152.4403</b>

**3.9 Water Well - Equipment Installation - 2021****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3297	4.0369	3.2856	6.3300e-003		0.1609	0.1609		0.1480	0.1480		613.1387	613.1387	0.1983		618.0962
<b>Total</b>	<b>0.3297</b>	<b>4.0369</b>	<b>3.2856</b>	<b>6.3300e-003</b>		<b>0.1609</b>	<b>0.1609</b>		<b>0.1480</b>	<b>0.1480</b>		<b>613.1387</b>	<b>613.1387</b>	<b>0.1983</b>		<b>618.0962</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.8600e-003	0.1902	0.0507	5.0000e-004	0.0128	4.0000e-004	0.0132	3.6900e-003	3.8000e-004	4.0600e-003		52.9100	52.9100	3.5400e-003		52.9985
Worker	0.0369	0.0240	0.2708	8.3000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243		82.8534	82.8534	2.2200e-003		82.9089
<b>Total</b>	<b>0.0428</b>	<b>0.2141</b>	<b>0.3215</b>	<b>1.3300e-003</b>	<b>0.1022</b>	<b>1.0600e-003</b>	<b>0.1033</b>	<b>0.0274</b>	<b>9.9000e-004</b>	<b>0.0284</b>		<b>135.7635</b>	<b>135.7635</b>	<b>5.7600e-003</b>		<b>135.9075</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3297	4.0369	3.2856	6.3300e-003		0.1609	0.1609		0.1480	0.1480	0.0000	613.1387	613.1387	0.1983		618.0962
<b>Total</b>	<b>0.3297</b>	<b>4.0369</b>	<b>3.2856</b>	<b>6.3300e-003</b>		<b>0.1609</b>	<b>0.1609</b>		<b>0.1480</b>	<b>0.1480</b>	<b>0.0000</b>	<b>613.1387</b>	<b>613.1387</b>	<b>0.1983</b>		<b>618.0962</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.8600e-003	0.1902	0.0507	5.0000e-004	0.0128	4.0000e-004	0.0132	3.6900e-003	3.8000e-004	4.0600e-003		52.9100	52.9100	3.5400e-003		52.9985
Worker	0.0369	0.0240	0.2708	8.3000e-004	0.0894	6.6000e-004	0.0901	0.0237	6.1000e-004	0.0243		82.8534	82.8534	2.2200e-003		82.9089
<b>Total</b>	<b>0.0428</b>	<b>0.2141</b>	<b>0.3215</b>	<b>1.3300e-003</b>	<b>0.1022</b>	<b>1.0600e-003</b>	<b>0.1033</b>	<b>0.0274</b>	<b>9.9000e-004</b>	<b>0.0284</b>		<b>135.7635</b>	<b>135.7635</b>	<b>5.7600e-003</b>		<b>135.9075</b>

**3.10 WTP - Security, Entrance, and Landscaping - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0936	0.8325	1.0021	1.7500e-003		0.0316	0.0316		0.0302	0.0302		150.7119	150.7119	0.0377		151.6532
<b>Total</b>	<b>0.0936</b>	<b>0.8325</b>	<b>1.0021</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0316</b>	<b>0.0316</b>	<b>0.0000</b>	<b>0.0302</b>	<b>0.0302</b>		<b>150.7119</b>	<b>150.7119</b>	<b>0.0377</b>		<b>151.6532</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5000e-003	0.1803	0.0479	4.9000e-004	0.0128	3.4000e-004	0.0131	3.6900e-003	3.3000e-004	4.0100e-003		52.4388	52.4388	3.4100e-003		52.5240
Worker	0.0347	0.0217	0.2500	8.0000e-004	0.0894	6.4000e-004	0.0901	0.0237	5.9000e-004	0.0243		79.8829	79.8829	2.0100e-003		79.9331
<b>Total</b>	<b>0.0402</b>	<b>0.2020</b>	<b>0.2979</b>	<b>1.2900e-003</b>	<b>0.1022</b>	<b>9.8000e-004</b>	<b>0.1032</b>	<b>0.0274</b>	<b>9.2000e-004</b>	<b>0.0283</b>		<b>132.3218</b>	<b>132.3218</b>	<b>5.4200e-003</b>		<b>132.4570</b>



**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0936	0.8325	1.0021	1.7500e-003		0.0316	0.0316		0.0302	0.0302	0.0000	150.7119	150.7119	0.0377		151.6532
<b>Total</b>	<b>0.0936</b>	<b>0.8325</b>	<b>1.0021</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0316</b>	<b>0.0316</b>	<b>0.0000</b>	<b>0.0302</b>	<b>0.0302</b>	<b>0.0000</b>	<b>150.7119</b>	<b>150.7119</b>	<b>0.0377</b>		<b>151.6532</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5000e-003	0.1803	0.0479	4.9000e-004	0.0128	3.4000e-004	0.0131	3.6900e-003	3.3000e-004	4.0100e-003		52.4388	52.4388	3.4100e-003		52.5240
Worker	0.0347	0.0217	0.2500	8.0000e-004	0.0894	6.4000e-004	0.0901	0.0237	5.9000e-004	0.0243		79.8829	79.8829	2.0100e-003		79.9331
<b>Total</b>	<b>0.0402</b>	<b>0.2020</b>	<b>0.2979</b>	<b>1.2900e-003</b>	<b>0.1022</b>	<b>9.8000e-004</b>	<b>0.1032</b>	<b>0.0274</b>	<b>9.2000e-004</b>	<b>0.0283</b>		<b>132.3218</b>	<b>132.3218</b>	<b>5.4200e-003</b>		<b>132.4570</b>

**3.11 WTP - Paving - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3732	3.8248	4.7443	7.3300e-003		0.1992	0.1992		0.1833	0.1833		709.3618	709.3618	0.2294		715.0973
Paving	0.2620					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.6352</b>	<b>3.8248</b>	<b>4.7443</b>	<b>7.3300e-003</b>		<b>0.1992</b>	<b>0.1992</b>		<b>0.1833</b>	<b>0.1833</b>		<b>709.3618</b>	<b>709.3618</b>	<b>0.2294</b>		<b>715.0973</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5000e-003	0.1803	0.0479	4.9000e-004	0.0128	3.4000e-004	0.0131	3.6900e-003	3.3000e-004	4.0100e-003		52.4388	52.4388	3.4100e-003		52.5240
Worker	0.0260	0.0162	0.1875	6.0000e-004	0.0671	4.8000e-004	0.0676	0.0178	4.4000e-004	0.0182		59.9122	59.9122	1.5000e-003		59.9498
<b>Total</b>	<b>0.0315</b>	<b>0.1966</b>	<b>0.2354</b>	<b>1.0900e-003</b>	<b>0.0799</b>	<b>8.2000e-004</b>	<b>0.0807</b>	<b>0.0215</b>	<b>7.7000e-004</b>	<b>0.0222</b>		<b>112.3510</b>	<b>112.3510</b>	<b>4.9100e-003</b>		<b>112.4738</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3732	3.8248	4.7443	7.3300e-003		0.1992	0.1992		0.1833	0.1833	0.0000	709.3618	709.3618	0.2294		715.0973
Paving	0.2620					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.6352</b>	<b>3.8248</b>	<b>4.7443</b>	<b>7.3300e-003</b>		<b>0.1992</b>	<b>0.1992</b>		<b>0.1833</b>	<b>0.1833</b>	<b>0.0000</b>	<b>709.3618</b>	<b>709.3618</b>	<b>0.2294</b>		<b>715.0973</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5000e-003	0.1803	0.0479	4.9000e-004	0.0128	3.4000e-004	0.0131	3.6900e-003	3.3000e-004	4.0100e-003		52.4388	52.4388	3.4100e-003		52.5240
Worker	0.0260	0.0162	0.1875	6.0000e-004	0.0671	4.8000e-004	0.0676	0.0178	4.4000e-004	0.0182		59.9122	59.9122	1.5000e-003		59.9498
<b>Total</b>	<b>0.0315</b>	<b>0.1966</b>	<b>0.2354</b>	<b>1.0900e-003</b>	<b>0.0799</b>	<b>8.2000e-004</b>	<b>0.0807</b>	<b>0.0215</b>	<b>7.7000e-004</b>	<b>0.0222</b>		<b>112.3510</b>	<b>112.3510</b>	<b>4.9100e-003</b>		<b>112.4738</b>

**3.12 WTP - Architectural Coating - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.2116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2727	1.8780	2.4181	3.9600e-003		0.1090	0.1090		0.1090	0.1090		375.2641	375.2641	0.0244		375.8749
<b>Total</b>	<b>1.4843</b>	<b>1.8780</b>	<b>2.4181</b>	<b>3.9600e-003</b>		<b>0.1090</b>	<b>0.1090</b>		<b>0.1090</b>	<b>0.1090</b>		<b>375.2641</b>	<b>375.2641</b>	<b>0.0244</b>		<b>375.8749</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5000e-003	0.1803	0.0479	4.9000e-004	0.0128	3.4000e-004	0.0131	3.6900e-003	3.3000e-004	4.0100e-003		52.4388	52.4388	3.4100e-003		52.5240
Worker	0.0260	0.0162	0.1875	6.0000e-004	0.0671	4.8000e-004	0.0676	0.0178	4.4000e-004	0.0182		59.9122	59.9122	1.5000e-003		59.9498
<b>Total</b>	<b>0.0315</b>	<b>0.1966</b>	<b>0.2354</b>	<b>1.0900e-003</b>	<b>0.0799</b>	<b>8.2000e-004</b>	<b>0.0807</b>	<b>0.0215</b>	<b>7.7000e-004</b>	<b>0.0222</b>		<b>112.3510</b>	<b>112.3510</b>	<b>4.9100e-003</b>		<b>112.4738</b>

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.2116					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2727	1.8780	2.4181	3.9600e-003		0.1090	0.1090		0.1090	0.1090	0.0000	375.2641	375.2641	0.0244		375.8749
<b>Total</b>	<b>1.4843</b>	<b>1.8780</b>	<b>2.4181</b>	<b>3.9600e-003</b>		<b>0.1090</b>	<b>0.1090</b>		<b>0.1090</b>	<b>0.1090</b>	<b>0.0000</b>	<b>375.2641</b>	<b>375.2641</b>	<b>0.0244</b>		<b>375.8749</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5000e-003	0.1803	0.0479	4.9000e-004	0.0128	3.4000e-004	0.0131	3.6900e-003	3.3000e-004	4.0100e-003		52.4388	52.4388	3.4100e-003		52.5240
Worker	0.0260	0.0162	0.1875	6.0000e-004	0.0671	4.8000e-004	0.0676	0.0178	4.4000e-004	0.0182		59.9122	59.9122	1.5000e-003		59.9498
<b>Total</b>	<b>0.0315</b>	<b>0.1966</b>	<b>0.2354</b>	<b>1.0900e-003</b>	<b>0.0799</b>	<b>8.2000e-004</b>	<b>0.0807</b>	<b>0.0215</b>	<b>7.7000e-004</b>	<b>0.0222</b>		<b>112.3510</b>	<b>112.3510</b>	<b>4.9100e-003</b>		<b>112.4738</b>

**APU Well and Water Treatment Facilities Project (Linda Vista Site)**  
**South Coast AQMD Air District, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.00	0.00	0
Other Asphalt Surfaces	2.30	Acre	2.30	100,188.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2024
<b>Utility Company</b>	Anaheim Public Utilities				
<b>CO2 Intensity (lb/MW hr)</b>	1543.28	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - APU Well and Water Treatment Facilities Project - Linda Vista Site. SCAQMD.

Land Use - Surrogate land uses for pipeline and pavement for water treatment facility location.

Construction Phase - Construction schedule based on estimated duration of activities, September 2021 through 2023.

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

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Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Trips and VMT - Based on default assumptions

Demolition - Demolition of existing 1,200 foot building

Architectural Coating - Default coating EF

Construction Off-road Equipment Mitigation - Water exposed area 3x per day to represent fugitive dust construction practices

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	220.00	5.00
tblConstructionPhase	NumDays	220.00	131.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	6.00	5.00
tblConstructionPhase	NumDays	6.00	70.00
tblConstructionPhase	NumDays	6.00	25.00
tblConstructionPhase	NumDays	6.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	3.00	20.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00

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tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	530.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	Load_Factor	0.73	1.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	HaulingTripNumber	5.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	16.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	16.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	5.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	42.00	8.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblTripsAndVMT	WorkerTripNumber	10.00	12.00
tblTripsAndVMT	WorkerTripNumber	42.00	10.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00



## 2.0 Emissions Summary

### 2.1 Overall Construction

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0821	0.7613	0.8663	1.8400e-003	0.0345	0.0332	0.0677	0.0132	0.0311	0.0443	0.0000	162.6261	162.6261	0.0403	0.0000	163.6333
2023	0.0205	0.0301	0.0411	7.0000e-005	1.0400e-003	1.4400e-003	2.4700e-003	2.8000e-004	1.3600e-003	1.6400e-003	0.0000	6.5579	6.5579	1.2800e-003	0.0000	6.5898
Maximum	0.0821	0.7613	0.8663	1.8400e-003	0.0345	0.0332	0.0677	0.0132	0.0311	0.0443	0.0000	162.6261	162.6261	0.0403	0.0000	163.6333

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0821	0.7613	0.8663	1.8400e-003	0.0241	0.0332	0.0573	8.0100e-003	0.0311	0.0391	0.0000	162.6259	162.6259	0.0403	0.0000	163.6331
2023	0.0205	0.0301	0.0411	7.0000e-005	1.0400e-003	1.4400e-003	2.4700e-003	2.8000e-004	1.3600e-003	1.6400e-003	0.0000	6.5579	6.5579	1.2800e-003	0.0000	6.5898
Maximum	0.0821	0.7613	0.8663	1.8400e-003	0.0241	0.0332	0.0573	8.0100e-003	0.0311	0.0391	0.0000	162.6259	162.6259	0.0403	0.0000	163.6331

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	29.16	0.00	14.76	38.50	0.00	11.31	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

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#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Water Well - Grading Well Pad	Grading	2/4/2022	2/10/2022	5	5	
2	Pipeline - Installation	Grading	2/4/2022	5/12/2022	5	70	
3	Water Well - Well Construction	Grading	2/11/2022	3/17/2022	5	25	
4	Water Well - Equipment Installation	Building Construction	3/18/2022	3/24/2022	5	5	
5	Pipeline - Final Paving	Paving	5/13/2022	5/19/2022	5	5	
6	WTP - Demolition	Demolition	5/20/2022	6/2/2022	5	10	
7	WTP - Site Preparation and Grading	Grading	6/3/2022	6/9/2022	5	5	
8	WTP - Equipment Installation	Building Construction	6/10/2022	12/10/2022	5	131	
9	WTP - Security, Entrance, and Landscaping	Site Preparation	12/11/2022	1/8/2023	5	20	
10	WTP - Paving	Paving	1/9/2023	1/20/2023	5	10	
11	WTP - Architectural Coating	Architectural Coating	1/9/2023	1/20/2023	5	10	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 2.3**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 6,011**

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**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Water Well - Grading Well Pad	Cement and Mortar Mixers	1	4.00	9	0.56
Water Well - Grading Well Pad	Excavators	1	4.00	158	0.38
Pipeline - Installation	Concrete/Industrial Saws	1	8.00	81	0.73
Pipeline - Installation	Excavators	1	8.00	158	0.38
Pipeline - Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Water Well - Well Construction	Bore/Drill Rigs	1	24.00	221	0.50
Water Well - Well Construction	Excavators	1	8.00	158	0.38
Water Well - Equipment Installation	Cranes	1	4.00	231	0.29
Water Well - Equipment Installation	Rough Terrain Forklifts	1	8.00	100	0.40
Pipeline - Final Paving	Pavers	1	8.00	130	0.42
Pipeline - Final Paving	Paving Equipment	1	8.00	132	0.36
Pipeline - Final Paving	Rollers	1	8.00	80	0.38
WTP - Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
WTP - Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
WTP - Site Preparation and Grading	Graders	1	8.00	187	0.41
WTP - Site Preparation and Grading	Rubber Tired Dozers	1	8.00	247	0.40
WTP - Site Preparation and Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
WTP - Equipment Installation	Cranes	1	4.00	231	0.29
WTP - Equipment Installation	Rough Terrain Forklifts	1	4.00	100	0.40
WTP - Equipment Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
WTP - Security, Entrance, and Landscaping	Cement and Mortar Mixers	1	8.00	9	0.56
WTP - Security, Entrance, and Landscaping	Skid Steer Loaders	1	4.00	65	0.37
WTP - Paving	Pavers	1	8.00	130	0.42
WTP - Paving	Rollers	1	8.00	80	0.38
WTP - Architectural Coating	Air Compressors	1	8.00	78	0.48

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**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Water Well - Grading	2	12.00	6.00	20.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Well Pad Pipeline - Installation	3	12.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Water Well - Well Construction	2	8.00	2.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Water Well - Equipment Installation	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Final Paving	3	6.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Demolition	2	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Site Preparation and	4	12.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Equipment Installation	3	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Security, Entrance and	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Paving	2	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Architectural Coating	1	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area

**3.2 Water Well - Grading Well Pad - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3000e-004	2.6800e-003	4.4500e-003	1.0000e-005		1.3000e-004	1.3000e-004		1.2000e-004	1.2000e-004	0.0000	0.6243	0.6243	1.9000e-004	0.0000	0.6290
<b>Total</b>	<b>3.3000e-004</b>	<b>2.6800e-003</b>	<b>4.4500e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.3000e-004</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>1.2000e-004</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>0.6243</b>	<b>0.6243</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>0.6290</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	2.4100e-003	5.5000e-004	1.0000e-005	1.7000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.7378	0.7378	5.0000e-005	0.0000	0.7391
Vendor	4.0000e-005	1.3800e-003	3.4000e-004	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3630	0.3630	2.0000e-005	0.0000	0.3636
Worker	1.2000e-004	8.0000e-005	9.7000e-004	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2764	0.2764	1.0000e-005	0.0000	0.2766
<b>Total</b>	<b>2.3000e-004</b>	<b>3.8700e-003</b>	<b>1.8600e-003</b>	<b>1.0000e-005</b>	<b>5.9000e-004</b>	<b>1.0000e-005</b>	<b>6.1000e-004</b>	<b>1.7000e-004</b>	<b>1.0000e-005</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>1.3773</b>	<b>1.3773</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>1.3792</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.3000e-004	2.6800e-003	4.4500e-003	1.0000e-005		1.3000e-004	1.3000e-004		1.2000e-004	1.2000e-004	0.0000	0.6243	0.6243	1.9000e-004	0.0000	0.6290
<b>Total</b>	<b>3.3000e-004</b>	<b>2.6800e-003</b>	<b>4.4500e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.3000e-004</b>	<b>1.3000e-004</b>	<b>0.0000</b>	<b>1.2000e-004</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>0.6243</b>	<b>0.6243</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>0.6290</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.0000e-005	2.4100e-003	5.5000e-004	1.0000e-005	1.7000e-004	1.0000e-005	1.8000e-004	5.0000e-005	1.0000e-005	5.0000e-005	0.0000	0.7378	0.7378	5.0000e-005	0.0000	0.7391
Vendor	4.0000e-005	1.3800e-003	3.4000e-004	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3630	0.3630	2.0000e-005	0.0000	0.3636
Worker	1.2000e-004	8.0000e-005	9.7000e-004	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2764	0.2764	1.0000e-005	0.0000	0.2766
<b>Total</b>	<b>2.3000e-004</b>	<b>3.8700e-003</b>	<b>1.8600e-003</b>	<b>1.0000e-005</b>	<b>5.9000e-004</b>	<b>1.0000e-005</b>	<b>6.1000e-004</b>	<b>1.7000e-004</b>	<b>1.0000e-005</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>1.3773</b>	<b>1.3773</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>1.3792</b>

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**3.3 Pipeline - Installation - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0254	0.2189	0.3205	5.1000e-004		0.0114	0.0114		0.0109	0.0109	0.0000	44.2590	44.2590	9.2500e-003	0.0000	44.4903
<b>Total</b>	<b>0.0254</b>	<b>0.2189</b>	<b>0.3205</b>	<b>5.1000e-004</b>	<b>0.0000</b>	<b>0.0114</b>	<b>0.0114</b>	<b>0.0000</b>	<b>0.0109</b>	<b>0.0109</b>	<b>0.0000</b>	<b>44.2590</b>	<b>44.2590</b>	<b>9.2500e-003</b>	<b>0.0000</b>	<b>44.4903</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7000e-004	0.0128	3.1700e-003	3.0000e-005	8.8000e-004	2.0000e-005	9.1000e-004	2.5000e-004	2.0000e-005	2.8000e-004	0.0000	3.3880	3.3880	2.1000e-004	0.0000	3.3932
Worker	1.6400e-003	1.1700e-003	0.0135	4.0000e-005	4.6100e-003	3.0000e-005	4.6400e-003	1.2200e-003	3.0000e-005	1.2500e-003	0.0000	3.8699	3.8699	1.0000e-004	0.0000	3.8723
<b>Total</b>	<b>2.0100e-003</b>	<b>0.0140</b>	<b>0.0167</b>	<b>7.0000e-005</b>	<b>5.4900e-003</b>	<b>5.0000e-005</b>	<b>5.5500e-003</b>	<b>1.4700e-003</b>	<b>5.0000e-005</b>	<b>1.5300e-003</b>	<b>0.0000</b>	<b>7.2578</b>	<b>7.2578</b>	<b>3.1000e-004</b>	<b>0.0000</b>	<b>7.2655</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0254	0.2189	0.3205	5.1000e-004		0.0114	0.0114		0.0109	0.0109	0.0000	44.2589	44.2589	9.2500e-003	0.0000	44.4903
<b>Total</b>	<b>0.0254</b>	<b>0.2189</b>	<b>0.3205</b>	<b>5.1000e-004</b>	<b>0.0000</b>	<b>0.0114</b>	<b>0.0114</b>	<b>0.0000</b>	<b>0.0109</b>	<b>0.0109</b>	<b>0.0000</b>	<b>44.2589</b>	<b>44.2589</b>	<b>9.2500e-003</b>	<b>0.0000</b>	<b>44.4903</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.7000e-004	0.0128	3.1700e-003	3.0000e-005	8.8000e-004	2.0000e-005	9.1000e-004	2.5000e-004	2.0000e-005	2.8000e-004	0.0000	3.3880	3.3880	2.1000e-004	0.0000	3.3932
Worker	1.6400e-003	1.1700e-003	0.0135	4.0000e-005	4.6100e-003	3.0000e-005	4.6400e-003	1.2200e-003	3.0000e-005	1.2500e-003	0.0000	3.8699	3.8699	1.0000e-004	0.0000	3.8723
<b>Total</b>	<b>2.0100e-003</b>	<b>0.0140</b>	<b>0.0167</b>	<b>7.0000e-005</b>	<b>5.4900e-003</b>	<b>5.0000e-005</b>	<b>5.5500e-003</b>	<b>1.4700e-003</b>	<b>5.0000e-005</b>	<b>1.5300e-003</b>	<b>0.0000</b>	<b>7.2578</b>	<b>7.2578</b>	<b>3.1000e-004</b>	<b>0.0000</b>	<b>7.2655</b>



## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Annual

**3.4 Water Well - Well Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0109	0.1072	0.1172	4.2000e-004		3.8000e-003	3.8000e-003		3.5000e-003	3.5000e-003	0.0000	36.7489	36.7489	0.0119	0.0000	37.0460
<b>Total</b>	<b>0.0109</b>	<b>0.1072</b>	<b>0.1172</b>	<b>4.2000e-004</b>	<b>0.0000</b>	<b>3.8000e-003</b>	<b>3.8000e-003</b>	<b>0.0000</b>	<b>3.5000e-003</b>	<b>3.5000e-003</b>	<b>0.0000</b>	<b>36.7489</b>	<b>36.7489</b>	<b>0.0119</b>	<b>0.0000</b>	<b>37.0460</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4000e-004	4.8100e-003	1.0900e-003	2.0000e-005	3.4000e-004	1.0000e-005	3.6000e-004	9.0000e-005	1.0000e-005	1.1000e-004	0.0000	1.4757	1.4757	1.0000e-004	0.0000	1.4782
Vendor	7.0000e-005	2.2900e-003	5.7000e-004	1.0000e-005	1.6000e-004	0.0000	1.6000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.6050	0.6050	4.0000e-005	0.0000	0.6059
Worker	3.9000e-004	2.8000e-004	3.2200e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9214	0.9214	2.0000e-005	0.0000	0.9220
<b>Total</b>	<b>6.0000e-004</b>	<b>7.3800e-003</b>	<b>4.8800e-003</b>	<b>4.0000e-005</b>	<b>1.6000e-003</b>	<b>2.0000e-005</b>	<b>1.6300e-003</b>	<b>4.3000e-004</b>	<b>2.0000e-005</b>	<b>4.6000e-004</b>	<b>0.0000</b>	<b>3.0021</b>	<b>3.0021</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>3.0061</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Annual

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0109	0.1072	0.1172	4.2000e-004		3.8000e-003	3.8000e-003		3.5000e-003	3.5000e-003	0.0000	36.7489	36.7489	0.0119	0.0000	37.0460
<b>Total</b>	<b>0.0109</b>	<b>0.1072</b>	<b>0.1172</b>	<b>4.2000e-004</b>	<b>0.0000</b>	<b>3.8000e-003</b>	<b>3.8000e-003</b>	<b>0.0000</b>	<b>3.5000e-003</b>	<b>3.5000e-003</b>	<b>0.0000</b>	<b>36.7489</b>	<b>36.7489</b>	<b>0.0119</b>	<b>0.0000</b>	<b>37.0460</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.4000e-004	4.8100e-003	1.0900e-003	2.0000e-005	3.4000e-004	1.0000e-005	3.6000e-004	9.0000e-005	1.0000e-005	1.1000e-004	0.0000	1.4757	1.4757	1.0000e-004	0.0000	1.4782
Vendor	7.0000e-005	2.2900e-003	5.7000e-004	1.0000e-005	1.6000e-004	0.0000	1.6000e-004	5.0000e-005	0.0000	5.0000e-005	0.0000	0.6050	0.6050	4.0000e-005	0.0000	0.6059
Worker	3.9000e-004	2.8000e-004	3.2200e-003	1.0000e-005	1.1000e-003	1.0000e-005	1.1100e-003	2.9000e-004	1.0000e-005	3.0000e-004	0.0000	0.9214	0.9214	2.0000e-005	0.0000	0.9220
<b>Total</b>	<b>6.0000e-004</b>	<b>7.3800e-003</b>	<b>4.8800e-003</b>	<b>4.0000e-005</b>	<b>1.6000e-003</b>	<b>2.0000e-005</b>	<b>1.6300e-003</b>	<b>4.3000e-004</b>	<b>2.0000e-005</b>	<b>4.6000e-004</b>	<b>0.0000</b>	<b>3.0021</b>	<b>3.0021</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>3.0061</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Annual

**3.5 Water Well - Equipment Installation - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.5000e-004	8.9300e-003	8.0900e-003	2.0000e-005		3.5000e-004	3.5000e-004		3.2000e-004	3.2000e-004	0.0000	1.3907	1.3907	4.5000e-004	0.0000	1.4019
<b>Total</b>	<b>7.5000e-004</b>	<b>8.9300e-003</b>	<b>8.0900e-003</b>	<b>2.0000e-005</b>		<b>3.5000e-004</b>	<b>3.5000e-004</b>		<b>3.2000e-004</b>	<b>3.2000e-004</b>	<b>0.0000</b>	<b>1.3907</b>	<b>1.3907</b>	<b>4.5000e-004</b>	<b>0.0000</b>	<b>1.4019</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	4.6000e-004	1.1000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1210	0.1210	1.0000e-005	0.0000	0.1212
Worker	8.0000e-005	6.0000e-005	6.4000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1843	0.1843	0.0000	0.0000	0.1844
<b>Total</b>	<b>9.0000e-005</b>	<b>5.2000e-004</b>	<b>7.5000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.3053</b>	<b>0.3053</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.3056</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Annual

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	7.5000e-004	8.9300e-003	8.0900e-003	2.0000e-005		3.5000e-004	3.5000e-004		3.2000e-004	3.2000e-004	0.0000	1.3906	1.3906	4.5000e-004	0.0000	1.4019
<b>Total</b>	<b>7.5000e-004</b>	<b>8.9300e-003</b>	<b>8.0900e-003</b>	<b>2.0000e-005</b>		<b>3.5000e-004</b>	<b>3.5000e-004</b>		<b>3.2000e-004</b>	<b>3.2000e-004</b>	<b>0.0000</b>	<b>1.3906</b>	<b>1.3906</b>	<b>4.5000e-004</b>	<b>0.0000</b>	<b>1.4019</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	4.6000e-004	1.1000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1210	0.1210	1.0000e-005	0.0000	0.1212
Worker	8.0000e-005	6.0000e-005	6.4000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1843	0.1843	0.0000	0.0000	0.1844
<b>Total</b>	<b>9.0000e-005</b>	<b>5.2000e-004</b>	<b>7.5000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.3053</b>	<b>0.3053</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.3056</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Annual

**3.6 Pipeline - Final Paving - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.3800e-003	0.0139	0.0182	3.0000e-005		7.1000e-004	7.1000e-004		6.5000e-004	6.5000e-004	0.0000	2.5034	2.5034	8.1000e-004	0.0000	2.5237
Paving	3.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>4.3900e-003</b>	<b>0.0139</b>	<b>0.0182</b>	<b>3.0000e-005</b>		<b>7.1000e-004</b>	<b>7.1000e-004</b>		<b>6.5000e-004</b>	<b>6.5000e-004</b>	<b>0.0000</b>	<b>2.5034</b>	<b>2.5034</b>	<b>8.1000e-004</b>	<b>0.0000</b>	<b>2.5237</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	9.2000e-004	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2420	0.2420	1.0000e-005	0.0000	0.2424
Worker	6.0000e-005	4.0000e-005	4.8000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1382	0.1382	0.0000	0.0000	0.1383
<b>Total</b>	<b>9.0000e-005</b>	<b>9.6000e-004</b>	<b>7.1000e-004</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>2.3000e-004</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.3802</b>	<b>0.3802</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.3807</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Annual

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.3800e-003	0.0139	0.0182	3.0000e-005		7.1000e-004	7.1000e-004		6.5000e-004	6.5000e-004	0.0000	2.5034	2.5034	8.1000e-004	0.0000	2.5237
Paving	3.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>4.3900e-003</b>	<b>0.0139</b>	<b>0.0182</b>	<b>3.0000e-005</b>		<b>7.1000e-004</b>	<b>7.1000e-004</b>		<b>6.5000e-004</b>	<b>6.5000e-004</b>	<b>0.0000</b>	<b>2.5034</b>	<b>2.5034</b>	<b>8.1000e-004</b>	<b>0.0000</b>	<b>2.5237</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	9.2000e-004	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2420	0.2420	1.0000e-005	0.0000	0.2424
Worker	6.0000e-005	4.0000e-005	4.8000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1382	0.1382	0.0000	0.0000	0.1383
<b>Total</b>	<b>9.0000e-005</b>	<b>9.6000e-004</b>	<b>7.1000e-004</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>2.3000e-004</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.3802</b>	<b>0.3802</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.3807</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Annual

**3.7 WTP - Demolition - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.9000e-004	0.0000	5.9000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6100e-003	0.0224	0.0295	5.0000e-005		1.2000e-003	1.2000e-003		1.1700e-003	1.1700e-003	0.0000	4.0547	4.0547	5.9000e-004	0.0000	4.0694
<b>Total</b>	<b>2.6100e-003</b>	<b>0.0224</b>	<b>0.0295</b>	<b>5.0000e-005</b>	<b>5.9000e-004</b>	<b>1.2000e-003</b>	<b>1.7900e-003</b>	<b>9.0000e-005</b>	<b>1.1700e-003</b>	<b>1.2600e-003</b>	<b>0.0000</b>	<b>4.0547</b>	<b>4.0547</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>4.0694</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	6.0000e-005	6.4000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1843	0.1843	0.0000	0.0000	0.1844
<b>Total</b>	<b>8.0000e-005</b>	<b>6.0000e-005</b>	<b>6.4000e-004</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.1843</b>	<b>0.1843</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.1844</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Annual

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3000e-004	0.0000	2.3000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6100e-003	0.0224	0.0295	5.0000e-005		1.2000e-003	1.2000e-003		1.1700e-003	1.1700e-003	0.0000	4.0547	4.0547	5.9000e-004	0.0000	4.0694
<b>Total</b>	<b>2.6100e-003</b>	<b>0.0224</b>	<b>0.0295</b>	<b>5.0000e-005</b>	<b>2.3000e-004</b>	<b>1.2000e-003</b>	<b>1.4300e-003</b>	<b>3.0000e-005</b>	<b>1.1700e-003</b>	<b>1.2000e-003</b>	<b>0.0000</b>	<b>4.0547</b>	<b>4.0547</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>4.0694</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	8.0000e-005	6.0000e-005	6.4000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1843	0.1843	0.0000	0.0000	0.1844
<b>Total</b>	<b>8.0000e-005</b>	<b>6.0000e-005</b>	<b>6.4000e-004</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.1843</b>	<b>0.1843</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.1844</b>



**3.8 WTP - Site Preparation and Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0164	0.0000	0.0164	8.4200e-003	0.0000	8.4200e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9500e-003	0.0435	0.0245	5.0000e-005		1.9100e-003	1.9100e-003		1.7600e-003	1.7600e-003	0.0000	4.6965	4.6965	1.5200e-003	0.0000	4.7345
<b>Total</b>	<b>3.9500e-003</b>	<b>0.0435</b>	<b>0.0245</b>	<b>5.0000e-005</b>	<b>0.0164</b>	<b>1.9100e-003</b>	<b>0.0183</b>	<b>8.4200e-003</b>	<b>1.7600e-003</b>	<b>0.0102</b>	<b>0.0000</b>	<b>4.6965</b>	<b>4.6965</b>	<b>1.5200e-003</b>	<b>0.0000</b>	<b>4.7345</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	8.0000e-005	9.7000e-004	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2764	0.2764	1.0000e-005	0.0000	0.2766
<b>Total</b>	<b>1.2000e-004</b>	<b>8.0000e-005</b>	<b>9.7000e-004</b>	<b>0.0000</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>3.3000e-004</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.2764</b>	<b>0.2764</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2766</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.3900e-003	0.0000	6.3900e-003	3.2800e-003	0.0000	3.2800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.9500e-003	0.0435	0.0245	5.0000e-005		1.9100e-003	1.9100e-003		1.7600e-003	1.7600e-003	0.0000	4.6965	4.6965	1.5200e-003	0.0000	4.7345
<b>Total</b>	<b>3.9500e-003</b>	<b>0.0435</b>	<b>0.0245</b>	<b>5.0000e-005</b>	<b>6.3900e-003</b>	<b>1.9100e-003</b>	<b>8.3000e-003</b>	<b>3.2800e-003</b>	<b>1.7600e-003</b>	<b>5.0400e-003</b>	<b>0.0000</b>	<b>4.6965</b>	<b>4.6965</b>	<b>1.5200e-003</b>	<b>0.0000</b>	<b>4.7345</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-004	8.0000e-005	9.7000e-004	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2764	0.2764	1.0000e-005	0.0000	0.2766
<b>Total</b>	<b>1.2000e-004</b>	<b>8.0000e-005</b>	<b>9.7000e-004</b>	<b>0.0000</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>3.3000e-004</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.2764</b>	<b>0.2764</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2766</b>

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**3.9 WTP - Equipment Installation - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0267	0.2953	0.2835	5.1000e-004		0.0133	0.0133		0.0122	0.0122	0.0000	44.4188	44.4188	0.0144	0.0000	44.7779
<b>Total</b>	<b>0.0267</b>	<b>0.2953</b>	<b>0.2835</b>	<b>5.1000e-004</b>		<b>0.0133</b>	<b>0.0133</b>		<b>0.0122</b>	<b>0.0122</b>	<b>0.0000</b>	<b>44.4188</b>	<b>44.4188</b>	<b>0.0144</b>	<b>0.0000</b>	<b>44.7779</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5000e-004	0.0120	2.9700e-003	3.0000e-005	8.3000e-004	2.0000e-005	8.5000e-004	2.4000e-004	2.0000e-005	2.6000e-004	0.0000	3.1702	3.1702	1.9000e-004	0.0000	3.1750
Worker	2.5600e-003	1.8200e-003	0.0211	7.0000e-005	7.1900e-003	5.0000e-005	7.2400e-003	1.9100e-003	5.0000e-005	1.9600e-003	0.0000	6.0352	6.0352	1.5000e-004	0.0000	6.0389
<b>Total</b>	<b>2.9100e-003</b>	<b>0.0138</b>	<b>0.0241</b>	<b>1.0000e-004</b>	<b>8.0200e-003</b>	<b>7.0000e-005</b>	<b>8.0900e-003</b>	<b>2.1500e-003</b>	<b>7.0000e-005</b>	<b>2.2200e-003</b>	<b>0.0000</b>	<b>9.2053</b>	<b>9.2053</b>	<b>3.4000e-004</b>	<b>0.0000</b>	<b>9.2140</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0267	0.2953	0.2835	5.1000e-004		0.0133	0.0133		0.0122	0.0122	0.0000	44.4187	44.4187	0.0144	0.0000	44.7779
<b>Total</b>	<b>0.0267</b>	<b>0.2953</b>	<b>0.2835</b>	<b>5.1000e-004</b>		<b>0.0133</b>	<b>0.0133</b>		<b>0.0122</b>	<b>0.0122</b>	<b>0.0000</b>	<b>44.4187</b>	<b>44.4187</b>	<b>0.0144</b>	<b>0.0000</b>	<b>44.7779</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.5000e-004	0.0120	2.9700e-003	3.0000e-005	8.3000e-004	2.0000e-005	8.5000e-004	2.4000e-004	2.0000e-005	2.6000e-004	0.0000	3.1702	3.1702	1.9000e-004	0.0000	3.1750
Worker	2.5600e-003	1.8200e-003	0.0211	7.0000e-005	7.1900e-003	5.0000e-005	7.2400e-003	1.9100e-003	5.0000e-005	1.9600e-003	0.0000	6.0352	6.0352	1.5000e-004	0.0000	6.0389
<b>Total</b>	<b>2.9100e-003</b>	<b>0.0138</b>	<b>0.0241</b>	<b>1.0000e-004</b>	<b>8.0200e-003</b>	<b>7.0000e-005</b>	<b>8.0900e-003</b>	<b>2.1500e-003</b>	<b>7.0000e-005</b>	<b>2.2200e-003</b>	<b>0.0000</b>	<b>9.2053</b>	<b>9.2053</b>	<b>3.4000e-004</b>	<b>0.0000</b>	<b>9.2140</b>

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**3.10 WTP - Security, Entrance, and Landscaping - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0000e-004	6.2400e-003	7.5200e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.3000e-004	2.3000e-004	0.0000	1.0254	1.0254	2.6000e-004	0.0000	1.0318
<b>Total</b>	<b>7.0000e-004</b>	<b>6.2400e-003</b>	<b>7.5200e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>2.4000e-004</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>2.3000e-004</b>	<b>2.3000e-004</b>	<b>0.0000</b>	<b>1.0254</b>	<b>1.0254</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>1.0318</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.3800e-003	3.4000e-004	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3630	0.3630	2.0000e-005	0.0000	0.3636
Worker	2.3000e-004	1.7000e-004	1.9300e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5528	0.5528	1.0000e-005	0.0000	0.5532
<b>Total</b>	<b>2.7000e-004</b>	<b>1.5500e-003</b>	<b>2.2700e-003</b>	<b>1.0000e-005</b>	<b>7.5000e-004</b>	<b>0.0000</b>	<b>7.6000e-004</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>0.9158</b>	<b>0.9158</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.9167</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0000e-004	6.2400e-003	7.5200e-003	1.0000e-005		2.4000e-004	2.4000e-004		2.3000e-004	2.3000e-004	0.0000	1.0254	1.0254	2.6000e-004	0.0000	1.0318
<b>Total</b>	<b>7.0000e-004</b>	<b>6.2400e-003</b>	<b>7.5200e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>2.4000e-004</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>2.3000e-004</b>	<b>2.3000e-004</b>	<b>0.0000</b>	<b>1.0254</b>	<b>1.0254</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>1.0318</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	4.0000e-005	1.3800e-003	3.4000e-004	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3630	0.3630	2.0000e-005	0.0000	0.3636
Worker	2.3000e-004	1.7000e-004	1.9300e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5528	0.5528	1.0000e-005	0.0000	0.5532
<b>Total</b>	<b>2.7000e-004</b>	<b>1.5500e-003</b>	<b>2.2700e-003</b>	<b>1.0000e-005</b>	<b>7.5000e-004</b>	<b>0.0000</b>	<b>7.6000e-004</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>0.9158</b>	<b>0.9158</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.9167</b>

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**3.10 WTP - Security, Entrance, and Landscaping - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3000e-004	2.0000e-003	2.5000e-003	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.3419	0.3419	9.0000e-005	0.0000	0.3441
<b>Total</b>	<b>2.3000e-004</b>	<b>2.0000e-003</b>	<b>2.5000e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.3419</b>	<b>0.3419</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.3441</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	3.5000e-004	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1174	0.1174	1.0000e-005	0.0000	0.1175
Worker	7.0000e-005	5.0000e-005	5.9000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1774	0.1774	0.0000	0.0000	0.1775
<b>Total</b>	<b>8.0000e-005</b>	<b>4.0000e-004</b>	<b>6.9000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.2948</b>	<b>0.2948</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2950</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Annual

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.3000e-004	2.0000e-003	2.5000e-003	0.0000		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	0.3419	0.3419	9.0000e-005	0.0000	0.3441
<b>Total</b>	<b>2.3000e-004</b>	<b>2.0000e-003</b>	<b>2.5000e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.3419</b>	<b>0.3419</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.3441</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	3.5000e-004	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1174	0.1174	1.0000e-005	0.0000	0.1175
Worker	7.0000e-005	5.0000e-005	5.9000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1774	0.1774	0.0000	0.0000	0.1775
<b>Total</b>	<b>8.0000e-005</b>	<b>4.0000e-004</b>	<b>6.9000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>0.0000</b>	<b>2.5000e-004</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>0.2948</b>	<b>0.2948</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2950</b>



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**3.11 WTP - Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7300e-003	0.0175	0.0237	4.0000e-005		8.9000e-004	8.9000e-004		8.1000e-004	8.1000e-004	0.0000	3.2174	3.2174	1.0400e-003	0.0000	3.2435
Paving	3.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>4.7400e-003</b>	<b>0.0175</b>	<b>0.0237</b>	<b>4.0000e-005</b>		<b>8.9000e-004</b>	<b>8.9000e-004</b>		<b>8.1000e-004</b>	<b>8.1000e-004</b>	<b>0.0000</b>	<b>3.2174</b>	<b>3.2174</b>	<b>1.0400e-003</b>	<b>0.0000</b>	<b>3.2435</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	6.9000e-004	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2347	0.2347	1.0000e-005	0.0000	0.2350
Worker	1.1000e-004	8.0000e-005	8.9000e-004	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2661	0.2661	1.0000e-005	0.0000	0.2663
<b>Total</b>	<b>1.3000e-004</b>	<b>7.7000e-004</b>	<b>1.0900e-003</b>	<b>0.0000</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>3.9000e-004</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>0.5008</b>	<b>0.5008</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.5013</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Annual

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7300e-003	0.0175	0.0237	4.0000e-005		8.9000e-004	8.9000e-004		8.1000e-004	8.1000e-004	0.0000	3.2174	3.2174	1.0400e-003	0.0000	3.2435
Paving	3.0100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>4.7400e-003</b>	<b>0.0175</b>	<b>0.0237</b>	<b>4.0000e-005</b>		<b>8.9000e-004</b>	<b>8.9000e-004</b>		<b>8.1000e-004</b>	<b>8.1000e-004</b>	<b>0.0000</b>	<b>3.2174</b>	<b>3.2174</b>	<b>1.0400e-003</b>	<b>0.0000</b>	<b>3.2435</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	6.9000e-004	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2347	0.2347	1.0000e-005	0.0000	0.2350
Worker	1.1000e-004	8.0000e-005	8.9000e-004	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2661	0.2661	1.0000e-005	0.0000	0.2663
<b>Total</b>	<b>1.3000e-004</b>	<b>7.7000e-004</b>	<b>1.0900e-003</b>	<b>0.0000</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>3.9000e-004</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>0.5008</b>	<b>0.5008</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.5013</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Annual

**3.12 WTP - Architectural Coating - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0139					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2800e-003	8.6900e-003	0.0121	2.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.7022	1.7022	1.0000e-004	0.0000	1.7047
<b>Total</b>	<b>0.0152</b>	<b>8.6900e-003</b>	<b>0.0121</b>	<b>2.0000e-005</b>		<b>4.7000e-004</b>	<b>4.7000e-004</b>		<b>4.7000e-004</b>	<b>4.7000e-004</b>	<b>0.0000</b>	<b>1.7022</b>	<b>1.7022</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>1.7047</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	6.9000e-004	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2347	0.2347	1.0000e-005	0.0000	0.2350
Worker	1.1000e-004	8.0000e-005	8.9000e-004	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2661	0.2661	1.0000e-005	0.0000	0.2663
<b>Total</b>	<b>1.3000e-004</b>	<b>7.7000e-004</b>	<b>1.0900e-003</b>	<b>0.0000</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>3.9000e-004</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>0.5008</b>	<b>0.5008</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.5013</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Annual

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0139					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.2800e-003	8.6900e-003	0.0121	2.0000e-005		4.7000e-004	4.7000e-004		4.7000e-004	4.7000e-004	0.0000	1.7022	1.7022	1.0000e-004	0.0000	1.7047
<b>Total</b>	<b>0.0152</b>	<b>8.6900e-003</b>	<b>0.0121</b>	<b>2.0000e-005</b>		<b>4.7000e-004</b>	<b>4.7000e-004</b>		<b>4.7000e-004</b>	<b>4.7000e-004</b>	<b>0.0000</b>	<b>1.7022</b>	<b>1.7022</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>1.7047</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	6.9000e-004	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2347	0.2347	1.0000e-005	0.0000	0.2350
Worker	1.1000e-004	8.0000e-005	8.9000e-004	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2661	0.2661	1.0000e-005	0.0000	0.2663
<b>Total</b>	<b>1.3000e-004</b>	<b>7.7000e-004</b>	<b>1.0900e-003</b>	<b>0.0000</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>3.9000e-004</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>0.5008</b>	<b>0.5008</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.5013</b>

**APU Well and Water Treatment Facilities Project (Linda Vista Site)**  
**South Coast AQMD Air District, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.00	0.00	0
Other Asphalt Surfaces	2.30	Acre	2.30	100,188.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2024
<b>Utility Company</b>	Anaheim Public Utilities				
<b>CO2 Intensity (lb/MW hr)</b>	1543.28	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - APU Well and Water Treatment Facilities Project - Linda Vista Site. SCAQMD.

Land Use - Surrogate land uses for pipeline and pavement for water treatment facility location.

Construction Phase - Construction schedule based on estimated duration of activities, September 2021 through 2023.

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Summer

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Trips and VMT - Based on default assumptions

Demolition - Demolition of existing 1,200 foot building

Architectural Coating - Default coating EF

Construction Off-road Equipment Mitigation - Water exposed area 3x per day to represent fugitive dust construction practices

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	220.00	5.00
tblConstructionPhase	NumDays	220.00	131.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	6.00	5.00
tblConstructionPhase	NumDays	6.00	70.00
tblConstructionPhase	NumDays	6.00	25.00
tblConstructionPhase	NumDays	6.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	3.00	20.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Summer

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	530.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	Load_Factor	0.73	1.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	HaulingTripNumber	5.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	16.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	16.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	5.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	42.00	8.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblTripsAndVMT	WorkerTripNumber	10.00	12.00
tblTripsAndVMT	WorkerTripNumber	42.00	10.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.7908	17.4322	19.4461	0.0529	6.6865	0.7658	7.4522	3.4031	0.7045	4.1076	0.0000	5,141.3577	5,141.3577	1.3632	0.0000	5,175.4370
2023	4.0424	5.5309	7.6133	0.0135	0.1597	0.2728	0.4325	0.0430	0.2586	0.3015	0.0000	1,312.6878	1,312.6878	0.2603	0.0000	1,319.1955
Maximum	4.0424	17.4322	19.4461	0.0529	6.6865	0.7658	7.4522	3.4031	0.7045	4.1076	0.0000	5,141.3577	5,141.3577	1.3632	0.0000	5,175.4370

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.7908	17.4322	19.4461	0.0529	2.6895	0.7658	3.4553	1.3489	0.7045	2.0534	0.0000	5,141.3576	5,141.3576	1.3632	0.0000	5,175.4370
2023	4.0424	5.5309	7.6133	0.0135	0.1597	0.2728	0.4325	0.0430	0.2586	0.3015	0.0000	1,312.6878	1,312.6878	0.2603	0.0000	1,319.1955
Maximum	4.0424	17.4322	19.4461	0.0529	2.6895	0.7658	3.4553	1.3489	0.7045	2.0534	0.0000	5,141.3576	5,141.3576	1.3632	0.0000	5,175.4370

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	58.38	0.00	50.69	59.61	0.00	46.59	0.00	0.00	0.00	0.00	0.00	0.00



### 3.0 Construction Detail

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#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Water Well - Grading Well Pad	Grading	2/4/2022	2/10/2022	5	5	
2	Pipeline - Installation	Grading	2/4/2022	5/12/2022	5	70	
3	Water Well - Well Construction	Grading	2/11/2022	3/17/2022	5	25	
4	Water Well - Equipment Installation	Building Construction	3/18/2022	3/24/2022	5	5	
5	Pipeline - Final Paving	Paving	5/13/2022	5/19/2022	5	5	
6	WTP - Demolition	Demolition	5/20/2022	6/2/2022	5	10	
7	WTP - Site Preparation and Grading	Grading	6/3/2022	6/9/2022	5	5	
8	WTP - Equipment Installation	Building Construction	6/10/2022	12/10/2022	5	131	
9	WTP - Security, Entrance, and Landscaping	Site Preparation	12/11/2022	1/8/2023	5	20	
10	WTP - Paving	Paving	1/9/2023	1/20/2023	5	10	
11	WTP - Architectural Coating	Architectural Coating	1/9/2023	1/20/2023	5	10	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 2.3**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 6,011**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Water Well - Grading Well Pad	Cement and Mortar Mixers	1	4.00	9	0.56
Water Well - Grading Well Pad	Excavators	1	4.00	158	0.38
Pipeline - Installation	Concrete/Industrial Saws	1	8.00	81	0.73
Pipeline - Installation	Excavators	1	8.00	158	0.38
Pipeline - Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Water Well - Well Construction	Bore/Drill Rigs	1	24.00	221	0.50
Water Well - Well Construction	Excavators	1	8.00	158	0.38
Water Well - Equipment Installation	Cranes	1	4.00	231	0.29
Water Well - Equipment Installation	Rough Terrain Forklifts	1	8.00	100	0.40
Pipeline - Final Paving	Pavers	1	8.00	130	0.42
Pipeline - Final Paving	Paving Equipment	1	8.00	132	0.36
Pipeline - Final Paving	Rollers	1	8.00	80	0.38
WTP - Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
WTP - Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
WTP - Site Preparation and Grading	Graders	1	8.00	187	0.41
WTP - Site Preparation and Grading	Rubber Tired Dozers	1	8.00	247	0.40
WTP - Site Preparation and Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
WTP - Equipment Installation	Cranes	1	4.00	231	0.29
WTP - Equipment Installation	Rough Terrain Forklifts	1	4.00	100	0.40
WTP - Equipment Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
WTP - Security, Entrance, and Landscaping	Cement and Mortar Mixers	1	8.00	9	0.56
WTP - Security, Entrance, and Landscaping	Skid Steer Loaders	1	4.00	65	0.37
WTP - Paving	Pavers	1	8.00	130	0.42
WTP - Paving	Rollers	1	8.00	80	0.38
WTP - Architectural Coating	Air Compressors	1	8.00	78	0.48

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Summer

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Water Well - Grading	2	12.00	6.00	20.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Well Pad Pipeline - Installation	3	12.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Water Well - Well Construction	2	8.00	2.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Water Well - Equipment Installation	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Final Paving	3	6.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Demolition	2	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Site Preparation and	4	12.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Equipment Installation	3	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Security, Entrance and	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Paving	2	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Architectural Coating	1	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area

**3.2 Water Well - Grading Well Pad - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1306	1.0726	1.7818	2.9400e-003		0.0501	0.0501		0.0467	0.0467		275.2658	275.2658	0.0835		277.3528
<b>Total</b>	<b>0.1306</b>	<b>1.0726</b>	<b>1.7818</b>	<b>2.9400e-003</b>	<b>0.0000</b>	<b>0.0501</b>	<b>0.0501</b>	<b>0.0000</b>	<b>0.0467</b>	<b>0.0467</b>		<b>275.2658</b>	<b>275.2658</b>	<b>0.0835</b>		<b>277.3528</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0276	0.9350	0.2118	3.0300e-003	0.0699	2.7000e-003	0.0726	0.0192	2.5800e-003	0.0217		327.9020	327.9020	0.0217		328.4454
Vendor	0.0157	0.5432	0.1283	1.5200e-003	0.0384	1.0000e-003	0.0394	0.0111	9.5000e-004	0.0120		162.0355	162.0355	9.5200e-003		162.2735
Worker	0.0475	0.0297	0.4180	1.2900e-003	0.1341	9.6000e-004	0.1351	0.0356	8.8000e-004	0.0365		128.1269	128.1269	3.2300e-003		128.2076
<b>Total</b>	<b>0.0907</b>	<b>1.5079</b>	<b>0.7581</b>	<b>5.8400e-003</b>	<b>0.2424</b>	<b>4.6600e-003</b>	<b>0.2471</b>	<b>0.0658</b>	<b>4.4100e-003</b>	<b>0.0702</b>		<b>618.0643</b>	<b>618.0643</b>	<b>0.0345</b>		<b>618.9264</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1306	1.0726	1.7818	2.9400e-003		0.0501	0.0501		0.0467	0.0467	0.0000	275.2658	275.2658	0.0835		277.3528
<b>Total</b>	<b>0.1306</b>	<b>1.0726</b>	<b>1.7818</b>	<b>2.9400e-003</b>	<b>0.0000</b>	<b>0.0501</b>	<b>0.0501</b>	<b>0.0000</b>	<b>0.0467</b>	<b>0.0467</b>	<b>0.0000</b>	<b>275.2658</b>	<b>275.2658</b>	<b>0.0835</b>		<b>277.3528</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0276	0.9350	0.2118	3.0300e-003	0.0699	2.7000e-003	0.0726	0.0192	2.5800e-003	0.0217		327.9020	327.9020	0.0217		328.4454
Vendor	0.0157	0.5432	0.1283	1.5200e-003	0.0384	1.0000e-003	0.0394	0.0111	9.5000e-004	0.0120		162.0355	162.0355	9.5200e-003		162.2735
Worker	0.0475	0.0297	0.4180	1.2900e-003	0.1341	9.6000e-004	0.1351	0.0356	8.8000e-004	0.0365		128.1269	128.1269	3.2300e-003		128.2076
<b>Total</b>	<b>0.0907</b>	<b>1.5079</b>	<b>0.7581</b>	<b>5.8400e-003</b>	<b>0.2424</b>	<b>4.6600e-003</b>	<b>0.2471</b>	<b>0.0658</b>	<b>4.4100e-003</b>	<b>0.0702</b>		<b>618.0643</b>	<b>618.0643</b>	<b>0.0345</b>		<b>618.9264</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Summer

**3.3 Pipeline - Installation - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.7248	6.2538	9.1577	0.0145		0.3262	0.3262		0.3121	0.3121		1,393.9189	1,393.9189	0.2915		1,401.2056
<b>Total</b>	<b>0.7248</b>	<b>6.2538</b>	<b>9.1577</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.3262</b>	<b>0.3262</b>	<b>0.0000</b>	<b>0.3121</b>	<b>0.3121</b>		<b>1,393.9189</b>	<b>1,393.9189</b>	<b>0.2915</b>		<b>1,401.2056</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0104	0.3621	0.0856	1.0100e-003	0.0256	6.7000e-004	0.0263	7.3700e-003	6.4000e-004	8.0100e-003		108.0237	108.0237	6.3500e-003		108.1823
Worker	0.0475	0.0297	0.4180	1.2900e-003	0.1341	9.6000e-004	0.1351	0.0356	8.8000e-004	0.0365		128.1269	128.1269	3.2300e-003		128.2076
<b>Total</b>	<b>0.0580</b>	<b>0.3918</b>	<b>0.5036</b>	<b>2.3000e-003</b>	<b>0.1597</b>	<b>1.6300e-003</b>	<b>0.1614</b>	<b>0.0429</b>	<b>1.5200e-003</b>	<b>0.0445</b>		<b>236.1505</b>	<b>236.1505</b>	<b>9.5800e-003</b>		<b>236.3899</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.7248	6.2538	9.1577	0.0145		0.3262	0.3262		0.3121	0.3121	0.0000	1,393.9189	1,393.9189	0.2915		1,401.2056
<b>Total</b>	<b>0.7248</b>	<b>6.2538</b>	<b>9.1577</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.3262</b>	<b>0.3262</b>	<b>0.0000</b>	<b>0.3121</b>	<b>0.3121</b>	<b>0.0000</b>	<b>1,393.9189</b>	<b>1,393.9189</b>	<b>0.2915</b>		<b>1,401.2056</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0104	0.3621	0.0856	1.0100e-003	0.0256	6.7000e-004	0.0263	7.3700e-003	6.4000e-004	8.0100e-003		108.0237	108.0237	6.3500e-003		108.1823
Worker	0.0475	0.0297	0.4180	1.2900e-003	0.1341	9.6000e-004	0.1351	0.0356	8.8000e-004	0.0365		128.1269	128.1269	3.2300e-003		128.2076
<b>Total</b>	<b>0.0580</b>	<b>0.3918</b>	<b>0.5036</b>	<b>2.3000e-003</b>	<b>0.1597</b>	<b>1.6300e-003</b>	<b>0.1614</b>	<b>0.0429</b>	<b>1.5200e-003</b>	<b>0.0445</b>		<b>236.1505</b>	<b>236.1505</b>	<b>9.5800e-003</b>		<b>236.3899</b>

**3.4 Water Well - Well Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8747	8.5762	9.3786	0.0335		0.3042	0.3042		0.2798	0.2798		3,240.6978	3,240.6978	1.0481		3,266.9004
<b>Total</b>	<b>0.8747</b>	<b>8.5762</b>	<b>9.3786</b>	<b>0.0335</b>	<b>0.0000</b>	<b>0.3042</b>	<b>0.3042</b>	<b>0.0000</b>	<b>0.2798</b>	<b>0.2798</b>		<b>3,240.6978</b>	<b>3,240.6978</b>	<b>1.0481</b>		<b>3,266.9004</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0110	0.3740	0.0847	1.2100e-003	0.0280	1.0800e-003	0.0290	7.6600e-003	1.0300e-003	8.6900e-003		131.1608	131.1608	8.6900e-003		131.3782
Vendor	5.2200e-003	0.1811	0.0428	5.1000e-004	0.0128	3.3000e-004	0.0131	3.6900e-003	3.2000e-004	4.0000e-003		54.0118	54.0118	3.1700e-003		54.0912
Worker	0.0317	0.0198	0.2787	8.6000e-004	0.0894	6.4000e-004	0.0901	0.0237	5.9000e-004	0.0243		85.4179	85.4179	2.1500e-003		85.4717
<b>Total</b>	<b>0.0479</b>	<b>0.5749</b>	<b>0.4062</b>	<b>2.5800e-003</b>	<b>0.1302</b>	<b>2.0500e-003</b>	<b>0.1322</b>	<b>0.0351</b>	<b>1.9400e-003</b>	<b>0.0370</b>		<b>270.5905</b>	<b>270.5905</b>	<b>0.0140</b>		<b>270.9410</b>



## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8747	8.5762	9.3786	0.0335		0.3042	0.3042		0.2798	0.2798	0.0000	3,240.6977	3,240.6977	1.0481		3,266.9004
<b>Total</b>	<b>0.8747</b>	<b>8.5762</b>	<b>9.3786</b>	<b>0.0335</b>	<b>0.0000</b>	<b>0.3042</b>	<b>0.3042</b>	<b>0.0000</b>	<b>0.2798</b>	<b>0.2798</b>	<b>0.0000</b>	<b>3,240.6977</b>	<b>3,240.6977</b>	<b>1.0481</b>		<b>3,266.9004</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0110	0.3740	0.0847	1.2100e-003	0.0280	1.0800e-003	0.0290	7.6600e-003	1.0300e-003	8.6900e-003		131.1608	131.1608	8.6900e-003		131.3782
Vendor	5.2200e-003	0.1811	0.0428	5.1000e-004	0.0128	3.3000e-004	0.0131	3.6900e-003	3.2000e-004	4.0000e-003		54.0118	54.0118	3.1700e-003		54.0912
Worker	0.0317	0.0198	0.2787	8.6000e-004	0.0894	6.4000e-004	0.0901	0.0237	5.9000e-004	0.0243		85.4179	85.4179	2.1500e-003		85.4717
<b>Total</b>	<b>0.0479</b>	<b>0.5749</b>	<b>0.4062</b>	<b>2.5800e-003</b>	<b>0.1302</b>	<b>2.0500e-003</b>	<b>0.1322</b>	<b>0.0351</b>	<b>1.9400e-003</b>	<b>0.0370</b>		<b>270.5905</b>	<b>270.5905</b>	<b>0.0140</b>		<b>270.9410</b>

**3.5 Water Well - Equipment Installation - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2984	3.5724	3.2346	6.3300e-003		0.1385	0.1385		0.1274	0.1274		613.1697	613.1697	0.1983		618.1274
<b>Total</b>	<b>0.2984</b>	<b>3.5724</b>	<b>3.2346</b>	<b>6.3300e-003</b>		<b>0.1385</b>	<b>0.1385</b>		<b>0.1274</b>	<b>0.1274</b>		<b>613.1697</b>	<b>613.1697</b>	<b>0.1983</b>		<b>618.1274</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2200e-003	0.1811	0.0428	5.1000e-004	0.0128	3.3000e-004	0.0131	3.6900e-003	3.2000e-004	4.0000e-003		54.0118	54.0118	3.1700e-003		54.0912
Worker	0.0317	0.0198	0.2787	8.6000e-004	0.0894	6.4000e-004	0.0901	0.0237	5.9000e-004	0.0243		85.4179	85.4179	2.1500e-003		85.4717
<b>Total</b>	<b>0.0369</b>	<b>0.2009</b>	<b>0.3215</b>	<b>1.3700e-003</b>	<b>0.1022</b>	<b>9.7000e-004</b>	<b>0.1032</b>	<b>0.0274</b>	<b>9.1000e-004</b>	<b>0.0283</b>		<b>139.4297</b>	<b>139.4297</b>	<b>5.3200e-003</b>		<b>139.5629</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2984	3.5724	3.2346	6.3300e-003		0.1385	0.1385		0.1274	0.1274	0.0000	613.1697	613.1697	0.1983		618.1274
<b>Total</b>	<b>0.2984</b>	<b>3.5724</b>	<b>3.2346</b>	<b>6.3300e-003</b>		<b>0.1385</b>	<b>0.1385</b>		<b>0.1274</b>	<b>0.1274</b>	<b>0.0000</b>	<b>613.1697</b>	<b>613.1697</b>	<b>0.1983</b>		<b>618.1274</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2200e-003	0.1811	0.0428	5.1000e-004	0.0128	3.3000e-004	0.0131	3.6900e-003	3.2000e-004	4.0000e-003		54.0118	54.0118	3.1700e-003		54.0912
Worker	0.0317	0.0198	0.2787	8.6000e-004	0.0894	6.4000e-004	0.0901	0.0237	5.9000e-004	0.0243		85.4179	85.4179	2.1500e-003		85.4717
<b>Total</b>	<b>0.0369</b>	<b>0.2009</b>	<b>0.3215</b>	<b>1.3700e-003</b>	<b>0.1022</b>	<b>9.7000e-004</b>	<b>0.1032</b>	<b>0.0274</b>	<b>9.1000e-004</b>	<b>0.0283</b>		<b>139.4297</b>	<b>139.4297</b>	<b>5.3200e-003</b>		<b>139.5629</b>

**3.6 Pipeline - Final Paving - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5514	5.5624	7.2902	0.0114		0.2840	0.2840		0.2612	0.2612		1,103.830 2	1,103.830 2	0.3570		1,112.755 2
Paving	1.2052					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.7566</b>	<b>5.5624</b>	<b>7.2902</b>	<b>0.0114</b>		<b>0.2840</b>	<b>0.2840</b>		<b>0.2612</b>	<b>0.2612</b>		<b>1,103.830 2</b>	<b>1,103.830 2</b>	<b>0.3570</b>		<b>1,112.755 2</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0104	0.3621	0.0856	1.0100e-003	0.0256	6.7000e-004	0.0263	7.3700e-003	6.4000e-004	8.0100e-003		108.0237	108.0237	6.3500e-003		108.1823
Worker	0.0238	0.0148	0.2090	6.4000e-004	0.0671	4.8000e-004	0.0676	0.0178	4.4000e-004	0.0182		64.0634	64.0634	1.6100e-003		64.1038
<b>Total</b>	<b>0.0342</b>	<b>0.3770</b>	<b>0.2946</b>	<b>1.6500e-003</b>	<b>0.0927</b>	<b>1.1500e-003</b>	<b>0.0938</b>	<b>0.0252</b>	<b>1.0800e-003</b>	<b>0.0262</b>		<b>172.0871</b>	<b>172.0871</b>	<b>7.9600e-003</b>		<b>172.2861</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5514	5.5624	7.2902	0.0114		0.2840	0.2840		0.2612	0.2612	0.0000	1,103.8302	1,103.8302	0.3570		1,112.7552
Paving	1.2052					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.7566</b>	<b>5.5624</b>	<b>7.2902</b>	<b>0.0114</b>		<b>0.2840</b>	<b>0.2840</b>		<b>0.2612</b>	<b>0.2612</b>	<b>0.0000</b>	<b>1,103.8302</b>	<b>1,103.8302</b>	<b>0.3570</b>		<b>1,112.7552</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0104	0.3621	0.0856	1.0100e-003	0.0256	6.7000e-004	0.0263	7.3700e-003	6.4000e-004	8.0100e-003		108.0237	108.0237	6.3500e-003		108.1823
Worker	0.0238	0.0148	0.2090	6.4000e-004	0.0671	4.8000e-004	0.0676	0.0178	4.4000e-004	0.0182		64.0634	64.0634	1.6100e-003		64.1038
<b>Total</b>	<b>0.0342</b>	<b>0.3770</b>	<b>0.2946</b>	<b>1.6500e-003</b>	<b>0.0927</b>	<b>1.1500e-003</b>	<b>0.0938</b>	<b>0.0252</b>	<b>1.0800e-003</b>	<b>0.0262</b>		<b>172.0871</b>	<b>172.0871</b>	<b>7.9600e-003</b>		<b>172.2861</b>

**3.7 WTP - Demolition - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1181	0.0000	0.1181	0.0179	0.0000	0.0179			0.0000			0.0000
Off-Road	0.5224	4.4768	5.9026	9.3700e-003		0.2403	0.2403		0.2331	0.2331		893.9036	893.9036	0.1298		897.1475
<b>Total</b>	<b>0.5224</b>	<b>4.4768</b>	<b>5.9026</b>	<b>9.3700e-003</b>	<b>0.1181</b>	<b>0.2403</b>	<b>0.3584</b>	<b>0.0179</b>	<b>0.2331</b>	<b>0.2510</b>		<b>893.9036</b>	<b>893.9036</b>	<b>0.1298</b>		<b>897.1475</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0158	9.8900e-003	0.1393	4.3000e-004	0.0447	3.2000e-004	0.0450	0.0119	2.9000e-004	0.0122		42.7090	42.7090	1.0800e-003		42.7359
<b>Total</b>	<b>0.0158</b>	<b>9.8900e-003</b>	<b>0.1393</b>	<b>4.3000e-004</b>	<b>0.0447</b>	<b>3.2000e-004</b>	<b>0.0450</b>	<b>0.0119</b>	<b>2.9000e-004</b>	<b>0.0122</b>		<b>42.7090</b>	<b>42.7090</b>	<b>1.0800e-003</b>		<b>42.7359</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0461	0.0000	0.0461	6.9800e-003	0.0000	6.9800e-003			0.0000			0.0000
Off-Road	0.5224	4.4768	5.9026	9.3700e-003		0.2403	0.2403		0.2331	0.2331	0.0000	893.9036	893.9036	0.1298		897.1475
<b>Total</b>	<b>0.5224</b>	<b>4.4768</b>	<b>5.9026</b>	<b>9.3700e-003</b>	<b>0.0461</b>	<b>0.2403</b>	<b>0.2864</b>	<b>6.9800e-003</b>	<b>0.2331</b>	<b>0.2401</b>	<b>0.0000</b>	<b>893.9036</b>	<b>893.9036</b>	<b>0.1298</b>		<b>897.1475</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0158	9.8900e-003	0.1393	4.3000e-004	0.0447	3.2000e-004	0.0450	0.0119	2.9000e-004	0.0122		42.7090	42.7090	1.0800e-003		42.7359
<b>Total</b>	<b>0.0158</b>	<b>9.8900e-003</b>	<b>0.1393</b>	<b>4.3000e-004</b>	<b>0.0447</b>	<b>3.2000e-004</b>	<b>0.0450</b>	<b>0.0119</b>	<b>2.9000e-004</b>	<b>0.0122</b>		<b>42.7090</b>	<b>42.7090</b>	<b>1.0800e-003</b>		<b>42.7359</b>

**3.8 WTP - Site Preparation and Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.5815	17.4025	9.7796	0.0214		0.7648	0.7648		0.7036	0.7036		2,070.792 2	2,070.792 2	0.6697		2,087.535 6
<b>Total</b>	<b>1.5815</b>	<b>17.4025</b>	<b>9.7796</b>	<b>0.0214</b>	<b>6.5523</b>	<b>0.7648</b>	<b>7.3172</b>	<b>3.3675</b>	<b>0.7036</b>	<b>4.0711</b>		<b>2,070.792 2</b>	<b>2,070.792 2</b>	<b>0.6697</b>		<b>2,087.535 6</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0475	0.0297	0.4180	1.2900e-003	0.1341	9.6000e-004	0.1351	0.0356	8.8000e-004	0.0365		128.1269	128.1269	3.2300e-003		128.2076
<b>Total</b>	<b>0.0475</b>	<b>0.0297</b>	<b>0.4180</b>	<b>1.2900e-003</b>	<b>0.1341</b>	<b>9.6000e-004</b>	<b>0.1351</b>	<b>0.0356</b>	<b>8.8000e-004</b>	<b>0.0365</b>		<b>128.1269</b>	<b>128.1269</b>	<b>3.2300e-003</b>		<b>128.2076</b>



## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	1.5815	17.4025	9.7796	0.0214		0.7648	0.7648		0.7036	0.7036	0.0000	2,070.792 2	2,070.792 2	0.6697		2,087.535 6
<b>Total</b>	<b>1.5815</b>	<b>17.4025</b>	<b>9.7796</b>	<b>0.0214</b>	<b>2.5554</b>	<b>0.7648</b>	<b>3.3202</b>	<b>1.3133</b>	<b>0.7036</b>	<b>2.0170</b>	<b>0.0000</b>	<b>2,070.792 2</b>	<b>2,070.792 2</b>	<b>0.6697</b>		<b>2,087.535 6</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0475	0.0297	0.4180	1.2900e-003	0.1341	9.6000e-004	0.1351	0.0356	8.8000e-004	0.0365		128.1269	128.1269	3.2300e-003		128.2076
<b>Total</b>	<b>0.0475</b>	<b>0.0297</b>	<b>0.4180</b>	<b>1.2900e-003</b>	<b>0.1341</b>	<b>9.6000e-004</b>	<b>0.1351</b>	<b>0.0356</b>	<b>8.8000e-004</b>	<b>0.0365</b>		<b>128.1269</b>	<b>128.1269</b>	<b>3.2300e-003</b>		<b>128.2076</b>

**3.9 WTP - Equipment Installation - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4071	4.5079	4.3283	7.7200e-003		0.2028	0.2028		0.1866	0.1866		747.5314	747.5314	0.2418		753.5755
<b>Total</b>	<b>0.4071</b>	<b>4.5079</b>	<b>4.3283</b>	<b>7.7200e-003</b>		<b>0.2028</b>	<b>0.2028</b>		<b>0.1866</b>	<b>0.1866</b>		<b>747.5314</b>	<b>747.5314</b>	<b>0.2418</b>		<b>753.5755</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2200e-003	0.1811	0.0428	5.1000e-004	0.0128	3.3000e-004	0.0131	3.6900e-003	3.2000e-004	4.0000e-003		54.0118	54.0118	3.1700e-003		54.0912
Worker	0.0396	0.0247	0.3484	1.0700e-003	0.1118	8.0000e-004	0.1126	0.0296	7.4000e-004	0.0304		106.7724	106.7724	2.6900e-003		106.8397
<b>Total</b>	<b>0.0448</b>	<b>0.2058</b>	<b>0.3911</b>	<b>1.5800e-003</b>	<b>0.1246</b>	<b>1.1300e-003</b>	<b>0.1257</b>	<b>0.0333</b>	<b>1.0600e-003</b>	<b>0.0344</b>		<b>160.7842</b>	<b>160.7842</b>	<b>5.8600e-003</b>		<b>160.9308</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4071	4.5079	4.3283	7.7200e-003		0.2028	0.2028		0.1866	0.1866	0.0000	747.5314	747.5314	0.2418		753.5755
<b>Total</b>	<b>0.4071</b>	<b>4.5079</b>	<b>4.3283</b>	<b>7.7200e-003</b>		<b>0.2028</b>	<b>0.2028</b>		<b>0.1866</b>	<b>0.1866</b>	<b>0.0000</b>	<b>747.5314</b>	<b>747.5314</b>	<b>0.2418</b>		<b>753.5755</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2200e-003	0.1811	0.0428	5.1000e-004	0.0128	3.3000e-004	0.0131	3.6900e-003	3.2000e-004	4.0000e-003		54.0118	54.0118	3.1700e-003		54.0912
Worker	0.0396	0.0247	0.3484	1.0700e-003	0.1118	8.0000e-004	0.1126	0.0296	7.4000e-004	0.0304		106.7724	106.7724	2.6900e-003		106.8397
<b>Total</b>	<b>0.0448</b>	<b>0.2058</b>	<b>0.3911</b>	<b>1.5800e-003</b>	<b>0.1246</b>	<b>1.1300e-003</b>	<b>0.1257</b>	<b>0.0333</b>	<b>1.0600e-003</b>	<b>0.0344</b>		<b>160.7842</b>	<b>160.7842</b>	<b>5.8600e-003</b>		<b>160.9308</b>

**3.10 WTP - Security, Entrance, and Landscaping - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0936	0.8325	1.0021	1.7500e-003		0.0316	0.0316		0.0302	0.0302		150.7119	150.7119	0.0377		151.6532
<b>Total</b>	<b>0.0936</b>	<b>0.8325</b>	<b>1.0021</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0316</b>	<b>0.0316</b>	<b>0.0000</b>	<b>0.0302</b>	<b>0.0302</b>		<b>150.7119</b>	<b>150.7119</b>	<b>0.0377</b>		<b>151.6532</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2200e-003	0.1811	0.0428	5.1000e-004	0.0128	3.3000e-004	0.0131	3.6900e-003	3.2000e-004	4.0000e-003		54.0118	54.0118	3.1700e-003		54.0912
Worker	0.0317	0.0198	0.2787	8.6000e-004	0.0894	6.4000e-004	0.0901	0.0237	5.9000e-004	0.0243		85.4179	85.4179	2.1500e-003		85.4717
<b>Total</b>	<b>0.0369</b>	<b>0.2009</b>	<b>0.3215</b>	<b>1.3700e-003</b>	<b>0.1022</b>	<b>9.7000e-004</b>	<b>0.1032</b>	<b>0.0274</b>	<b>9.1000e-004</b>	<b>0.0283</b>		<b>139.4297</b>	<b>139.4297</b>	<b>5.3200e-003</b>		<b>139.5629</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0936	0.8325	1.0021	1.7500e-003		0.0316	0.0316		0.0302	0.0302	0.0000	150.7119	150.7119	0.0377		151.6532
<b>Total</b>	<b>0.0936</b>	<b>0.8325</b>	<b>1.0021</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0316</b>	<b>0.0316</b>	<b>0.0000</b>	<b>0.0302</b>	<b>0.0302</b>	<b>0.0000</b>	<b>150.7119</b>	<b>150.7119</b>	<b>0.0377</b>		<b>151.6532</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.2200e-003	0.1811	0.0428	5.1000e-004	0.0128	3.3000e-004	0.0131	3.6900e-003	3.2000e-004	4.0000e-003		54.0118	54.0118	3.1700e-003		54.0912
Worker	0.0317	0.0198	0.2787	8.6000e-004	0.0894	6.4000e-004	0.0901	0.0237	5.9000e-004	0.0243		85.4179	85.4179	2.1500e-003		85.4717
<b>Total</b>	<b>0.0369</b>	<b>0.2009</b>	<b>0.3215</b>	<b>1.3700e-003</b>	<b>0.1022</b>	<b>9.7000e-004</b>	<b>0.1032</b>	<b>0.0274</b>	<b>9.1000e-004</b>	<b>0.0283</b>		<b>139.4297</b>	<b>139.4297</b>	<b>5.3200e-003</b>		<b>139.5629</b>

**3.10 WTP - Security, Entrance, and Landscaping - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0913	0.8005	1.0011	1.7500e-003		0.0289	0.0289		0.0278	0.0278		150.7594	150.7594	0.0377		151.7011
<b>Total</b>	<b>0.0913</b>	<b>0.8005</b>	<b>1.0011</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0289</b>	<b>0.0289</b>	<b>0.0000</b>	<b>0.0278</b>	<b>0.0278</b>		<b>150.7594</b>	<b>150.7594</b>	<b>0.0377</b>		<b>151.7011</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0298	0.0179	0.2574	8.2000e-004	0.0894	6.2000e-004	0.0900	0.0237	5.7000e-004	0.0243		82.2344	82.2344	1.9400e-003		82.2830
<b>Total</b>	<b>0.0337</b>	<b>0.1548</b>	<b>0.2959</b>	<b>1.3100e-003</b>	<b>0.1022</b>	<b>7.7000e-004</b>	<b>0.1030</b>	<b>0.0274</b>	<b>7.2000e-004</b>	<b>0.0281</b>		<b>134.6080</b>	<b>134.6080</b>	<b>4.7100e-003</b>		<b>134.7257</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0913	0.8005	1.0011	1.7500e-003		0.0289	0.0289		0.0278	0.0278	0.0000	150.7594	150.7594	0.0377		151.7011
<b>Total</b>	<b>0.0913</b>	<b>0.8005</b>	<b>1.0011</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0289</b>	<b>0.0289</b>	<b>0.0000</b>	<b>0.0278</b>	<b>0.0278</b>	<b>0.0000</b>	<b>150.7594</b>	<b>150.7594</b>	<b>0.0377</b>		<b>151.7011</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0298	0.0179	0.2574	8.2000e-004	0.0894	6.2000e-004	0.0900	0.0237	5.7000e-004	0.0243		82.2344	82.2344	1.9400e-003		82.2830
<b>Total</b>	<b>0.0337</b>	<b>0.1548</b>	<b>0.2959</b>	<b>1.3100e-003</b>	<b>0.1022</b>	<b>7.7000e-004</b>	<b>0.1030</b>	<b>0.0274</b>	<b>7.2000e-004</b>	<b>0.0281</b>		<b>134.6080</b>	<b>134.6080</b>	<b>4.7100e-003</b>		<b>134.7257</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Summer

**3.11 WTP - Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3457	3.4929	4.7354	7.3300e-003		0.1772	0.1772		0.1630	0.1630		709.3250	709.3250	0.2294		715.0603
Paving	0.6026					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.9483</b>	<b>3.4929</b>	<b>4.7354</b>	<b>7.3300e-003</b>		<b>0.1772</b>	<b>0.1772</b>		<b>0.1630</b>	<b>0.1630</b>		<b>709.3250</b>	<b>709.3250</b>	<b>0.2294</b>		<b>715.0603</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0223	0.0134	0.1930	6.2000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		61.6758	61.6758	1.4600e-003		61.7122
<b>Total</b>	<b>0.0262</b>	<b>0.1503</b>	<b>0.2316</b>	<b>1.1100e-003</b>	<b>0.0799</b>	<b>6.2000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>114.0494</b>	<b>114.0494</b>	<b>4.2300e-003</b>		<b>114.1549</b>



## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3457	3.4929	4.7354	7.3300e-003		0.1772	0.1772		0.1630	0.1630	0.0000	709.3250	709.3250	0.2294		715.0603
Paving	0.6026					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.9483</b>	<b>3.4929</b>	<b>4.7354</b>	<b>7.3300e-003</b>		<b>0.1772</b>	<b>0.1772</b>		<b>0.1630</b>	<b>0.1630</b>	<b>0.0000</b>	<b>709.3250</b>	<b>709.3250</b>	<b>0.2294</b>		<b>715.0603</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0223	0.0134	0.1930	6.2000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		61.6758	61.6758	1.4600e-003		61.7122
<b>Total</b>	<b>0.0262</b>	<b>0.1503</b>	<b>0.2316</b>	<b>1.1100e-003</b>	<b>0.0799</b>	<b>6.2000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>114.0494</b>	<b>114.0494</b>	<b>4.2300e-003</b>		<b>114.1549</b>

**3.12 WTP - Architectural Coating - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.7861					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944		375.2641	375.2641	0.0225		375.8253
<b>Total</b>	<b>3.0417</b>	<b>1.7373</b>	<b>2.4148</b>	<b>3.9600e-003</b>		<b>0.0944</b>	<b>0.0944</b>		<b>0.0944</b>	<b>0.0944</b>		<b>375.2641</b>	<b>375.2641</b>	<b>0.0225</b>		<b>375.8253</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0223	0.0134	0.1930	6.2000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		61.6758	61.6758	1.4600e-003		61.7122
<b>Total</b>	<b>0.0262</b>	<b>0.1503</b>	<b>0.2316</b>	<b>1.1100e-003</b>	<b>0.0799</b>	<b>6.2000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>114.0494</b>	<b>114.0494</b>	<b>4.2300e-003</b>		<b>114.1549</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.7861					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944	0.0000	375.2641	375.2641	0.0225		375.8253
<b>Total</b>	<b>3.0417</b>	<b>1.7373</b>	<b>2.4148</b>	<b>3.9600e-003</b>		<b>0.0944</b>	<b>0.0944</b>		<b>0.0944</b>	<b>0.0944</b>	<b>0.0000</b>	<b>375.2641</b>	<b>375.2641</b>	<b>0.0225</b>		<b>375.8253</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0223	0.0134	0.1930	6.2000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		61.6758	61.6758	1.4600e-003		61.7122
<b>Total</b>	<b>0.0262</b>	<b>0.1503</b>	<b>0.2316</b>	<b>1.1100e-003</b>	<b>0.0799</b>	<b>6.2000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>114.0494</b>	<b>114.0494</b>	<b>4.2300e-003</b>		<b>114.1549</b>

**APU Well and Water Treatment Facilities Project (Linda Vista Site)**  
**South Coast AQMD Air District, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.00	0.00	0
Other Asphalt Surfaces	2.30	Acre	2.30	100,188.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2024
<b>Utility Company</b>	Anaheim Public Utilities				
<b>CO2 Intensity (lb/MW hr)</b>	1543.28	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - APU Well and Water Treatment Facilities Project - Linda Vista Site. SCAQMD.

Land Use - Surrogate land uses for pipeline and pavement for water treatment facility location.

Construction Phase - Construction schedule based on estimated duration of activities, September 2021 through 2023.

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Trips and VMT - Based on default assumptions

Demolition - Demolition of existing 1,200 foot building

Architectural Coating - Default coating EF

Construction Off-road Equipment Mitigation - Water exposed area 3x per day to represent fugitive dust construction practices

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	220.00	5.00
tblConstructionPhase	NumDays	220.00	131.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	NumDays	6.00	5.00
tblConstructionPhase	NumDays	6.00	70.00
tblConstructionPhase	NumDays	6.00	25.00
tblConstructionPhase	NumDays	6.00	5.00
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	3.00	20.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	3.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	8.00	4.00
tblOffRoadEquipment	UsageHours	8.00	4.00

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	530.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	Load_Factor	0.73	1.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	1.00
tblTripsAndVMT	HaulingTripNumber	0.00	20.00
tblTripsAndVMT	HaulingTripNumber	0.00	40.00
tblTripsAndVMT	HaulingTripNumber	5.00	0.00
tblTripsAndVMT	VendorTripNumber	0.00	6.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	16.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	16.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	5.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	8.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	42.00	8.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	4.00
tblTripsAndVMT	WorkerTripNumber	10.00	12.00
tblTripsAndVMT	WorkerTripNumber	42.00	10.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00

## 2.0 Emissions Summary

### 2.1 Overall Construction (Maximum Daily Emission)

#### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.7936	17.4350	19.3957	0.0527	6.6865	0.7658	7.4522	3.4031	0.7045	4.1076	0.0000	5,120.3546	5,120.3546	1.3639	0.0000	5,154.4510
2023	4.0472	5.5316	7.5805	0.0134	0.1597	0.2728	0.4326	0.0430	0.2586	0.3015	0.0000	1,301.6893	1,301.6893	0.2605	0.0000	1,308.2010
Maximum	4.0472	17.4350	19.3957	0.0527	6.6865	0.7658	7.4522	3.4031	0.7045	4.1076	0.0000	5,120.3546	5,120.3546	1.3639	0.0000	5,154.4510

#### Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	1.7936	17.4350	19.3957	0.0527	2.6895	0.7658	3.4553	1.3489	0.7045	2.0534	0.0000	5,120.3546	5,120.3546	1.3639	0.0000	5,154.4510
2023	4.0472	5.5316	7.5805	0.0134	0.1597	0.2728	0.4326	0.0430	0.2586	0.3015	0.0000	1,301.6893	1,301.6893	0.2605	0.0000	1,308.2010
Maximum	4.0472	17.4350	19.3957	0.0527	2.6895	0.7658	3.4553	1.3489	0.7045	2.0534	0.0000	5,120.3546	5,120.3546	1.3639	0.0000	5,154.4510

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	58.38	0.00	50.69	59.61	0.00	46.59	0.00	0.00	0.00	0.00	0.00	0.00

### 3.0 Construction Detail

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#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Water Well - Grading Well Pad	Grading	2/4/2022	2/10/2022	5	5	
2	Pipeline - Installation	Grading	2/4/2022	5/12/2022	5	70	
3	Water Well - Well Construction	Grading	2/11/2022	3/17/2022	5	25	
4	Water Well - Equipment Installation	Building Construction	3/18/2022	3/24/2022	5	5	
5	Pipeline - Final Paving	Paving	5/13/2022	5/19/2022	5	5	
6	WTP - Demolition	Demolition	5/20/2022	6/2/2022	5	10	
7	WTP - Site Preparation and Grading	Grading	6/3/2022	6/9/2022	5	5	
8	WTP - Equipment Installation	Building Construction	6/10/2022	12/10/2022	5	131	
9	WTP - Security, Entrance, and Landscaping	Site Preparation	12/11/2022	1/8/2023	5	20	
10	WTP - Paving	Paving	1/9/2023	1/20/2023	5	10	
11	WTP - Architectural Coating	Architectural Coating	1/9/2023	1/20/2023	5	10	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 2.3**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 6,011**



## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Water Well - Grading Well Pad	Cement and Mortar Mixers	1	4.00	9	0.56
Water Well - Grading Well Pad	Excavators	1	4.00	158	0.38
Pipeline - Installation	Concrete/Industrial Saws	1	8.00	81	0.73
Pipeline - Installation	Excavators	1	8.00	158	0.38
Pipeline - Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Water Well - Well Construction	Bore/Drill Rigs	1	24.00	221	0.50
Water Well - Well Construction	Excavators	1	8.00	158	0.38
Water Well - Equipment Installation	Cranes	1	4.00	231	0.29
Water Well - Equipment Installation	Rough Terrain Forklifts	1	8.00	100	0.40
Pipeline - Final Paving	Pavers	1	8.00	130	0.42
Pipeline - Final Paving	Paving Equipment	1	8.00	132	0.36
Pipeline - Final Paving	Rollers	1	8.00	80	0.38
WTP - Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
WTP - Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
WTP - Site Preparation and Grading	Graders	1	8.00	187	0.41
WTP - Site Preparation and Grading	Rubber Tired Dozers	1	8.00	247	0.40
WTP - Site Preparation and Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
WTP - Equipment Installation	Cranes	1	4.00	231	0.29
WTP - Equipment Installation	Rough Terrain Forklifts	1	4.00	100	0.40
WTP - Equipment Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
WTP - Security, Entrance, and Landscaping	Cement and Mortar Mixers	1	8.00	9	0.56
WTP - Security, Entrance, and Landscaping	Skid Steer Loaders	1	4.00	65	0.37
WTP - Paving	Pavers	1	8.00	130	0.42
WTP - Paving	Rollers	1	8.00	80	0.38
WTP - Architectural Coating	Air Compressors	1	8.00	78	0.48

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Water Well - Grading	2	12.00	6.00	20.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Well Pad Pipeline - Installation	3	12.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Water Well - Well Construction	2	8.00	2.00	40.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Water Well - Equipment Installation	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Final Paving	3	6.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Demolition	2	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Site Preparation and	4	12.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Equipment Installation	3	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Security, Entrance and	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Paving	2	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Architectural Coating	1	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area

**3.2 Water Well - Grading Well Pad - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1306	1.0726	1.7818	2.9400e-003		0.0501	0.0501		0.0467	0.0467		275.2658	275.2658	0.0835		277.3528
<b>Total</b>	<b>0.1306</b>	<b>1.0726</b>	<b>1.7818</b>	<b>2.9400e-003</b>	<b>0.0000</b>	<b>0.0501</b>	<b>0.0501</b>	<b>0.0000</b>	<b>0.0467</b>	<b>0.0467</b>		<b>275.2658</b>	<b>275.2658</b>	<b>0.0835</b>		<b>277.3528</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0284	0.9450	0.2268	2.9700e-003	0.0699	2.7400e-003	0.0726	0.0192	2.6200e-003	0.0218		321.7853	321.7853	0.0226		322.3510
Vendor	0.0165	0.5410	0.1437	1.4700e-003	0.0384	1.0300e-003	0.0394	0.0111	9.9000e-004	0.0120		157.3165	157.3165	0.0102		157.5720
Worker	0.0521	0.0325	0.3750	1.2000e-003	0.1341	9.6000e-004	0.1351	0.0356	8.8000e-004	0.0365		119.8244	119.8244	3.0100e-003		119.8996
<b>Total</b>	<b>0.0969</b>	<b>1.5186</b>	<b>0.7455</b>	<b>5.6400e-003</b>	<b>0.2424</b>	<b>4.7300e-003</b>	<b>0.2472</b>	<b>0.0658</b>	<b>4.4900e-003</b>	<b>0.0703</b>		<b>598.9262</b>	<b>598.9262</b>	<b>0.0359</b>		<b>599.8225</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1306	1.0726	1.7818	2.9400e-003		0.0501	0.0501		0.0467	0.0467	0.0000	275.2658	275.2658	0.0835		277.3528
<b>Total</b>	<b>0.1306</b>	<b>1.0726</b>	<b>1.7818</b>	<b>2.9400e-003</b>	<b>0.0000</b>	<b>0.0501</b>	<b>0.0501</b>	<b>0.0000</b>	<b>0.0467</b>	<b>0.0467</b>	<b>0.0000</b>	<b>275.2658</b>	<b>275.2658</b>	<b>0.0835</b>		<b>277.3528</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0284	0.9450	0.2268	2.9700e-003	0.0699	2.7400e-003	0.0726	0.0192	2.6200e-003	0.0218		321.7853	321.7853	0.0226		322.3510
Vendor	0.0165	0.5410	0.1437	1.4700e-003	0.0384	1.0300e-003	0.0394	0.0111	9.9000e-004	0.0120		157.3165	157.3165	0.0102		157.5720
Worker	0.0521	0.0325	0.3750	1.2000e-003	0.1341	9.6000e-004	0.1351	0.0356	8.8000e-004	0.0365		119.8244	119.8244	3.0100e-003		119.8996
<b>Total</b>	<b>0.0969</b>	<b>1.5186</b>	<b>0.7455</b>	<b>5.6400e-003</b>	<b>0.2424</b>	<b>4.7300e-003</b>	<b>0.2472</b>	<b>0.0658</b>	<b>4.4900e-003</b>	<b>0.0703</b>		<b>598.9262</b>	<b>598.9262</b>	<b>0.0359</b>		<b>599.8225</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**3.3 Pipeline - Installation - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.7248	6.2538	9.1577	0.0145		0.3262	0.3262		0.3121	0.3121		1,393.9189	1,393.9189	0.2915		1,401.2056
<b>Total</b>	<b>0.7248</b>	<b>6.2538</b>	<b>9.1577</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.3262</b>	<b>0.3262</b>	<b>0.0000</b>	<b>0.3121</b>	<b>0.3121</b>		<b>1,393.9189</b>	<b>1,393.9189</b>	<b>0.2915</b>		<b>1,401.2056</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0110	0.3607	0.0958	9.8000e-004	0.0256	6.9000e-004	0.0263	7.3700e-003	6.6000e-004	8.0300e-003		104.8777	104.8777	6.8100e-003		105.0480
Worker	0.0521	0.0325	0.3750	1.2000e-003	0.1341	9.6000e-004	0.1351	0.0356	8.8000e-004	0.0365		119.8244	119.8244	3.0100e-003		119.8996
<b>Total</b>	<b>0.0630</b>	<b>0.3932</b>	<b>0.4708</b>	<b>2.1800e-003</b>	<b>0.1597</b>	<b>1.6500e-003</b>	<b>0.1614</b>	<b>0.0429</b>	<b>1.5400e-003</b>	<b>0.0445</b>		<b>224.7021</b>	<b>224.7021</b>	<b>9.8200e-003</b>		<b>224.9476</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.7248	6.2538	9.1577	0.0145		0.3262	0.3262		0.3121	0.3121	0.0000	1,393.9189	1,393.9189	0.2915		1,401.2056
<b>Total</b>	<b>0.7248</b>	<b>6.2538</b>	<b>9.1577</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.3262</b>	<b>0.3262</b>	<b>0.0000</b>	<b>0.3121</b>	<b>0.3121</b>	<b>0.0000</b>	<b>1,393.9189</b>	<b>1,393.9189</b>	<b>0.2915</b>		<b>1,401.2056</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0110	0.3607	0.0958	9.8000e-004	0.0256	6.9000e-004	0.0263	7.3700e-003	6.6000e-004	8.0300e-003		104.8777	104.8777	6.8100e-003		105.0480
Worker	0.0521	0.0325	0.3750	1.2000e-003	0.1341	9.6000e-004	0.1351	0.0356	8.8000e-004	0.0365		119.8244	119.8244	3.0100e-003		119.8996
<b>Total</b>	<b>0.0630</b>	<b>0.3932</b>	<b>0.4708</b>	<b>2.1800e-003</b>	<b>0.1597</b>	<b>1.6500e-003</b>	<b>0.1614</b>	<b>0.0429</b>	<b>1.5400e-003</b>	<b>0.0445</b>		<b>224.7021</b>	<b>224.7021</b>	<b>9.8200e-003</b>		<b>224.9476</b>

**3.4 Water Well - Well Construction - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8747	8.5762	9.3786	0.0335		0.3042	0.3042		0.2798	0.2798		3,240.6978	3,240.6978	1.0481		3,266.9004
<b>Total</b>	<b>0.8747</b>	<b>8.5762</b>	<b>9.3786</b>	<b>0.0335</b>	<b>0.0000</b>	<b>0.3042</b>	<b>0.3042</b>	<b>0.0000</b>	<b>0.2798</b>	<b>0.2798</b>		<b>3,240.6978</b>	<b>3,240.6978</b>	<b>1.0481</b>		<b>3,266.9004</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0113	0.3780	0.0907	1.1900e-003	0.0280	1.1000e-003	0.0291	7.6600e-003	1.0500e-003	8.7100e-003		128.7141	128.7141	9.0500e-003		128.9404
Vendor	5.5000e-003	0.1803	0.0479	4.9000e-004	0.0128	3.4000e-004	0.0131	3.6900e-003	3.3000e-004	4.0100e-003		52.4388	52.4388	3.4100e-003		52.5240
Worker	0.0347	0.0217	0.2500	8.0000e-004	0.0894	6.4000e-004	0.0901	0.0237	5.9000e-004	0.0243		79.8829	79.8829	2.0100e-003		79.9331
<b>Total</b>	<b>0.0515</b>	<b>0.5800</b>	<b>0.3886</b>	<b>2.4800e-003</b>	<b>0.1302</b>	<b>2.0800e-003</b>	<b>0.1323</b>	<b>0.0351</b>	<b>1.9700e-003</b>	<b>0.0370</b>		<b>261.0359</b>	<b>261.0359</b>	<b>0.0145</b>		<b>261.3974</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.8747	8.5762	9.3786	0.0335		0.3042	0.3042		0.2798	0.2798	0.0000	3,240.6977	3,240.6977	1.0481		3,266.9004
<b>Total</b>	<b>0.8747</b>	<b>8.5762</b>	<b>9.3786</b>	<b>0.0335</b>	<b>0.0000</b>	<b>0.3042</b>	<b>0.3042</b>	<b>0.0000</b>	<b>0.2798</b>	<b>0.2798</b>	<b>0.0000</b>	<b>3,240.6977</b>	<b>3,240.6977</b>	<b>1.0481</b>		<b>3,266.9004</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0113	0.3780	0.0907	1.1900e-003	0.0280	1.1000e-003	0.0291	7.6600e-003	1.0500e-003	8.7100e-003		128.7141	128.7141	9.0500e-003		128.9404
Vendor	5.5000e-003	0.1803	0.0479	4.9000e-004	0.0128	3.4000e-004	0.0131	3.6900e-003	3.3000e-004	4.0100e-003		52.4388	52.4388	3.4100e-003		52.5240
Worker	0.0347	0.0217	0.2500	8.0000e-004	0.0894	6.4000e-004	0.0901	0.0237	5.9000e-004	0.0243		79.8829	79.8829	2.0100e-003		79.9331
<b>Total</b>	<b>0.0515</b>	<b>0.5800</b>	<b>0.3886</b>	<b>2.4800e-003</b>	<b>0.1302</b>	<b>2.0800e-003</b>	<b>0.1323</b>	<b>0.0351</b>	<b>1.9700e-003</b>	<b>0.0370</b>		<b>261.0359</b>	<b>261.0359</b>	<b>0.0145</b>		<b>261.3974</b>



## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**3.5 Water Well - Equipment Installation - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2984	3.5724	3.2346	6.3300e-003		0.1385	0.1385		0.1274	0.1274		613.1697	613.1697	0.1983		618.1274
<b>Total</b>	<b>0.2984</b>	<b>3.5724</b>	<b>3.2346</b>	<b>6.3300e-003</b>		<b>0.1385</b>	<b>0.1385</b>		<b>0.1274</b>	<b>0.1274</b>		<b>613.1697</b>	<b>613.1697</b>	<b>0.1983</b>		<b>618.1274</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5000e-003	0.1803	0.0479	4.9000e-004	0.0128	3.4000e-004	0.0131	3.6900e-003	3.3000e-004	4.0100e-003		52.4388	52.4388	3.4100e-003		52.5240
Worker	0.0347	0.0217	0.2500	8.0000e-004	0.0894	6.4000e-004	0.0901	0.0237	5.9000e-004	0.0243		79.8829	79.8829	2.0100e-003		79.9331
<b>Total</b>	<b>0.0402</b>	<b>0.2020</b>	<b>0.2979</b>	<b>1.2900e-003</b>	<b>0.1022</b>	<b>9.8000e-004</b>	<b>0.1032</b>	<b>0.0274</b>	<b>9.2000e-004</b>	<b>0.0283</b>		<b>132.3218</b>	<b>132.3218</b>	<b>5.4200e-003</b>		<b>132.4570</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2984	3.5724	3.2346	6.3300e-003		0.1385	0.1385		0.1274	0.1274	0.0000	613.1697	613.1697	0.1983		618.1274
<b>Total</b>	<b>0.2984</b>	<b>3.5724</b>	<b>3.2346</b>	<b>6.3300e-003</b>		<b>0.1385</b>	<b>0.1385</b>		<b>0.1274</b>	<b>0.1274</b>	<b>0.0000</b>	<b>613.1697</b>	<b>613.1697</b>	<b>0.1983</b>		<b>618.1274</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5000e-003	0.1803	0.0479	4.9000e-004	0.0128	3.4000e-004	0.0131	3.6900e-003	3.3000e-004	4.0100e-003		52.4388	52.4388	3.4100e-003		52.5240
Worker	0.0347	0.0217	0.2500	8.0000e-004	0.0894	6.4000e-004	0.0901	0.0237	5.9000e-004	0.0243		79.8829	79.8829	2.0100e-003		79.9331
<b>Total</b>	<b>0.0402</b>	<b>0.2020</b>	<b>0.2979</b>	<b>1.2900e-003</b>	<b>0.1022</b>	<b>9.8000e-004</b>	<b>0.1032</b>	<b>0.0274</b>	<b>9.2000e-004</b>	<b>0.0283</b>		<b>132.3218</b>	<b>132.3218</b>	<b>5.4200e-003</b>		<b>132.4570</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**3.6 Pipeline - Final Paving - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5514	5.5624	7.2902	0.0114		0.2840	0.2840		0.2612	0.2612		1,103.830 2	1,103.830 2	0.3570		1,112.755 2
Paving	1.2052					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.7566</b>	<b>5.5624</b>	<b>7.2902</b>	<b>0.0114</b>		<b>0.2840</b>	<b>0.2840</b>		<b>0.2612</b>	<b>0.2612</b>		<b>1,103.830 2</b>	<b>1,103.830 2</b>	<b>0.3570</b>		<b>1,112.755 2</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0110	0.3607	0.0958	9.8000e-004	0.0256	6.9000e-004	0.0263	7.3700e-003	6.6000e-004	8.0300e-003		104.8777	104.8777	6.8100e-003		105.0480
Worker	0.0260	0.0162	0.1875	6.0000e-004	0.0671	4.8000e-004	0.0676	0.0178	4.4000e-004	0.0182		59.9122	59.9122	1.5000e-003		59.9498
<b>Total</b>	<b>0.0370</b>	<b>0.3769</b>	<b>0.2833</b>	<b>1.5800e-003</b>	<b>0.0927</b>	<b>1.1700e-003</b>	<b>0.0938</b>	<b>0.0252</b>	<b>1.1000e-003</b>	<b>0.0263</b>		<b>164.7899</b>	<b>164.7899</b>	<b>8.3100e-003</b>		<b>164.9978</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5514	5.5624	7.2902	0.0114		0.2840	0.2840		0.2612	0.2612	0.0000	1,103.8302	1,103.8302	0.3570		1,112.7552
Paving	1.2052					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.7566</b>	<b>5.5624</b>	<b>7.2902</b>	<b>0.0114</b>		<b>0.2840</b>	<b>0.2840</b>		<b>0.2612</b>	<b>0.2612</b>	<b>0.0000</b>	<b>1,103.8302</b>	<b>1,103.8302</b>	<b>0.3570</b>		<b>1,112.7552</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0110	0.3607	0.0958	9.8000e-004	0.0256	6.9000e-004	0.0263	7.3700e-003	6.6000e-004	8.0300e-003		104.8777	104.8777	6.8100e-003		105.0480
Worker	0.0260	0.0162	0.1875	6.0000e-004	0.0671	4.8000e-004	0.0676	0.0178	4.4000e-004	0.0182		59.9122	59.9122	1.5000e-003		59.9498
<b>Total</b>	<b>0.0370</b>	<b>0.3769</b>	<b>0.2833</b>	<b>1.5800e-003</b>	<b>0.0927</b>	<b>1.1700e-003</b>	<b>0.0938</b>	<b>0.0252</b>	<b>1.1000e-003</b>	<b>0.0263</b>		<b>164.7899</b>	<b>164.7899</b>	<b>8.3100e-003</b>		<b>164.9978</b>

**3.7 WTP - Demolition - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.1181	0.0000	0.1181	0.0179	0.0000	0.0179			0.0000			0.0000
Off-Road	0.5224	4.4768	5.9026	9.3700e-003		0.2403	0.2403		0.2331	0.2331		893.9036	893.9036	0.1298		897.1475
<b>Total</b>	<b>0.5224</b>	<b>4.4768</b>	<b>5.9026</b>	<b>9.3700e-003</b>	<b>0.1181</b>	<b>0.2403</b>	<b>0.3584</b>	<b>0.0179</b>	<b>0.2331</b>	<b>0.2510</b>		<b>893.9036</b>	<b>893.9036</b>	<b>0.1298</b>		<b>897.1475</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0174	0.0108	0.1250	4.0000e-004	0.0447	3.2000e-004	0.0450	0.0119	2.9000e-004	0.0122		39.9415	39.9415	1.0000e-003		39.9665
<b>Total</b>	<b>0.0174</b>	<b>0.0108</b>	<b>0.1250</b>	<b>4.0000e-004</b>	<b>0.0447</b>	<b>3.2000e-004</b>	<b>0.0450</b>	<b>0.0119</b>	<b>2.9000e-004</b>	<b>0.0122</b>		<b>39.9415</b>	<b>39.9415</b>	<b>1.0000e-003</b>		<b>39.9665</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0461	0.0000	0.0461	6.9800e-003	0.0000	6.9800e-003			0.0000			0.0000
Off-Road	0.5224	4.4768	5.9026	9.3700e-003		0.2403	0.2403		0.2331	0.2331	0.0000	893.9036	893.9036	0.1298		897.1475
<b>Total</b>	<b>0.5224</b>	<b>4.4768</b>	<b>5.9026</b>	<b>9.3700e-003</b>	<b>0.0461</b>	<b>0.2403</b>	<b>0.2864</b>	<b>6.9800e-003</b>	<b>0.2331</b>	<b>0.2401</b>	<b>0.0000</b>	<b>893.9036</b>	<b>893.9036</b>	<b>0.1298</b>		<b>897.1475</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0174	0.0108	0.1250	4.0000e-004	0.0447	3.2000e-004	0.0450	0.0119	2.9000e-004	0.0122		39.9415	39.9415	1.0000e-003		39.9665
<b>Total</b>	<b>0.0174</b>	<b>0.0108</b>	<b>0.1250</b>	<b>4.0000e-004</b>	<b>0.0447</b>	<b>3.2000e-004</b>	<b>0.0450</b>	<b>0.0119</b>	<b>2.9000e-004</b>	<b>0.0122</b>		<b>39.9415</b>	<b>39.9415</b>	<b>1.0000e-003</b>		<b>39.9665</b>

**3.8 WTP - Site Preparation and Grading - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					6.5523	0.0000	6.5523	3.3675	0.0000	3.3675			0.0000			0.0000
Off-Road	1.5815	17.4025	9.7796	0.0214		0.7648	0.7648		0.7036	0.7036		2,070.792 2	2,070.792 2	0.6697		2,087.535 6
<b>Total</b>	<b>1.5815</b>	<b>17.4025</b>	<b>9.7796</b>	<b>0.0214</b>	<b>6.5523</b>	<b>0.7648</b>	<b>7.3172</b>	<b>3.3675</b>	<b>0.7036</b>	<b>4.0711</b>		<b>2,070.792 2</b>	<b>2,070.792 2</b>	<b>0.6697</b>		<b>2,087.535 6</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0521	0.0325	0.3750	1.2000e-003	0.1341	9.6000e-004	0.1351	0.0356	8.8000e-004	0.0365		119.8244	119.8244	3.0100e-003		119.8996
<b>Total</b>	<b>0.0521</b>	<b>0.0325</b>	<b>0.3750</b>	<b>1.2000e-003</b>	<b>0.1341</b>	<b>9.6000e-004</b>	<b>0.1351</b>	<b>0.0356</b>	<b>8.8000e-004</b>	<b>0.0365</b>		<b>119.8244</b>	<b>119.8244</b>	<b>3.0100e-003</b>		<b>119.8996</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5554	0.0000	2.5554	1.3133	0.0000	1.3133			0.0000			0.0000
Off-Road	1.5815	17.4025	9.7796	0.0214		0.7648	0.7648		0.7036	0.7036	0.0000	2,070.792 2	2,070.792 2	0.6697		2,087.535 6
<b>Total</b>	<b>1.5815</b>	<b>17.4025</b>	<b>9.7796</b>	<b>0.0214</b>	<b>2.5554</b>	<b>0.7648</b>	<b>3.3202</b>	<b>1.3133</b>	<b>0.7036</b>	<b>2.0170</b>	<b>0.0000</b>	<b>2,070.792 2</b>	<b>2,070.792 2</b>	<b>0.6697</b>		<b>2,087.535 6</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0521	0.0325	0.3750	1.2000e-003	0.1341	9.6000e-004	0.1351	0.0356	8.8000e-004	0.0365		119.8244	119.8244	3.0100e-003		119.8996
<b>Total</b>	<b>0.0521</b>	<b>0.0325</b>	<b>0.3750</b>	<b>1.2000e-003</b>	<b>0.1341</b>	<b>9.6000e-004</b>	<b>0.1351</b>	<b>0.0356</b>	<b>8.8000e-004</b>	<b>0.0365</b>		<b>119.8244</b>	<b>119.8244</b>	<b>3.0100e-003</b>		<b>119.8996</b>



**3.9 WTP - Equipment Installation - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4071	4.5079	4.3283	7.7200e-003		0.2028	0.2028		0.1866	0.1866		747.5314	747.5314	0.2418		753.5755
<b>Total</b>	<b>0.4071</b>	<b>4.5079</b>	<b>4.3283</b>	<b>7.7200e-003</b>		<b>0.2028</b>	<b>0.2028</b>		<b>0.1866</b>	<b>0.1866</b>		<b>747.5314</b>	<b>747.5314</b>	<b>0.2418</b>		<b>753.5755</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5000e-003	0.1803	0.0479	4.9000e-004	0.0128	3.4000e-004	0.0131	3.6900e-003	3.3000e-004	4.0100e-003		52.4388	52.4388	3.4100e-003		52.5240
Worker	0.0434	0.0271	0.3125	1.0000e-003	0.1118	8.0000e-004	0.1126	0.0296	7.4000e-004	0.0304		99.8537	99.8537	2.5100e-003		99.9163
<b>Total</b>	<b>0.0489</b>	<b>0.2074</b>	<b>0.3604</b>	<b>1.4900e-003</b>	<b>0.1246</b>	<b>1.1400e-003</b>	<b>0.1257</b>	<b>0.0333</b>	<b>1.0700e-003</b>	<b>0.0344</b>		<b>152.2925</b>	<b>152.2925</b>	<b>5.9200e-003</b>		<b>152.4403</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4071	4.5079	4.3283	7.7200e-003		0.2028	0.2028		0.1866	0.1866	0.0000	747.5314	747.5314	0.2418		753.5755
<b>Total</b>	<b>0.4071</b>	<b>4.5079</b>	<b>4.3283</b>	<b>7.7200e-003</b>		<b>0.2028</b>	<b>0.2028</b>		<b>0.1866</b>	<b>0.1866</b>	<b>0.0000</b>	<b>747.5314</b>	<b>747.5314</b>	<b>0.2418</b>		<b>753.5755</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5000e-003	0.1803	0.0479	4.9000e-004	0.0128	3.4000e-004	0.0131	3.6900e-003	3.3000e-004	4.0100e-003		52.4388	52.4388	3.4100e-003		52.5240
Worker	0.0434	0.0271	0.3125	1.0000e-003	0.1118	8.0000e-004	0.1126	0.0296	7.4000e-004	0.0304		99.8537	99.8537	2.5100e-003		99.9163
<b>Total</b>	<b>0.0489</b>	<b>0.2074</b>	<b>0.3604</b>	<b>1.4900e-003</b>	<b>0.1246</b>	<b>1.1400e-003</b>	<b>0.1257</b>	<b>0.0333</b>	<b>1.0700e-003</b>	<b>0.0344</b>		<b>152.2925</b>	<b>152.2925</b>	<b>5.9200e-003</b>		<b>152.4403</b>

**3.10 WTP - Security, Entrance, and Landscaping - 2022****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0936	0.8325	1.0021	1.7500e-003		0.0316	0.0316		0.0302	0.0302		150.7119	150.7119	0.0377		151.6532
<b>Total</b>	<b>0.0936</b>	<b>0.8325</b>	<b>1.0021</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0316</b>	<b>0.0316</b>	<b>0.0000</b>	<b>0.0302</b>	<b>0.0302</b>		<b>150.7119</b>	<b>150.7119</b>	<b>0.0377</b>		<b>151.6532</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5000e-003	0.1803	0.0479	4.9000e-004	0.0128	3.4000e-004	0.0131	3.6900e-003	3.3000e-004	4.0100e-003		52.4388	52.4388	3.4100e-003		52.5240
Worker	0.0347	0.0217	0.2500	8.0000e-004	0.0894	6.4000e-004	0.0901	0.0237	5.9000e-004	0.0243		79.8829	79.8829	2.0100e-003		79.9331
<b>Total</b>	<b>0.0402</b>	<b>0.2020</b>	<b>0.2979</b>	<b>1.2900e-003</b>	<b>0.1022</b>	<b>9.8000e-004</b>	<b>0.1032</b>	<b>0.0274</b>	<b>9.2000e-004</b>	<b>0.0283</b>		<b>132.3218</b>	<b>132.3218</b>	<b>5.4200e-003</b>		<b>132.4570</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0936	0.8325	1.0021	1.7500e-003		0.0316	0.0316		0.0302	0.0302	0.0000	150.7119	150.7119	0.0377		151.6532
<b>Total</b>	<b>0.0936</b>	<b>0.8325</b>	<b>1.0021</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0316</b>	<b>0.0316</b>	<b>0.0000</b>	<b>0.0302</b>	<b>0.0302</b>	<b>0.0000</b>	<b>150.7119</b>	<b>150.7119</b>	<b>0.0377</b>		<b>151.6532</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	5.5000e-003	0.1803	0.0479	4.9000e-004	0.0128	3.4000e-004	0.0131	3.6900e-003	3.3000e-004	4.0100e-003		52.4388	52.4388	3.4100e-003		52.5240
Worker	0.0347	0.0217	0.2500	8.0000e-004	0.0894	6.4000e-004	0.0901	0.0237	5.9000e-004	0.0243		79.8829	79.8829	2.0100e-003		79.9331
<b>Total</b>	<b>0.0402</b>	<b>0.2020</b>	<b>0.2979</b>	<b>1.2900e-003</b>	<b>0.1022</b>	<b>9.8000e-004</b>	<b>0.1032</b>	<b>0.0274</b>	<b>9.2000e-004</b>	<b>0.0283</b>		<b>132.3218</b>	<b>132.3218</b>	<b>5.4200e-003</b>		<b>132.4570</b>

**3.10 WTP - Security, Entrance, and Landscaping - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0913	0.8005	1.0011	1.7500e-003		0.0289	0.0289		0.0278	0.0278		150.7594	150.7594	0.0377		151.7011
<b>Total</b>	<b>0.0913</b>	<b>0.8005</b>	<b>1.0011</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0289</b>	<b>0.0289</b>	<b>0.0000</b>	<b>0.0278</b>	<b>0.0278</b>		<b>150.7594</b>	<b>150.7594</b>	<b>0.0377</b>		<b>151.7011</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0327	0.0196	0.2304	7.7000e-004	0.0894	6.2000e-004	0.0900	0.0237	5.7000e-004	0.0243		76.9037	76.9037	1.8100e-003		76.9489
<b>Total</b>	<b>0.0368</b>	<b>0.1556</b>	<b>0.2728</b>	<b>1.2500e-003</b>	<b>0.1022</b>	<b>7.8000e-004</b>	<b>0.1030</b>	<b>0.0274</b>	<b>7.2000e-004</b>	<b>0.0281</b>		<b>127.7760</b>	<b>127.7760</b>	<b>4.7600e-003</b>		<b>127.8949</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0913	0.8005	1.0011	1.7500e-003		0.0289	0.0289		0.0278	0.0278	0.0000	150.7594	150.7594	0.0377		151.7011
<b>Total</b>	<b>0.0913</b>	<b>0.8005</b>	<b>1.0011</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0289</b>	<b>0.0289</b>	<b>0.0000</b>	<b>0.0278</b>	<b>0.0278</b>	<b>0.0000</b>	<b>150.7594</b>	<b>150.7594</b>	<b>0.0377</b>		<b>151.7011</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0327	0.0196	0.2304	7.7000e-004	0.0894	6.2000e-004	0.0900	0.0237	5.7000e-004	0.0243		76.9037	76.9037	1.8100e-003		76.9489
<b>Total</b>	<b>0.0368</b>	<b>0.1556</b>	<b>0.2728</b>	<b>1.2500e-003</b>	<b>0.1022</b>	<b>7.8000e-004</b>	<b>0.1030</b>	<b>0.0274</b>	<b>7.2000e-004</b>	<b>0.0281</b>		<b>127.7760</b>	<b>127.7760</b>	<b>4.7600e-003</b>		<b>127.8949</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**3.11 WTP - Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3457	3.4929	4.7354	7.3300e-003		0.1772	0.1772		0.1630	0.1630		709.3250	709.3250	0.2294		715.0603
Paving	0.6026					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.9483</b>	<b>3.4929</b>	<b>4.7354</b>	<b>7.3300e-003</b>		<b>0.1772</b>	<b>0.1772</b>		<b>0.1630</b>	<b>0.1630</b>		<b>709.3250</b>	<b>709.3250</b>	<b>0.2294</b>		<b>715.0603</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0245	0.0147	0.1728	5.8000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		57.6778	57.6778	1.3500e-003		57.7117
<b>Total</b>	<b>0.0286</b>	<b>0.1507</b>	<b>0.2152</b>	<b>1.0600e-003</b>	<b>0.0799</b>	<b>6.3000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>108.5501</b>	<b>108.5501</b>	<b>4.3000e-003</b>		<b>108.6577</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3457	3.4929	4.7354	7.3300e-003		0.1772	0.1772		0.1630	0.1630	0.0000	709.3250	709.3250	0.2294		715.0603
Paving	0.6026					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.9483</b>	<b>3.4929</b>	<b>4.7354</b>	<b>7.3300e-003</b>		<b>0.1772</b>	<b>0.1772</b>		<b>0.1630</b>	<b>0.1630</b>	<b>0.0000</b>	<b>709.3250</b>	<b>709.3250</b>	<b>0.2294</b>		<b>715.0603</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0245	0.0147	0.1728	5.8000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		57.6778	57.6778	1.3500e-003		57.7117
<b>Total</b>	<b>0.0286</b>	<b>0.1507</b>	<b>0.2152</b>	<b>1.0600e-003</b>	<b>0.0799</b>	<b>6.3000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>108.5501</b>	<b>108.5501</b>	<b>4.3000e-003</b>		<b>108.6577</b>



**3.12 WTP - Architectural Coating - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.7861					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944		375.2641	375.2641	0.0225		375.8253
<b>Total</b>	<b>3.0417</b>	<b>1.7373</b>	<b>2.4148</b>	<b>3.9600e-003</b>		<b>0.0944</b>	<b>0.0944</b>		<b>0.0944</b>	<b>0.0944</b>		<b>375.2641</b>	<b>375.2641</b>	<b>0.0225</b>		<b>375.8253</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0245	0.0147	0.1728	5.8000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		57.6778	57.6778	1.3500e-003		57.7117
<b>Total</b>	<b>0.0286</b>	<b>0.1507</b>	<b>0.2152</b>	<b>1.0600e-003</b>	<b>0.0799</b>	<b>6.3000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>108.5501</b>	<b>108.5501</b>	<b>4.3000e-003</b>		<b>108.6577</b>

## APU Well and Water Treatment Facilities Project (Linda Vista Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	2.7861					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944	0.0000	375.2641	375.2641	0.0225		375.8253
<b>Total</b>	<b>3.0417</b>	<b>1.7373</b>	<b>2.4148</b>	<b>3.9600e-003</b>		<b>0.0944</b>	<b>0.0944</b>		<b>0.0944</b>	<b>0.0944</b>	<b>0.0000</b>	<b>375.2641</b>	<b>375.2641</b>	<b>0.0225</b>		<b>375.8253</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0245	0.0147	0.1728	5.8000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		57.6778	57.6778	1.3500e-003		57.7117
<b>Total</b>	<b>0.0286</b>	<b>0.1507</b>	<b>0.2152</b>	<b>1.0600e-003</b>	<b>0.0799</b>	<b>6.3000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>108.5501</b>	<b>108.5501</b>	<b>4.3000e-003</b>		<b>108.6577</b>

CalEEMod Version: CalEEMod.2016.3.2

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**APU Well and Water Treatment Facilities Project (Boysen Site)**  
**South Coast AQMD Air District, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.00	0.00	0
Other Asphalt Surfaces	0.30	Acre	0.30	13,068.00	0

### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2024
Utility Company	Anaheim Public Utilities				
CO2 Intensity (lb/MW hr)	1543.28	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - APU Well and Water Treatment Facilities Project - Boysen Site. SCAQMD.

Land Use - Surrogate land uses for pipeline and pavement for water treatment facility location.

Construction Phase - Construction schedule based on estimated duration of activities, September 2021 through 2023.

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Annual

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Trips and VMT - Based on default assumptions

Architectural Coating - Default coating EF

Construction Off-road Equipment Mitigation - Water exposed area 3x per day to represent fugitive dust construction practices

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	NumDays	100.00	30.00
tblConstructionPhase	NumDays	1.00	15.00
tblConstructionPhase	NumDays	5.00	1.00
tblConstructionPhase	NumDays	5.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		WTP - Security, Entrance, and Landscaping
tblOffRoadEquipment	PhaseName		Pipeline - Installation
tblOffRoadEquipment	PhaseName		Pipeline - Final Paving
tblOffRoadEquipment	PhaseName		WTP - Equipment Installation

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Annual

tblOffRoadEquipment	PhaseName		WTP - Security, Entrance, and Landscaping
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	3.00	4.00
tblTripsAndVMT	WorkerTripNumber	10.00	12.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	3.00	4.00
tblTripsAndVMT	WorkerTripNumber	1.00	4.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	1.00	6.00

## 2.1 Overall Construction

### Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0139	0.0873	0.1302	2.3000e-004	3.8600e-003	3.7600e-003	7.6200e-003	1.0400e-003	3.5000e-003	4.5400e-003	0.0000	20.3709	20.3709	4.7400e-003	0.0000	20.4894
Maximum	0.0139	0.0873	0.1302	2.3000e-004	3.8600e-003	3.7600e-003	7.6200e-003	1.0400e-003	3.5000e-003	4.5400e-003	0.0000	20.3709	20.3709	4.7400e-003	0.0000	20.4894

### **Mitigated Construction**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0139	0.0873	0.1302	2.3000e-004	3.8600e-003	3.7600e-003	7.6200e-003	1.0400e-003	3.5000e-003	4.5400e-003	0.0000	20.3708	20.3708	4.7400e-003	0.0000	20.4894
Maximum	0.0139	0.0873	0.1302	2.3000e-004	3.8600e-003	3.7600e-003	7.6200e-003	1.0400e-003	3.5000e-003	4.5400e-003	0.0000	20.3708	20.3708	4.7400e-003	0.0000	20.4894

[illegible]

### 3.0 Construction Detail

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#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	WTP - Demolition	Demolition	1/21/2023	1/27/2023	5	5	
2	Pipeline - Installation	Grading	1/21/2023	1/27/2023	5	5	
3	Pipeline - Final Paving	Paving	1/28/2023	2/3/2023	5	5	
4	WTP - Site Preparation and Grading	Grading	1/29/2023	2/10/2023	5	10	
5	Pipeline - Pavement Striping	Architectural Coating	2/4/2023	2/10/2023	5	5	
6	WTP - Equipment Installation	Building Construction	2/11/2023	3/24/2023	5	30	
7	WTP - Security, Entrance, and Landscaping	Site Preparation	3/25/2023	4/14/2023	5	15	
8	WTP - Paving	Paving	4/15/2023	4/17/2023	5	1	
9	WTP - Architectural Coating	Architectural Coating	4/15/2023	4/17/2023	5	1	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0.3**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 784**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
WTP - Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline - Installation	Concrete/Industrial Saws	1	8.00	81	0.73
Pipeline - Installation	Excavators	1	8.00	158	0.38
Pipeline - Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline - Final Paving	Pavers	1	8.00	130	0.42
Pipeline - Final Paving	Paving Equipment	1	8.00	132	0.36
Pipeline - Final Paving	Rollers	1	8.00	80	0.38
WTP - Site Preparation and Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline - Pavement Striping	Air Compressors	0	0.00	78	0.48
WTP - Equipment Installation	Rough Terrain Forklifts	1	4.00	100	0.40
WTP - Equipment Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
WTP - Security, Entrance, and Landscaping	Cement and Mortar Mixers	1	8.00	9	0.56
WTP - Security, Entrance, and Landscaping	Skid Steer Loaders	1	4.00	65	0.37
WTP - Paving	Pavers	1	8.00	130	0.42
WTP - Paving	Rollers	1	8.00	80	0.38
WTP - Architectural Coating	Air Compressors	1	8.00	78	0.48



## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Annual

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
WTP - Demolition	1	4.00	0.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Installation	4	12.00	4.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Final Paving	3	6.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Site Preparation and	1	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Pavement Stripping	0	4.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Equipment Installation	2	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Security, Entrance and	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Paving	2	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Architectural Coating	1	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area

**3.2 WTP - Demolition - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8000e-004	3.8400e-003	5.5800e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.7000e-004	1.7000e-004	0.0000	0.6840	0.6840	2.2000e-004	0.0000	0.6895
<b>Total</b>	<b>3.8000e-004</b>	<b>3.8400e-003</b>	<b>5.5800e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.9000e-004</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>0.6840</b>	<b>0.6840</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>0.6895</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.1000e-004	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1417	0.1417	1.0000e-005	0.0000	0.1420
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0887	0.0887	0.0000	0.0000	0.0888
<b>Total</b>	<b>5.0000e-005</b>	<b>3.4000e-004</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.2304</b>	<b>0.2304</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2307</b>

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Annual

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.8000e-004	3.8400e-003	5.5800e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.7000e-004	1.7000e-004	0.0000	0.6840	0.6840	2.2000e-004	0.0000	0.6895
<b>Total</b>	<b>3.8000e-004</b>	<b>3.8400e-003</b>	<b>5.5800e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.9000e-004</b>	<b>1.9000e-004</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>0.6840</b>	<b>0.6840</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>0.6895</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.1000e-004	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1417	0.1417	1.0000e-005	0.0000	0.1420
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0887	0.0887	0.0000	0.0000	0.0888
<b>Total</b>	<b>5.0000e-005</b>	<b>3.4000e-004</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.2304</b>	<b>0.2304</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2307</b>

**3.3 Pipeline - Installation - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6800e-003	0.0142	0.0229	4.0000e-005		7.0000e-004	7.0000e-004		6.7000e-004	6.7000e-004	0.0000	3.1623	3.1623	6.5000e-004	0.0000	3.1787
<b>Total</b>	<b>1.6800e-003</b>	<b>0.0142</b>	<b>0.0229</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-004</b>	<b>7.0000e-004</b>	<b>0.0000</b>	<b>6.7000e-004</b>	<b>6.7000e-004</b>	<b>0.0000</b>	<b>3.1623</b>	<b>3.1623</b>	<b>6.5000e-004</b>	<b>0.0000</b>	<b>3.1787</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.1000e-004	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1417	0.1417	1.0000e-005	0.0000	0.1420
Vendor	2.0000e-005	6.9000e-004	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2347	0.2347	1.0000e-005	0.0000	0.2350
Worker	1.1000e-004	8.0000e-005	8.9000e-004	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2661	0.2661	1.0000e-005	0.0000	0.2663
<b>Total</b>	<b>1.4000e-004</b>	<b>1.0800e-003</b>	<b>1.1900e-003</b>	<b>0.0000</b>	<b>4.2000e-004</b>	<b>0.0000</b>	<b>4.2000e-004</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>0.6425</b>	<b>0.6425</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.6433</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6800e-003	0.0142	0.0229	4.0000e-005		7.0000e-004	7.0000e-004		6.7000e-004	6.7000e-004	0.0000	3.1623	3.1623	6.5000e-004	0.0000	3.1787
<b>Total</b>	<b>1.6800e-003</b>	<b>0.0142</b>	<b>0.0229</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-004</b>	<b>7.0000e-004</b>	<b>0.0000</b>	<b>6.7000e-004</b>	<b>6.7000e-004</b>	<b>0.0000</b>	<b>3.1623</b>	<b>3.1623</b>	<b>6.5000e-004</b>	<b>0.0000</b>	<b>3.1787</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.1000e-004	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1417	0.1417	1.0000e-005	0.0000	0.1420
Vendor	2.0000e-005	6.9000e-004	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2347	0.2347	1.0000e-005	0.0000	0.2350
Worker	1.1000e-004	8.0000e-005	8.9000e-004	0.0000	3.3000e-004	0.0000	3.3000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2661	0.2661	1.0000e-005	0.0000	0.2663
<b>Total</b>	<b>1.4000e-004</b>	<b>1.0800e-003</b>	<b>1.1900e-003</b>	<b>0.0000</b>	<b>4.2000e-004</b>	<b>0.0000</b>	<b>4.2000e-004</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>1.2000e-004</b>	<b>0.0000</b>	<b>0.6425</b>	<b>0.6425</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.6433</b>

**3.4 Pipeline - Final Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2900e-003	0.0127	0.0182	3.0000e-005		6.4000e-004	6.4000e-004		5.9000e-004	5.9000e-004	0.0000	2.5034	2.5034	8.1000e-004	0.0000	2.5236
Paving	3.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>1.6800e-003</b>	<b>0.0127</b>	<b>0.0182</b>	<b>3.0000e-005</b>		<b>6.4000e-004</b>	<b>6.4000e-004</b>		<b>5.9000e-004</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>2.5034</b>	<b>2.5034</b>	<b>8.1000e-004</b>	<b>0.0000</b>	<b>2.5236</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	6.9000e-004	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2347	0.2347	1.0000e-005	0.0000	0.2350
Worker	6.0000e-005	4.0000e-005	4.5000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1331	0.1331	0.0000	0.0000	0.1331
<b>Total</b>	<b>8.0000e-005</b>	<b>7.3000e-004</b>	<b>6.5000e-004</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>2.3000e-004</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.3678</b>	<b>0.3678</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.3682</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.2900e-003	0.0127	0.0182	3.0000e-005		6.4000e-004	6.4000e-004		5.9000e-004	5.9000e-004	0.0000	2.5034	2.5034	8.1000e-004	0.0000	2.5236
Paving	3.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>1.6800e-003</b>	<b>0.0127</b>	<b>0.0182</b>	<b>3.0000e-005</b>		<b>6.4000e-004</b>	<b>6.4000e-004</b>		<b>5.9000e-004</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>2.5034</b>	<b>2.5034</b>	<b>8.1000e-004</b>	<b>0.0000</b>	<b>2.5236</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	6.9000e-004	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2347	0.2347	1.0000e-005	0.0000	0.2350
Worker	6.0000e-005	4.0000e-005	4.5000e-004	0.0000	1.6000e-004	0.0000	1.7000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1331	0.1331	0.0000	0.0000	0.1331
<b>Total</b>	<b>8.0000e-005</b>	<b>7.3000e-004</b>	<b>6.5000e-004</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>2.3000e-004</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.3678</b>	<b>0.3678</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.3682</b>

**3.5 WTP - Site Preparation and Grading - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.6000e-004	7.6800e-003	0.0112	2.0000e-005		3.8000e-004	3.8000e-004		3.5000e-004	3.5000e-004	0.0000	1.3679	1.3679	4.4000e-004	0.0000	1.3790
<b>Total</b>	<b>7.6000e-004</b>	<b>7.6800e-003</b>	<b>0.0112</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>3.8000e-004</b>	<b>3.8000e-004</b>	<b>0.0000</b>	<b>3.5000e-004</b>	<b>3.5000e-004</b>	<b>0.0000</b>	<b>1.3679</b>	<b>1.3679</b>	<b>4.4000e-004</b>	<b>0.0000</b>	<b>1.3790</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.9000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1774	0.1774	0.0000	0.0000	0.1775
<b>Total</b>	<b>7.0000e-005</b>	<b>5.0000e-005</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.1774</b>	<b>0.1774</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.1775</b>



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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.6000e-004	7.6800e-003	0.0112	2.0000e-005		3.8000e-004	3.8000e-004		3.5000e-004	3.5000e-004	0.0000	1.3679	1.3679	4.4000e-004	0.0000	1.3790
<b>Total</b>	<b>7.6000e-004</b>	<b>7.6800e-003</b>	<b>0.0112</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>3.8000e-004</b>	<b>3.8000e-004</b>	<b>0.0000</b>	<b>3.5000e-004</b>	<b>3.5000e-004</b>	<b>0.0000</b>	<b>1.3679</b>	<b>1.3679</b>	<b>4.4000e-004</b>	<b>0.0000</b>	<b>1.3790</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.0000e-005	5.0000e-005	5.9000e-004	0.0000	2.2000e-004	0.0000	2.2000e-004	6.0000e-005	0.0000	6.0000e-005	0.0000	0.1774	0.1774	0.0000	0.0000	0.1775
<b>Total</b>	<b>7.0000e-005</b>	<b>5.0000e-005</b>	<b>5.9000e-004</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>0.1774</b>	<b>0.1774</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.1775</b>

**3.6 Pipeline - Pavement Striping - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>1.8200e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	6.9000e-004	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2347	0.2347	1.0000e-005	0.0000	0.2350
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0887	0.0887	0.0000	0.0000	0.0888
<b>Total</b>	<b>6.0000e-005</b>	<b>7.2000e-004</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.3234</b>	<b>0.3234</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.3238</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>1.8200e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0000e-005	6.9000e-004	2.0000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.2347	0.2347	1.0000e-005	0.0000	0.2350
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0887	0.0887	0.0000	0.0000	0.0888
<b>Total</b>	<b>6.0000e-005</b>	<b>7.2000e-004</b>	<b>5.0000e-004</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>0.0000</b>	<b>1.7000e-004</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.3234</b>	<b>0.3234</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.3238</b>

**3.7 WTP - Equipment Installation - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.0600e-003	0.0335	0.0506	7.0000e-005		1.4700e-003	1.4700e-003		1.3600e-003	1.3600e-003	0.0000	6.3749	6.3749	2.0600e-003	0.0000	6.4265
<b>Total</b>	<b>3.0600e-003</b>	<b>0.0335</b>	<b>0.0506</b>	<b>7.0000e-005</b>		<b>1.4700e-003</b>	<b>1.4700e-003</b>		<b>1.3600e-003</b>	<b>1.3600e-003</b>	<b>0.0000</b>	<b>6.3749</b>	<b>6.3749</b>	<b>2.0600e-003</b>	<b>0.0000</b>	<b>6.4265</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0000e-005	2.0700e-003	6.1000e-004	1.0000e-005	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	6.0000e-005	0.0000	0.7041	0.7041	4.0000e-005	0.0000	0.7051
Worker	5.5000e-004	3.8000e-004	4.4500e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3306	1.3306	3.0000e-005	0.0000	1.3313
<b>Total</b>	<b>6.1000e-004</b>	<b>2.4500e-003</b>	<b>5.0600e-003</b>	<b>2.0000e-005</b>	<b>1.8400e-003</b>	<b>1.0000e-005</b>	<b>1.8500e-003</b>	<b>4.9000e-004</b>	<b>1.0000e-005</b>	<b>5.1000e-004</b>	<b>0.0000</b>	<b>2.0347</b>	<b>2.0347</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>2.0364</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.0600e-003	0.0335	0.0506	7.0000e-005		1.4700e-003	1.4700e-003		1.3600e-003	1.3600e-003	0.0000	6.3749	6.3749	2.0600e-003	0.0000	6.4265
<b>Total</b>	<b>3.0600e-003</b>	<b>0.0335</b>	<b>0.0506</b>	<b>7.0000e-005</b>		<b>1.4700e-003</b>	<b>1.4700e-003</b>		<b>1.3600e-003</b>	<b>1.3600e-003</b>	<b>0.0000</b>	<b>6.3749</b>	<b>6.3749</b>	<b>2.0600e-003</b>	<b>0.0000</b>	<b>6.4265</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.0000e-005	2.0700e-003	6.1000e-004	1.0000e-005	1.9000e-004	0.0000	1.9000e-004	5.0000e-005	0.0000	6.0000e-005	0.0000	0.7041	0.7041	4.0000e-005	0.0000	0.7051
Worker	5.5000e-004	3.8000e-004	4.4500e-003	1.0000e-005	1.6500e-003	1.0000e-005	1.6600e-003	4.4000e-004	1.0000e-005	4.5000e-004	0.0000	1.3306	1.3306	3.0000e-005	0.0000	1.3313
<b>Total</b>	<b>6.1000e-004</b>	<b>2.4500e-003</b>	<b>5.0600e-003</b>	<b>2.0000e-005</b>	<b>1.8400e-003</b>	<b>1.0000e-005</b>	<b>1.8500e-003</b>	<b>4.9000e-004</b>	<b>1.0000e-005</b>	<b>5.1000e-004</b>	<b>0.0000</b>	<b>2.0347</b>	<b>2.0347</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>2.0364</b>

**3.8 WTP - Security, Entrance, and Landscaping - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.8000e-004	6.0000e-003	7.5100e-003	1.0000e-005		2.2000e-004	2.2000e-004		2.1000e-004	2.1000e-004	0.0000	1.0258	1.0258	2.6000e-004	0.0000	1.0322
<b>Total</b>	<b>6.8000e-004</b>	<b>6.0000e-003</b>	<b>7.5100e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>2.1000e-004</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>1.0258</b>	<b>1.0258</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>1.0322</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	1.0400e-003	3.0000e-004	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3521	0.3521	2.0000e-005	0.0000	0.3525
Worker	2.2000e-004	1.5000e-004	1.7800e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5322	0.5322	1.0000e-005	0.0000	0.5325
<b>Total</b>	<b>2.5000e-004</b>	<b>1.1900e-003</b>	<b>2.0800e-003</b>	<b>1.0000e-005</b>	<b>7.5000e-004</b>	<b>0.0000</b>	<b>7.6000e-004</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>0.8843</b>	<b>0.8843</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.8851</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	6.8000e-004	6.0000e-003	7.5100e-003	1.0000e-005		2.2000e-004	2.2000e-004		2.1000e-004	2.1000e-004	0.0000	1.0258	1.0258	2.6000e-004	0.0000	1.0322
<b>Total</b>	<b>6.8000e-004</b>	<b>6.0000e-003</b>	<b>7.5100e-003</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>2.1000e-004</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>1.0258</b>	<b>1.0258</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>1.0322</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	3.0000e-005	1.0400e-003	3.0000e-004	0.0000	9.0000e-005	0.0000	1.0000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.3521	0.3521	2.0000e-005	0.0000	0.3525
Worker	2.2000e-004	1.5000e-004	1.7800e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5322	0.5322	1.0000e-005	0.0000	0.5325
<b>Total</b>	<b>2.5000e-004</b>	<b>1.1900e-003</b>	<b>2.0800e-003</b>	<b>1.0000e-005</b>	<b>7.5000e-004</b>	<b>0.0000</b>	<b>7.6000e-004</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>0.8843</b>	<b>0.8843</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.8851</b>

**3.9 WTP - Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7000e-004	1.7500e-003	2.3700e-003	0.0000		9.0000e-005	9.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.3217	0.3217	1.0000e-004	0.0000	0.3244
Paving	3.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>5.6000e-004</b>	<b>1.7500e-003</b>	<b>2.3700e-003</b>	<b>0.0000</b>		<b>9.0000e-005</b>	<b>9.0000e-005</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.3217</b>	<b>0.3217</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.3244</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	7.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0235	0.0235	0.0000	0.0000	0.0235
Worker	1.0000e-005	1.0000e-005	9.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0266	0.0266	0.0000	0.0000	0.0266
<b>Total</b>	<b>1.0000e-005</b>	<b>8.0000e-005</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0501</b>	<b>0.0501</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0501</b>



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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.7000e-004	1.7500e-003	2.3700e-003	0.0000		9.0000e-005	9.0000e-005		8.0000e-005	8.0000e-005	0.0000	0.3217	0.3217	1.0000e-004	0.0000	0.3244
Paving	3.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>5.6000e-004</b>	<b>1.7500e-003</b>	<b>2.3700e-003</b>	<b>0.0000</b>		<b>9.0000e-005</b>	<b>9.0000e-005</b>		<b>8.0000e-005</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>0.3217</b>	<b>0.3217</b>	<b>1.0000e-004</b>	<b>0.0000</b>	<b>0.3244</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	7.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0235	0.0235	0.0000	0.0000	0.0235
Worker	1.0000e-005	1.0000e-005	9.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0266	0.0266	0.0000	0.0000	0.0266
<b>Total</b>	<b>1.0000e-005</b>	<b>8.0000e-005</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0501</b>	<b>0.0501</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0501</b>

**3.10 WTP - Architectural Coating - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3000e-004	8.7000e-004	1.2100e-003	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.1702	0.1702	1.0000e-005	0.0000	0.1705
<b>Total</b>	<b>1.9500e-003</b>	<b>8.7000e-004</b>	<b>1.2100e-003</b>	<b>0.0000</b>		<b>5.0000e-005</b>	<b>5.0000e-005</b>		<b>5.0000e-005</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.1702</b>	<b>0.1702</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1705</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	7.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0235	0.0235	0.0000	0.0000	0.0235
Worker	1.0000e-005	1.0000e-005	9.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0266	0.0266	0.0000	0.0000	0.0266
<b>Total</b>	<b>1.0000e-005</b>	<b>8.0000e-005</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0501</b>	<b>0.0501</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0501</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.3000e-004	8.7000e-004	1.2100e-003	0.0000		5.0000e-005	5.0000e-005		5.0000e-005	5.0000e-005	0.0000	0.1702	0.1702	1.0000e-005	0.0000	0.1705
<b>Total</b>	<b>1.9500e-003</b>	<b>8.7000e-004</b>	<b>1.2100e-003</b>	<b>0.0000</b>		<b>5.0000e-005</b>	<b>5.0000e-005</b>		<b>5.0000e-005</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>0.1702</b>	<b>0.1702</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1705</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	7.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0235	0.0235	0.0000	0.0000	0.0235
Worker	1.0000e-005	1.0000e-005	9.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0266	0.0266	0.0000	0.0000	0.0266
<b>Total</b>	<b>1.0000e-005</b>	<b>8.0000e-005</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.0501</b>	<b>0.0501</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0501</b>

**APU Well and Water Treatment Facilities Project (Boysen Site)**  
**South Coast AQMD Air District, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.00	0.00	0
Other Asphalt Surfaces	0.30	Acre	0.30	13,068.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2024
<b>Utility Company</b>	Anaheim Public Utilities				
<b>CO2 Intensity (lb/MW hr)</b>	1543.28	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - APU Well and Water Treatment Facilities Project - Boysen Site. SCAQMD.

Land Use - Surrogate land uses for pipeline and pavement for water treatment facility location.

Construction Phase - Construction schedule based on estimated duration of activities, September 2021 through 2023.

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Summer

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Trips and VMT - Based on default assumptions

Architectural Coating - Default coating EF

Construction Off-road Equipment Mitigation - Water exposed area 3x per day to represent fugitive dust construction practices

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	NumDays	100.00	30.00
tblConstructionPhase	NumDays	1.00	15.00
tblConstructionPhase	NumDays	5.00	1.00
tblConstructionPhase	NumDays	5.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		WTP - Security, Entrance, and Landscaping
tblOffRoadEquipment	PhaseName		Pipeline - Installation
tblOffRoadEquipment	PhaseName		Pipeline - Final Paving
tblOffRoadEquipment	PhaseName		WTP - Equipment Installation

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Summer

tblOffRoadEquipment	PhaseName		WTP - Security, Entrance, and Landscaping
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	3.00	4.00
tblTripsAndVMT	WorkerTripNumber	10.00	12.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	3.00	4.00
tblTripsAndVMT	WorkerTripNumber	1.00	4.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	1.00	6.00

## 2.1 Overall Construction (Maximum Daily Emission)

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	5.0735	7.7558	12.0468	0.0215	0.2324	0.3577	0.5901	0.0625	0.3394	0.4018	0.0000	2,091.098 2	2,091.098 2	0.4625	0.0000	2,101.184 1
Maximum	5.0735	7.7558	12.0468	0.0215	0.2324	0.3577	0.5901	0.0625	0.3394	0.4018	0.0000	2,091.098 2	2,091.098 2	0.4625	0.0000	2,101.184 1

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	5.0735	7.7558	12.0468	0.0215	0.2324	0.3577	0.5901	0.0625	0.3394	0.4018	0.0000	2,091.098 2	2,091.098 2	0.4625	0.0000	2,101.184 1
Maximum	5.0735	7.7558	12.0468	0.0215	0.2324	0.3577	0.5901	0.0625	0.3394	0.4018	0.0000	2,091.098 2	2,091.098 2	0.4625	0.0000	2,101.184 1

[illegible]

### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	WTP - Demolition	Demolition	1/21/2023	1/27/2023	5	5	
2	Pipeline - Installation	Grading	1/21/2023	1/27/2023	5	5	
3	Pipeline - Final Paving	Paving	1/28/2023	2/3/2023	5	5	
4	WTP - Site Preparation and Grading	Grading	1/29/2023	2/10/2023	5	10	
5	Pipeline - Pavement Striping	Architectural Coating	2/4/2023	2/10/2023	5	5	
6	WTP - Equipment Installation	Building Construction	2/11/2023	3/24/2023	5	30	
7	WTP - Security, Entrance, and Landscaping	Site Preparation	3/25/2023	4/14/2023	5	15	
8	WTP - Paving	Paving	4/15/2023	4/17/2023	5	1	
9	WTP - Architectural Coating	Architectural Coating	4/15/2023	4/17/2023	5	1	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0.3**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 784**



## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Summer

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
WTP - Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline - Installation	Concrete/Industrial Saws	1	8.00	81	0.73
Pipeline - Installation	Excavators	1	8.00	158	0.38
Pipeline - Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline - Final Paving	Pavers	1	8.00	130	0.42
Pipeline - Final Paving	Paving Equipment	1	8.00	132	0.36
Pipeline - Final Paving	Rollers	1	8.00	80	0.38
WTP - Site Preparation and Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline - Pavement Striping	Air Compressors	0	0.00	78	0.48
WTP - Equipment Installation	Rough Terrain Forklifts	1	4.00	100	0.40
WTP - Equipment Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
WTP - Security, Entrance, and Landscaping	Cement and Mortar Mixers	1	8.00	9	0.56
WTP - Security, Entrance, and Landscaping	Skid Steer Loaders	1	4.00	65	0.37
WTP - Paving	Pavers	1	8.00	130	0.42
WTP - Paving	Rollers	1	8.00	80	0.38
WTP - Architectural Coating	Air Compressors	1	8.00	78	0.48

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Summer

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
WTP - Demolition	1	4.00	0.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Installation	4	12.00	4.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Final Paving	3	6.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Site Preparation and Pipeline - Pavement Stripping	1	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Equipment Installation	0	4.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Security, Entrance and	2	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Paving	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Architectural Coating	2	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Architectural Coating	1	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area

**3.2 WTP - Demolition - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698		301.5765	301.5765	0.0975		304.0149
<b>Total</b>	<b>0.1514</b>	<b>1.5357</b>	<b>2.2313</b>	<b>3.1200e-003</b>	<b>0.0000</b>	<b>0.0758</b>	<b>0.0758</b>	<b>0.0000</b>	<b>0.0698</b>	<b>0.0698</b>		<b>301.5765</b>	<b>301.5765</b>	<b>0.0975</b>		<b>304.0149</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.6500e-003	0.1210	0.0386	5.8000e-004	0.0140	2.2000e-004	0.0142	3.8300e-003	2.1000e-004	4.0500e-003		62.9790	62.9790	4.0000e-003		63.0790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0149	8.9500e-003	0.1287	4.1000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		41.1172	41.1172	9.7000e-004		41.1415
<b>Total</b>	<b>0.0185</b>	<b>0.1299</b>	<b>0.1673</b>	<b>9.9000e-004</b>	<b>0.0587</b>	<b>5.3000e-004</b>	<b>0.0592</b>	<b>0.0157</b>	<b>5.0000e-004</b>	<b>0.0162</b>		<b>104.0962</b>	<b>104.0962</b>	<b>4.9700e-003</b>		<b>104.2205</b>

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698	0.0000	301.5765	301.5765	0.0975		304.0149
<b>Total</b>	<b>0.1514</b>	<b>1.5357</b>	<b>2.2313</b>	<b>3.1200e-003</b>	<b>0.0000</b>	<b>0.0758</b>	<b>0.0758</b>	<b>0.0000</b>	<b>0.0698</b>	<b>0.0698</b>	<b>0.0000</b>	<b>301.5765</b>	<b>301.5765</b>	<b>0.0975</b>		<b>304.0149</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.6500e-003	0.1210	0.0386	5.8000e-004	0.0140	2.2000e-004	0.0142	3.8300e-003	2.1000e-004	4.0500e-003		62.9790	62.9790	4.0000e-003		63.0790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0149	8.9500e-003	0.1287	4.1000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		41.1172	41.1172	9.7000e-004		41.1415
<b>Total</b>	<b>0.0185</b>	<b>0.1299</b>	<b>0.1673</b>	<b>9.9000e-004</b>	<b>0.0587</b>	<b>5.3000e-004</b>	<b>0.0592</b>	<b>0.0157</b>	<b>5.0000e-004</b>	<b>0.0162</b>		<b>104.0962</b>	<b>104.0962</b>	<b>4.9700e-003</b>		<b>104.2205</b>

**3.3 Pipeline - Installation - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.6738	5.6686	9.1464	0.0145		0.2799	0.2799		0.2678	0.2678		1,394.3478	1,394.3478	0.2885		1,401.5598
<b>Total</b>	<b>0.6738</b>	<b>5.6686</b>	<b>9.1464</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.2799</b>	<b>0.2799</b>	<b>0.0000</b>	<b>0.2678</b>	<b>0.2678</b>		<b>1,394.3478</b>	<b>1,394.3478</b>	<b>0.2885</b>		<b>1,401.5598</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.6500e-003	0.1210	0.0386	5.8000e-004	0.0140	2.2000e-004	0.0142	3.8300e-003	2.1000e-004	4.0500e-003		62.9790	62.9790	4.0000e-003		63.0790
Vendor	7.7900e-003	0.2738	0.0771	9.8000e-004	0.0256	3.1000e-004	0.0259	7.3700e-003	2.9000e-004	7.6600e-003		104.7471	104.7471	5.5300e-003		104.8854
Worker	0.0447	0.0269	0.3860	1.2400e-003	0.1341	9.3000e-004	0.1351	0.0356	8.6000e-004	0.0364		123.3516	123.3516	2.9100e-003		123.4244
<b>Total</b>	<b>0.0561</b>	<b>0.4216</b>	<b>0.5017</b>	<b>2.8000e-003</b>	<b>0.1737</b>	<b>1.4600e-003</b>	<b>0.1752</b>	<b>0.0468</b>	<b>1.3600e-003</b>	<b>0.0481</b>		<b>291.0777</b>	<b>291.0777</b>	<b>0.0124</b>		<b>291.3889</b>

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.6738	5.6686	9.1464	0.0145		0.2799	0.2799		0.2678	0.2678	0.0000	1,394.3478	1,394.3478	0.2885		1,401.5598
<b>Total</b>	<b>0.6738</b>	<b>5.6686</b>	<b>9.1464</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.2799</b>	<b>0.2799</b>	<b>0.0000</b>	<b>0.2678</b>	<b>0.2678</b>	<b>0.0000</b>	<b>1,394.3478</b>	<b>1,394.3478</b>	<b>0.2885</b>		<b>1,401.5598</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.6500e-003	0.1210	0.0386	5.8000e-004	0.0140	2.2000e-004	0.0142	3.8300e-003	2.1000e-004	4.0500e-003		62.9790	62.9790	4.0000e-003		63.0790
Vendor	7.7900e-003	0.2738	0.0771	9.8000e-004	0.0256	3.1000e-004	0.0259	7.3700e-003	2.9000e-004	7.6600e-003		104.7471	104.7471	5.5300e-003		104.8854
Worker	0.0447	0.0269	0.3860	1.2400e-003	0.1341	9.3000e-004	0.1351	0.0356	8.6000e-004	0.0364		123.3516	123.3516	2.9100e-003		123.4244
<b>Total</b>	<b>0.0561</b>	<b>0.4216</b>	<b>0.5017</b>	<b>2.8000e-003</b>	<b>0.1737</b>	<b>1.4600e-003</b>	<b>0.1752</b>	<b>0.0468</b>	<b>1.3600e-003</b>	<b>0.0481</b>		<b>291.0777</b>	<b>291.0777</b>	<b>0.0124</b>		<b>291.3889</b>

**3.4 Pipeline - Final Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5164	5.0958	7.2921	0.0114		0.2551	0.2551		0.2347	0.2347		1,103.792 1	1,103.792 1	0.3570		1,112.716 8
Paving	0.1572					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.6736</b>	<b>5.0958</b>	<b>7.2921</b>	<b>0.0114</b>		<b>0.2551</b>	<b>0.2551</b>		<b>0.2347</b>	<b>0.2347</b>		<b>1,103.792 1</b>	<b>1,103.792 1</b>	<b>0.3570</b>		<b>1,112.716 8</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.7900e-003	0.2738	0.0771	9.8000e-004	0.0256	3.1000e-004	0.0259	7.3700e-003	2.9000e-004	7.6600e-003		104.7471	104.7471	5.5300e-003		104.8854
Worker	0.0223	0.0134	0.1930	6.2000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		61.6758	61.6758	1.4600e-003		61.7122
<b>Total</b>	<b>0.0301</b>	<b>0.2872</b>	<b>0.2701</b>	<b>1.6000e-003</b>	<b>0.0927</b>	<b>7.8000e-004</b>	<b>0.0934</b>	<b>0.0252</b>	<b>7.2000e-004</b>	<b>0.0259</b>		<b>166.4229</b>	<b>166.4229</b>	<b>6.9900e-003</b>		<b>166.5977</b>

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5164	5.0958	7.2921	0.0114		0.2551	0.2551		0.2347	0.2347	0.0000	1,103.7921	1,103.7921	0.3570		1,112.7168
Paving	0.1572					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.6736</b>	<b>5.0958</b>	<b>7.2921</b>	<b>0.0114</b>		<b>0.2551</b>	<b>0.2551</b>		<b>0.2347</b>	<b>0.2347</b>	<b>0.0000</b>	<b>1,103.7921</b>	<b>1,103.7921</b>	<b>0.3570</b>		<b>1,112.7168</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.7900e-003	0.2738	0.0771	9.8000e-004	0.0256	3.1000e-004	0.0259	7.3700e-003	2.9000e-004	7.6600e-003		104.7471	104.7471	5.5300e-003		104.8854
Worker	0.0223	0.0134	0.1930	6.2000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		61.6758	61.6758	1.4600e-003		61.7122
<b>Total</b>	<b>0.0301</b>	<b>0.2872</b>	<b>0.2701</b>	<b>1.6000e-003</b>	<b>0.0927</b>	<b>7.8000e-004</b>	<b>0.0934</b>	<b>0.0252</b>	<b>7.2000e-004</b>	<b>0.0259</b>		<b>166.4229</b>	<b>166.4229</b>	<b>6.9900e-003</b>		<b>166.5977</b>



**3.5 WTP - Site Preparation and Grading - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698		301.5765	301.5765	0.0975		304.0149
<b>Total</b>	<b>0.1514</b>	<b>1.5357</b>	<b>2.2313</b>	<b>3.1200e-003</b>	<b>0.0000</b>	<b>0.0758</b>	<b>0.0758</b>	<b>0.0000</b>	<b>0.0698</b>	<b>0.0698</b>		<b>301.5765</b>	<b>301.5765</b>	<b>0.0975</b>		<b>304.0149</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0149	8.9500e-003	0.1287	4.1000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		41.1172	41.1172	9.7000e-004		41.1415
<b>Total</b>	<b>0.0149</b>	<b>8.9500e-003</b>	<b>0.1287</b>	<b>4.1000e-004</b>	<b>0.0447</b>	<b>3.1000e-004</b>	<b>0.0450</b>	<b>0.0119</b>	<b>2.9000e-004</b>	<b>0.0121</b>		<b>41.1172</b>	<b>41.1172</b>	<b>9.7000e-004</b>		<b>41.1415</b>

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698	0.0000	301.5765	301.5765	0.0975		304.0149
<b>Total</b>	<b>0.1514</b>	<b>1.5357</b>	<b>2.2313</b>	<b>3.1200e-003</b>	<b>0.0000</b>	<b>0.0758</b>	<b>0.0758</b>	<b>0.0000</b>	<b>0.0698</b>	<b>0.0698</b>	<b>0.0000</b>	<b>301.5765</b>	<b>301.5765</b>	<b>0.0975</b>		<b>304.0149</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0149	8.9500e-003	0.1287	4.1000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		41.1172	41.1172	9.7000e-004		41.1415
<b>Total</b>	<b>0.0149</b>	<b>8.9500e-003</b>	<b>0.1287</b>	<b>4.1000e-004</b>	<b>0.0447</b>	<b>3.1000e-004</b>	<b>0.0450</b>	<b>0.0119</b>	<b>2.9000e-004</b>	<b>0.0121</b>		<b>41.1172</b>	<b>41.1172</b>	<b>9.7000e-004</b>		<b>41.1415</b>

**3.6 Pipeline - Pavement Striping - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.7268					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.7268</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.7900e-003	0.2738	0.0771	9.8000e-004	0.0256	3.1000e-004	0.0259	7.3700e-003	2.9000e-004	7.6600e-003		104.7471	104.7471	5.5300e-003		104.8854
Worker	0.0149	8.9500e-003	0.1287	4.1000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		41.1172	41.1172	9.7000e-004		41.1415
<b>Total</b>	<b>0.0227</b>	<b>0.2827</b>	<b>0.2058</b>	<b>1.3900e-003</b>	<b>0.0703</b>	<b>6.2000e-004</b>	<b>0.0709</b>	<b>0.0192</b>	<b>5.8000e-004</b>	<b>0.0198</b>		<b>145.8643</b>	<b>145.8643</b>	<b>6.5000e-003</b>		<b>146.0269</b>

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.7268					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.7268</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.7900e-003	0.2738	0.0771	9.8000e-004	0.0256	3.1000e-004	0.0259	7.3700e-003	2.9000e-004	7.6600e-003		104.7471	104.7471	5.5300e-003		104.8854
Worker	0.0149	8.9500e-003	0.1287	4.1000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		41.1172	41.1172	9.7000e-004		41.1415
<b>Total</b>	<b>0.0227</b>	<b>0.2827</b>	<b>0.2058</b>	<b>1.3900e-003</b>	<b>0.0703</b>	<b>6.2000e-004</b>	<b>0.0709</b>	<b>0.0192</b>	<b>5.8000e-004</b>	<b>0.0198</b>		<b>145.8643</b>	<b>145.8643</b>	<b>6.5000e-003</b>		<b>146.0269</b>

**3.7 WTP - Equipment Installation - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2042	2.2354	3.3750	4.8400e-003		0.0983	0.0983		0.0904	0.0904		468.4782	468.4782	0.1515		472.2661
<b>Total</b>	<b>0.2042</b>	<b>2.2354</b>	<b>3.3750</b>	<b>4.8400e-003</b>		<b>0.0983</b>	<b>0.0983</b>		<b>0.0904</b>	<b>0.0904</b>		<b>468.4782</b>	<b>468.4782</b>	<b>0.1515</b>		<b>472.2661</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0372	0.0224	0.3217	1.0300e-003	0.1118	7.8000e-004	0.1126	0.0296	7.2000e-004	0.0304		102.7930	102.7930	2.4300e-003		102.8537
<b>Total</b>	<b>0.0411</b>	<b>0.1593</b>	<b>0.3602</b>	<b>1.5200e-003</b>	<b>0.1246</b>	<b>9.3000e-004</b>	<b>0.1255</b>	<b>0.0333</b>	<b>8.7000e-004</b>	<b>0.0342</b>		<b>155.1666</b>	<b>155.1666</b>	<b>5.2000e-003</b>		<b>155.2964</b>

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2042	2.2354	3.3750	4.8400e-003		0.0983	0.0983		0.0904	0.0904	0.0000	468.4782	468.4782	0.1515		472.2661
<b>Total</b>	<b>0.2042</b>	<b>2.2354</b>	<b>3.3750</b>	<b>4.8400e-003</b>		<b>0.0983</b>	<b>0.0983</b>		<b>0.0904</b>	<b>0.0904</b>	<b>0.0000</b>	<b>468.4782</b>	<b>468.4782</b>	<b>0.1515</b>		<b>472.2661</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0372	0.0224	0.3217	1.0300e-003	0.1118	7.8000e-004	0.1126	0.0296	7.2000e-004	0.0304		102.7930	102.7930	2.4300e-003		102.8537
<b>Total</b>	<b>0.0411</b>	<b>0.1593</b>	<b>0.3602</b>	<b>1.5200e-003</b>	<b>0.1246</b>	<b>9.3000e-004</b>	<b>0.1255</b>	<b>0.0333</b>	<b>8.7000e-004</b>	<b>0.0342</b>		<b>155.1666</b>	<b>155.1666</b>	<b>5.2000e-003</b>		<b>155.2964</b>

**3.8 WTP - Security, Entrance, and Landscaping - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0913	0.8005	1.0011	1.7500e-003		0.0289	0.0289		0.0278	0.0278		150.7594	150.7594	0.0377		151.7011
<b>Total</b>	<b>0.0913</b>	<b>0.8005</b>	<b>1.0011</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0289</b>	<b>0.0289</b>	<b>0.0000</b>	<b>0.0278</b>	<b>0.0278</b>		<b>150.7594</b>	<b>150.7594</b>	<b>0.0377</b>		<b>151.7011</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0298	0.0179	0.2574	8.2000e-004	0.0894	6.2000e-004	0.0900	0.0237	5.7000e-004	0.0243		82.2344	82.2344	1.9400e-003		82.2830
<b>Total</b>	<b>0.0337</b>	<b>0.1548</b>	<b>0.2959</b>	<b>1.3100e-003</b>	<b>0.1022</b>	<b>7.7000e-004</b>	<b>0.1030</b>	<b>0.0274</b>	<b>7.2000e-004</b>	<b>0.0281</b>		<b>134.6080</b>	<b>134.6080</b>	<b>4.7100e-003</b>		<b>134.7257</b>

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0913	0.8005	1.0011	1.7500e-003		0.0289	0.0289		0.0278	0.0278	0.0000	150.7594	150.7594	0.0377		151.7011
<b>Total</b>	<b>0.0913</b>	<b>0.8005</b>	<b>1.0011</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0289</b>	<b>0.0289</b>	<b>0.0000</b>	<b>0.0278</b>	<b>0.0278</b>	<b>0.0000</b>	<b>150.7594</b>	<b>150.7594</b>	<b>0.0377</b>		<b>151.7011</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0298	0.0179	0.2574	8.2000e-004	0.0894	6.2000e-004	0.0900	0.0237	5.7000e-004	0.0243		82.2344	82.2344	1.9400e-003		82.2830
<b>Total</b>	<b>0.0337</b>	<b>0.1548</b>	<b>0.2959</b>	<b>1.3100e-003</b>	<b>0.1022</b>	<b>7.7000e-004</b>	<b>0.1030</b>	<b>0.0274</b>	<b>7.2000e-004</b>	<b>0.0281</b>		<b>134.6080</b>	<b>134.6080</b>	<b>4.7100e-003</b>		<b>134.7257</b>



**3.9 WTP - Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3457	3.4929	4.7354	7.3300e-003		0.1772	0.1772		0.1630	0.1630		709.3250	709.3250	0.2294		715.0603
Paving	0.7860					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.1317</b>	<b>3.4929</b>	<b>4.7354</b>	<b>7.3300e-003</b>		<b>0.1772</b>	<b>0.1772</b>		<b>0.1630</b>	<b>0.1630</b>		<b>709.3250</b>	<b>709.3250</b>	<b>0.2294</b>		<b>715.0603</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0223	0.0134	0.1930	6.2000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		61.6758	61.6758	1.4600e-003		61.7122
<b>Total</b>	<b>0.0262</b>	<b>0.1503</b>	<b>0.2316</b>	<b>1.1100e-003</b>	<b>0.0799</b>	<b>6.2000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>114.0494</b>	<b>114.0494</b>	<b>4.2300e-003</b>		<b>114.1549</b>

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3457	3.4929	4.7354	7.3300e-003		0.1772	0.1772		0.1630	0.1630	0.0000	709.3250	709.3250	0.2294		715.0603
Paving	0.7860					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.1317</b>	<b>3.4929</b>	<b>4.7354</b>	<b>7.3300e-003</b>		<b>0.1772</b>	<b>0.1772</b>		<b>0.1630</b>	<b>0.1630</b>	<b>0.0000</b>	<b>709.3250</b>	<b>709.3250</b>	<b>0.2294</b>		<b>715.0603</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0223	0.0134	0.1930	6.2000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		61.6758	61.6758	1.4600e-003		61.7122
<b>Total</b>	<b>0.0262</b>	<b>0.1503</b>	<b>0.2316</b>	<b>1.1100e-003</b>	<b>0.0799</b>	<b>6.2000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>114.0494</b>	<b>114.0494</b>	<b>4.2300e-003</b>		<b>114.1549</b>

**3.10 WTP - Architectural Coating - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.6338					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944		375.2641	375.2641	0.0225		375.8253
<b>Total</b>	<b>3.8894</b>	<b>1.7373</b>	<b>2.4148</b>	<b>3.9600e-003</b>		<b>0.0944</b>	<b>0.0944</b>		<b>0.0944</b>	<b>0.0944</b>		<b>375.2641</b>	<b>375.2641</b>	<b>0.0225</b>		<b>375.8253</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0223	0.0134	0.1930	6.2000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		61.6758	61.6758	1.4600e-003		61.7122
<b>Total</b>	<b>0.0262</b>	<b>0.1503</b>	<b>0.2316</b>	<b>1.1100e-003</b>	<b>0.0799</b>	<b>6.2000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>114.0494</b>	<b>114.0494</b>	<b>4.2300e-003</b>		<b>114.1549</b>

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.6338					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944	0.0000	375.2641	375.2641	0.0225		375.8253
<b>Total</b>	<b>3.8894</b>	<b>1.7373</b>	<b>2.4148</b>	<b>3.9600e-003</b>		<b>0.0944</b>	<b>0.0944</b>		<b>0.0944</b>	<b>0.0944</b>	<b>0.0000</b>	<b>375.2641</b>	<b>375.2641</b>	<b>0.0225</b>		<b>375.8253</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0223	0.0134	0.1930	6.2000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		61.6758	61.6758	1.4600e-003		61.7122
<b>Total</b>	<b>0.0262</b>	<b>0.1503</b>	<b>0.2316</b>	<b>1.1100e-003</b>	<b>0.0799</b>	<b>6.2000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>114.0494</b>	<b>114.0494</b>	<b>4.2300e-003</b>		<b>114.1549</b>

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**APU Well and Water Treatment Facilities Project (Boysen Site)**  
**South Coast AQMD Air District, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.00	0.00	0
Other Asphalt Surfaces	0.30	Acre	0.30	13,068.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2024
<b>Utility Company</b>	Anaheim Public Utilities				
<b>CO2 Intensity (lb/MW hr)</b>	1543.28	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - APU Well and Water Treatment Facilities Project - Boysen Site. SCAQMD.

Land Use - Surrogate land uses for pipeline and pavement for water treatment facility location.

Construction Phase - Construction schedule based on estimated duration of activities, September 2021 through 2023.

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Winter

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Trips and VMT - Based on default assumptions

Architectural Coating - Default coating EF

Construction Off-road Equipment Mitigation - Water exposed area 3x per day to represent fugitive dust construction practices

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	5.00
tblConstructionPhase	NumDays	2.00	10.00
tblConstructionPhase	NumDays	100.00	30.00
tblConstructionPhase	NumDays	1.00	15.00
tblConstructionPhase	NumDays	5.00	1.00
tblConstructionPhase	NumDays	5.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		WTP - Security, Entrance, and Landscaping
tblOffRoadEquipment	PhaseName		Pipeline - Installation
tblOffRoadEquipment	PhaseName		Pipeline - Final Paving
tblOffRoadEquipment	PhaseName		WTP - Equipment Installation

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Winter

tblOffRoadEquipment	PhaseName		WTP - Security, Entrance, and Landscaping
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	3.00	4.00
tblTripsAndVMT	WorkerTripNumber	10.00	12.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	3.00	4.00
tblTripsAndVMT	WorkerTripNumber	1.00	4.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	1.00	6.00

## 2.1 Overall Construction (Maximum Daily Emission)

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	5.0783	7.7585	12.0045	0.0213	0.2324	0.3577	0.5901	0.0625	0.3394	0.4019	0.0000	2,075.1013	2,075.1013	0.4627	0.0000	2,085.1964
Maximum	5.0783	7.7585	12.0045	0.0213	0.2324	0.3577	0.5901	0.0625	0.3394	0.4019	0.0000	2,075.1013	2,075.1013	0.4627	0.0000	2,085.1964

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	5.0783	7.7585	12.0045	0.0213	0.2324	0.3577	0.5901	0.0625	0.3394	0.4019	0.0000	2,075.1013	2,075.1013	0.4627	0.0000	2,085.1964
Maximum	5.0783	7.7585	12.0045	0.0213	0.2324	0.3577	0.5901	0.0625	0.3394	0.4019	0.0000	2,075.1013	2,075.1013	0.4627	0.0000	2,085.1964

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### 3.0 Construction Detail

#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	WTP - Demolition	Demolition	1/21/2023	1/27/2023	5	5	
2	Pipeline - Installation	Grading	1/21/2023	1/27/2023	5	5	
3	Pipeline - Final Paving	Paving	1/28/2023	2/3/2023	5	5	
4	WTP - Site Preparation and Grading	Grading	1/29/2023	2/10/2023	5	10	
5	Pipeline - Pavement Striping	Architectural Coating	2/4/2023	2/10/2023	5	5	
6	WTP - Equipment Installation	Building Construction	2/11/2023	3/24/2023	5	30	
7	WTP - Security, Entrance, and Landscaping	Site Preparation	3/25/2023	4/14/2023	5	15	
8	WTP - Paving	Paving	4/15/2023	4/17/2023	5	1	
9	WTP - Architectural Coating	Architectural Coating	4/15/2023	4/17/2023	5	1	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0.3**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 784**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
WTP - Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline - Installation	Concrete/Industrial Saws	1	8.00	81	0.73
Pipeline - Installation	Excavators	1	8.00	158	0.38
Pipeline - Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline - Final Paving	Pavers	1	8.00	130	0.42
Pipeline - Final Paving	Paving Equipment	1	8.00	132	0.36
Pipeline - Final Paving	Rollers	1	8.00	80	0.38
WTP - Site Preparation and Grading	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline - Pavement Striping	Air Compressors	0	0.00	78	0.48
WTP - Equipment Installation	Rough Terrain Forklifts	1	4.00	100	0.40
WTP - Equipment Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
WTP - Security, Entrance, and Landscaping	Cement and Mortar Mixers	1	8.00	9	0.56
WTP - Security, Entrance, and Landscaping	Skid Steer Loaders	1	4.00	65	0.37
WTP - Paving	Pavers	1	8.00	130	0.42
WTP - Paving	Rollers	1	8.00	80	0.38
WTP - Architectural Coating	Air Compressors	1	8.00	78	0.48

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
WTP - Demolition	1	4.00	0.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Installation	4	12.00	4.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Final Paving	3	6.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Site Preparation and Grading	1	4.00	0.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Pavement Striping	0	4.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Equipment Installation	2	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Security, Entrance, and Landscaping	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Paving	2	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Winter

WTP - Architectural Coatings	1	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
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**3.1 Mitigation Measures Construction**

Water Exposed Area

**3.2 WTP - Demolition - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698		301.5765	301.5765	0.0975		304.0149
<b>Total</b>	<b>0.1514</b>	<b>1.5357</b>	<b>2.2313</b>	<b>3.1200e-003</b>	<b>0.0000</b>	<b>0.0758</b>	<b>0.0758</b>	<b>0.0000</b>	<b>0.0698</b>	<b>0.0698</b>		<b>301.5765</b>	<b>301.5765</b>	<b>0.0975</b>		<b>304.0149</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.7500e-003	0.1216	0.0406	5.7000e-004	0.0140	2.3000e-004	0.0142	3.8300e-003	2.2000e-004	4.0500e-003		61.8124	61.8124	4.1400e-003		61.9159
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0164	9.7900e-003	0.1152	3.9000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		38.4519	38.4519	9.0000e-004		38.4744
<b>Total</b>	<b>0.0201</b>	<b>0.1313</b>	<b>0.1558</b>	<b>9.6000e-004</b>	<b>0.0587</b>	<b>5.4000e-004</b>	<b>0.0592</b>	<b>0.0157</b>	<b>5.1000e-004</b>	<b>0.0162</b>		<b>100.2643</b>	<b>100.2643</b>	<b>5.0400e-003</b>		<b>100.3903</b>



## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698	0.0000	301.5765	301.5765	0.0975		304.0149
<b>Total</b>	<b>0.1514</b>	<b>1.5357</b>	<b>2.2313</b>	<b>3.1200e-003</b>	<b>0.0000</b>	<b>0.0758</b>	<b>0.0758</b>	<b>0.0000</b>	<b>0.0698</b>	<b>0.0698</b>	<b>0.0000</b>	<b>301.5765</b>	<b>301.5765</b>	<b>0.0975</b>		<b>304.0149</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.7500e-003	0.1216	0.0406	5.7000e-004	0.0140	2.3000e-004	0.0142	3.8300e-003	2.2000e-004	4.0500e-003		61.8124	61.8124	4.1400e-003		61.9159
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0164	9.7900e-003	0.1152	3.9000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		38.4519	38.4519	9.0000e-004		38.4744
<b>Total</b>	<b>0.0201</b>	<b>0.1313</b>	<b>0.1558</b>	<b>9.6000e-004</b>	<b>0.0587</b>	<b>5.4000e-004</b>	<b>0.0592</b>	<b>0.0157</b>	<b>5.1000e-004</b>	<b>0.0162</b>		<b>100.2643</b>	<b>100.2643</b>	<b>5.0400e-003</b>		<b>100.3903</b>

**3.3 Pipeline - Installation - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.6738	5.6686	9.1464	0.0145		0.2799	0.2799		0.2678	0.2678		1,394.3478	1,394.3478	0.2885		1,401.5598
<b>Total</b>	<b>0.6738</b>	<b>5.6686</b>	<b>9.1464</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.2799</b>	<b>0.2799</b>	<b>0.0000</b>	<b>0.2678</b>	<b>0.2678</b>		<b>1,394.3478</b>	<b>1,394.3478</b>	<b>0.2885</b>		<b>1,401.5598</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.7500e-003	0.1216	0.0406	5.7000e-004	0.0140	2.3000e-004	0.0142	3.8300e-003	2.2000e-004	4.0500e-003		61.8124	61.8124	4.1400e-003		61.9159
Vendor	8.2000e-003	0.2720	0.0847	9.5000e-004	0.0256	3.2000e-004	0.0259	7.3700e-003	3.1000e-004	7.6800e-003		101.7447	101.7447	5.9000e-003		101.8921
Worker	0.0491	0.0294	0.3456	1.1600e-003	0.1341	9.3000e-004	0.1351	0.0356	8.6000e-004	0.0364		115.3556	115.3556	2.7100e-003		115.4233
<b>Total</b>	<b>0.0610</b>	<b>0.4229</b>	<b>0.4709</b>	<b>2.6800e-003</b>	<b>0.1737</b>	<b>1.4800e-003</b>	<b>0.1752</b>	<b>0.0468</b>	<b>1.3900e-003</b>	<b>0.0482</b>		<b>278.9127</b>	<b>278.9127</b>	<b>0.0128</b>		<b>279.2313</b>

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.6738	5.6686	9.1464	0.0145		0.2799	0.2799		0.2678	0.2678	0.0000	1,394.3478	1,394.3478	0.2885		1,401.5598
<b>Total</b>	<b>0.6738</b>	<b>5.6686</b>	<b>9.1464</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.2799</b>	<b>0.2799</b>	<b>0.0000</b>	<b>0.2678</b>	<b>0.2678</b>	<b>0.0000</b>	<b>1,394.3478</b>	<b>1,394.3478</b>	<b>0.2885</b>		<b>1,401.5598</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.7500e-003	0.1216	0.0406	5.7000e-004	0.0140	2.3000e-004	0.0142	3.8300e-003	2.2000e-004	4.0500e-003		61.8124	61.8124	4.1400e-003		61.9159
Vendor	8.2000e-003	0.2720	0.0847	9.5000e-004	0.0256	3.2000e-004	0.0259	7.3700e-003	3.1000e-004	7.6800e-003		101.7447	101.7447	5.9000e-003		101.8921
Worker	0.0491	0.0294	0.3456	1.1600e-003	0.1341	9.3000e-004	0.1351	0.0356	8.6000e-004	0.0364		115.3556	115.3556	2.7100e-003		115.4233
<b>Total</b>	<b>0.0610</b>	<b>0.4229</b>	<b>0.4709</b>	<b>2.6800e-003</b>	<b>0.1737</b>	<b>1.4800e-003</b>	<b>0.1752</b>	<b>0.0468</b>	<b>1.3900e-003</b>	<b>0.0482</b>		<b>278.9127</b>	<b>278.9127</b>	<b>0.0128</b>		<b>279.2313</b>

**3.4 Pipeline - Final Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5164	5.0958	7.2921	0.0114		0.2551	0.2551		0.2347	0.2347		1,103.792 1	1,103.792 1	0.3570		1,112.716 8
Paving	0.1572					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.6736</b>	<b>5.0958</b>	<b>7.2921</b>	<b>0.0114</b>		<b>0.2551</b>	<b>0.2551</b>		<b>0.2347</b>	<b>0.2347</b>		<b>1,103.792 1</b>	<b>1,103.792 1</b>	<b>0.3570</b>		<b>1,112.716 8</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.2000e-003	0.2720	0.0847	9.5000e-004	0.0256	3.2000e-004	0.0259	7.3700e-003	3.1000e-004	7.6800e-003		101.7447	101.7447	5.9000e-003		101.8921
Worker	0.0245	0.0147	0.1728	5.8000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		57.6778	57.6778	1.3500e-003		57.7117
<b>Total</b>	<b>0.0327</b>	<b>0.2867</b>	<b>0.2575</b>	<b>1.5300e-003</b>	<b>0.0927</b>	<b>7.9000e-004</b>	<b>0.0935</b>	<b>0.0252</b>	<b>7.4000e-004</b>	<b>0.0259</b>		<b>159.4225</b>	<b>159.4225</b>	<b>7.2500e-003</b>		<b>159.6038</b>



## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5164	5.0958	7.2921	0.0114		0.2551	0.2551		0.2347	0.2347	0.0000	1,103.7921	1,103.7921	0.3570		1,112.7168
Paving	0.1572					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.6736</b>	<b>5.0958</b>	<b>7.2921</b>	<b>0.0114</b>		<b>0.2551</b>	<b>0.2551</b>		<b>0.2347</b>	<b>0.2347</b>	<b>0.0000</b>	<b>1,103.7921</b>	<b>1,103.7921</b>	<b>0.3570</b>		<b>1,112.7168</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.2000e-003	0.2720	0.0847	9.5000e-004	0.0256	3.2000e-004	0.0259	7.3700e-003	3.1000e-004	7.6800e-003		101.7447	101.7447	5.9000e-003		101.8921
Worker	0.0245	0.0147	0.1728	5.8000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		57.6778	57.6778	1.3500e-003		57.7117
<b>Total</b>	<b>0.0327</b>	<b>0.2867</b>	<b>0.2575</b>	<b>1.5300e-003</b>	<b>0.0927</b>	<b>7.9000e-004</b>	<b>0.0935</b>	<b>0.0252</b>	<b>7.4000e-004</b>	<b>0.0259</b>		<b>159.4225</b>	<b>159.4225</b>	<b>7.2500e-003</b>		<b>159.6038</b>

**3.5 WTP - Site Preparation and Grading - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698		301.5765	301.5765	0.0975		304.0149
<b>Total</b>	<b>0.1514</b>	<b>1.5357</b>	<b>2.2313</b>	<b>3.1200e-003</b>	<b>0.0000</b>	<b>0.0758</b>	<b>0.0758</b>	<b>0.0000</b>	<b>0.0698</b>	<b>0.0698</b>		<b>301.5765</b>	<b>301.5765</b>	<b>0.0975</b>		<b>304.0149</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0164	9.7900e-003	0.1152	3.9000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		38.4519	38.4519	9.0000e-004		38.4744
<b>Total</b>	<b>0.0164</b>	<b>9.7900e-003</b>	<b>0.1152</b>	<b>3.9000e-004</b>	<b>0.0447</b>	<b>3.1000e-004</b>	<b>0.0450</b>	<b>0.0119</b>	<b>2.9000e-004</b>	<b>0.0121</b>		<b>38.4519</b>	<b>38.4519</b>	<b>9.0000e-004</b>		<b>38.4744</b>

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.1514	1.5357	2.2313	3.1200e-003		0.0758	0.0758		0.0698	0.0698	0.0000	301.5765	301.5765	0.0975		304.0149
<b>Total</b>	<b>0.1514</b>	<b>1.5357</b>	<b>2.2313</b>	<b>3.1200e-003</b>	<b>0.0000</b>	<b>0.0758</b>	<b>0.0758</b>	<b>0.0000</b>	<b>0.0698</b>	<b>0.0698</b>	<b>0.0000</b>	<b>301.5765</b>	<b>301.5765</b>	<b>0.0975</b>		<b>304.0149</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0164	9.7900e-003	0.1152	3.9000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		38.4519	38.4519	9.0000e-004		38.4744
<b>Total</b>	<b>0.0164</b>	<b>9.7900e-003</b>	<b>0.1152</b>	<b>3.9000e-004</b>	<b>0.0447</b>	<b>3.1000e-004</b>	<b>0.0450</b>	<b>0.0119</b>	<b>2.9000e-004</b>	<b>0.0121</b>		<b>38.4519</b>	<b>38.4519</b>	<b>9.0000e-004</b>		<b>38.4744</b>

**3.6 Pipeline - Pavement Striping - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.7268					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.7268</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.2000e-003	0.2720	0.0847	9.5000e-004	0.0256	3.2000e-004	0.0259	7.3700e-003	3.1000e-004	7.6800e-003		101.7447	101.7447	5.9000e-003		101.8921
Worker	0.0164	9.7900e-003	0.1152	3.9000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		38.4519	38.4519	9.0000e-004		38.4744
<b>Total</b>	<b>0.0246</b>	<b>0.2818</b>	<b>0.1999</b>	<b>1.3400e-003</b>	<b>0.0703</b>	<b>6.3000e-004</b>	<b>0.0709</b>	<b>0.0192</b>	<b>6.0000e-004</b>	<b>0.0198</b>		<b>140.1965</b>	<b>140.1965</b>	<b>6.8000e-003</b>		<b>140.3665</b>

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	0.7268					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>0.7268</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.2000e-003	0.2720	0.0847	9.5000e-004	0.0256	3.2000e-004	0.0259	7.3700e-003	3.1000e-004	7.6800e-003		101.7447	101.7447	5.9000e-003		101.8921
Worker	0.0164	9.7900e-003	0.1152	3.9000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		38.4519	38.4519	9.0000e-004		38.4744
<b>Total</b>	<b>0.0246</b>	<b>0.2818</b>	<b>0.1999</b>	<b>1.3400e-003</b>	<b>0.0703</b>	<b>6.3000e-004</b>	<b>0.0709</b>	<b>0.0192</b>	<b>6.0000e-004</b>	<b>0.0198</b>		<b>140.1965</b>	<b>140.1965</b>	<b>6.8000e-003</b>		<b>140.3665</b>

**3.7 WTP - Equipment Installation - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2042	2.2354	3.3750	4.8400e-003		0.0983	0.0983		0.0904	0.0904		468.4782	468.4782	0.1515		472.2661
<b>Total</b>	<b>0.2042</b>	<b>2.2354</b>	<b>3.3750</b>	<b>4.8400e-003</b>		<b>0.0983</b>	<b>0.0983</b>		<b>0.0904</b>	<b>0.0904</b>		<b>468.4782</b>	<b>468.4782</b>	<b>0.1515</b>		<b>472.2661</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0409	0.0245	0.2880	9.6000e-004	0.1118	7.8000e-004	0.1126	0.0296	7.2000e-004	0.0304		96.1296	96.1296	2.2600e-003		96.1861
<b>Total</b>	<b>0.0450</b>	<b>0.1605</b>	<b>0.3303</b>	<b>1.4400e-003</b>	<b>0.1246</b>	<b>9.4000e-004</b>	<b>0.1255</b>	<b>0.0333</b>	<b>8.7000e-004</b>	<b>0.0342</b>		<b>147.0020</b>	<b>147.0020</b>	<b>5.2100e-003</b>		<b>147.1321</b>

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2042	2.2354	3.3750	4.8400e-003		0.0983	0.0983		0.0904	0.0904	0.0000	468.4782	468.4782	0.1515		472.2661
<b>Total</b>	<b>0.2042</b>	<b>2.2354</b>	<b>3.3750</b>	<b>4.8400e-003</b>		<b>0.0983</b>	<b>0.0983</b>		<b>0.0904</b>	<b>0.0904</b>	<b>0.0000</b>	<b>468.4782</b>	<b>468.4782</b>	<b>0.1515</b>		<b>472.2661</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0409	0.0245	0.2880	9.6000e-004	0.1118	7.8000e-004	0.1126	0.0296	7.2000e-004	0.0304		96.1296	96.1296	2.2600e-003		96.1861
<b>Total</b>	<b>0.0450</b>	<b>0.1605</b>	<b>0.3303</b>	<b>1.4400e-003</b>	<b>0.1246</b>	<b>9.4000e-004</b>	<b>0.1255</b>	<b>0.0333</b>	<b>8.7000e-004</b>	<b>0.0342</b>		<b>147.0020</b>	<b>147.0020</b>	<b>5.2100e-003</b>		<b>147.1321</b>

**3.8 WTP - Security, Entrance, and Landscaping - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0913	0.8005	1.0011	1.7500e-003		0.0289	0.0289		0.0278	0.0278		150.7594	150.7594	0.0377		151.7011
<b>Total</b>	<b>0.0913</b>	<b>0.8005</b>	<b>1.0011</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0289</b>	<b>0.0289</b>	<b>0.0000</b>	<b>0.0278</b>	<b>0.0278</b>		<b>150.7594</b>	<b>150.7594</b>	<b>0.0377</b>		<b>151.7011</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0327	0.0196	0.2304	7.7000e-004	0.0894	6.2000e-004	0.0900	0.0237	5.7000e-004	0.0243		76.9037	76.9037	1.8100e-003		76.9489
<b>Total</b>	<b>0.0368</b>	<b>0.1556</b>	<b>0.2728</b>	<b>1.2500e-003</b>	<b>0.1022</b>	<b>7.8000e-004</b>	<b>0.1030</b>	<b>0.0274</b>	<b>7.2000e-004</b>	<b>0.0281</b>		<b>127.7760</b>	<b>127.7760</b>	<b>4.7600e-003</b>		<b>127.8949</b>



## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0913	0.8005	1.0011	1.7500e-003		0.0289	0.0289		0.0278	0.0278	0.0000	150.7594	150.7594	0.0377		151.7011
<b>Total</b>	<b>0.0913</b>	<b>0.8005</b>	<b>1.0011</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0289</b>	<b>0.0289</b>	<b>0.0000</b>	<b>0.0278</b>	<b>0.0278</b>	<b>0.0000</b>	<b>150.7594</b>	<b>150.7594</b>	<b>0.0377</b>		<b>151.7011</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0327	0.0196	0.2304	7.7000e-004	0.0894	6.2000e-004	0.0900	0.0237	5.7000e-004	0.0243		76.9037	76.9037	1.8100e-003		76.9489
<b>Total</b>	<b>0.0368</b>	<b>0.1556</b>	<b>0.2728</b>	<b>1.2500e-003</b>	<b>0.1022</b>	<b>7.8000e-004</b>	<b>0.1030</b>	<b>0.0274</b>	<b>7.2000e-004</b>	<b>0.0281</b>		<b>127.7760</b>	<b>127.7760</b>	<b>4.7600e-003</b>		<b>127.8949</b>

**3.9 WTP - Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3457	3.4929	4.7354	7.3300e-003		0.1772	0.1772		0.1630	0.1630		709.3250	709.3250	0.2294		715.0603
Paving	0.7860					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.1317</b>	<b>3.4929</b>	<b>4.7354</b>	<b>7.3300e-003</b>		<b>0.1772</b>	<b>0.1772</b>		<b>0.1630</b>	<b>0.1630</b>		<b>709.3250</b>	<b>709.3250</b>	<b>0.2294</b>		<b>715.0603</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0245	0.0147	0.1728	5.8000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		57.6778	57.6778	1.3500e-003		57.7117
<b>Total</b>	<b>0.0286</b>	<b>0.1507</b>	<b>0.2152</b>	<b>1.0600e-003</b>	<b>0.0799</b>	<b>6.3000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>108.5501</b>	<b>108.5501</b>	<b>4.3000e-003</b>		<b>108.6577</b>

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3457	3.4929	4.7354	7.3300e-003		0.1772	0.1772		0.1630	0.1630	0.0000	709.3250	709.3250	0.2294		715.0603
Paving	0.7860					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>1.1317</b>	<b>3.4929</b>	<b>4.7354</b>	<b>7.3300e-003</b>		<b>0.1772</b>	<b>0.1772</b>		<b>0.1630</b>	<b>0.1630</b>	<b>0.0000</b>	<b>709.3250</b>	<b>709.3250</b>	<b>0.2294</b>		<b>715.0603</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0245	0.0147	0.1728	5.8000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		57.6778	57.6778	1.3500e-003		57.7117
<b>Total</b>	<b>0.0286</b>	<b>0.1507</b>	<b>0.2152</b>	<b>1.0600e-003</b>	<b>0.0799</b>	<b>6.3000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>108.5501</b>	<b>108.5501</b>	<b>4.3000e-003</b>		<b>108.6577</b>

**3.10 WTP - Architectural Coating - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.6338					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944		375.2641	375.2641	0.0225		375.8253
<b>Total</b>	<b>3.8894</b>	<b>1.7373</b>	<b>2.4148</b>	<b>3.9600e-003</b>		<b>0.0944</b>	<b>0.0944</b>		<b>0.0944</b>	<b>0.0944</b>		<b>375.2641</b>	<b>375.2641</b>	<b>0.0225</b>		<b>375.8253</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0245	0.0147	0.1728	5.8000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		57.6778	57.6778	1.3500e-003		57.7117
<b>Total</b>	<b>0.0286</b>	<b>0.1507</b>	<b>0.2152</b>	<b>1.0600e-003</b>	<b>0.0799</b>	<b>6.3000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>108.5501</b>	<b>108.5501</b>	<b>4.3000e-003</b>		<b>108.6577</b>

## APU Well and Water Treatment Facilities Project (Boysen Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	3.6338					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944	0.0000	375.2641	375.2641	0.0225		375.8253
<b>Total</b>	<b>3.8894</b>	<b>1.7373</b>	<b>2.4148</b>	<b>3.9600e-003</b>		<b>0.0944</b>	<b>0.0944</b>		<b>0.0944</b>	<b>0.0944</b>	<b>0.0000</b>	<b>375.2641</b>	<b>375.2641</b>	<b>0.0225</b>		<b>375.8253</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0245	0.0147	0.1728	5.8000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		57.6778	57.6778	1.3500e-003		57.7117
<b>Total</b>	<b>0.0286</b>	<b>0.1507</b>	<b>0.2152</b>	<b>1.0600e-003</b>	<b>0.0799</b>	<b>6.3000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>108.5501</b>	<b>108.5501</b>	<b>4.3000e-003</b>		<b>108.6577</b>

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**APU Well and Water Treatment Facilities Project (Energy Site)**  
**South Coast AQMD Air District, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.00	0.00	0
Other Asphalt Surfaces	0.30	Acre	0.30	13,068.00	0

### 1.2 Other Project Characteristics

Urbanization	Urban	Wind Speed (m/s)	2.2	Precipitation Freq (Days)	31
Climate Zone	8			Operational Year	2024
Utility Company	Anaheim Public Utilities				
CO2 Intensity (lb/MW hr)	1543.28	CH4 Intensity (lb/MW hr)	0.029	N2O Intensity (lb/MW hr)	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - APU Well and Water Treatment Facilities Project - Energy Field Site. SCAQMD.

Land Use - Surrogate land uses for pipeline and pavement for water treatment facility location.

Construction Phase - Construction schedule based on estimated duration of activities, September 2021 through 2023.

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Annual

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Trips and VMT - Based on default assumptions.

Architectural Coating - Default coating EF

Construction Off-road Equipment Mitigation - Water exposed area 3x per day to represent fugitive dust construction practices

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	NumDays	100.00	45.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	1.00	23.00
tblConstructionPhase	NumDays	5.00	2.00
tblConstructionPhase	NumDays	5.00	2.00
tblConstructionPhase	NumDays	5.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
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tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		WTP - Security, Entrance, and Landscaping
tblOffRoadEquipment	PhaseName		Pipeline - Installation
tblOffRoadEquipment	PhaseName		Pipeline - Final Paving
tblOffRoadEquipment	PhaseName		WTP - Equipment Installation
tblOffRoadEquipment	PhaseName		WTP - Security, Entrance, and Landscaping

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Annual

tblOffRoadEquipment	UsageHours	6.00	0.00
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tblOffRoadEquipment	UsageHours	7.00	8.00
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tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
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tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	8.00	4.00
tblTripsAndVMT	WorkerTripNumber	8.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	1.00	4.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	1.00	6.00



## 2.1 Overall Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0357	0.2803	0.4068	7.3000e-004	8.3400e-003	0.0126	0.0210	2.2400e-003	0.0119	0.0141	0.0000	63.9615	63.9615	0.0142	0.0000	64.3156
Maximum	0.0357	0.2803	0.4068	7.3000e-004	8.3400e-003	0.0126	0.0210	2.2400e-003	0.0119	0.0141	0.0000	63.9615	63.9615	0.0142	0.0000	64.3156

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2023	0.0357	0.2803	0.4068	7.3000e-004	8.3400e-003	0.0126	0.0210	2.2400e-003	0.0119	0.0141	0.0000	63.9615	63.9615	0.0142	0.0000	64.3156
Maximum	0.0357	0.2803	0.4068	7.3000e-004	8.3400e-003	0.0126	0.0210	2.2400e-003	0.0119	0.0141	0.0000	63.9615	63.9615	0.0142	0.0000	64.3156

[illegible]

### 3.0 Construction Detail

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#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	WTP - Demolition	Demolition	4/18/2023	4/24/2023	5	5	
2	Pipeline - Installation	Grading	4/18/2023	6/12/2023	5	40	
3	WTP - Equipment Installation	Building Construction	4/25/2023	6/26/2023	5	45	
4	Pipeline - Final Paving	Paving	6/13/2023	7/10/2023	5	20	
5	WTP - Security, Entrance, and Landscaping	Site Preparation	6/27/2023	7/27/2023	5	23	
6	Pipeline - Pavement Striping	Architectural Coating	7/11/2023	7/12/2023	5	2	
7	WTP - Paving	Paving	7/28/2023	7/31/2023	5	2	
8	WTP - Architectural Coating	Architectural Coating	7/28/2023	7/31/2023	5	2	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0.3**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 784**

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
WTP - Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
WTP - Demolition	Excavators	1	8.00	158	0.38
WTP - Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline - Installation	Concrete/Industrial Saws	1	8.00	81	0.73
Pipeline - Installation	Excavators	1	8.00	158	0.38
Pipeline - Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
WTP - Equipment Installation	Cranes	1	2.00	231	0.29
WTP - Equipment Installation	Rough Terrain Forklifts	1	4.00	100	0.40
WTP - Equipment Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline - Final Paving	Pavers	1	8.00	130	0.42
Pipeline - Final Paving	Paving Equipment	1	8.00	132	0.36
Pipeline - Final Paving	Rollers	1	8.00	80	0.38
WTP - Security, Entrance, and Landscaping	Cement and Mortar Mixers	1	8.00	9	0.56
WTP - Security, Entrance, and Landscaping	Skid Steer Loaders	1	4.00	65	0.37
Pipeline - Pavement Striping	Air Compressors	0	0.00	78	0.48
WTP - Paving	Pavers	1	8.00	130	0.42
WTP - Paving	Rollers	1	8.00	80	0.38
WTP - Architectural Coating	Air Compressors	1	8.00	78	0.48

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**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
WTP - Demolition	3	4.00	0.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Installation	3	12.00	4.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Equipment Installation	3	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Final Paving	3	6.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Security, Entrance, and Pipeline - Pavement Striping	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Paving	0	4.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Architectural Coating	2	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Architectural Coating	1	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area

**3.2 WTP - Demolition - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6800e-003	0.0142	0.0229	4.0000e-005		7.0000e-004	7.0000e-004		6.7000e-004	6.7000e-004	0.0000	3.1623	3.1623	6.5000e-004	0.0000	3.1787
<b>Total</b>	<b>1.6800e-003</b>	<b>0.0142</b>	<b>0.0229</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-004</b>	<b>7.0000e-004</b>	<b>0.0000</b>	<b>6.7000e-004</b>	<b>6.7000e-004</b>	<b>0.0000</b>	<b>3.1623</b>	<b>3.1623</b>	<b>6.5000e-004</b>	<b>0.0000</b>	<b>3.1787</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.1000e-004	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1417	0.1417	1.0000e-005	0.0000	0.1420
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0887	0.0887	0.0000	0.0000	0.0888
<b>Total</b>	<b>5.0000e-005</b>	<b>3.4000e-004</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.2304</b>	<b>0.2304</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2307</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.6800e-003	0.0142	0.0229	4.0000e-005		7.0000e-004	7.0000e-004		6.7000e-004	6.7000e-004	0.0000	3.1623	3.1623	6.5000e-004	0.0000	3.1787
<b>Total</b>	<b>1.6800e-003</b>	<b>0.0142</b>	<b>0.0229</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-004</b>	<b>7.0000e-004</b>	<b>0.0000</b>	<b>6.7000e-004</b>	<b>6.7000e-004</b>	<b>0.0000</b>	<b>3.1623</b>	<b>3.1623</b>	<b>6.5000e-004</b>	<b>0.0000</b>	<b>3.1787</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.0000e-005	3.1000e-004	1.0000e-004	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.1417	0.1417	1.0000e-005	0.0000	0.1420
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.0000e-005	3.0000e-005	3.0000e-004	0.0000	1.1000e-004	0.0000	1.1000e-004	3.0000e-005	0.0000	3.0000e-005	0.0000	0.0887	0.0887	0.0000	0.0000	0.0888
<b>Total</b>	<b>5.0000e-005</b>	<b>3.4000e-004</b>	<b>4.0000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>0.0000</b>	<b>1.4000e-004</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>4.0000e-005</b>	<b>0.0000</b>	<b>0.2304</b>	<b>0.2304</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.2307</b>

**3.3 Pipeline - Installation - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0135	0.1134	0.1829	2.9000e-004		5.6000e-003	5.6000e-003		5.3600e-003	5.3600e-003	0.0000	25.2986	25.2986	5.2300e-003	0.0000	25.4295
<b>Total</b>	<b>0.0135</b>	<b>0.1134</b>	<b>0.1829</b>	<b>2.9000e-004</b>	<b>0.0000</b>	<b>5.6000e-003</b>	<b>5.6000e-003</b>	<b>0.0000</b>	<b>5.3600e-003</b>	<b>5.3600e-003</b>	<b>0.0000</b>	<b>25.2986</b>	<b>25.2986</b>	<b>5.2300e-003</b>	<b>0.0000</b>	<b>25.4295</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	5.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0709	0.0709	0.0000	0.0000	0.0710
Vendor	1.6000e-004	5.5200e-003	1.6200e-003	2.0000e-005	5.0000e-004	1.0000e-005	5.1000e-004	1.5000e-004	1.0000e-005	1.5000e-004	0.0000	1.8776	1.8776	1.0000e-004	0.0000	1.8802
Worker	8.8000e-004	6.0000e-004	7.1200e-003	2.0000e-005	2.6300e-003	2.0000e-005	2.6500e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.1289	2.1289	5.0000e-005	0.0000	2.1301
<b>Total</b>	<b>1.0400e-003</b>	<b>6.2700e-003</b>	<b>8.7900e-003</b>	<b>4.0000e-005</b>	<b>3.1500e-003</b>	<b>3.0000e-005</b>	<b>3.1800e-003</b>	<b>8.5000e-004</b>	<b>3.0000e-005</b>	<b>8.7000e-004</b>	<b>0.0000</b>	<b>4.0774</b>	<b>4.0774</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>4.0813</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0135	0.1134	0.1829	2.9000e-004		5.6000e-003	5.6000e-003		5.3600e-003	5.3600e-003	0.0000	25.2986	25.2986	5.2300e-003	0.0000	25.4294
<b>Total</b>	<b>0.0135</b>	<b>0.1134</b>	<b>0.1829</b>	<b>2.9000e-004</b>	<b>0.0000</b>	<b>5.6000e-003</b>	<b>5.6000e-003</b>	<b>0.0000</b>	<b>5.3600e-003</b>	<b>5.3600e-003</b>	<b>0.0000</b>	<b>25.2986</b>	<b>25.2986</b>	<b>5.2300e-003</b>	<b>0.0000</b>	<b>25.4294</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	1.5000e-004	5.0000e-005	0.0000	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0709	0.0709	0.0000	0.0000	0.0710
Vendor	1.6000e-004	5.5200e-003	1.6200e-003	2.0000e-005	5.0000e-004	1.0000e-005	5.1000e-004	1.5000e-004	1.0000e-005	1.5000e-004	0.0000	1.8776	1.8776	1.0000e-004	0.0000	1.8802
Worker	8.8000e-004	6.0000e-004	7.1200e-003	2.0000e-005	2.6300e-003	2.0000e-005	2.6500e-003	7.0000e-004	2.0000e-005	7.2000e-004	0.0000	2.1289	2.1289	5.0000e-005	0.0000	2.1301
<b>Total</b>	<b>1.0400e-003</b>	<b>6.2700e-003</b>	<b>8.7900e-003</b>	<b>4.0000e-005</b>	<b>3.1500e-003</b>	<b>3.0000e-005</b>	<b>3.1800e-003</b>	<b>8.5000e-004</b>	<b>3.0000e-005</b>	<b>8.7000e-004</b>	<b>0.0000</b>	<b>4.0774</b>	<b>4.0774</b>	<b>1.5000e-004</b>	<b>0.0000</b>	<b>4.0813</b>



**3.4 WTP - Equipment Installation - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.5700e-003	0.0718	0.0863	1.4000e-004		3.1100e-003	3.1100e-003		2.8600e-003	2.8600e-003	0.0000	12.4140	12.4140	4.0100e-003	0.0000	12.5144
<b>Total</b>	<b>6.5700e-003</b>	<b>0.0718</b>	<b>0.0863</b>	<b>1.4000e-004</b>		<b>3.1100e-003</b>	<b>3.1100e-003</b>		<b>2.8600e-003</b>	<b>2.8600e-003</b>	<b>0.0000</b>	<b>12.4140</b>	<b>12.4140</b>	<b>4.0100e-003</b>	<b>0.0000</b>	<b>12.5144</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.0000e-005	3.1100e-003	9.1000e-004	1.0000e-005	2.8000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	1.0562	1.0562	6.0000e-005	0.0000	1.0576
Worker	8.3000e-004	5.7000e-004	6.6800e-003	2.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.6000e-004	2.0000e-005	6.7000e-004	0.0000	1.9958	1.9958	5.0000e-005	0.0000	1.9970
<b>Total</b>	<b>9.2000e-004</b>	<b>3.6800e-003</b>	<b>7.5900e-003</b>	<b>3.0000e-005</b>	<b>2.7500e-003</b>	<b>2.0000e-005</b>	<b>2.7800e-003</b>	<b>7.4000e-004</b>	<b>2.0000e-005</b>	<b>7.6000e-004</b>	<b>0.0000</b>	<b>3.0520</b>	<b>3.0520</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>3.0546</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	6.5700e-003	0.0718	0.0863	1.4000e-004		3.1100e-003	3.1100e-003		2.8600e-003	2.8600e-003	0.0000	12.4140	12.4140	4.0100e-003	0.0000	12.5144
<b>Total</b>	<b>6.5700e-003</b>	<b>0.0718</b>	<b>0.0863</b>	<b>1.4000e-004</b>		<b>3.1100e-003</b>	<b>3.1100e-003</b>		<b>2.8600e-003</b>	<b>2.8600e-003</b>	<b>0.0000</b>	<b>12.4140</b>	<b>12.4140</b>	<b>4.0100e-003</b>	<b>0.0000</b>	<b>12.5144</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	9.0000e-005	3.1100e-003	9.1000e-004	1.0000e-005	2.8000e-004	0.0000	2.9000e-004	8.0000e-005	0.0000	9.0000e-005	0.0000	1.0562	1.0562	6.0000e-005	0.0000	1.0576
Worker	8.3000e-004	5.7000e-004	6.6800e-003	2.0000e-005	2.4700e-003	2.0000e-005	2.4900e-003	6.6000e-004	2.0000e-005	6.7000e-004	0.0000	1.9958	1.9958	5.0000e-005	0.0000	1.9970
<b>Total</b>	<b>9.2000e-004</b>	<b>3.6800e-003</b>	<b>7.5900e-003</b>	<b>3.0000e-005</b>	<b>2.7500e-003</b>	<b>2.0000e-005</b>	<b>2.7800e-003</b>	<b>7.4000e-004</b>	<b>2.0000e-005</b>	<b>7.6000e-004</b>	<b>0.0000</b>	<b>3.0520</b>	<b>3.0520</b>	<b>1.1000e-004</b>	<b>0.0000</b>	<b>3.0546</b>

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**3.5 Pipeline - Final Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.1600e-003	0.0510	0.0729	1.1000e-004		2.5500e-003	2.5500e-003		2.3500e-003	2.3500e-003	0.0000	10.0134	10.0134	3.2400e-003	0.0000	10.0944
Paving	3.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>5.5500e-003</b>	<b>0.0510</b>	<b>0.0729</b>	<b>1.1000e-004</b>		<b>2.5500e-003</b>	<b>2.5500e-003</b>		<b>2.3500e-003</b>	<b>2.3500e-003</b>	<b>0.0000</b>	<b>10.0134</b>	<b>10.0134</b>	<b>3.2400e-003</b>	<b>0.0000</b>	<b>10.0944</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.0000e-005	2.7600e-003	8.1000e-004	1.0000e-005	2.5000e-004	0.0000	2.6000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.9388	0.9388	5.0000e-005	0.0000	0.9401
Worker	2.2000e-004	1.5000e-004	1.7800e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5322	0.5322	1.0000e-005	0.0000	0.5325
<b>Total</b>	<b>3.0000e-004</b>	<b>2.9100e-003</b>	<b>2.5900e-003</b>	<b>2.0000e-005</b>	<b>9.1000e-004</b>	<b>0.0000</b>	<b>9.2000e-004</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>1.4710</b>	<b>1.4710</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>1.4726</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.1600e-003	0.0510	0.0729	1.1000e-004		2.5500e-003	2.5500e-003		2.3500e-003	2.3500e-003	0.0000	10.0134	10.0134	3.2400e-003	0.0000	10.0944
Paving	3.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>5.5500e-003</b>	<b>0.0510</b>	<b>0.0729</b>	<b>1.1000e-004</b>		<b>2.5500e-003</b>	<b>2.5500e-003</b>		<b>2.3500e-003</b>	<b>2.3500e-003</b>	<b>0.0000</b>	<b>10.0134</b>	<b>10.0134</b>	<b>3.2400e-003</b>	<b>0.0000</b>	<b>10.0944</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	8.0000e-005	2.7600e-003	8.1000e-004	1.0000e-005	2.5000e-004	0.0000	2.6000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.9388	0.9388	5.0000e-005	0.0000	0.9401
Worker	2.2000e-004	1.5000e-004	1.7800e-003	1.0000e-005	6.6000e-004	0.0000	6.6000e-004	1.7000e-004	0.0000	1.8000e-004	0.0000	0.5322	0.5322	1.0000e-005	0.0000	0.5325
<b>Total</b>	<b>3.0000e-004</b>	<b>2.9100e-003</b>	<b>2.5900e-003</b>	<b>2.0000e-005</b>	<b>9.1000e-004</b>	<b>0.0000</b>	<b>9.2000e-004</b>	<b>2.4000e-004</b>	<b>0.0000</b>	<b>2.6000e-004</b>	<b>0.0000</b>	<b>1.4710</b>	<b>1.4710</b>	<b>6.0000e-005</b>	<b>0.0000</b>	<b>1.4726</b>

**3.6 WTP - Security, Entrance, and Landscaping - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0500e-003	9.2100e-003	0.0115	2.0000e-005		3.3000e-004	3.3000e-004		3.2000e-004	3.2000e-004	0.0000	1.5728	1.5728	3.9000e-004	0.0000	1.5826
<b>Total</b>	<b>1.0500e-003</b>	<b>9.2100e-003</b>	<b>0.0115</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>3.3000e-004</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>3.2000e-004</b>	<b>3.2000e-004</b>	<b>0.0000</b>	<b>1.5728</b>	<b>1.5728</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>1.5826</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.5900e-003	4.7000e-004	1.0000e-005	1.4000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.5398	0.5398	3.0000e-005	0.0000	0.5406
Worker	3.4000e-004	2.3000e-004	2.7300e-003	1.0000e-005	1.0100e-003	1.0000e-005	1.0200e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.8161	0.8161	2.0000e-005	0.0000	0.8166
<b>Total</b>	<b>3.9000e-004</b>	<b>1.8200e-003</b>	<b>3.2000e-003</b>	<b>2.0000e-005</b>	<b>1.1500e-003</b>	<b>1.0000e-005</b>	<b>1.1700e-003</b>	<b>3.1000e-004</b>	<b>1.0000e-005</b>	<b>3.1000e-004</b>	<b>0.0000</b>	<b>1.3559</b>	<b>1.3559</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>1.3571</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0500e-003	9.2100e-003	0.0115	2.0000e-005		3.3000e-004	3.3000e-004		3.2000e-004	3.2000e-004	0.0000	1.5728	1.5728	3.9000e-004	0.0000	1.5826
<b>Total</b>	<b>1.0500e-003</b>	<b>9.2100e-003</b>	<b>0.0115</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>3.3000e-004</b>	<b>3.3000e-004</b>	<b>0.0000</b>	<b>3.2000e-004</b>	<b>3.2000e-004</b>	<b>0.0000</b>	<b>1.5728</b>	<b>1.5728</b>	<b>3.9000e-004</b>	<b>0.0000</b>	<b>1.5826</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	5.0000e-005	1.5900e-003	4.7000e-004	1.0000e-005	1.4000e-004	0.0000	1.5000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.5398	0.5398	3.0000e-005	0.0000	0.5406
Worker	3.4000e-004	2.3000e-004	2.7300e-003	1.0000e-005	1.0100e-003	1.0000e-005	1.0200e-003	2.7000e-004	1.0000e-005	2.7000e-004	0.0000	0.8161	0.8161	2.0000e-005	0.0000	0.8166
<b>Total</b>	<b>3.9000e-004</b>	<b>1.8200e-003</b>	<b>3.2000e-003</b>	<b>2.0000e-005</b>	<b>1.1500e-003</b>	<b>1.0000e-005</b>	<b>1.1700e-003</b>	<b>3.1000e-004</b>	<b>1.0000e-005</b>	<b>3.1000e-004</b>	<b>0.0000</b>	<b>1.3559</b>	<b>1.3559</b>	<b>5.0000e-005</b>	<b>0.0000</b>	<b>1.3571</b>

**3.7 Pipeline - Pavement Striping - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>1.8200e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	2.8000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0939	0.0939	1.0000e-005	0.0000	0.0940
Worker	1.0000e-005	1.0000e-005	1.2000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0355	0.0355	0.0000	0.0000	0.0355
<b>Total</b>	<b>2.0000e-005</b>	<b>2.9000e-004</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.1294</b>	<b>0.1294</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1295</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>1.8200e-003</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-005	2.8000e-004	8.0000e-005	0.0000	3.0000e-005	0.0000	3.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0939	0.0939	1.0000e-005	0.0000	0.0940
Worker	1.0000e-005	1.0000e-005	1.2000e-004	0.0000	4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0355	0.0355	0.0000	0.0000	0.0355
<b>Total</b>	<b>2.0000e-005</b>	<b>2.9000e-004</b>	<b>2.0000e-004</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>0.0000</b>	<b>7.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.1294</b>	<b>0.1294</b>	<b>1.0000e-005</b>	<b>0.0000</b>	<b>0.1295</b>



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**3.8 WTP - Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.5000e-004	3.4900e-003	4.7400e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.6000e-004	1.6000e-004	0.0000	0.6435	0.6435	2.1000e-004	0.0000	0.6487
Paving	3.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>7.4000e-004</b>	<b>3.4900e-003</b>	<b>4.7400e-003</b>	<b>1.0000e-005</b>		<b>1.8000e-004</b>	<b>1.8000e-004</b>		<b>1.6000e-004</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>0.6435</b>	<b>0.6435</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>0.6487</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	1.4000e-004	4.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0469	0.0469	0.0000	0.0000	0.0470
Worker	2.0000e-005	2.0000e-005	1.8000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0532	0.0532	0.0000	0.0000	0.0533
<b>Total</b>	<b>2.0000e-005</b>	<b>1.6000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.1002</b>	<b>0.1002</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.1003</b>

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**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.5000e-004	3.4900e-003	4.7400e-003	1.0000e-005		1.8000e-004	1.8000e-004		1.6000e-004	1.6000e-004	0.0000	0.6435	0.6435	2.1000e-004	0.0000	0.6487
Paving	3.9000e-004					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>Total</b>	<b>7.4000e-004</b>	<b>3.4900e-003</b>	<b>4.7400e-003</b>	<b>1.0000e-005</b>		<b>1.8000e-004</b>	<b>1.8000e-004</b>		<b>1.6000e-004</b>	<b>1.6000e-004</b>	<b>0.0000</b>	<b>0.6435</b>	<b>0.6435</b>	<b>2.1000e-004</b>	<b>0.0000</b>	<b>0.6487</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	1.4000e-004	4.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0469	0.0469	0.0000	0.0000	0.0470
Worker	2.0000e-005	2.0000e-005	1.8000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0532	0.0532	0.0000	0.0000	0.0533
<b>Total</b>	<b>2.0000e-005</b>	<b>1.6000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.1002</b>	<b>0.1002</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.1003</b>

**3.9 WTP - Architectural Coating - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6000e-004	1.7400e-003	2.4100e-003	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.3404	0.3404	2.0000e-005	0.0000	0.3409
<b>Total</b>	<b>2.0800e-003</b>	<b>1.7400e-003</b>	<b>2.4100e-003</b>	<b>0.0000</b>		<b>9.0000e-005</b>	<b>9.0000e-005</b>		<b>9.0000e-005</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.3404</b>	<b>0.3404</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.3409</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	1.4000e-004	4.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0469	0.0469	0.0000	0.0000	0.0470
Worker	2.0000e-005	2.0000e-005	1.8000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0532	0.0532	0.0000	0.0000	0.0533
<b>Total</b>	<b>2.0000e-005</b>	<b>1.6000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.1002</b>	<b>0.1002</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.1003</b>

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Annual

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.8200e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.6000e-004	1.7400e-003	2.4100e-003	0.0000		9.0000e-005	9.0000e-005		9.0000e-005	9.0000e-005	0.0000	0.3404	0.3404	2.0000e-005	0.0000	0.3409
<b>Total</b>	<b>2.0800e-003</b>	<b>1.7400e-003</b>	<b>2.4100e-003</b>	<b>0.0000</b>		<b>9.0000e-005</b>	<b>9.0000e-005</b>		<b>9.0000e-005</b>	<b>9.0000e-005</b>	<b>0.0000</b>	<b>0.3404</b>	<b>0.3404</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.3409</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	1.4000e-004	4.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0469	0.0469	0.0000	0.0000	0.0470
Worker	2.0000e-005	2.0000e-005	1.8000e-004	0.0000	7.0000e-005	0.0000	7.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0532	0.0532	0.0000	0.0000	0.0533
<b>Total</b>	<b>2.0000e-005</b>	<b>1.6000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>0.0000</b>	<b>8.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.1002</b>	<b>0.1002</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.1003</b>

**APU Well and Water Treatment Facilities Project (Energy Site)**  
**South Coast AQMD Air District, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.00	0.00	0
Other Asphalt Surfaces	0.30	Acre	0.30	13,068.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2024
<b>Utility Company</b>	Anaheim Public Utilities				
<b>CO2 Intensity (lb/MW hr)</b>	1543.28	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - APU Well and Water Treatment Facilities Project - Energy Field Site. SCAQMD.

Land Use - Surrogate land uses for pipeline and pavement for water treatment facility location.

Construction Phase - Construction schedule based on estimated duration of activities, September 2021 through 2023.

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Construction Off-road Equipment Mitigation - Water exposed area 3x per day to represent fugitive dust construction practices

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	NumDays	100.00	45.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	1.00	23.00
tblConstructionPhase	NumDays	5.00	2.00
tblConstructionPhase	NumDays	5.00	2.00
tblConstructionPhase	NumDays	5.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		WTP - Security, Entrance, and Landscaping
tblOffRoadEquipment	PhaseName		Pipeline - Installation
tblOffRoadEquipment	PhaseName		Pipeline - Final Paving
tblOffRoadEquipment	PhaseName		WTP - Equipment Installation
tblOffRoadEquipment	PhaseName		WTP - Security, Entrance, and Landscaping

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Summer

tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	4.00	2.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	8.00	4.00
tblTripsAndVMT	WorkerTripNumber	8.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	1.00	4.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	1.00	6.00

## 2.1 Overall Construction (Maximum Daily Emission)

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.8636	11.7752	18.9257	0.0323	0.2852	0.5616	0.7809	0.0765	0.5372	0.5961	0.0000	3,124.8267	3,124.8267	0.5906	0.0000	3,139.5925
Maximum	2.8636	11.7752	18.9257	0.0323	0.2852	0.5616	0.7809	0.0765	0.5372	0.5961	0.0000	3,124.8267	3,124.8267	0.5906	0.0000	3,139.5925

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.8636	11.7752	18.9257	0.0323	0.2852	0.5616	0.7809	0.0765	0.5372	0.5961	0.0000	3,124.8267	3,124.8267	0.5906	0.0000	3,139.5925
Maximum	2.8636	11.7752	18.9257	0.0323	0.2852	0.5616	0.7809	0.0765	0.5372	0.5961	0.0000	3,124.8267	3,124.8267	0.5906	0.0000	3,139.5925

[illegible]



### 3.0 Construction Detail

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#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	WTP - Demolition	Demolition	4/18/2023	4/24/2023	5	5	
2	Pipeline - Installation	Grading	4/18/2023	6/12/2023	5	40	
3	WTP - Equipment Installation	Building Construction	4/25/2023	6/26/2023	5	45	
4	Pipeline - Final Paving	Paving	6/13/2023	7/10/2023	5	20	
5	WTP - Security, Entrance, and Landscaping	Site Preparation	6/27/2023	7/27/2023	5	23	
6	Pipeline - Pavement Striping	Architectural Coating	7/11/2023	7/12/2023	5	2	
7	WTP - Paving	Paving	7/28/2023	7/31/2023	5	2	
8	WTP - Architectural Coating	Architectural Coating	7/28/2023	7/31/2023	5	2	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0.3**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 784**

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Summer

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
WTP - Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
WTP - Demolition	Excavators	1	8.00	158	0.38
WTP - Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline - Installation	Concrete/Industrial Saws	1	8.00	81	0.73
Pipeline - Installation	Excavators	1	8.00	158	0.38
Pipeline - Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
WTP - Equipment Installation	Cranes	1	2.00	231	0.29
WTP - Equipment Installation	Rough Terrain Forklifts	1	4.00	100	0.40
WTP - Equipment Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline - Final Paving	Pavers	1	8.00	130	0.42
Pipeline - Final Paving	Paving Equipment	1	8.00	132	0.36
Pipeline - Final Paving	Rollers	1	8.00	80	0.38
WTP - Security, Entrance, and Landscaping	Cement and Mortar Mixers	1	8.00	9	0.56
WTP - Security, Entrance, and Landscaping	Skid Steer Loaders	1	4.00	65	0.37
Pipeline - Pavement Striping	Air Compressors	0	0.00	78	0.48
WTP - Paving	Pavers	1	8.00	130	0.42
WTP - Paving	Rollers	1	8.00	80	0.38
WTP - Architectural Coating	Air Compressors	1	8.00	78	0.48

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Summer

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
WTP - Demolition	3	4.00	0.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Installation	3	12.00	4.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Equipment Installation	3	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Final Paving	3	6.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Security, Entrance and Pipeline - Pavement	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Stripping	0	4.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Paving	2	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Architectural Coating	1	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area

**3.2 WTP - Demolition - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.6738	5.6686	9.1464	0.0145		0.2799	0.2799		0.2678	0.2678		1,394.3478	1,394.3478	0.2885		1,401.5598
<b>Total</b>	<b>0.6738</b>	<b>5.6686</b>	<b>9.1464</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.2799</b>	<b>0.2799</b>	<b>0.0000</b>	<b>0.2678</b>	<b>0.2678</b>		<b>1,394.3478</b>	<b>1,394.3478</b>	<b>0.2885</b>		<b>1,401.5598</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.6500e-003	0.1210	0.0386	5.8000e-004	0.0140	2.2000e-004	0.0142	3.8300e-003	2.1000e-004	4.0500e-003		62.9790	62.9790	4.0000e-003		63.0790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0149	8.9500e-003	0.1287	4.1000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		41.1172	41.1172	9.7000e-004		41.1415
<b>Total</b>	<b>0.0185</b>	<b>0.1299</b>	<b>0.1673</b>	<b>9.9000e-004</b>	<b>0.0587</b>	<b>5.3000e-004</b>	<b>0.0592</b>	<b>0.0157</b>	<b>5.0000e-004</b>	<b>0.0162</b>		<b>104.0962</b>	<b>104.0962</b>	<b>4.9700e-003</b>		<b>104.2205</b>

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.6738	5.6686	9.1464	0.0145		0.2799	0.2799		0.2678	0.2678	0.0000	1,394.3478	1,394.3478	0.2885		1,401.5598
<b>Total</b>	<b>0.6738</b>	<b>5.6686</b>	<b>9.1464</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.2799</b>	<b>0.2799</b>	<b>0.0000</b>	<b>0.2678</b>	<b>0.2678</b>	<b>0.0000</b>	<b>1,394.3478</b>	<b>1,394.3478</b>	<b>0.2885</b>		<b>1,401.5598</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.6500e-003	0.1210	0.0386	5.8000e-004	0.0140	2.2000e-004	0.0142	3.8300e-003	2.1000e-004	4.0500e-003		62.9790	62.9790	4.0000e-003		63.0790
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0149	8.9500e-003	0.1287	4.1000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		41.1172	41.1172	9.7000e-004		41.1415
<b>Total</b>	<b>0.0185</b>	<b>0.1299</b>	<b>0.1673</b>	<b>9.9000e-004</b>	<b>0.0587</b>	<b>5.3000e-004</b>	<b>0.0592</b>	<b>0.0157</b>	<b>5.0000e-004</b>	<b>0.0162</b>		<b>104.0962</b>	<b>104.0962</b>	<b>4.9700e-003</b>		<b>104.2205</b>

**3.3 Pipeline - Installation - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.6738	5.6686	9.1464	0.0145		0.2799	0.2799		0.2678	0.2678		1,394.3478	1,394.3478	0.2885		1,401.5598
<b>Total</b>	<b>0.6738</b>	<b>5.6686</b>	<b>9.1464</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.2799</b>	<b>0.2799</b>	<b>0.0000</b>	<b>0.2678</b>	<b>0.2678</b>		<b>1,394.3478</b>	<b>1,394.3478</b>	<b>0.2885</b>		<b>1,401.5598</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3000e-004	7.5600e-003	2.4100e-003	4.0000e-005	8.7000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.5000e-004		3.9362	3.9362	2.5000e-004		3.9424
Vendor	7.7900e-003	0.2738	0.0771	9.8000e-004	0.0256	3.1000e-004	0.0259	7.3700e-003	2.9000e-004	7.6600e-003		104.7471	104.7471	5.5300e-003		104.8854
Worker	0.0447	0.0269	0.3860	1.2400e-003	0.1341	9.3000e-004	0.1351	0.0356	8.6000e-004	0.0364		123.3516	123.3516	2.9100e-003		123.4244
<b>Total</b>	<b>0.0527</b>	<b>0.3082</b>	<b>0.4655</b>	<b>2.2600e-003</b>	<b>0.1606</b>	<b>1.2500e-003</b>	<b>0.1619</b>	<b>0.0432</b>	<b>1.1600e-003</b>	<b>0.0443</b>		<b>232.0349</b>	<b>232.0349</b>	<b>8.6900e-003</b>		<b>232.2523</b>

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.6738	5.6686	9.1464	0.0145		0.2799	0.2799		0.2678	0.2678	0.0000	1,394.3478	1,394.3478	0.2885		1,401.5598
<b>Total</b>	<b>0.6738</b>	<b>5.6686</b>	<b>9.1464</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.2799</b>	<b>0.2799</b>	<b>0.0000</b>	<b>0.2678</b>	<b>0.2678</b>	<b>0.0000</b>	<b>1,394.3478</b>	<b>1,394.3478</b>	<b>0.2885</b>		<b>1,401.5598</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3000e-004	7.5600e-003	2.4100e-003	4.0000e-005	8.7000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.5000e-004		3.9362	3.9362	2.5000e-004		3.9424
Vendor	7.7900e-003	0.2738	0.0771	9.8000e-004	0.0256	3.1000e-004	0.0259	7.3700e-003	2.9000e-004	7.6600e-003		104.7471	104.7471	5.5300e-003		104.8854
Worker	0.0447	0.0269	0.3860	1.2400e-003	0.1341	9.3000e-004	0.1351	0.0356	8.6000e-004	0.0364		123.3516	123.3516	2.9100e-003		123.4244
<b>Total</b>	<b>0.0527</b>	<b>0.3082</b>	<b>0.4655</b>	<b>2.2600e-003</b>	<b>0.1606</b>	<b>1.2500e-003</b>	<b>0.1619</b>	<b>0.0432</b>	<b>1.1600e-003</b>	<b>0.0443</b>		<b>232.0349</b>	<b>232.0349</b>	<b>8.6900e-003</b>		<b>232.2523</b>

**3.4 WTP - Equipment Installation - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2921	3.1893	3.8336	6.2800e-003		0.1381	0.1381		0.1271	0.1271		608.1830	608.1830	0.1967		613.1005
<b>Total</b>	<b>0.2921</b>	<b>3.1893</b>	<b>3.8336</b>	<b>6.2800e-003</b>		<b>0.1381</b>	<b>0.1381</b>		<b>0.1271</b>	<b>0.1271</b>		<b>608.1830</b>	<b>608.1830</b>	<b>0.1967</b>		<b>613.1005</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0372	0.0224	0.3217	1.0300e-003	0.1118	7.8000e-004	0.1126	0.0296	7.2000e-004	0.0304		102.7930	102.7930	2.4300e-003		102.8537
<b>Total</b>	<b>0.0411</b>	<b>0.1593</b>	<b>0.3602</b>	<b>1.5200e-003</b>	<b>0.1246</b>	<b>9.3000e-004</b>	<b>0.1255</b>	<b>0.0333</b>	<b>8.7000e-004</b>	<b>0.0342</b>		<b>155.1666</b>	<b>155.1666</b>	<b>5.2000e-003</b>		<b>155.2964</b>



## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2921	3.1893	3.8336	6.2800e-003		0.1381	0.1381		0.1271	0.1271	0.0000	608.1830	608.1830	0.1967		613.1005
<b>Total</b>	<b>0.2921</b>	<b>3.1893</b>	<b>3.8336</b>	<b>6.2800e-003</b>		<b>0.1381</b>	<b>0.1381</b>		<b>0.1271</b>	<b>0.1271</b>	<b>0.0000</b>	<b>608.1830</b>	<b>608.1830</b>	<b>0.1967</b>		<b>613.1005</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0372	0.0224	0.3217	1.0300e-003	0.1118	7.8000e-004	0.1126	0.0296	7.2000e-004	0.0304		102.7930	102.7930	2.4300e-003		102.8537
<b>Total</b>	<b>0.0411</b>	<b>0.1593</b>	<b>0.3602</b>	<b>1.5200e-003</b>	<b>0.1246</b>	<b>9.3000e-004</b>	<b>0.1255</b>	<b>0.0333</b>	<b>8.7000e-004</b>	<b>0.0342</b>		<b>155.1666</b>	<b>155.1666</b>	<b>5.2000e-003</b>		<b>155.2964</b>

**3.5 Pipeline - Final Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5164	5.0958	7.2921	0.0114		0.2551	0.2551		0.2347	0.2347		1,103.792 1	1,103.792 1	0.3570		1,112.716 8
Paving	0.0393					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.5557</b>	<b>5.0958</b>	<b>7.2921</b>	<b>0.0114</b>		<b>0.2551</b>	<b>0.2551</b>		<b>0.2347</b>	<b>0.2347</b>		<b>1,103.792 1</b>	<b>1,103.792 1</b>	<b>0.3570</b>		<b>1,112.716 8</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.7900e-003	0.2738	0.0771	9.8000e-004	0.0256	3.1000e-004	0.0259	7.3700e-003	2.9000e-004	7.6600e-003		104.7471	104.7471	5.5300e-003		104.8854
Worker	0.0223	0.0134	0.1930	6.2000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		61.6758	61.6758	1.4600e-003		61.7122
<b>Total</b>	<b>0.0301</b>	<b>0.2872</b>	<b>0.2701</b>	<b>1.6000e-003</b>	<b>0.0927</b>	<b>7.8000e-004</b>	<b>0.0934</b>	<b>0.0252</b>	<b>7.2000e-004</b>	<b>0.0259</b>		<b>166.4229</b>	<b>166.4229</b>	<b>6.9900e-003</b>		<b>166.5977</b>

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5164	5.0958	7.2921	0.0114		0.2551	0.2551		0.2347	0.2347	0.0000	1,103.7921	1,103.7921	0.3570		1,112.7168
Paving	0.0393					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.5557</b>	<b>5.0958</b>	<b>7.2921</b>	<b>0.0114</b>		<b>0.2551</b>	<b>0.2551</b>		<b>0.2347</b>	<b>0.2347</b>	<b>0.0000</b>	<b>1,103.7921</b>	<b>1,103.7921</b>	<b>0.3570</b>		<b>1,112.7168</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.7900e-003	0.2738	0.0771	9.8000e-004	0.0256	3.1000e-004	0.0259	7.3700e-003	2.9000e-004	7.6600e-003		104.7471	104.7471	5.5300e-003		104.8854
Worker	0.0223	0.0134	0.1930	6.2000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		61.6758	61.6758	1.4600e-003		61.7122
<b>Total</b>	<b>0.0301</b>	<b>0.2872</b>	<b>0.2701</b>	<b>1.6000e-003</b>	<b>0.0927</b>	<b>7.8000e-004</b>	<b>0.0934</b>	<b>0.0252</b>	<b>7.2000e-004</b>	<b>0.0259</b>		<b>166.4229</b>	<b>166.4229</b>	<b>6.9900e-003</b>		<b>166.5977</b>

**3.6 WTP - Security, Entrance, and Landscaping - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0913	0.8005	1.0011	1.7500e-003		0.0289	0.0289		0.0278	0.0278		150.7594	150.7594	0.0377		151.7011
<b>Total</b>	<b>0.0913</b>	<b>0.8005</b>	<b>1.0011</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0289</b>	<b>0.0289</b>	<b>0.0000</b>	<b>0.0278</b>	<b>0.0278</b>		<b>150.7594</b>	<b>150.7594</b>	<b>0.0377</b>		<b>151.7011</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0298	0.0179	0.2574	8.2000e-004	0.0894	6.2000e-004	0.0900	0.0237	5.7000e-004	0.0243		82.2344	82.2344	1.9400e-003		82.2830
<b>Total</b>	<b>0.0337</b>	<b>0.1548</b>	<b>0.2959</b>	<b>1.3100e-003</b>	<b>0.1022</b>	<b>7.7000e-004</b>	<b>0.1030</b>	<b>0.0274</b>	<b>7.2000e-004</b>	<b>0.0281</b>		<b>134.6080</b>	<b>134.6080</b>	<b>4.7100e-003</b>		<b>134.7257</b>

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0913	0.8005	1.0011	1.7500e-003		0.0289	0.0289		0.0278	0.0278	0.0000	150.7594	150.7594	0.0377		151.7011
<b>Total</b>	<b>0.0913</b>	<b>0.8005</b>	<b>1.0011</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0289</b>	<b>0.0289</b>	<b>0.0000</b>	<b>0.0278</b>	<b>0.0278</b>	<b>0.0000</b>	<b>150.7594</b>	<b>150.7594</b>	<b>0.0377</b>		<b>151.7011</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0298	0.0179	0.2574	8.2000e-004	0.0894	6.2000e-004	0.0900	0.0237	5.7000e-004	0.0243		82.2344	82.2344	1.9400e-003		82.2830
<b>Total</b>	<b>0.0337</b>	<b>0.1548</b>	<b>0.2959</b>	<b>1.3100e-003</b>	<b>0.1022</b>	<b>7.7000e-004</b>	<b>0.1030</b>	<b>0.0274</b>	<b>7.2000e-004</b>	<b>0.0281</b>		<b>134.6080</b>	<b>134.6080</b>	<b>4.7100e-003</b>		<b>134.7257</b>

**3.7 Pipeline - Pavement Striping - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.8169					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>1.8169</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.7900e-003	0.2738	0.0771	9.8000e-004	0.0256	3.1000e-004	0.0259	7.3700e-003	2.9000e-004	7.6600e-003		104.7471	104.7471	5.5300e-003		104.8854
Worker	0.0149	8.9500e-003	0.1287	4.1000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		41.1172	41.1172	9.7000e-004		41.1415
<b>Total</b>	<b>0.0227</b>	<b>0.2827</b>	<b>0.2058</b>	<b>1.3900e-003</b>	<b>0.0703</b>	<b>6.2000e-004</b>	<b>0.0709</b>	<b>0.0192</b>	<b>5.8000e-004</b>	<b>0.0198</b>		<b>145.8643</b>	<b>145.8643</b>	<b>6.5000e-003</b>		<b>146.0269</b>

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.8169					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>1.8169</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	7.7900e-003	0.2738	0.0771	9.8000e-004	0.0256	3.1000e-004	0.0259	7.3700e-003	2.9000e-004	7.6600e-003		104.7471	104.7471	5.5300e-003		104.8854
Worker	0.0149	8.9500e-003	0.1287	4.1000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		41.1172	41.1172	9.7000e-004		41.1415
<b>Total</b>	<b>0.0227</b>	<b>0.2827</b>	<b>0.2058</b>	<b>1.3900e-003</b>	<b>0.0703</b>	<b>6.2000e-004</b>	<b>0.0709</b>	<b>0.0192</b>	<b>5.8000e-004</b>	<b>0.0198</b>		<b>145.8643</b>	<b>145.8643</b>	<b>6.5000e-003</b>		<b>146.0269</b>

**3.8 WTP - Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3457	3.4929	4.7354	7.3300e-003		0.1772	0.1772		0.1630	0.1630		709.3250	709.3250	0.2294		715.0603
Paving	0.3930					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.7387</b>	<b>3.4929</b>	<b>4.7354</b>	<b>7.3300e-003</b>		<b>0.1772</b>	<b>0.1772</b>		<b>0.1630</b>	<b>0.1630</b>		<b>709.3250</b>	<b>709.3250</b>	<b>0.2294</b>		<b>715.0603</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0223	0.0134	0.1930	6.2000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		61.6758	61.6758	1.4600e-003		61.7122
<b>Total</b>	<b>0.0262</b>	<b>0.1503</b>	<b>0.2316</b>	<b>1.1100e-003</b>	<b>0.0799</b>	<b>6.2000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>114.0494</b>	<b>114.0494</b>	<b>4.2300e-003</b>		<b>114.1549</b>



## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3457	3.4929	4.7354	7.3300e-003		0.1772	0.1772		0.1630	0.1630	0.0000	709.3250	709.3250	0.2294		715.0603
Paving	0.3930					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.7387</b>	<b>3.4929</b>	<b>4.7354</b>	<b>7.3300e-003</b>		<b>0.1772</b>	<b>0.1772</b>		<b>0.1630</b>	<b>0.1630</b>	<b>0.0000</b>	<b>709.3250</b>	<b>709.3250</b>	<b>0.2294</b>		<b>715.0603</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0223	0.0134	0.1930	6.2000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		61.6758	61.6758	1.4600e-003		61.7122
<b>Total</b>	<b>0.0262</b>	<b>0.1503</b>	<b>0.2316</b>	<b>1.1100e-003</b>	<b>0.0799</b>	<b>6.2000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>114.0494</b>	<b>114.0494</b>	<b>4.2300e-003</b>		<b>114.1549</b>

**3.9 WTP - Architectural Coating - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.8169					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944		375.2641	375.2641	0.0225		375.8253
<b>Total</b>	<b>2.0725</b>	<b>1.7373</b>	<b>2.4148</b>	<b>3.9600e-003</b>		<b>0.0944</b>	<b>0.0944</b>		<b>0.0944</b>	<b>0.0944</b>		<b>375.2641</b>	<b>375.2641</b>	<b>0.0225</b>		<b>375.8253</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0223	0.0134	0.1930	6.2000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		61.6758	61.6758	1.4600e-003		61.7122
<b>Total</b>	<b>0.0262</b>	<b>0.1503</b>	<b>0.2316</b>	<b>1.1100e-003</b>	<b>0.0799</b>	<b>6.2000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>114.0494</b>	<b>114.0494</b>	<b>4.2300e-003</b>		<b>114.1549</b>

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Summer

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.8169					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944	0.0000	375.2641	375.2641	0.0225		375.8253
<b>Total</b>	<b>2.0725</b>	<b>1.7373</b>	<b>2.4148</b>	<b>3.9600e-003</b>		<b>0.0944</b>	<b>0.0944</b>		<b>0.0944</b>	<b>0.0944</b>	<b>0.0000</b>	<b>375.2641</b>	<b>375.2641</b>	<b>0.0225</b>		<b>375.8253</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	3.8900e-003	0.1369	0.0385	4.9000e-004	0.0128	1.5000e-004	0.0130	3.6900e-003	1.5000e-004	3.8300e-003		52.3735	52.3735	2.7700e-003		52.4427
Worker	0.0223	0.0134	0.1930	6.2000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		61.6758	61.6758	1.4600e-003		61.7122
<b>Total</b>	<b>0.0262</b>	<b>0.1503</b>	<b>0.2316</b>	<b>1.1100e-003</b>	<b>0.0799</b>	<b>6.2000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>114.0494</b>	<b>114.0494</b>	<b>4.2300e-003</b>		<b>114.1549</b>

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**APU Well and Water Treatment Facilities Project (Energy Site)**  
**South Coast AQMD Air District, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Light Industry	0.00	1000sqft	0.00	0.00	0
Other Asphalt Surfaces	0.30	Acre	0.30	13,068.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2024
<b>Utility Company</b>	Anaheim Public Utilities				
<b>CO2 Intensity (lb/MW hr)</b>	1543.28	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - APU Well and Water Treatment Facilities Project - Energy Field Site. SCAQMD.

Land Use - Surrogate land uses for pipeline and pavement for water treatment facility location.

Construction Phase - Construction schedule based on estimated duration of activities, September 2021 through 2023.

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Winter

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Off-road Equipment - Equipment based on default assumptions

Trips and VMT - Based on default assumptions.

Architectural Coating - Default coating EF

Construction Off-road Equipment Mitigation - Water exposed area 3x per day to represent fugitive dust construction practices

Table Name	Column Name	Default Value	New Value
tblConstructionPhase	NumDays	10.00	5.00
tblConstructionPhase	NumDays	2.00	40.00
tblConstructionPhase	NumDays	100.00	45.00
tblConstructionPhase	NumDays	5.00	20.00
tblConstructionPhase	NumDays	1.00	23.00
tblConstructionPhase	NumDays	5.00	2.00
tblConstructionPhase	NumDays	5.00	2.00
tblConstructionPhase	NumDays	5.00	2.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	2.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	0.00	1.00
tblOffRoadEquipment	PhaseName		WTP - Security, Entrance, and Landscaping
tblOffRoadEquipment	PhaseName		Pipeline - Installation
tblOffRoadEquipment	PhaseName		Pipeline - Final Paving
tblOffRoadEquipment	PhaseName		WTP - Equipment Installation
tblOffRoadEquipment	PhaseName		WTP - Security, Entrance, and Landscaping

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Winter

tblOffRoadEquipment	UsageHours	6.00	0.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	4.00	2.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	7.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblOffRoadEquipment	UsageHours	6.00	8.00
tblTripsAndVMT	HaulingTripNumber	0.00	4.00
tblTripsAndVMT	HaulingTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	4.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	VendorTripNumber	0.00	2.00
tblTripsAndVMT	WorkerTripNumber	8.00	4.00
tblTripsAndVMT	WorkerTripNumber	8.00	12.00
tblTripsAndVMT	WorkerTripNumber	5.00	10.00
tblTripsAndVMT	WorkerTripNumber	8.00	6.00
tblTripsAndVMT	WorkerTripNumber	5.00	8.00
tblTripsAndVMT	WorkerTripNumber	1.00	4.00
tblTripsAndVMT	WorkerTripNumber	5.00	6.00
tblTripsAndVMT	WorkerTripNumber	1.00	6.00

## 2.1 Overall Construction (Maximum Daily Emission)

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.8684	11.7774	18.8815	0.0322	0.2852	0.5616	0.7809	0.0765	0.5372	0.5961	0.0000	3,109.9234	3,109.9234	0.5909	0.0000	3,124.6951
Maximum	2.8684	11.7774	18.8815	0.0322	0.2852	0.5616	0.7809	0.0765	0.5372	0.5961	0.0000	3,109.9234	3,109.9234	0.5909	0.0000	3,124.6951

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2023	2.8684	11.7774	18.8815	0.0322	0.2852	0.5616	0.7809	0.0765	0.5372	0.5961	0.0000	3,109.9234	3,109.9234	0.5909	0.0000	3,124.6951
Maximum	2.8684	11.7774	18.8815	0.0322	0.2852	0.5616	0.7809	0.0765	0.5372	0.5961	0.0000	3,109.9234	3,109.9234	0.5909	0.0000	3,124.6951

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### 3.0 Construction Detail

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#### Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	WTP - Demolition	Demolition	4/18/2023	4/24/2023	5	5	
2	Pipeline - Installation	Grading	4/18/2023	6/12/2023	5	40	
3	WTP - Equipment Installation	Building Construction	4/25/2023	6/26/2023	5	45	
4	Pipeline - Final Paving	Paving	6/13/2023	7/10/2023	5	20	
5	WTP - Security, Entrance, and Landscaping	Site Preparation	6/27/2023	7/27/2023	5	23	
6	Pipeline - Pavement Striping	Architectural Coating	7/11/2023	7/12/2023	5	2	
7	WTP - Paving	Paving	7/28/2023	7/31/2023	5	2	
8	WTP - Architectural Coating	Architectural Coating	7/28/2023	7/31/2023	5	2	

**Acres of Grading (Site Preparation Phase): 0**

**Acres of Grading (Grading Phase): 0**

**Acres of Paving: 0.3**

**Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 784**



## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Winter

**OffRoad Equipment**

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
WTP - Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
WTP - Demolition	Excavators	1	8.00	158	0.38
WTP - Demolition	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline - Installation	Concrete/Industrial Saws	1	8.00	81	0.73
Pipeline - Installation	Excavators	1	8.00	158	0.38
Pipeline - Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
WTP - Equipment Installation	Cranes	1	2.00	231	0.29
WTP - Equipment Installation	Rough Terrain Forklifts	1	4.00	100	0.40
WTP - Equipment Installation	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Pipeline - Final Paving	Pavers	1	8.00	130	0.42
Pipeline - Final Paving	Paving Equipment	1	8.00	132	0.36
Pipeline - Final Paving	Rollers	1	8.00	80	0.38
WTP - Security, Entrance, and Landscaping	Cement and Mortar Mixers	1	8.00	9	0.56
WTP - Security, Entrance, and Landscaping	Skid Steer Loaders	1	4.00	65	0.37
Pipeline - Pavement Striping	Air Compressors	0	0.00	78	0.48
WTP - Paving	Pavers	1	8.00	130	0.42
WTP - Paving	Rollers	1	8.00	80	0.38
WTP - Architectural Coating	Air Compressors	1	8.00	78	0.48

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Winter

**Trips and VMT**

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
WTP - Demolition	3	4.00	0.00	4.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Installation	3	12.00	4.00	2.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Equipment Installation	3	10.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Pipeline - Final Paving	3	6.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Security, Entrance and Pipeline - Pavement	2	8.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
Stripping	0	4.00	4.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Paving	2	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT
WTP - Architectural Coating	1	6.00	2.00	0.00	14.70	6.90	20.00	LD_Mix	HDT_Mix	HHDT

**3.1 Mitigation Measures Construction**

Water Exposed Area

**3.2 WTP - Demolition - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.6738	5.6686	9.1464	0.0145		0.2799	0.2799		0.2678	0.2678		1,394.3478	1,394.3478	0.2885		1,401.5598
<b>Total</b>	<b>0.6738</b>	<b>5.6686</b>	<b>9.1464</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.2799</b>	<b>0.2799</b>	<b>0.0000</b>	<b>0.2678</b>	<b>0.2678</b>		<b>1,394.3478</b>	<b>1,394.3478</b>	<b>0.2885</b>		<b>1,401.5598</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.7500e-003	0.1216	0.0406	5.7000e-004	0.0140	2.3000e-004	0.0142	3.8300e-003	2.2000e-004	4.0500e-003		61.8124	61.8124	4.1400e-003		61.9159
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0164	9.7900e-003	0.1152	3.9000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		38.4519	38.4519	9.0000e-004		38.4744
<b>Total</b>	<b>0.0201</b>	<b>0.1313</b>	<b>0.1558</b>	<b>9.6000e-004</b>	<b>0.0587</b>	<b>5.4000e-004</b>	<b>0.0592</b>	<b>0.0157</b>	<b>5.1000e-004</b>	<b>0.0162</b>		<b>100.2643</b>	<b>100.2643</b>	<b>5.0400e-003</b>		<b>100.3903</b>

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.6738	5.6686	9.1464	0.0145		0.2799	0.2799		0.2678	0.2678	0.0000	1,394.3478	1,394.3478	0.2885		1,401.5598
<b>Total</b>	<b>0.6738</b>	<b>5.6686</b>	<b>9.1464</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.2799</b>	<b>0.2799</b>	<b>0.0000</b>	<b>0.2678</b>	<b>0.2678</b>	<b>0.0000</b>	<b>1,394.3478</b>	<b>1,394.3478</b>	<b>0.2885</b>		<b>1,401.5598</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	3.7500e-003	0.1216	0.0406	5.7000e-004	0.0140	2.3000e-004	0.0142	3.8300e-003	2.2000e-004	4.0500e-003		61.8124	61.8124	4.1400e-003		61.9159
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Worker	0.0164	9.7900e-003	0.1152	3.9000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		38.4519	38.4519	9.0000e-004		38.4744
<b>Total</b>	<b>0.0201</b>	<b>0.1313</b>	<b>0.1558</b>	<b>9.6000e-004</b>	<b>0.0587</b>	<b>5.4000e-004</b>	<b>0.0592</b>	<b>0.0157</b>	<b>5.1000e-004</b>	<b>0.0162</b>		<b>100.2643</b>	<b>100.2643</b>	<b>5.0400e-003</b>		<b>100.3903</b>

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Winter

**3.3 Pipeline - Installation - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.6738	5.6686	9.1464	0.0145		0.2799	0.2799		0.2678	0.2678		1,394.3478	1,394.3478	0.2885		1,401.5598
<b>Total</b>	<b>0.6738</b>	<b>5.6686</b>	<b>9.1464</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.2799</b>	<b>0.2799</b>	<b>0.0000</b>	<b>0.2678</b>	<b>0.2678</b>		<b>1,394.3478</b>	<b>1,394.3478</b>	<b>0.2885</b>		<b>1,401.5598</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3000e-004	7.6000e-003	2.5400e-003	4.0000e-005	8.7000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.5000e-004		3.8633	3.8633	2.6000e-004		3.8697
Vendor	8.2000e-003	0.2720	0.0847	9.5000e-004	0.0256	3.2000e-004	0.0259	7.3700e-003	3.1000e-004	7.6800e-003		101.7447	101.7447	5.9000e-003		101.8921
Worker	0.0491	0.0294	0.3456	1.1600e-003	0.1341	9.3000e-004	0.1351	0.0356	8.6000e-004	0.0364		115.3556	115.3556	2.7100e-003		115.4233
<b>Total</b>	<b>0.0575</b>	<b>0.3090</b>	<b>0.4328</b>	<b>2.1500e-003</b>	<b>0.1606</b>	<b>1.2600e-003</b>	<b>0.1619</b>	<b>0.0432</b>	<b>1.1800e-003</b>	<b>0.0444</b>		<b>220.9635</b>	<b>220.9635</b>	<b>8.8700e-003</b>		<b>221.1852</b>

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.6738	5.6686	9.1464	0.0145		0.2799	0.2799		0.2678	0.2678	0.0000	1,394.3478	1,394.3478	0.2885		1,401.5598
<b>Total</b>	<b>0.6738</b>	<b>5.6686</b>	<b>9.1464</b>	<b>0.0145</b>	<b>0.0000</b>	<b>0.2799</b>	<b>0.2799</b>	<b>0.0000</b>	<b>0.2678</b>	<b>0.2678</b>	<b>0.0000</b>	<b>1,394.3478</b>	<b>1,394.3478</b>	<b>0.2885</b>		<b>1,401.5598</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3000e-004	7.6000e-003	2.5400e-003	4.0000e-005	8.7000e-004	1.0000e-005	8.9000e-004	2.4000e-004	1.0000e-005	2.5000e-004		3.8633	3.8633	2.6000e-004		3.8697
Vendor	8.2000e-003	0.2720	0.0847	9.5000e-004	0.0256	3.2000e-004	0.0259	7.3700e-003	3.1000e-004	7.6800e-003		101.7447	101.7447	5.9000e-003		101.8921
Worker	0.0491	0.0294	0.3456	1.1600e-003	0.1341	9.3000e-004	0.1351	0.0356	8.6000e-004	0.0364		115.3556	115.3556	2.7100e-003		115.4233
<b>Total</b>	<b>0.0575</b>	<b>0.3090</b>	<b>0.4328</b>	<b>2.1500e-003</b>	<b>0.1606</b>	<b>1.2600e-003</b>	<b>0.1619</b>	<b>0.0432</b>	<b>1.1800e-003</b>	<b>0.0444</b>		<b>220.9635</b>	<b>220.9635</b>	<b>8.8700e-003</b>		<b>221.1852</b>

**3.4 WTP - Equipment Installation - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2921	3.1893	3.8336	6.2800e-003		0.1381	0.1381		0.1271	0.1271		608.1830	608.1830	0.1967		613.1005
<b>Total</b>	<b>0.2921</b>	<b>3.1893</b>	<b>3.8336</b>	<b>6.2800e-003</b>		<b>0.1381</b>	<b>0.1381</b>		<b>0.1271</b>	<b>0.1271</b>		<b>608.1830</b>	<b>608.1830</b>	<b>0.1967</b>		<b>613.1005</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0409	0.0245	0.2880	9.6000e-004	0.1118	7.8000e-004	0.1126	0.0296	7.2000e-004	0.0304		96.1296	96.1296	2.2600e-003		96.1861
<b>Total</b>	<b>0.0450</b>	<b>0.1605</b>	<b>0.3303</b>	<b>1.4400e-003</b>	<b>0.1246</b>	<b>9.4000e-004</b>	<b>0.1255</b>	<b>0.0333</b>	<b>8.7000e-004</b>	<b>0.0342</b>		<b>147.0020</b>	<b>147.0020</b>	<b>5.2100e-003</b>		<b>147.1321</b>

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2921	3.1893	3.8336	6.2800e-003		0.1381	0.1381		0.1271	0.1271	0.0000	608.1830	608.1830	0.1967		613.1005
<b>Total</b>	<b>0.2921</b>	<b>3.1893</b>	<b>3.8336</b>	<b>6.2800e-003</b>		<b>0.1381</b>	<b>0.1381</b>		<b>0.1271</b>	<b>0.1271</b>	<b>0.0000</b>	<b>608.1830</b>	<b>608.1830</b>	<b>0.1967</b>		<b>613.1005</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0409	0.0245	0.2880	9.6000e-004	0.1118	7.8000e-004	0.1126	0.0296	7.2000e-004	0.0304		96.1296	96.1296	2.2600e-003		96.1861
<b>Total</b>	<b>0.0450</b>	<b>0.1605</b>	<b>0.3303</b>	<b>1.4400e-003</b>	<b>0.1246</b>	<b>9.4000e-004</b>	<b>0.1255</b>	<b>0.0333</b>	<b>8.7000e-004</b>	<b>0.0342</b>		<b>147.0020</b>	<b>147.0020</b>	<b>5.2100e-003</b>		<b>147.1321</b>



**3.5 Pipeline - Final Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5164	5.0958	7.2921	0.0114		0.2551	0.2551		0.2347	0.2347		1,103.792 1	1,103.792 1	0.3570		1,112.716 8
Paving	0.0393					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.5557</b>	<b>5.0958</b>	<b>7.2921</b>	<b>0.0114</b>		<b>0.2551</b>	<b>0.2551</b>		<b>0.2347</b>	<b>0.2347</b>		<b>1,103.792 1</b>	<b>1,103.792 1</b>	<b>0.3570</b>		<b>1,112.716 8</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.2000e-003	0.2720	0.0847	9.5000e-004	0.0256	3.2000e-004	0.0259	7.3700e-003	3.1000e-004	7.6800e-003		101.7447	101.7447	5.9000e-003		101.8921
Worker	0.0245	0.0147	0.1728	5.8000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		57.6778	57.6778	1.3500e-003		57.7117
<b>Total</b>	<b>0.0327</b>	<b>0.2867</b>	<b>0.2575</b>	<b>1.5300e-003</b>	<b>0.0927</b>	<b>7.9000e-004</b>	<b>0.0935</b>	<b>0.0252</b>	<b>7.4000e-004</b>	<b>0.0259</b>		<b>159.4225</b>	<b>159.4225</b>	<b>7.2500e-003</b>		<b>159.6038</b>

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.5164	5.0958	7.2921	0.0114		0.2551	0.2551		0.2347	0.2347	0.0000	1,103.7921	1,103.7921	0.3570		1,112.7168
Paving	0.0393					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.5557</b>	<b>5.0958</b>	<b>7.2921</b>	<b>0.0114</b>		<b>0.2551</b>	<b>0.2551</b>		<b>0.2347</b>	<b>0.2347</b>	<b>0.0000</b>	<b>1,103.7921</b>	<b>1,103.7921</b>	<b>0.3570</b>		<b>1,112.7168</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.2000e-003	0.2720	0.0847	9.5000e-004	0.0256	3.2000e-004	0.0259	7.3700e-003	3.1000e-004	7.6800e-003		101.7447	101.7447	5.9000e-003		101.8921
Worker	0.0245	0.0147	0.1728	5.8000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		57.6778	57.6778	1.3500e-003		57.7117
<b>Total</b>	<b>0.0327</b>	<b>0.2867</b>	<b>0.2575</b>	<b>1.5300e-003</b>	<b>0.0927</b>	<b>7.9000e-004</b>	<b>0.0935</b>	<b>0.0252</b>	<b>7.4000e-004</b>	<b>0.0259</b>		<b>159.4225</b>	<b>159.4225</b>	<b>7.2500e-003</b>		<b>159.6038</b>

**3.6 WTP - Security, Entrance, and Landscaping - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0913	0.8005	1.0011	1.7500e-003		0.0289	0.0289		0.0278	0.0278		150.7594	150.7594	0.0377		151.7011
<b>Total</b>	<b>0.0913</b>	<b>0.8005</b>	<b>1.0011</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0289</b>	<b>0.0289</b>	<b>0.0000</b>	<b>0.0278</b>	<b>0.0278</b>		<b>150.7594</b>	<b>150.7594</b>	<b>0.0377</b>		<b>151.7011</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0327	0.0196	0.2304	7.7000e-004	0.0894	6.2000e-004	0.0900	0.0237	5.7000e-004	0.0243		76.9037	76.9037	1.8100e-003		76.9489
<b>Total</b>	<b>0.0368</b>	<b>0.1556</b>	<b>0.2728</b>	<b>1.2500e-003</b>	<b>0.1022</b>	<b>7.8000e-004</b>	<b>0.1030</b>	<b>0.0274</b>	<b>7.2000e-004</b>	<b>0.0281</b>		<b>127.7760</b>	<b>127.7760</b>	<b>4.7600e-003</b>		<b>127.8949</b>

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000			0.0000			0.0000
Off-Road	0.0913	0.8005	1.0011	1.7500e-003		0.0289	0.0289		0.0278	0.0278	0.0000	150.7594	150.7594	0.0377		151.7011
<b>Total</b>	<b>0.0913</b>	<b>0.8005</b>	<b>1.0011</b>	<b>1.7500e-003</b>	<b>0.0000</b>	<b>0.0289</b>	<b>0.0289</b>	<b>0.0000</b>	<b>0.0278</b>	<b>0.0278</b>	<b>0.0000</b>	<b>150.7594</b>	<b>150.7594</b>	<b>0.0377</b>		<b>151.7011</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0327	0.0196	0.2304	7.7000e-004	0.0894	6.2000e-004	0.0900	0.0237	5.7000e-004	0.0243		76.9037	76.9037	1.8100e-003		76.9489
<b>Total</b>	<b>0.0368</b>	<b>0.1556</b>	<b>0.2728</b>	<b>1.2500e-003</b>	<b>0.1022</b>	<b>7.8000e-004</b>	<b>0.1030</b>	<b>0.0274</b>	<b>7.2000e-004</b>	<b>0.0281</b>		<b>127.7760</b>	<b>127.7760</b>	<b>4.7600e-003</b>		<b>127.8949</b>

**3.7 Pipeline - Pavement Striping - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.8169					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>1.8169</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.2000e-003	0.2720	0.0847	9.5000e-004	0.0256	3.2000e-004	0.0259	7.3700e-003	3.1000e-004	7.6800e-003		101.7447	101.7447	5.9000e-003		101.8921
Worker	0.0164	9.7900e-003	0.1152	3.9000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		38.4519	38.4519	9.0000e-004		38.4744
<b>Total</b>	<b>0.0246</b>	<b>0.2818</b>	<b>0.1999</b>	<b>1.3400e-003</b>	<b>0.0703</b>	<b>6.3000e-004</b>	<b>0.0709</b>	<b>0.0192</b>	<b>6.0000e-004</b>	<b>0.0198</b>		<b>140.1965</b>	<b>140.1965</b>	<b>6.8000e-003</b>		<b>140.3665</b>

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.8169					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000
<b>Total</b>	<b>1.8169</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	8.2000e-003	0.2720	0.0847	9.5000e-004	0.0256	3.2000e-004	0.0259	7.3700e-003	3.1000e-004	7.6800e-003		101.7447	101.7447	5.9000e-003		101.8921
Worker	0.0164	9.7900e-003	0.1152	3.9000e-004	0.0447	3.1000e-004	0.0450	0.0119	2.9000e-004	0.0121		38.4519	38.4519	9.0000e-004		38.4744
<b>Total</b>	<b>0.0246</b>	<b>0.2818</b>	<b>0.1999</b>	<b>1.3400e-003</b>	<b>0.0703</b>	<b>6.3000e-004</b>	<b>0.0709</b>	<b>0.0192</b>	<b>6.0000e-004</b>	<b>0.0198</b>		<b>140.1965</b>	<b>140.1965</b>	<b>6.8000e-003</b>		<b>140.3665</b>

**3.8 WTP - Paving - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3457	3.4929	4.7354	7.3300e-003		0.1772	0.1772		0.1630	0.1630		709.3250	709.3250	0.2294		715.0603
Paving	0.3930					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.7387</b>	<b>3.4929</b>	<b>4.7354</b>	<b>7.3300e-003</b>		<b>0.1772</b>	<b>0.1772</b>		<b>0.1630</b>	<b>0.1630</b>		<b>709.3250</b>	<b>709.3250</b>	<b>0.2294</b>		<b>715.0603</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0245	0.0147	0.1728	5.8000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		57.6778	57.6778	1.3500e-003		57.7117
<b>Total</b>	<b>0.0286</b>	<b>0.1507</b>	<b>0.2152</b>	<b>1.0600e-003</b>	<b>0.0799</b>	<b>6.3000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>108.5501</b>	<b>108.5501</b>	<b>4.3000e-003</b>		<b>108.6577</b>

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3457	3.4929	4.7354	7.3300e-003		0.1772	0.1772		0.1630	0.1630	0.0000	709.3250	709.3250	0.2294		715.0603
Paving	0.3930					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
<b>Total</b>	<b>0.7387</b>	<b>3.4929</b>	<b>4.7354</b>	<b>7.3300e-003</b>		<b>0.1772</b>	<b>0.1772</b>		<b>0.1630</b>	<b>0.1630</b>	<b>0.0000</b>	<b>709.3250</b>	<b>709.3250</b>	<b>0.2294</b>		<b>715.0603</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0245	0.0147	0.1728	5.8000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		57.6778	57.6778	1.3500e-003		57.7117
<b>Total</b>	<b>0.0286</b>	<b>0.1507</b>	<b>0.2152</b>	<b>1.0600e-003</b>	<b>0.0799</b>	<b>6.3000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>108.5501</b>	<b>108.5501</b>	<b>4.3000e-003</b>		<b>108.6577</b>



**3.9 WTP - Architectural Coating - 2023****Unmitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.8169					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944		375.2641	375.2641	0.0225		375.8253
<b>Total</b>	<b>2.0725</b>	<b>1.7373</b>	<b>2.4148</b>	<b>3.9600e-003</b>		<b>0.0944</b>	<b>0.0944</b>		<b>0.0944</b>	<b>0.0944</b>		<b>375.2641</b>	<b>375.2641</b>	<b>0.0225</b>		<b>375.8253</b>

**Unmitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0245	0.0147	0.1728	5.8000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		57.6778	57.6778	1.3500e-003		57.7117
<b>Total</b>	<b>0.0286</b>	<b>0.1507</b>	<b>0.2152</b>	<b>1.0600e-003</b>	<b>0.0799</b>	<b>6.3000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>108.5501</b>	<b>108.5501</b>	<b>4.3000e-003</b>		<b>108.6577</b>

## APU Well and Water Treatment Facilities Project (Energy Site) - South Coast AQMD Air District, Winter

**Mitigated Construction On-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	1.8169					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2556	1.7373	2.4148	3.9600e-003		0.0944	0.0944		0.0944	0.0944	0.0000	375.2641	375.2641	0.0225		375.8253
<b>Total</b>	<b>2.0725</b>	<b>1.7373</b>	<b>2.4148</b>	<b>3.9600e-003</b>		<b>0.0944</b>	<b>0.0944</b>		<b>0.0944</b>	<b>0.0944</b>	<b>0.0000</b>	<b>375.2641</b>	<b>375.2641</b>	<b>0.0225</b>		<b>375.8253</b>

**Mitigated Construction Off-Site**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Vendor	4.1000e-003	0.1360	0.0424	4.8000e-004	0.0128	1.6000e-004	0.0130	3.6900e-003	1.5000e-004	3.8400e-003		50.8723	50.8723	2.9500e-003		50.9460
Worker	0.0245	0.0147	0.1728	5.8000e-004	0.0671	4.7000e-004	0.0675	0.0178	4.3000e-004	0.0182		57.6778	57.6778	1.3500e-003		57.7117
<b>Total</b>	<b>0.0286</b>	<b>0.1507</b>	<b>0.2152</b>	<b>1.0600e-003</b>	<b>0.0799</b>	<b>6.3000e-004</b>	<b>0.0805</b>	<b>0.0215</b>	<b>5.8000e-004</b>	<b>0.0221</b>		<b>108.5501</b>	<b>108.5501</b>	<b>4.3000e-003</b>		<b>108.6577</b>

**APU Well and Water Treatment Facilities Project (Operational Emissions)**  
**South Coast AQMD Air District, Annual**

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Industrial Park	1.00	1000sqft	0.02	1,000.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2024
<b>Utility Company</b>	Anaheim Public Utilities				
<b>CO2 Intensity (lb/MW hr)</b>	1543.28	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - APU Well and Water Treatment Facilities Project. SCAQMD.

Vehicle Trips - Project would result in one trip (two one-way trips) per day.

Energy Use -

Water And Wastewater - Default water consumption

Solid Waste - Default solid waste

Construction Off-road Equipment Mitigation -

Fleet Mix - Assume 50% LDT1 and 50% LDT2

Operational Off-Road Equipment -

Stationary Sources - Emergency Generators and Fire Pumps - Assumed four 350 kW backup generators.

## APU Well and Water Treatment Facilities Project (Operational Emissions) - South Coast AQMD Air District, Annual

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	500	1
tblAreaCoating	Area_Nonresidential_Interior	1500	2
tblFleetMix	HHD	0.04	0.00
tblFleetMix	LDA	0.55	0.00
tblFleetMix	LDT1	0.04	0.50
tblFleetMix	LDT2	0.20	0.50
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	5.8060e-003	0.00
tblFleetMix	MCY	4.8910e-003	0.00
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MH	8.4500e-004	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	2.1340e-003	0.00
tblFleetMix	SBUS	7.1200e-004	0.00
tblFleetMix	UBUS	1.7360e-003	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	530.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	4.00
tblVehicleTrips	ST_TR	2.49	8.00
tblVehicleTrips	SU_TR	0.73	8.00
tblVehicleTrips	WD_TR	6.83	8.00

## 2.0 Emissions Summary

### 2.2 Overall Operational

#### Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.6200e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	5.0000e-005	4.5000e-004	3.8000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	10.2810	10.2810	1.9000e-004	5.0000e-005	10.2999
Mobile	2.4100e-003	3.4500e-003	0.0399	1.2000e-004	0.0119	9.0000e-005	0.0120	3.1500e-003	9.0000e-005	3.2400e-003	0.0000	10.6092	10.6092	2.8000e-004	0.0000	10.6163
Offroad	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Stationary	0.0870	0.2431	0.2218	4.2000e-004		0.0128	0.0128		0.0128	0.0128	0.0000	40.3645	40.3645	5.6600e-003	0.0000	40.5060
Waste						0.0000	0.0000		0.0000	0.0000	0.2517	0.0000	0.2517	0.0149	0.0000	0.6236
Water						0.0000	0.0000		0.0000	0.0000	0.0734	2.1078	2.1812	7.5700e-003	1.9000e-004	2.4260
<b>Total</b>	<b>0.0930</b>	<b>0.2470</b>	<b>0.2621</b>	<b>5.4000e-004</b>	<b>0.0119</b>	<b>0.0129</b>	<b>0.0248</b>	<b>3.1500e-003</b>	<b>0.0129</b>	<b>0.0161</b>	<b>0.3251</b>	<b>63.3626</b>	<b>63.6877</b>	<b>0.0286</b>	<b>2.4000e-004</b>	<b>64.4719</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	3.6200e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Energy	5.0000e-005	4.5000e-004	3.8000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	10.2810	10.2810	1.9000e-004	5.0000e-005	10.2999
Mobile	2.4100e-003	3.4500e-003	0.0399	1.2000e-004	0.0119	9.0000e-005	0.0120	3.1500e-003	9.0000e-005	3.2400e-003	0.0000	10.6092	10.6092	2.8000e-004	0.0000	10.6163
Offroad	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Stationary	0.0870	0.2431	0.2218	4.2000e-004		0.0128	0.0128		0.0128	0.0128	0.0000	40.3645	40.3645	5.6600e-003	0.0000	40.5060
Waste						0.0000	0.0000		0.0000	0.0000	0.2517	0.0000	0.2517	0.0149	0.0000	0.6236
Water						0.0000	0.0000		0.0000	0.0000	0.0734	2.1078	2.1812	7.5700e-003	1.9000e-004	2.4260
Total	0.0930	0.2470	0.2621	5.4000e-004	0.0119	0.0129	0.0248	3.1500e-003	0.0129	0.0161	0.3251	63.3626	63.6877	0.0286	2.4000e-004	64.4719

[illegible]

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	2.4100e-003	3.4500e-003	0.0399	1.2000e-004	0.0119	9.0000e-005	0.0120	3.1500e-003	9.0000e-005	3.2400e-003	0.0000	10.6092	10.6092	2.8000e-004	0.0000	10.6163
Unmitigated	2.4100e-003	3.4500e-003	0.0399	1.2000e-004	0.0119	9.0000e-005	0.0120	3.1500e-003	9.0000e-005	3.2400e-003	0.0000	10.6092	10.6092	2.8000e-004	0.0000	10.6163

### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Industrial Park	8.00	8.00	8.00	31,815	31,815
Total	8.00	8.00	8.00	31,815	31,815

### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Industrial Park	16.60	8.40	6.90	59.00	28.00	13.00	79	19	2

### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Industrial Park	0.000000	0.500000	0.500000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

## APU Well and Water Treatment Facilities Project (Operational Emissions) - South Coast AQMD Air District, Annual

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	9.7933	9.7933	1.8000e-004	4.0000e-005	9.8092
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	9.7933	9.7933	1.8000e-004	4.0000e-005	9.8092
NaturalGas Mitigated	5.0000e-005	4.5000e-004	3.8000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.4878	0.4878	1.0000e-005	1.0000e-005	0.4906
NaturalGas Unmitigated	5.0000e-005	4.5000e-004	3.8000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.4878	0.4878	1.0000e-005	1.0000e-005	0.4906

**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Industrial Park	9140	5.0000e-005	4.5000e-004	3.8000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.4878	0.4878	1.0000e-005	1.0000e-005	0.4906
<b>Total</b>		<b>5.0000e-005</b>	<b>4.5000e-004</b>	<b>3.8000e-004</b>	<b>0.0000</b>		<b>3.0000e-005</b>	<b>3.0000e-005</b>		<b>3.0000e-005</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.4878</b>	<b>0.4878</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.4906</b>



## APU Well and Water Treatment Facilities Project (Operational Emissions) - South Coast AQMD Air District, Annual

**Mitigated**

	Natural Gas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Industrial Park	9140	5.0000e-005	4.5000e-004	3.8000e-004	0.0000		3.0000e-005	3.0000e-005		3.0000e-005	3.0000e-005	0.0000	0.4878	0.4878	1.0000e-005	1.0000e-005	0.4906
<b>Total</b>		<b>5.0000e-005</b>	<b>4.5000e-004</b>	<b>3.8000e-004</b>	<b>0.0000</b>		<b>3.0000e-005</b>	<b>3.0000e-005</b>		<b>3.0000e-005</b>	<b>3.0000e-005</b>	<b>0.0000</b>	<b>0.4878</b>	<b>0.4878</b>	<b>1.0000e-005</b>	<b>1.0000e-005</b>	<b>0.4906</b>

**5.3 Energy by Land Use - Electricity****Unmitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Industrial Park	13990	9.7933	1.8000e-004	4.0000e-005	9.8092
<b>Total</b>		<b>9.7933</b>	<b>1.8000e-004</b>	<b>4.0000e-005</b>	<b>9.8092</b>

## APU Well and Water Treatment Facilities Project (Operational Emissions) - South Coast AQMD Air District, Annual

**Mitigated**

	Electricity Use	Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	MT/yr			
Industrial Park	13990	9.7933	1.8000e-004	4.0000e-005	9.8092
<b>Total</b>		<b>9.7933</b>	<b>1.8000e-004</b>	<b>4.0000e-005</b>	<b>9.8092</b>

**6.0 Area Detail****6.1 Mitigation Measures Area**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.6200e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
Unmitigated	3.6200e-003	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005

## APU Well and Water Treatment Facilities Project (Operational Emissions) - South Coast AQMD Air District, Annual

**6.2 Area by SubCategory****Unmitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
<b>Total</b>	<b>3.6100e-003</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>3.0000e-005</b>

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	3.6100e-003					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	1.0000e-005	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	2.0000e-005	2.0000e-005	0.0000	0.0000	3.0000e-005
<b>Total</b>	<b>3.6100e-003</b>	<b>0.0000</b>	<b>1.0000e-005</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>	<b>0.0000</b>	<b>2.0000e-005</b>	<b>2.0000e-005</b>	<b>0.0000</b>	<b>0.0000</b>	<b>3.0000e-005</b>

## 7.0 Water Detail

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### 7.1 Mitigation Measures Water

	Total CO2	CH4	N2O	CO2e
Category	MT/yr			
Mitigated	2.1812	7.5700e-003	1.9000e-004	2.4260
Unmitigated	2.1812	7.5700e-003	1.9000e-004	2.4260

### 7.2 Water by Land Use

#### Unmitigated

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Industrial Park	0.23125 / 0	2.1812	7.5700e-003	1.9000e-004	2.4260
<b>Total</b>		<b>2.1812</b>	<b>7.5700e-003</b>	<b>1.9000e-004</b>	<b>2.4260</b>

**Mitigated**

	Indoor/Outdoor Use	Total CO2	CH4	N2O	CO2e
Land Use	Mgal	MT/yr			
Industrial Park	0.23125 / 0	2.1812	7.5700e-003	1.9000e-004	2.4260
<b>Total</b>		<b>2.1812</b>	<b>7.5700e-003</b>	<b>1.9000e-004</b>	<b>2.4260</b>

**8.0 Waste Detail**

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**8.1 Mitigation Measures Waste****Category/Year**

	Total CO2	CH4	N2O	CO2e
	MT/yr			
Mitigated	0.2517	0.0149	0.0000	0.6236
Unmitigated	0.2517	0.0149	0.0000	0.6236

**8.2 Waste by Land Use****Unmitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Industrial Park	1.24	0.2517	0.0149	0.0000	0.6236
<b>Total</b>		<b>0.2517</b>	<b>0.0149</b>	<b>0.0000</b>	<b>0.6236</b>

**Mitigated**

	Waste Disposed	Total CO2	CH4	N2O	CO2e
Land Use	tons	MT/yr			
Industrial Park	1.24	0.2517	0.0149	0.0000	0.6236
<b>Total</b>		<b>0.2517</b>	<b>0.0149</b>	<b>0.0000</b>	<b>0.6236</b>

## 10.0 Stationary Equipment

### Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	4	1	50	530	0.73	Diesel

## 10.1 Stationary Sources

### Unmitigated/Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	tons/yr										MT/yr					
Emergency Generator - Diesel	0.0870	0.2431	0.2218	4.2000e-004		0.0128	0.0128		0.0128	0.0128	0.0000	40.3645	40.3645	5.6600e-003	0.0000	40.5060
<b>Total</b>	<b>0.0870</b>	<b>0.2431</b>	<b>0.2218</b>	<b>4.2000e-004</b>		<b>0.0128</b>	<b>0.0128</b>		<b>0.0128</b>	<b>0.0128</b>	<b>0.0000</b>	<b>40.3645</b>	<b>40.3645</b>	<b>5.6600e-003</b>	<b>0.0000</b>	<b>40.5060</b>

**APU Well and Water Treatment Facilities Project (Operational Emissions)**  
**South Coast AQMD Air District, Summer**

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Industrial Park	1.00	1000sqft	0.02	1,000.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2024
<b>Utility Company</b>	Anaheim Public Utilities				
<b>CO2 Intensity (lb/MW hr)</b>	1543.28	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - APU Well and Water Treatment Facilities Project. SCAQMD.

Vehicle Trips - Project would result in one trip (two one-way trips) per day.

Energy Use -

Water And Wastewater - Default water consumption

Solid Waste - Default solid waste

Construction Off-road Equipment Mitigation -

Fleet Mix - Assume 50% LDT1 and 50% LDT2

Operational Off-Road Equipment -

Stationary Sources - Emergency Generators and Fire Pumps - Assumed four 350 kW backup generators.



## APU Well and Water Treatment Facilities Project (Operational Emissions) - South Coast AQMD Air District, Summer

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	500	1
tblAreaCoating	Area_Nonresidential_Interior	1500	2
tblFleetMix	HHD	0.04	0.00
tblFleetMix	LDA	0.55	0.00
tblFleetMix	LDT1	0.04	0.50
tblFleetMix	LDT2	0.20	0.50
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	5.8060e-003	0.00
tblFleetMix	MCY	4.8910e-003	0.00
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MH	8.4500e-004	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	2.1340e-003	0.00
tblFleetMix	SBUS	7.1200e-004	0.00
tblFleetMix	UBUS	1.7360e-003	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	530.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	4.00
tblVehicleTrips	ST_TR	2.49	8.00
tblVehicleTrips	SU_TR	0.73	8.00
tblVehicleTrips	WD_TR	6.83	8.00

## 2.0 Emissions Summary

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### 2.2 Overall Operational Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0198	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	2.7000e-004	2.4600e-003	2.0600e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		2.9460	2.9460	6.0000e-005	5.0000e-005	2.9635
Mobile	0.0149	0.0169	0.2357	6.8000e-004	0.0664	5.2000e-004	0.0669	0.0176	4.8000e-004	0.0181		67.5485	67.5485	1.8100e-003		67.5937
Offroad	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Stationary	3.4786	9.7238	8.8709	0.0167		0.5118	0.5118		0.5118	0.5118		1,779.7699	1,779.7699	0.2495		1,786.0081
<b>Total</b>	<b>3.5135</b>	<b>9.7432</b>	<b>9.1087</b>	<b>0.0174</b>	<b>0.0664</b>	<b>0.5125</b>	<b>0.5789</b>	<b>0.0176</b>	<b>0.5125</b>	<b>0.5301</b>		<b>1,850.2646</b>	<b>1,850.2646</b>	<b>0.2514</b>	<b>5.0000e-005</b>	<b>1,856.5655</b>

## APU Well and Water Treatment Facilities Project (Operational Emissions) - South Coast AQMD Air District, Summer

**Mitigated Operational**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0198	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	2.7000e-004	2.4600e-003	2.0600e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		2.9460	2.9460	6.0000e-005	5.0000e-005	2.9635
Mobile	0.0149	0.0169	0.2357	6.8000e-004	0.0664	5.2000e-004	0.0669	0.0176	4.8000e-004	0.0181		67.5485	67.5485	1.8100e-003		67.5937
Offroad	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Stationary	3.4786	9.7238	8.8709	0.0167		0.5118	0.5118		0.5118	0.5118		1,779.7699	1,779.7699	0.2495		1,786.0081
<b>Total</b>	<b>3.5135</b>	<b>9.7432</b>	<b>9.1087</b>	<b>0.0174</b>	<b>0.0664</b>	<b>0.5125</b>	<b>0.5789</b>	<b>0.0176</b>	<b>0.5125</b>	<b>0.5301</b>		<b>1,850.2646</b>	<b>1,850.2646</b>	<b>0.2514</b>	<b>5.0000e-005</b>	<b>1,856.5655</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N2O	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**4.0 Operational Detail - Mobile****4.1 Mitigation Measures Mobile**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0149	0.0169	0.2357	6.8000e-004	0.0664	5.2000e-004	0.0669	0.0176	4.8000e-004	0.0181		67.5485	67.5485	1.8100e-003		67.5937
Unmitigated	0.0149	0.0169	0.2357	6.8000e-004	0.0664	5.2000e-004	0.0669	0.0176	4.8000e-004	0.0181		67.5485	67.5485	1.8100e-003		67.5937

## 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Industrial Park	8.00	8.00	8.00	31,815	31,815
Total	8.00	8.00	8.00	31,815	31,815

## 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Industrial Park	16.60	8.40	6.90	59.00	28.00	13.00	79	19	2

## 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Industrial Park	0.000000	0.500000	0.500000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

## 5.0 Energy Detail

Historical Energy Use: N

## 5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.7000e-004	2.4600e-003	2.0600e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		2.9460	2.9460	6.0000e-005	5.0000e-005	2.9635
NaturalGas Unmitigated	2.7000e-004	2.4600e-003	2.0600e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		2.9460	2.9460	6.0000e-005	5.0000e-005	2.9635

## APU Well and Water Treatment Facilities Project (Operational Emissions) - South Coast AQMD Air District, Summer

**5.2 Energy by Land Use - NaturalGas****Unmitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Industrial Park	25.0411	2.7000e-004	2.4600e-003	2.0600e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		2.9460	2.9460	6.0000e-005	5.0000e-005	2.9635
<b>Total</b>		<b>2.7000e-004</b>	<b>2.4600e-003</b>	<b>2.0600e-003</b>	<b>1.0000e-005</b>		<b>1.9000e-004</b>	<b>1.9000e-004</b>		<b>1.9000e-004</b>	<b>1.9000e-004</b>		<b>2.9460</b>	<b>2.9460</b>	<b>6.0000e-005</b>	<b>5.0000e-005</b>	<b>2.9635</b>

**Mitigated**

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Industrial Park	0.0250411	2.7000e-004	2.4600e-003	2.0600e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		2.9460	2.9460	6.0000e-005	5.0000e-005	2.9635
<b>Total</b>		<b>2.7000e-004</b>	<b>2.4600e-003</b>	<b>2.0600e-003</b>	<b>1.0000e-005</b>		<b>1.9000e-004</b>	<b>1.9000e-004</b>		<b>1.9000e-004</b>	<b>1.9000e-004</b>		<b>2.9460</b>	<b>2.9460</b>	<b>6.0000e-005</b>	<b>5.0000e-005</b>	<b>2.9635</b>

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0198	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0198	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

### 6.2 Area by SubCategory

#### Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
<b>Total</b>	<b>0.0198</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>		<b>2.3000e-004</b>

## APU Well and Water Treatment Facilities Project (Operational Emissions) - South Coast AQMD Air District, Summer

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
<b>Total</b>	<b>0.0198</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>		<b>2.3000e-004</b>

**10.0 Stationary Equipment****Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	4	1	50	530	0.73	Diesel

**10.1 Stationary Sources****Unmitigated/Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel	3.4786	9.7238	8.8709	0.0167		0.5118	0.5118		0.5118	0.5118		1,779.7699	1,779.7699	0.2495		1,786.0081
<b>Total</b>	<b>3.4786</b>	<b>9.7238</b>	<b>8.8709</b>	<b>0.0167</b>		<b>0.5118</b>	<b>0.5118</b>		<b>0.5118</b>	<b>0.5118</b>		<b>1,779.7699</b>	<b>1,779.7699</b>	<b>0.2495</b>		<b>1,786.0081</b>

**APU Well and Water Treatment Facilities Project (Operational Emissions)**  
**South Coast AQMD Air District, Winter**

## 1.0 Project Characteristics

### 1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Industrial Park	1.00	1000sqft	0.02	1,000.00	0

### 1.2 Other Project Characteristics

<b>Urbanization</b>	Urban	<b>Wind Speed (m/s)</b>	2.2	<b>Precipitation Freq (Days)</b>	31
<b>Climate Zone</b>	8			<b>Operational Year</b>	2024
<b>Utility Company</b>	Anaheim Public Utilities				
<b>CO2 Intensity (lb/MW hr)</b>	1543.28	<b>CH4 Intensity (lb/MW hr)</b>	0.029	<b>N2O Intensity (lb/MW hr)</b>	0.006

### 1.3 User Entered Comments & Non-Default Data

Project Characteristics - APU Well and Water Treatment Facilities Project. SCAQMD.

Vehicle Trips - Project would result in one trip (two one-way trips) per day.

Energy Use -

Water And Wastewater - Default water consumption

Solid Waste - Default solid waste

Construction Off-road Equipment Mitigation -

Fleet Mix - Assume 50% LDT1 and 50% LDT2

Operational Off-Road Equipment -

Stationary Sources - Emergency Generators and Fire Pumps - Assumed four 350 kW backup generators.



## APU Well and Water Treatment Facilities Project (Operational Emissions) - South Coast AQMD Air District, Winter

Table Name	Column Name	Default Value	New Value
tblAreaCoating	Area_Nonresidential_Exterior	500	1
tblAreaCoating	Area_Nonresidential_Interior	1500	2
tblFleetMix	HHD	0.04	0.00
tblFleetMix	LDA	0.55	0.00
tblFleetMix	LDT1	0.04	0.50
tblFleetMix	LDT2	0.20	0.50
tblFleetMix	LHD1	0.01	0.00
tblFleetMix	LHD2	5.8060e-003	0.00
tblFleetMix	MCY	4.8910e-003	0.00
tblFleetMix	MDV	0.12	0.00
tblFleetMix	MH	8.4500e-004	0.00
tblFleetMix	MHD	0.02	0.00
tblFleetMix	OBUS	2.1340e-003	0.00
tblFleetMix	SBUS	7.1200e-004	0.00
tblFleetMix	UBUS	1.7360e-003	0.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblOffRoadEquipment	UsageHours	8.00	0.00
tblStationaryGeneratorsPumpsUse	HorsePowerValue	0.00	530.00
tblStationaryGeneratorsPumpsUse	HoursPerDay	0.00	1.00
tblStationaryGeneratorsPumpsUse	HoursPerYear	0.00	50.00
tblStationaryGeneratorsPumpsUse	NumberOfEquipment	0.00	4.00
tblVehicleTrips	ST_TR	2.49	8.00
tblVehicleTrips	SU_TR	0.73	8.00
tblVehicleTrips	WD_TR	6.83	8.00

## 2.0 Emissions Summary

### 2.2 Overall Operational

#### Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0198	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	2.7000e-004	2.4600e-003	2.0600e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		2.9460	2.9460	6.0000e-005	5.0000e-005	2.9635
Mobile	0.0137	0.0185	0.2137	6.3000e-004	0.0664	5.2000e-004	0.0669	0.0176	4.8000e-004	0.0181		63.2614	63.2614	1.6900e-003		63.3037
Offroad	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Stationary	3.4786	9.7238	8.8709	0.0167		0.5118	0.5118		0.5118	0.5118		1,779.7699	1,779.7699	0.2495		1,786.0081
<b>Total</b>	<b>3.5124</b>	<b>9.7448</b>	<b>9.0868</b>	<b>0.0174</b>	<b>0.0664</b>	<b>0.5125</b>	<b>0.5789</b>	<b>0.0176</b>	<b>0.5125</b>	<b>0.5301</b>		<b>1,845.9775</b>	<b>1,845.9775</b>	<b>0.2513</b>	<b>5.0000e-005</b>	<b>1,852.2755</b>

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.0198	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Energy	2.7000e-004	2.4600e-003	2.0600e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		2.9460	2.9460	6.0000e-005	5.0000e-005	2.9635
Mobile	0.0137	0.0185	0.2137	6.3000e-004	0.0664	5.2000e-004	0.0669	0.0176	4.8000e-004	0.0181		63.2614	63.2614	1.6900e-003		63.3037
Offroad	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000		0.0000
Stationary	3.4786	9.7238	8.8709	0.0167		0.5118	0.5118		0.5118	0.5118		1,779.7699	1,779.7699	0.2495		1,786.0081
Total	3.5124	9.7448	9.0868	0.0174	0.0664	0.5125	0.5789	0.0176	0.5125	0.5301		1,845.9775	1,845.9775	0.2513	5.0000e-005	1,852.2755

[illegible]

## 4.0 Operational Detail - Mobile

### 4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0137	0.0185	0.2137	6.3000e-004	0.0664	5.2000e-004	0.0669	0.0176	4.8000e-004	0.0181		63.2614	63.2614	1.6900e-003		63.3037
Unmitigated	0.0137	0.0185	0.2137	6.3000e-004	0.0664	5.2000e-004	0.0669	0.0176	4.8000e-004	0.0181		63.2614	63.2614	1.6900e-003		63.3037

### 4.2 Trip Summary Information

Land Use	Average Daily Trip Rate			Unmitigated	Mitigated
	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Industrial Park	8.00	8.00	8.00	31,815	31,815
Total	8.00	8.00	8.00	31,815	31,815

### 4.3 Trip Type Information

Land Use	Miles			Trip %			Trip Purpose %		
	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Industrial Park	16.60	8.40	6.90	59.00	28.00	13.00	79	19	2

### 4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Industrial Park	0.000000	0.500000	0.500000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000

## 5.0 Energy Detail

Historical Energy Use: N

### 5.1 Mitigation Measures Energy

## APU Well and Water Treatment Facilities Project (Operational Emissions) - South Coast AQMD Air District, Winter

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	2.7000e-004	2.4600e-003	2.0600e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		2.9460	2.9460	6.0000e-005	5.0000e-005	2.9635
NaturalGas Unmitigated	2.7000e-004	2.4600e-003	2.0600e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		2.9460	2.9460	6.0000e-005	5.0000e-005	2.9635

## 5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Industrial Park	25.0411	2.7000e-004	2.4600e-003	2.0600e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		2.9460	2.9460	6.0000e-005	5.0000e-005	2.9635
<b>Total</b>		<b>2.7000e-004</b>	<b>2.4600e-003</b>	<b>2.0600e-003</b>	<b>1.0000e-005</b>		<b>1.9000e-004</b>	<b>1.9000e-004</b>		<b>1.9000e-004</b>	<b>1.9000e-004</b>		<b>2.9460</b>	<b>2.9460</b>	<b>6.0000e-005</b>	<b>5.0000e-005</b>	<b>2.9635</b>

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					

## APU Well and Water Treatment Facilities Project (Operational Emissions) - South Coast AQMD Air District, Winter

Industrial Park	0.0250411	2.7000e-004	2.4600e-003	2.0600e-003	1.0000e-005		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004		2.9460	2.9460	6.0000e-005	5.0000e-005	2.9635
<b>Total</b>		<b>2.7000e-004</b>	<b>2.4600e-003</b>	<b>2.0600e-003</b>	<b>1.0000e-005</b>		<b>1.9000e-004</b>	<b>1.9000e-004</b>		<b>1.9000e-004</b>	<b>1.9000e-004</b>		<b>2.9460</b>	<b>2.9460</b>	<b>6.0000e-005</b>	<b>5.0000e-005</b>	<b>2.9635</b>

## 6.0 Area Detail

### 6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0198	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
Unmitigated	0.0198	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004

### 6.2 Area by SubCategory

#### Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
<b>Total</b>	<b>0.0198</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>		<b>2.3000e-004</b>

## APU Well and Water Treatment Facilities Project (Operational Emissions) - South Coast AQMD Air District, Winter

**Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0198					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.0000e-005	0.0000	1.0000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		2.2000e-004	2.2000e-004	0.0000		2.3000e-004
<b>Total</b>	<b>0.0198</b>	<b>0.0000</b>	<b>1.0000e-004</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>0.0000</b>	<b>0.0000</b>		<b>2.2000e-004</b>	<b>2.2000e-004</b>	<b>0.0000</b>		<b>2.3000e-004</b>

**10.0 Stationary Equipment****Fire Pumps and Emergency Generators**

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type
Emergency Generator	4	1	50	530	0.73	Diesel

**10.1 Stationary Sources****Unmitigated/Mitigated**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Equipment Type	lb/day										lb/day					
Emergency Generator - Diesel	3.4786	9.7238	8.8709	0.0167		0.5118	0.5118		0.5118	0.5118		1,779.7699	1,779.7699	0.2495		1,786.0081
<b>Total</b>	<b>3.4786</b>	<b>9.7238</b>	<b>8.8709</b>	<b>0.0167</b>		<b>0.5118</b>	<b>0.5118</b>		<b>0.5118</b>	<b>0.5118</b>		<b>1,779.7699</b>	<b>1,779.7699</b>	<b>0.2495</b>		<b>1,786.0081</b>

## Construction - La Palma

### Hours of Operation for Construction Equipment

Phase 1	Equipment Type	Number of Equipment	Hours/day	Phase Duration	Hours of Equipment Use	Phase Totals	MTCO2
<b>Water Well - Grading</b>							
	Cement and Mortar Mixers	1		4	10	40	
	Excavators	1		4	10	40	
	Total	2					80 1.25
<b>Water Well - Well Construction</b>							
	Bore Drill Rigs	1		24	50	1,200	
	Excavators	1		8	50	400	
	Total	2					1,600 73.40
<b>Water Well - Equipment Installation</b>							
	Cranes	1		4	5	20	
	Forklifts	1		8	5	40	
	Total	2					60 1.40
<b>Pipeline - Installation</b>							
	Concrete Industrial Saws	1		8	20	160	
	Excavators	1		8	20	160	
	Tractors/Loaders/Backhoes	1		8	20	160	
	Total	3					480 12.64
<b>Pipeline - Final Paving</b>							
	Pavers	1		8	5	40	
	Paving Equipment	1		8	5	40	
	Pavers	1		8	5	40	
	Total	3					120 2.50
<b>Pipeline - Pavement Striping</b>							
		0		0	1	0	
	Total	0					0 0.00
<b>WTP - Site Prep and Grading</b>							
	Graders	1		8	10	80	
	Rubber Tired Dozers	1		8	10	80	
	Tractors/Loaders/Backhoes	2		8	10	160	
	Total	4					320 9.39
<b>WTP - Equipment Installation</b>							
	Cranes	1		4	66	264	
	Forklifts	1		8	66	528	
	Total	2					792 33.60
<b>WTP - Security, Entrance, and Landscaping</b>							
	Cement and Mortar Mixers	1		8	10	80	
	Skid Steer Loaders	1		4	10	40	
	Total	2					120 0.68
<b>WTP - Paving</b>							
	Pavers	1		8	5	40	
	Rollers	1		8	5	40	
	Total	2					80 1.61
<b>WTP - Arch Coatings</b>							
	Air Compressors	1		8	5	40	
	Total	1					40 0.85
							3,692

### Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO2 (MT)	Kg/CO2/Gallon	Gallons
Water Well - Grading	2	1.25	10.21	122.33
Water Well - Well Construction	2	73.40	10.21	7,189.01
Water Well - Equipment Installation	2	1.40	10.21	137.30
Pipeline - Installation	3	12.64	10.21	1,238.00
Pipeline - Final Paving	3	2.50	10.21	245.14
Pipeline - Pavement Striping	0	0.00	10.21	0.00
WTP - Site Prep and Grading	4	9.39	10.21	919.99
WTP - Equipment Installation	2	33.60	10.21	3,291.22
WTP - Security, Entrance, and Landscaping	2	0.68	10.21	66.95
WTP - Paving	2	1.61	10.21	157.57
WTP - Arch Coatings	1	0.85	10.21	83.36
		23	137.3335	Total
				13,450.88

### Construction Worker Gasoline Demand

Phase	Trips	Vehicle CO2 (MT)	Kg/CO2/Gallon	Gallons
Water Well - Grading	120	0.57	8.78	65.31
Water Well - Well Construction	400	1.91	8.78	217.69
Water Well - Equipment Installation	40	0.19	8.78	21.77
Pipeline - Installation	240	1.15	8.78	130.62
Pipeline - Final Paving	30	0.14	8.78	16.33
Pipeline - Pavement Striping	4	0.02	8.78	2.18
WTP - Site Prep and Grading	120	0.57	8.78	65.31
WTP - Equipment Installation	660	3.14	8.78	357.43
WTP - Security, Entrance, and Landscaping	80	0.37	8.78	41.98
WTP - Paving	30	0.14	8.78	15.74
WTP - Arch Coatings	30	0.14	8.78	15.74
		1,754	8.34	Total
				950.08



Construction Vendor Truck Diesel Demand

Phase	Trips	Vehicle			
		CO2 (MT)	Kg/CO2/Gallon	Gallons	
Water Well - Grading		60	0.73	10.21	71.73
Water Well - Well Construction		100	1.22	10.21	119.56
Water Well - Equipment Installation		10	0.12	10.21	11.96
Pipeline - Installation		80	0.98	10.21	95.65
Pipeline - Final Paving		20	0.24	10.21	23.92
Pipeline - Pavement Striping		4	0.05	10.21	4.78
WTP - Site Prep and Grading		0	0.00	10.21	0.00
WTP - Equipment Installation		132	1.61	10.21	157.63
WTP - Security, Entrance, and Landscaping		20	0.24	10.21	23.70
WTP - Paving		10	0.12	10.21	11.85
WTP - Arch Coatings		10	0.12	10.21	11.85
		446	5.44	Total	532.63

Construction Haul Truck Diesel Demand

Phase	Trips	Vehicle			
		CO2 (MT)	Kg/CO2/Gallon	Gallons	
Water Well - Grading		0	0.00	10.21	0.00
Water Well - Well Construction		40	1.49	10.21	146.27
Water Well - Equipment Installation		0	0.00	10.21	0.00
Pipeline - Installation		0	0.00	10.21	0.00
Pipeline - Final Paving		0	0.00	10.21	0.00
Pipeline - Pavement Striping		0	0.00	10.21	0.00
WTP - Site Prep and Grading		0	0.00	10.21	0.00
WTP - Equipment Installation		0	0.00	10.21	0.00
WTP - Security, Entrance, and Landscaping		0	0.00	10.21	0.00
WTP - Paving		0	0.00	10.21	0.00
WTP - Arch Coatings		0	0.00	10.21	0.00
		40	1.49	Total	146.27

Total Diesel	14,129.78
Total Gasoline	950.08
	15,079.86

California's Consumption of Petroleum Over Construction Period

78,600,000 gallons per day	Start	End	
12,183,000,000.00	9/1/2021	2/3/2022	155 days

## Construction - Linda Vista

### Hours of Operation for Construction Equipment

Phase 1	Equipment Type	Number of Equipment	Hours/day	Phase Duration	Hours of Equipment Use	Phase Totals	MTCO2
<b>Water Well - Grading</b>							
	Cement and Mortar Mixers	1	4		5	20	
	Excavators	1	4		5	20	
	Total	2					40 0.62
<b>Water Well - Well Construction</b>							
	Bore Drill Rigs	1	24		25	600	
	Excavators	1	8		25	200	
	Total	2					800 36.75
<b>Water Well - Equipment Installation</b>							
	Cranes	1	4		5	20	
	Forklifts	1	8		5	40	
	Total	2					60 1.39
<b>Pipeline - Installation</b>							
	Concrete Industrial Saws	1	8		70	560	
	Excavators	1	8		70	560	
	Tractors/Loaders/Backhoes	1	8		70	560	
	Total	3					1,680 44.26
<b>Pipeline - Final Paving</b>							
	Pavers	1	8		5	40	
	Paving Equipment	1	8		5	40	
	Pavers	1	8		5	40	
	Total	3					120 2.50
<b>WTP - Demolition</b>							
	Concrete Industrial Saws	1	8		10	80	
	Tractors/Loaders/Backhoes	1	8		10	80	
	Total	2					160 4.05
<b>WTP - Site Prep and Grading</b>							
	Graders	1	8		5	40	
	Rubber Tired Dozers	1	8		5	40	
	Tractors/Loaders/Backhoes	2	8		5	80	
	Total	4					160 4.70
<b>WTP - Equipment Installation</b>							
	Cranes	1	4		131	524	
	Tractors/Loaders/Backhoes	1	8		131	1,048	
	Forklifts	1	4		131	524	
	Total	3					2,096 44.42
<b>WTP - Security, Entrance, and Landscaping</b>							
	Cement and Mortar Mixers	1	8		20	160	
	Skid Steer Loaders	1	4		20	80	
	Total	2					240 1.37
<b>WTP - Paving</b>							
	Pavers	1	8		10	80	
	Rollers	1	8		10	80	
	Total	2					160 3.22
<b>WTP - Arch Coatings</b>							
	Air Compressors	1	8		10	80	
	Total	1					80 1.70
							5,596

### Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO2 (MT)	Kg/CO2/Gallon	Gallons
Water Well - Grading	2	0.62	10.21	61.15
Water Well - Well Construction	2	36.75	10.21	3,599.30
Water Well - Equipment Installation	2	1.39	10.21	136.20
Pipeline - Installation	3	44.26	10.21	4,334.86
Pipeline - Final Paving	3	2.50	10.21	245.19
WTP - Demolition	2	4.05	10.21	397.13
WTP - Site Prep and Grading	4	4.70	10.21	459.99
WTP - Equipment Installation	3	44.42	10.21	4,350.51
WTP - Security, Entrance, and Landscaping	2	1.37	10.21	133.92
WTP - Paving	2	3.22	10.21	315.12
WTP - Arch Coatings	1	1.70	10.21	166.72
	26	144.9829	Total	14,200.09

### Construction Worker Gasoline Demand

Phase	Trips	Vehicle CO2 (MT)	Kg/CO2/Gallon	Gallons
Water Well - Grading	60	0.28	8.78	31.48
Water Well - Well Construction	200	0.92	8.78	104.94
Water Well - Equipment Installation	40	0.18	8.78	20.99
Pipeline - Installation	840	3.87	8.78	440.76
Pipeline - Final Paving	30	0.14	8.78	15.74
WTP - Demolition	40	0.18	8.78	20.99
WTP - Site Prep and Grading	120	0.28	8.78	31.48
WTP - Equipment Installation	1,310	6.04	8.78	687.38
WTP - Security, Entrance, and Landscaping	160	0.73	8.78	83.17
WTP - Paving	60	0.27	8.78	30.31

WTP - Arch Coatings	60	0.27	8.78	30.31
	2,920	13.15	<b>Total</b>	<b>1,497.55</b>

#### Construction Vendor Truck Diesel Demand

Phase	Trips	Vehicle			
		CO2 (MT)	Kg/CO2/Gallon	Gallons	
Water Well - Grading		30	0.36	10.21	35.55
Water Well - Well Construction		50	0.61	10.21	59.26
Water Well - Equipment Installation		10	0.12	10.21	11.85
Pipeline - Installation		280	3.39	10.21	331.83
Pipeline - Final Paving		20	0.24	10.21	23.70
WTP - Demolition		0	0.00	10.21	0.00
WTP - Site Prep and Grading		0	0.00	10.21	0.00
WTP - Equipment Installation		262	3.17	10.21	310.50
WTP - Security, Entrance, and Landscaping		40	0.48	10.21	47.05
WTP - Paving		20	0.23	10.21	22.99
WTP - Arch Coatings		20	0.23	10.21	22.99
		732	8.84	Total	865.72

#### Construction Haul Truck Diesel Demand

Phase	Trips	Vehicle			
		CO2 (MT)	Kg/CO2/Gallon	Gallons	
Water Well - Grading		20	0.74	10.21	72.26
Water Well - Well Construction		40	1.48	10.21	144.53
Water Well - Equipment Installation		0	0.00	10.21	0.00
Pipeline - Installation		0	0.00	10.21	0.00
Pipeline - Final Paving		0	0.00	10.21	0.00
WTP - Demolition		6	0.22	10.21	21.68
WTP - Site Prep and Grading		0	0.00	10.21	0.00
WTP - Equipment Installation		0	0.00	10.21	0.00
WTP - Security, Entrance, and Landscaping		0	0.00	10.21	0.00
WTP - Paving		0	0.00	10.21	0.00
WTP - Arch Coatings		0	0.00	10.21	0.00
		66	2.43	Total	238.48

Total Diesel	15,304.29
Total Gasoline	1,497.55
	<b>16,801.84</b>

#### California's Consumption of Petroleum Over Construction Period

78,600,000 gallons per day	Start	End	
<b>27,510,000,000.00</b>	2/4/2022	1/20/2023	350 days

Construction - Boysen Park

Hours of Operation for Construction Equipment

Phase 1	Equipment Type	Number of Equipment	Hours/day	Phase Duration	Hours of Equipment Use	Phase Totals	MTCO2
<i>Pipeline - Installation</i>							
	Concrete Industrial Saws	1	8		5	40	
	Excavators	1	8		5	40	
	Tractors/Loaders/Backhoes	1	8		5	40	
	Total	3				120	3.16
<i>Pipeline - Final Paving</i>							
	Pavers	1	8		5	40	
	Paving Equipment	1	8		5	40	
	Pavers	1	8		5	40	
	Total	3				120	2.50
<i>WTP - Demolition</i>							
	Tractors/Loaders/Backhoes	1	8		5	40	
	Total	1				40	0.68
<i>WTP - Site Prep and Grading</i>							
	Tractors/Loaders/Backhoes	1	8		10	80	
	Total	1				80	1.37
<i>WTP - Equipment Installation</i>							
	Tractors/Loaders/Backhoes	1	8		30	240	
	Forklifts	1	4		30	120	
	Total	2				360	6.37
<i>WTP - Security, Entrance, and Landscaping</i>							
	Cement and Mortar Mixers	1	8		15	120	
	Skid Steer Loaders	1	4		15	60	
	Total	2				180	1.03
<i>WTP - Paving</i>							
	Pavers	1	8		1	8	
	Rollers	1	8		1	8	
	Total	2				16	0.32
<i>WTP - Arch Coatings</i>							
	Air Compressors	1	8		1	8	
	Total	1				8	0.17
						924	

Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO2 (MT)	Kg/CO2/Gallon	Gallons
Pipeline - Installation	3	3.16	10.21	309.73
Pipeline - Final Paving	3	2.50	10.21	245.19
Pipeline - Striping	0	0.00	10.21	0.00
WTP - Demolition	1	0.68	10.21	66.99
WTP - Site Prep and Grading	1	1.37	10.21	133.98
WTP - Equipment Installation	2	6.37	10.21	624.38
WTP - Security, Entrance, and Landscaping	2	1.03	10.21	100.47
WTP - Paving	2	0.32	10.21	31.51
WTP - Arch Coatings	1	0.17	10.21	16.67
		15	15.6102	Total
				1,651.24

Construction Worker Gasoline Demand

Phase	Trips	Vehicle CO2 (MT)	Kg/CO2/Gallon	Gallons
Pipeline - Installation	60	0.27	8.78	30.31
Pipeline - Final Paving	30	0.13	8.78	15.16
Pipeline - Striping	20	0.09	8.78	10.10
WTP - Demolition	20	0.09	8.78	10.10
WTP - Site Prep and Grading	40	0.18	8.78	20.21
WTP - Equipment Installation	300	1.33	8.78	151.55
WTP - Security, Entrance, and Landscaping	120	0.53	8.78	60.62
WTP - Paving	6	0.03	8.78	3.03
WTP - Arch Coatings	6	0.03	8.78	3.03
		602	2.67	Total
				608.86

Construction Vendor Truck Diesel Demand

Phase	Trips	Vehicle CO2 (MT)	Kg/CO2/Gallon	Gallons
Pipeline - Installation	20	0.23	10.21	22.99
Pipeline - Final Paving	20	0.23	10.21	22.99
Pipeline - Striping	20	0.23	10.21	0.00
WTP - Demolition	0	0.00	10.21	0.00
WTP - Site Prep and Grading	0	0.00	10.21	0.00
WTP - Equipment Installation	60	0.70	10.21	68.96
WTP - Security, Entrance, and Landscaping	30	0.35	10.21	34.49
WTP - Paving	2	0.02	10.21	2.30
WTP - Arch Coatings	2	0.02	10.21	2.30
		154	1.81	Total
				357.28

Construction Haul Truck Diesel Demand

Phase	Trips	Vehicle CO2 (MT)	Kg/CO2/Gallon	Gallons
Pipeline - Installation		4	0.14	10.21
Pipeline - Final Paving		0	0.00	10.21
WTP - Demolition		4	0.14	10.21
WTP - Site Prep and Grading		0	0.00	10.21
WTP - Equipment Installation		0	0.00	10.21
WTP - Security, Entrance, and Landscaping		0	0.00	10.21
WTP - Paving		0	0.00	10.21
WTP - Arch Coatings		0	0.00	10.21
		8	0.28	<b>Total</b>
				<b>174.03</b>

Total Diesel	2,182.55
Total Gasoline	608.86
	<b>2,791.41</b>

California's Consumption of Petroleum Over Construction Period

	78,600,000 gallons per day	Start	End	
	<b>8,331,600,000.00</b>	1/1/2023	4/17/2023	106 days

## Construction - Energy Field

### Hours of Operation for Construction Equipment

Phase 1	Equipment Type	Number of Equipment	Hours/day	Phase Duration	Hours of Equipment Use	Phase Totals	MTCO2
<i>Pipeline - Installation</i>							
	Concrete Industrial Saws	1	8		40	320	
	Excavators	1	8		40	320	
	Tractors/Loaders/Backhoes	1	8		40	320	
	Total	3					960 25.30
<i>Pipeline - Final Paving</i>							
	Pavers	1	8		20	160	
	Paving Equipment	1	8		20	160	
	Pavers	1	8		20	160	
	Total	3					480 10.01
<i>Pipeline - Striping</i>							
					2	0	
	Total	0					0 0.00
<i>WTP - Demolition</i>							
	Concrete Industrial Saws	1	8		5	40	
	Excavators	1	8		5	40	
	Tractors/Loaders/Backhoes	1	8		5	40	
	Total	1					120 3.16
<i>WTP - Equipment Installation</i>							
	Cranes	1	2		45	90	
	Tractors/Loaders/Backhoes	1	8		45	360	
	Forklifts	1	4		45	180	
	Total	3					630 12.41
<i>WTP - Security, Entrance, and Landscaping</i>							
	Cement and Mortar Mixers	1	8		23	184	
	Skid Steer Loaders	1	4		23	92	
	Total	2					276 1.57
<i>WTP - Paving</i>							
	Pavers	1	8		2	16	
	Rollers	1	8		2	16	
	Total	2					32 0.64
<i>WTP - Arch Coatings</i>							
	Air Compressors	1	8		2	16	
	Total	1					16 0.34
							2,514

### Construction Equipment Diesel Demand

Phase	Pieces of Equipment	Equipment CO2 (MT)	Kg/CO2/Gallon	Gallons
Pipeline - Installation	3	25.30	10.21	2,477.83
Pipeline - Final Paving	3	10.01	10.21	980.74
Pipeline - Striping	0	0.00	10.21	0.00
WTP - Demolition	1	3.16	10.21	309.73
WTP - Equipment Installation	3	12.41	10.21	1,215.87
WTP - Security, Entrance, and Landscaping	2	1.57	10.21	154.05
WTP - Paving	2	0.64	10.21	63.03
WTP - Arch Coatings	1	0.34	10.21	33.34
	15	53.445	Total	5,356.90

### Construction Worker Gasoline Demand

Phase	Trips	Vehicle CO2 (MT)	Kg/CO2/Gallon	Gallons
Pipeline - Installation	480	2.13	8.78	242.47
Pipeline - Final Paving	120	0.53	8.78	60.62
Pipeline - Striping	8	0.04	8.78	4.04
WTP - Demolition	20	0.09	8.78	10.10
WTP - Equipment Installation	450	2.00	8.78	227.31
WTP - Security, Entrance, and Landscaping	184	0.82	8.78	92.95
WTP - Paving	12	0.05	8.78	6.06
WTP - Arch Coatings	12	0.05	8.78	6.06
	1,286	5.70	Total	954.37

### Construction Vendor Truck Diesel Demand

Phase	Trips	Vehicle CO2 (MT)	Kg/CO2/Gallon	Gallons
Pipeline - Installation	160	1.88	10.21	183.90
Pipeline - Final Paving	80	0.94	10.21	91.95
Pipeline - Striping	8	0.09	10.21	0.00
WTP - Demolition	0	0.00	10.21	0.00
WTP - Equipment Installation	90	1.06	10.21	103.45
WTP - Security, Entrance, and Landscaping	46	0.54	10.21	52.87
WTP - Paving	4	0.05	10.21	4.59
WTP - Arch Coatings	4	0.05	10.21	4.59
	392	4.60	Total	644.60

### Construction Haul Truck Diesel Demand

Phase	Trips	Vehicle		Kg/CO2/Gallon	Gallons
		CO2 (MT)			
Pipeline - Installation		2	0.00	10.21	0.00
Pipeline - Final Paving		0	0.00	10.21	0.00
Pipeline - Striping		0	0.00	10.21	0.00
WTP - Demolition		4	0.14	10.21	13.88
WTP - Equipment Installation		0	0.00	10.21	0.00
WTP - Security, Entrance, and Landscaping		0	0.00	10.21	0.00
WTP - Paving		0	0.00	10.21	0.00
WTP - Arch Coatings		0	0.00	10.21	0.00
		6	0.14	Total	160.15

Total Diesel	6,161.66
Total Gasoline	954.37
	7,116.03

California's Consumption of Petroleum Over Construction Period

78,600,000 gallons per day	Start	End	
8,174,400,000.00	4/18/2023	7/31/2023	104 days

**Appendix B**  
Biological Analysis



## MEMORANDUM

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**To:** Jonathan Sanks, Environmental Services and Safety Manager  
**From:** Tommy Molioo, Senior Biologist, Dudek  
**Subject:** Results of a Biological Assessment for the Well and Water Facilities Project  
**Date:** February 8, 2021  
**cc:** Collin Ramsey, Dudek  
**Attachment(s):** A Figures  
B Site Photographs  
C Species Compendium  
D Sensitive Species Lists

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This technical memorandum documents the results of a biological resources assessment conducted for the proposed Water Treatment System and Water Supply Well Construction Project (project) for the City of Anaheim Public Utilities (APU) Department. The proposed project is located within the City of Anaheim (City) at four separate locations: La Palma, Linda Vista, Boysen Park, and Energy Field. The biological resources assessment was conducted to document the existing biological conditions at each site, determine if any special-status biological resources occur or have the potential to occur, and analyze potential project-related impacts under CEQA.

## 1 Project Location

The project sites are generally located in the City, north and south of State Route 91, and west of State Route 55, in northern Orange County (Attachment A: Figure 1). The four project sites are specifically located within existing disturbed and developed areas on City-owned property. The La Palma site is located immediately south of La Palma Avenue, east of West Street, and west of North Citron Street adjacent to an existing reservoir (Attachment A: Figure 2A). The Linda Vista site is located to the immediate west of Tustin Avenue within a disturbed area adjacent to the Anaheim Lake recharge basin (Attachment A: Figure 2B). The Energy Field site is located within an existing community park to the west of South Ninth Street (Attachment A: Figure 2C). The Boysen Park site is located adjacent to tennis courts and a parking lot associated with Boysen Park to the west of State College Boulevard (Attachment A: Figure 2D). These four sites are depicted on the Anaheim and Orange, California U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle maps. A 100-foot buffer was placed around each site as a study area in order to document the existing biological resources on and immediately adjacent to each site.

## 2 Project Description

The project involves installation of water treatment facilities at four sites. The number and size of vessels at each treatment site will depend on the volume of water that will require treatment at each location. The La Palma site would include a new treatment plant, water well, piping, and security features. The Linda Vista site would include a new treatment plant, water well, piping, operations building, and security features. The Boysen Park site would include a new treatment plant, piping, and security features. Lastly, the Energy Field site would include a new

treatment plant, piping, and security features. The treatment systems would operate up to 24 hours per day to ensure continuous availability of water.

## 3 Methods

### 3.1 Literature Review

To evaluate the natural resources found or potentially occurring within the four sites, Dudek biologists conducted literature searches and database reviews. The database review included the most recent versions of the California Natural Diversity Data Base (CNDDB), special-status species lists, and the California Native Plant Society's (CNPS) Inventory of Rare and Endangered Plants (CDFW 2020a, 2020b, 2020c, 2021). These databases were reviewed to identify sensitive biological resources present or potentially present for the USGS 7.5-minute quadrangles on which the study area is located (i.e., Anaheim and Orange) and the seven surrounding quadrangles (i.e., Los Alamitos, Whittier, La Habra, Yorba Linda, Seal Beach, Newport Beach, and Tustin).

Potential and/or historic drainages and aquatic features were investigated based on a review of USGS topographic maps (1:24,000 scale), aerial photographs, the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory database (USFWS 2020), and the Natural Resource Conservation Service's Web Soil Survey (USDA 2019).

### 3.2 National Wetlands Inventory Review

A review of the National Wetlands Inventory dataset revealed that one wetland type is mapped within the La Palma site associated with Anaheim Lake (USGS 2020). The Cowardin classification for this lake is L1UBHx, which stands for: Lacustrine (L) limnetic (1) unconsolidated bottom (UB) permanently flooded (H) excavated (x). Practically speaking, this means that Anaheim Lake is an excavated deep lake with a substrate smaller than stones and that is permanently flooded. The inlet basin to Anaheim Lake also includes the same designation. A depressional area adjacent to Anaheim Lake is also mapped as PUBFx (Palustrine unconsolidated bottom semi-permanently flooded excavated) and PUSC<sub>x</sub> (Palustrine unconsolidated shore seasonally flooded excavated).

Concrete-lined flood control channels are located adjacent to the Energy Field site and the La Palma site and are both mapped as R4SBCr (Riverine intermittent streambed seasonally flooded artificial substrate). These flood control channels occur outside of the study area for both sites and are physically separated by concrete and fencing.

### 3.3 Biological Reconnaissance

Dudek biologist Tommy Molioo conducted a general biological reconnaissance of the four sites on November 18, 2020. The survey was conducted from 1300 to 1630 hours; weather conditions were favorable with clear skies, wind speeds from 0 to 1 miles per hour, and a temperature of 63°F at the beginning of the survey and rising to 65°F by the end of the survey. All native and naturalized plant species encountered in the study area were identified and recorded. The potential for special-status plant and wildlife species to occur within the study area was evaluated based on the vegetation communities and soils present. Dudek used the California Department of Fish and Wildlife's (CDFW's) Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Natural Communities (CDFW 2018) and List of Vegetation Alliances and Associations (CDFW 2020d), also referred to as the Natural Communities List, to map the entire study area. Vegetation communities and land covers were delineated to the

vegetation alliance level, and where appropriate the association level. Some modifications, such as the Preliminary Descriptions of the Terrestrial Natural Communities of California (Holland 1986), were incorporated to accommodate the lack of conformity of the observed communities to those included in these references.

Latin and common names for plant species with a California Rare Plant Rank (CRPR) follow the CNPS Inventory of Rare and Endangered Plants (CNPS 2020). For plant species without a CRPR, Latin names follow the Jepson Interchange List of Currently Accepted Names of Native and Naturalized Plants of California (Jepson Flora Project 2019) and common names follow the U.S. Department of Agriculture's Natural Resources Conservation Service Plants Database (USDA 2020). Dudek also conducted an assessment for the presence of waters or wetlands potentially subject to regulatory agency jurisdiction, including searching for the presence of drainage features and topographic features and soils that could support standing water. However, a formal wetland delineation was not conducted as part of the biological reconnaissance. Representative site photographs taken at each project site are included in Attachment B.

## 4 Results

### 4.1 Project Sites Description

The four project sites were individually surveyed, and the existing biological resources were documented within the study area for each site.

#### 4.1.1 La Palma Site

The La Palma site is located within an existing water reservoir facility south of La Palma Avenue. The vast majority of the project site consists of disturbed land and is surrounded by developed land. A non-vegetated, concrete-lined flood control channel occurs to the immediate north of the site that contains rip-rap and little vegetation. This site is entirely disturbed and developed and only contains scattered non-native grasses and ruderal (weedy) forbs. Several buildings are located adjacent to the site and a large underground reservoir is surrounded by a paved access road. The surrounding land uses consist of residential development to the north and south, commercial development to the east, and the reservoir with residences to the west. No native vegetation communities or undisturbed land occurs in the vicinity of the La Palma site.

#### 4.1.2 Linda Vista Site

The Linda Vista site is located within the grounds of the Anaheim Lake recharge basin facility, within a disturbed area that is undeveloped but shows evidence of frequent disturbance from vehicle and heavy machinery use, with stored containers and building materials. Anaheim Lake is a human-made recharge basin that permanently contains water for recharge purposes and receives regular input from the Orange County Water District. The proposed disturbance footprint consists of disturbed land with developed land to the east and south, consisting of Tustin Avenue and a water tank facility. Open water also occurs within the study area surrounding the footprint. The vegetation within the project site consists of non-native grasses and ruderal (weedy) forbs. Land uses surrounding the site consist of the Anaheim Lake recharge basin to the north and west, and commercial development to the south and east. No native vegetation communities or undisturbed land occurs in the vicinity of the Linda Vista site. Open water is also located to the west of the project footprint within Anaheim Lake.

### 4.1.3 Energy Field Site

The Energy Field site is located within an active community park adjacent to an energy utility substation. The project site is located in a developed area previously used for a solar panel array. Therefore, there is no vegetation within the project site boundary due to previous clearing and grading for the solar project. The surrounding study area contains a non-vegetated, concrete-lined channel and the remainder of the park. The park is absent of vegetation within the study area boundary because the associated field contains artificial turf. Ornamental trees are located to the north of the project site associated with the substation. Existing development on the study area consists of electrical utility lines and park bench shelters. Surrounding land uses consist of residential development in every direction outside of the park and the electrical substation. No native vegetation communities or undisturbed land occur in the vicinity of the Energy Field site.

### 4.1.4 Boysen Park Site

The Boysen Park site occurs within the grounds of the existing Boysen Park, specifically within a walking area adjacent to tennis courts and a parking lot. The vegetation consists of grass sod and ornamental trees that are regularly landscaped. Existing developments include the park facilities and parking lots. Surrounding land use consists of residential development in all directions outside of the park facility. No native vegetation communities or undisturbed land occur in the vicinity of the Boysen Park site.

## 4.2 Vegetation Communities and Land Covers

The study areas for the four project sites consist of generally disturbed and developed habitats with no native vegetation observed at any of the sites. Figures 3A through 3D included in Attachment A depict the vegetation communities and land covers mapped within the study area for each project site. These vegetation communities and land covers include non-vegetated channel, ornamental, disturbed habitat, and developed land. These vegetation communities and land covers were mapped based on general physiognomy, species composition, and/or ground cover and are discussed in further detail below. There are no sensitive vegetation communities within the project sites. Plant species observed during the reconnaissance are included in Attachment C.

### 4.2.1 Non-natural and Unvegetated Land Covers

**Non-vegetated Channel.** The non-vegetated channel mapping unit is not recognized by the Natural Communities List (CDFW 2020e) but is described by Oberbauer et al. (2008). This mapping unit typically describes sandy, gravelly, or rocky fringe of waterways or flood channels that are unvegetated on a relatively permanent basis. Variable water lines inhibit the growth of vegetation, although some weedy species of grasses may grow along the outer edges of the wash. Vegetation may exist here but is usually less than 10% total cover. Non-vegetated channel is mapped for the La Palma site and Energy Field site for a concrete-lined flood control channel that occurs off site to the north of the project site but within the study area. No riparian habitat or native species were observed in either of these two mapped communities.

**Ornamental Plantings.** The ornamental plantings mapping unit is not recognized by the Natural Communities List (CDFW 2020e) or by Holland (1986) and Oberbauer et al. (2008). The ornamental plantings mapped on the study areas include a mixture of native and non-native species and are dominated by planted fan palm (*Washingtonia filifera*), coast live oak (*Quercus agrifolia*), Peruvian pepper tree (*Schinus molle*), salt cedar (*Tamarix ramosissima*),

mesquite (*Prosopis* sp.), sod grass, and artificial turf. Ornamental plantings are mapped for the Energy Field site and Boysen Park site.

**Disturbed Habitat Mapping Unit.** The disturbed (or barren) mapping unit is not recognized by the Natural Communities List (CDFG 2010) but is described by Oberbauer et al. (2008). The disturbed or barren mapping unit refers to areas that lack vegetation but still retain a pervious surface, or that are dominated by a sparse cover of ruderal vegetation. Species observed include Russian thistle (*Salsola tragus*), telegraph weed (*Heterotheca grandiflora*), shortpodded mustard (*Hirschfeldia incana*), castor bean (*Ricinus communis*), horse weed (*Erigeron sumatrensis*), tree tobacco (*Nicotiana glauca*), white sweetclover (*Melilotus albus*), spiny sowthistle (*Sonchus asper*), and red brome (*Bromus rubens*). The disturbed habitat observed throughout all four project sites is predominantly characterized as compacted bare ground with scattered non-native grasses and ruderal (weedy) forbs.

**Developed Mapping Unit.** The developed mapping unit is not recognized by the Natural Communities List (CDFW 2020e) but is described by Oberbauer et al. (2008). Developed land typically includes areas that have been constructed upon and do not contain any naturally occurring vegetation. These areas are generally characterized as graded land with asphalt and concrete placed upon it. Developed areas mapped for the study areas include the existing paved roads, buildings, structures, ball courts, and rights-of-way. No vegetation was observed within developed areas on the study areas.

### 4.3 Wildlife

The study area consists of upland non-native habitats that occur in urban and suburban environments associated with the four project sites. Therefore, wildlife observed within the study areas contains species typically observed in upland urban habitats. Wildlife use was limited during the survey and the following species were observed during the general biological reconnaissance: turkey vulture (*Cathartes aura*), Cassin's kingbird (*Tyrannus vociferans*), lesser goldfinch (*Spinus psaltria*), mourning dove (*Zenaida macroura*), black phoebe (*Sayornis nigricans*), red-tailed hawk (*Buteo jamaicensis*), and California ground squirrel (*Otospermophilus beecheyi*). No fish, amphibian, or reptile species were observed. No active bird nests were observed during the field visit; however, the study area could support nesting migratory birds. No amphibian or reptile species were observed within the study area; however, reptile species expected to occur include the western fence lizard (*Sceloporus occidentalis*). The complete list of wildlife species observed within the study area are included in Attachment C. Details regarding the potential for special-status species to occur within the study area are discussed further below.

### 4.4 Special-Status Plant Species

Special-status plants include those listed, or candidates for listing, as threatened or endangered by USFWS or CDFW, or species identified as rare by CNPS (particularly California Rare Plant Rank (CRPR) 1A – Presumed extinct in California; CRPR 1B – Rare, threatened, or endangered throughout its range; CRPR 2 – Rare or Endangered in California, more common elsewhere; and CRPR 3 - Plants about which more information is needed). A total of 32 special-status plant species were reported in the CNDDDB and CNPS databases as occurring in the vicinity of the study area. Attachment D includes the species lists provided from these database searches that were evaluated as part of this assessment. For each species evaluated, a determination was made regarding the potential for the species to occur on site based on information gathered during the field reconnaissance, including the location of the site, habitats present, current site conditions, and past and present land use.

Of the 32 special-status plant species listed in the CNDDDB and CNPS databases, all 32 species were determined to have no potential to occur within the study area based on an evaluation of species ranges/elevation and known habitat preferences. The predominantly disturbed and developed characteristics of the project sites do not support special-status plant species growth. Therefore, no special-status plant species were determined to have any potential to occur on the project sites. Additionally, no special-status plant species were observed during the biological reconnaissance conducted in November 2020.

## 4.5 Special-Status Wildlife Species

Special-status wildlife include those listed, or candidates for listing, as threatened or endangered by USFWS or CDFW, or designated as a Species of Special Concern by CDFW. A total of 59 special-status wildlife species were reported in the CNDDDB database as occurring in the vicinity of the study area. Attachment D summarizes the special-status wildlife species that were included in these databases and evaluated as part of this assessment. For each species evaluated, a determination was made regarding the potential use of the site based on information gathered during the field reconnaissance, known habitat preferences, and knowledge of their relative distributions in the area.

Of the 59 special-status wildlife species listed in the CNDDDB and USFWS databases as occurring in the vicinity of the study area, 57 species were determined to have no potential to occur within the study area based on an evaluation of species ranges/elevation and known habitat preferences. Species with no or a low potential to occur are omitted from further discussion in this report. A total of two special-status species were determined to have a moderate potential to occur in the vicinity of the project sites. However, the entirely disturbed nature of all four project sites significantly reduces the potential for any special-status wildlife species to occur within the project footprint. These species include osprey (*Pandion haliaetus*) and coast horned lizard (*Phrynosoma blainvillii*). Neither of these species have a potential to occur within the project footprints but may occur in upland and aquatic areas adjacent to the project sites.

No wildlife species listed or proposed for listing as rare, threatened, or endangered by either CDFW or USFWS were observed or detected within the study area during the site reconnaissance and focused species surveys.

## 4.6 Jurisdictional Waters and Wetlands

The assessment of potential jurisdictional waters on the study area determined there are no waterways or drainages within the project footprint of any of the four project sites that would be subject to regulatory agency jurisdiction. The La Palma site occurs adjacent to an existing water reservoir, and a concrete-lined flood control channel occurs to the north of the project site and within the study area boundary. This channel is separated from the project site by a levee and chain-link fence.

The Linda Vista site occurs within the boundary of the Anaheim Lake facility. Anaheim Lake and its supporting inlet basins may be considered jurisdictional features by U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and CDFW as waters of the United States and state. No project-related impacts to Anaheim Lake are proposed, but an outfall structure will be constructed within the adjacent inlet basin to Anaheim Lake. This adjacent inlet basin does not appear to fall within USACE jurisdiction due to the lack of connectivity to a Relatively Permanent Water (RPW) and lack of an Ordinary High Water Mark (OHWM). However, this inlet basin may still be considered jurisdictional by RWQCB and/or CDFW.



A concrete-lined channel also occurs to the west of the Energy Field site, within the study area boundary but outside of the project site. This channel is also separated from the project site by a levee and chain-link fence. The Boysen Park project site does not contain any potentially jurisdictional features within or adjacent to the study area for the project. While riverine and lacustrine features were observed within and adjacent to three of the four study areas, no riparian vegetation or soils capable of supporting wetlands occur at any of the project site locations.

## 4.7 Wildlife Corridors and Habitat Linkages

Wildlife corridors are linear features that connect large patches of natural open space and provide avenues for the migration of animals. Wildlife corridors contribute to population viability by ensuring continual exchange of genes between populations, providing access to adjacent habitat areas for foraging and mating, and providing routes for recolonization of habitat after local extirpation or ecological catastrophes (e.g., fires). Habitat linkages are small patches that join larger blocks of habitat and help reduce the adverse effects of habitat fragmentation. Habitat linkages provide a potential route for gene flow and long-term dispersal of plants and animals and may serve as primary habitat for smaller animals, such as reptiles and amphibians. Habitat linkages may be continuous habitat or discrete habitat islands that function as steppingstones for dispersal.

All four project sites are located in a suburban area of northern Orange County that is surrounded by residential and commercial development on all sides. There are no natural areas within or in proximity to any of the four project sites. While all four sites may provide a stopover location for migrating birds, none of the four sites function as a wildlife corridor or linkage between two larger habitat areas. A flood channel occurs adjacent to two of the sites, which small to medium sized mammals, fish, and birds could use for local movement in the region. However, these channels are located outside the project site boundary and will not be impacted by the project. Additionally, Anaheim Lake provides a large stopover site for waterfowl in the region but is not considered a corridor and will not be impacted by the project.

## 4.8 Local Policies and Ordinances

Chapter 13.12 of the Anaheim Municipal Code provides protection for street trees by requiring a permit for any maintenance, replacement, or removal of street trees in the public right-of-way. The Anaheim Municipal Code states: “No person shall cut, trim, plant, remove, spray or in any other manner interfere with any street tree within the City of Anaheim without first having secured written permission for the Director of Community Services or his or her designee.” The planting and removal of street trees should be based on the master plan of the City’s urban forest. Any tree that is removed shall be replaced, if a replacement is deemed possible, and should be in accordance with the Official Tree Species List and Tree Master Plan. Additionally, Chapter 18.18.040 specifies tree preservation for projects within the Scenic Corridor Overlay Zone, which generally includes the hillside areas near State Route 91. However, the project sites do not occur within the Scenic Corridor Overlay Zone.

## 4.9 Regional Resource Planning Context

The four project sites are located outside of any approved regional or local natural community conservation plan (NCCP) or habitat conservation plan (HCP) including the Orange County NCCP/HCP. The project sites occur outside of the boundary of the adjacent Central/Coastal subarea plan of the Orange County NCCP/HCP.

## 5 Impacts and Avoidance Measures

This section addresses the anticipated impacts to biological resources that would result from construction of the proposed project. The significance determinations for proposed or potential impacts follow the thresholds provided in the California Environmental Quality Act Guidelines Section 15064(b) and Appendix G Environmental Checklist. The evaluation of the project's impacts using the thresholds of significance presented is organized by the resource potentially affected: special-status species, riparian and sensitive vegetation communities, jurisdictional wetlands and waters, wildlife movement, local policies and ordinances, and regional conservation plans.

### 5.1 Impacts to Special-Status Plant Species

The four project sites do not provide suitable habitat to support any special-status plant species known to occur in the region. All four sites are significantly disturbed or developed and do not contain any native habitats or soils capable of supporting special-status species. The undeveloped areas at all four sites have been graded and disturbed so that the observed surface soils are now compacted and contain little to no native species. Therefore, the project would not result in impacts to any special-status plant species, and no mitigation is required.

### 5.2 Impacts to Special-Status Wildlife Species

The four project sites do not provide suitable habitat to support any special-status wildlife species known to occur in the region. All four sites are significantly disturbed or developed and do not contain any native habitats capable of supporting special-status wildlife. All four sites are disturbed, surrounded by developed areas, and isolated from any undisturbed native habitat. Additionally, there are no linkages to the project site that could support special-status wildlife from moving onto the site. A permitted fairy shrimp biologist conducted a habitat assessment of Anaheim Lake and the adjacent inlet basin and depressional area and determined that no suitable habitat for listed fairy shrimp species occurs on the Linda Vista site. However, the aquatic habitat and surrounding upland areas located within Anaheim Lake at the Linda Vista site provides moderate quality habitat for two special-status wildlife species including osprey and coast horned lizard. The proposed project footprint of the Linda Vista site is limited to disturbed areas characterized by bare ground; however, upland areas adjacent to the project footprint may provide suitable habitat for coast horned lizard and aquatic areas associated with the basin may provide suitable habitat for osprey. Therefore, if these species are determined to occur in the immediate vicinity of the project site, potential indirect impacts may occur.

Potential project-related impacts to coast horned lizard and osprey is expected to be minimal; however, if a population of coast horned lizards is found on the Linda Vista site, project impacts would be considered significant. Therefore, mitigation measure MM-BIO-1 would be required, which involves conducting a pre-construction clearance survey at the Linda Vista site within 3 calendar days prior to the start of construction activities to reduce potential impacts to non-listed special-status wildlife species such as coast horned lizard.

Lastly, the four project sites provide suitable nesting habitat for a number of common and migratory bird species, such as ospreys, which are known to occur within upland suburban and urban settings and will nest within ornamental trees and on disturbed bare ground. Therefore, project activities that take place at any of the four sites during the avian nesting season of February through August may result in potential impacts to nesting birds, which



would be considered significant without mitigation. Therefore, implementation of mitigation measure MM-BIO-2 is required to reduce potential impacts to nesting birds to a less-than-significant level.

**MM-BIO-1** In order to avoid potential impacts to coast horned lizards within the Linda Vista site, a biologist shall conduct a pre-construction clearance survey within 3 calendar days prior to the start of construction activities. If this species is observed during the pre-construction survey, the project biologist shall require additional measures to reduce potential impacts such as establishing an appropriate buffer around an active nest, on-site construction monitoring by a qualified biological monitor, and/or moving individuals to off-site areas out of harm's way.

**MM-BIO-2** In order to avoid potential direct and indirect impacts to nesting birds, including ospreys, project activities within all four project sites shall avoid the bird nesting season (generally February 1 through August 30) to ensure compliance with the Migratory Bird Treaty Act and California Fish and Game Code Section 3500 et seq. If avoidance of the nesting season is not feasible, then a pre-construction nesting bird survey shall be conducted by a qualified biologist within 3 calendar days prior to the start of construction activities to ensure that birds are not engaged in active nesting within 500 feet of the project's construction limits.

If nesting birds are discovered during pre-construction surveys, then the biologist shall identify an appropriate buffer where no project activities are allowed to occur until after the birds have fledged from the nest. Construction activities may continue only at the discretion of an on-site monitoring biologist, or when the nest is no longer active.

### 5.3 Impacts to Sensitive Vegetation Communities

The proposed project will not result in impacts to any sensitive natural community because none were observed within any of the four project sites. There are no native vegetation communities or riparian/wetland habitats located within or immediately adjacent to any of the project sites. Therefore, the proposed project will have no impact on sensitive vegetation communities.

### 5.4 Impacts to Jurisdictional Wetlands and Waters

No potentially jurisdictional wetlands or waters occur within any of the four project sites. A concrete-lined flood control channel occurs adjacent to but outside of the project impact area for the La Palma site and Energy Field site. No project activities would occur to adjacent channels for these two project sites and no impact would occur. Additionally, no potential impacts to jurisdictional features would occur at the Boysen Park site.

However, the Linda Vista project site occurs adjacent to Anaheim Lake and within a concrete-lined inlet basin, which may be considered jurisdictional features by the regulatory agencies. The project would include construction of an outfall structure within the inlet basin, which would result in an impact to a potentially jurisdictional feature.

The concrete inlet basin connected to Anaheim Lake is a cement structure that contains little to no water most of the year, has no connectivity to a RPW, has no OHWM, and no vegetation of any kind. As such, this inlet basin is not considered a jurisdictional feature regulated by the USACE. However, it may still be considered a jurisdictional feature by the RWQCB and CDFW due to the presence of water that could affect downstream water quality and provide

habitat for local wildlife species, especially birds. Project-related impacts to a regulated water of the state may be considered significant without mitigation. Therefore, MM-BIO-3 will be required to reduce potential impacts to a less-than-significant level.

**MM-BIO-3** In order to determine if the concrete inlet basin is considered jurisdictional, a formal jurisdictional delineation should be conducted to map the limits and extent of potential regulatory agency jurisdiction. The Regional Water Quality Control Board (RWQCB) and California Department of Fish and Wildlife (CDFW) could exert jurisdiction over the inlet basin due to the presence of water that could affect downstream water quality and provide habitat for local wildlife species, especially birds. Project-related impacts may require 401 Certification or Waste Discharge Requirement (WDR) from the RWQCB and a Streambed Alteration Agreement from CDFW under Section 1600 of California Fish and Game Code.

After consultation with RWQCB and CDFW, which may include a preliminary site visit and the sharing of Project information, if permits are determined to be required by the resources agencies, these permits may require mitigation for impacts to wetlands and waters that ensure no net loss of jurisdictional aquatic resources. Typically, a conceptual wetlands mitigation and monitoring plan is required as part of the permit applications. This plan shall be prepared and shall prescribe site preparation, planting, irrigation, and a multi-year maintenance and monitoring program with qualitative and quantitative evaluation of the revegetation effort and specific criteria to determine successful revegetation. Mitigation may also be carried out through the purchase of in-lieu fee credits from an agency-approved mitigation bank in the same watershed. In addition, permit conditions may include other avoidance and minimization measures that could constrain the project. The appropriate mitigation approach and ratio shall be determined through agency consultation.

## 5.5 Impacts to Wildlife Corridors and Migratory Routes

The project would not result in significant direct or indirect permanent impacts with regard to wildlife movement or use of native wildlife nursery sites. Existing habitat linkages and wildlife corridor functions in the region would remain intact while project activities are conducted and following completion. Project activities would not result in impacts to wildlife movement because construction of the proposed residence would not impede wildlife movement through the area due to the relatively limited size of the project footprint and lack of movement opportunities. Therefore, construction of the proposed project would result in no impact to wildlife corridors and migratory routes.

## 5.6 Impacts Related to Local Policies and Ordinances

The City of Anaheim protects street trees and significant trees within the Scenic Corridor Overlay Zone. The project may involve the removal of ornamental trees and vegetation along the perimeter of the Linda Vista site and at the Boysen Park Site. Per the Anaheim Municipal Code, the project would involve the replacement of removed trees, where feasible, with trees that are included on the Official Tree Species List and Tree Master Plan, in coordination with the Director of Community Services or his or her designee. Additionally, the project sites are not located within the Scenic Corridor Overlay Zone. Adherence to the Anaheim Municipal Code and coordination with the Director of Community Services would ensure that the project would have a less-than-significant impact with regard to local

policies and ordinances protecting biological resources such as street and significant trees protected by the City. No mitigation would be required.

## 5.7 Impacts Related to Regional Resource Planning Context

The proposed project is not located within any local or regional NCCP, including the Orange County NCCP/HCP, as the project occurs outside of the boundaries of the Central/Coastal subarea plan of the OC NCCP/HCP. Therefore, the project is not required to comply with the goals and provisions of the any NCCP/HCP and the project will result in no impact to any local or regional NCCPs, and no mitigation is required.

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*Memorandum*

*Subject: Results of a Biological Assessment for the Well and Water Facilities Project*

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# Attachment A

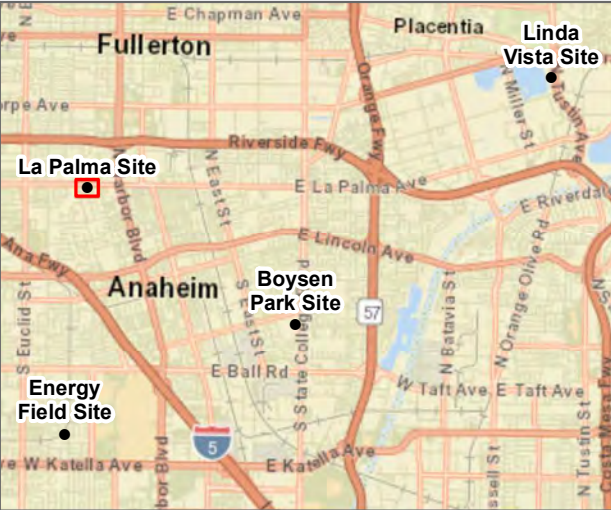
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Figures









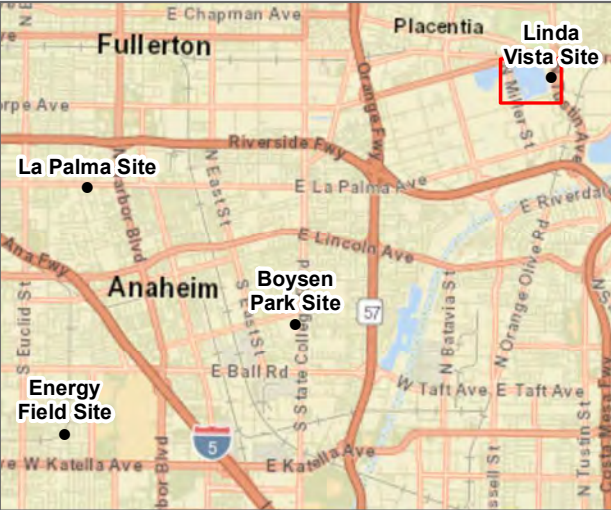
- Project Sites
- ▭ Project Boundary



SOURCE: Bing Maps 2020

**FIGURE 2A**  
**La Palma Site**  
Well and Water Treatment Facilities Project



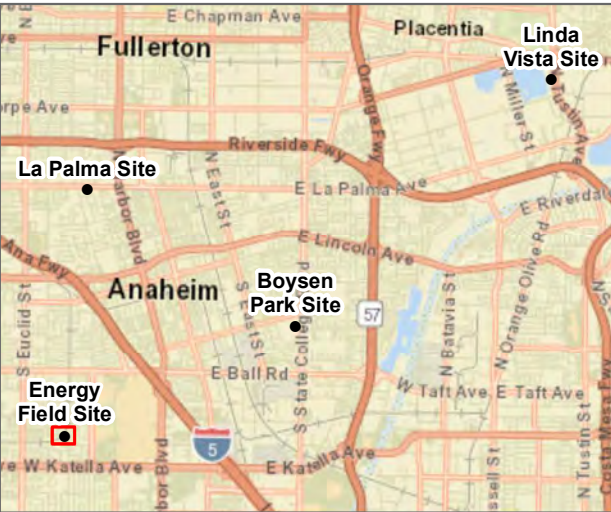


- Project Sites
- ◻ Project Boundary
- ▭ Depressional Area



SOURCE: Bing Maps 2020





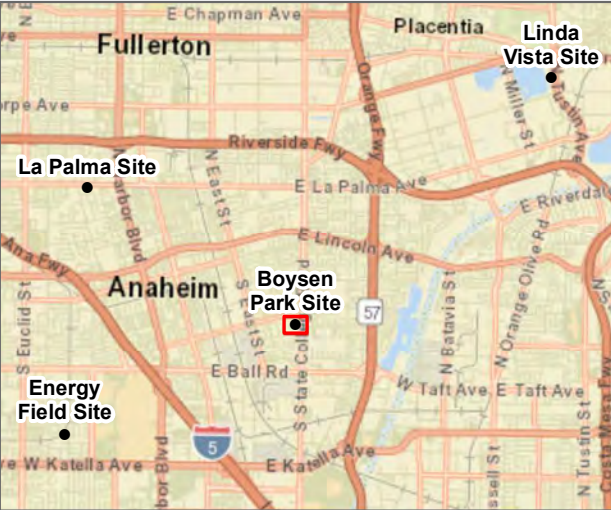
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SOURCE: Bing Maps 2020

**FIGURE 2C**  
**Energy Field Site**  
Well and Water Treatment Facilities Project





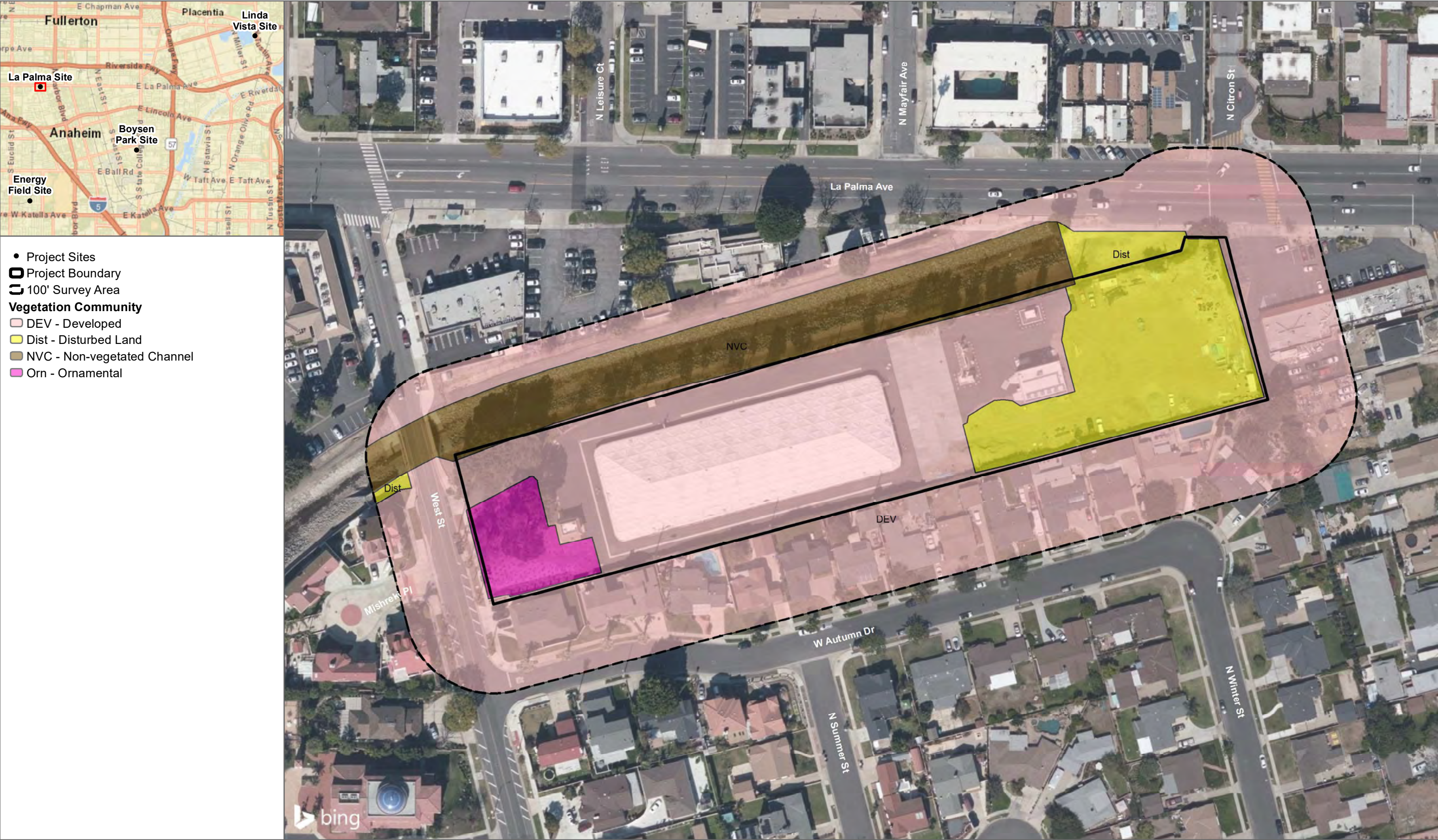
- Project Sites
- ▭ Project Boundary



SOURCE: Bing Maps 2020

**FIGURE 2D**  
**Boysen Park Site**  
Well and Water Treatment Facilities Project

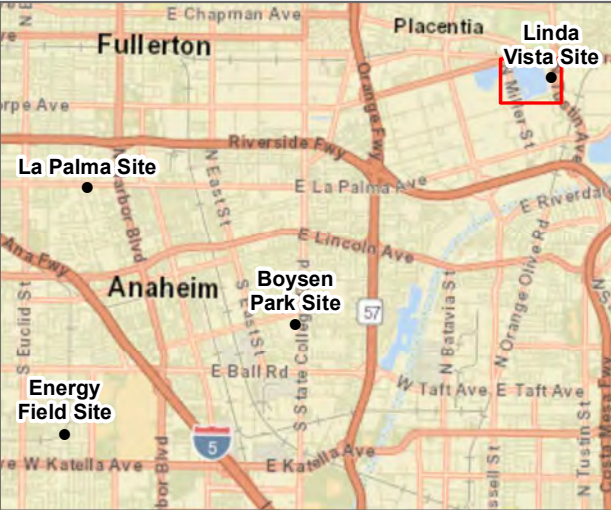




SOURCE: Bing Maps 2020

**FIGURE 3A**  
**La Palma Site Biological Resources**  
Well and Water Treatment Facilities Project





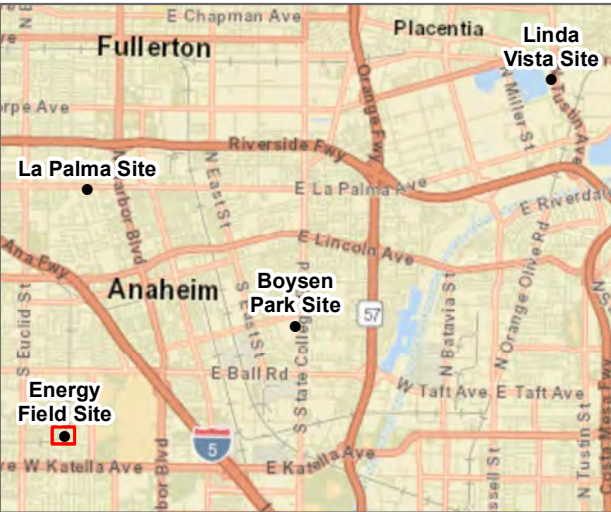
- Project Sites
- ◻ Project Boundary
- ◻ 100' Survey Area
- Vegetation Community**
- ◻ DEV - Developed
- ◻ Dist - Disturbed Land
- ◻ OW - Open Water



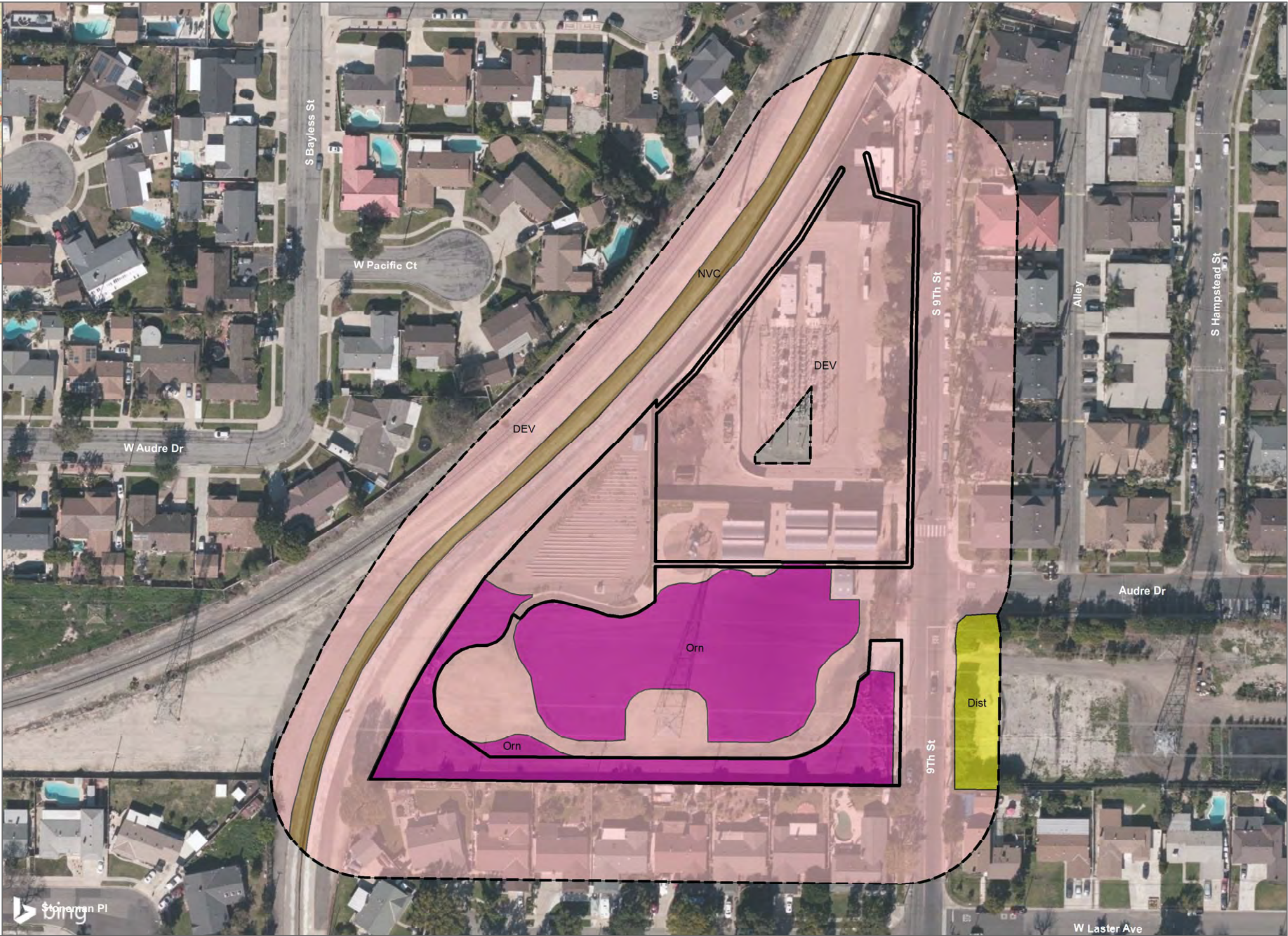
SOURCE: Bing Maps 2020

**FIGURE 3B**  
 Linda Vista Site Biological Resources  
 Well and Water Treatment Facilities Project





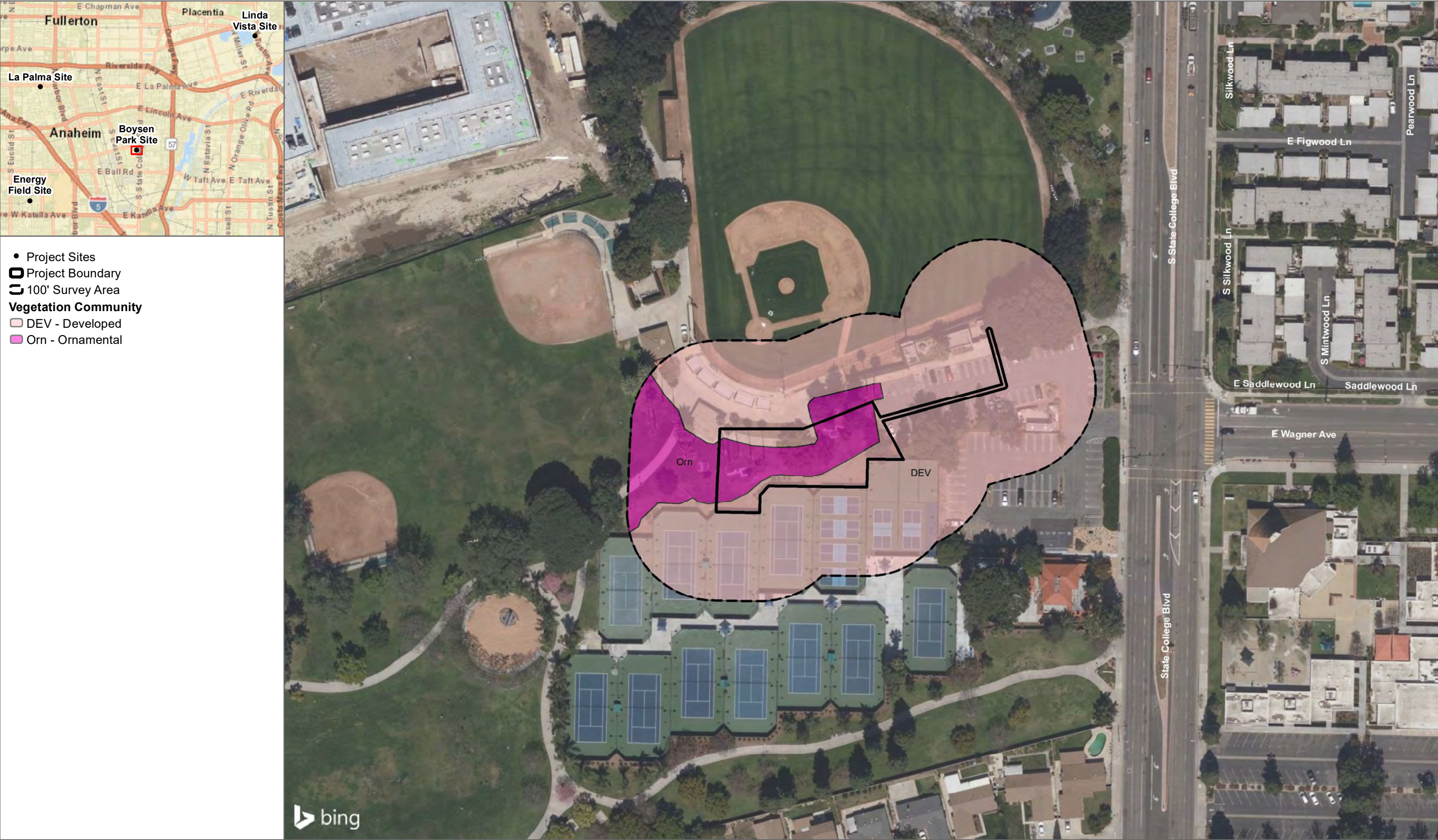
- Project Sites
- ◻ Project Boundary
- ◻ 100' Survey Area
- Vegetation Community**
- ◻ DEV - Developed
- ◻ Dist - Disturbed Land
- ◻ NVC - Non-vegetated Channel
- ◻ Orn - Ornamental



SOURCE: Bing Maps 2020

**FIGURE 3C**  
**Energy Field Site Biological Resources**  
 Well and Water Treatment Facilities Project





SOURCE: Bing Maps 2020

**FIGURE 3D**  
 Boysen Park Site Biological Resources  
 Well and Water Treatment Facilities Project





# Attachment B

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Site Photographs



**Photo 1:** Facing south towards the Linda Vista site.  
Note disturbed habitat in foreground.



**Photo 2:** Facing east towards the Linda Vista site.  
Non-native vegetation with ornamental trees.



**Photo 3:** Facing east towards the Boysen Park site.  
Note ornamental vegetation and grass sod.



**Photo 4:** Facing north from the Boysen Park site. Note  
ball fields and ornamental trees.





**Photo 5:** Facing east towards the La Palma site. Note disturbed habitat with ruderal vegetation.



**Photo 6:** Facing east towards the La Palma. Existing reservoir equipment located to the west of the site.



**Photo 7:** Facing north towards the Energy Field site. Previous location of a solar array.



**Photo 8:** Facing west towards the Energy Field site to the right. Note artificial turf and power lines.



# Attachment C

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Species Compendium

Plants  
Eudicots  
*Vascular Species*

**ARALIACEAE—GINSENG FAMILY**

- \* *Hedera helix*—English ivy

**ASTERACEAE—SUNFLOWER FAMILY**

- Baccharis salicifolia*—mulefat
- Erigeron canadensis*—Canadian horseweed
- Helianthus annuus*—common sunflower
- Heterotheca grandiflora*—telegraphweed

**BRASSICACEAE—MUSTARD FAMILY**

- \* *Hirschfeldia incana*—shortpod mustard
- \* *Rosmarinus officinalis*—rosemary

**EUPHORBIACEAE—SPURGE FAMILY**

- \* *Ricinus communis*—castorbean

**FABACEAE—LEGUME FAMILY**

- Prosopis glandulosa*—honey mesquite
- \* *Trifolium repens*—white clover

**SOLANACEAE—NIGHTSHADE FAMILY**

- \* *Nicotiana glauca*—tree tobacco

**TAMARICACEAE—TAMARISK FAMILY**

- \* *Tamarix gallica*—French tamarisk

*Monocots*

**ARECACEAE—PALM FAMILY**

- \* *Washingtonia robusta*—Washington fan palm

**POACEAE—GRASS FAMILY**

- \* *Bromus rubens*—red brome
- \* *Pennisetum macrourum*—African feathergrass

## Wildlife

### Bird

#### *Finches*

#### **FRINGILLIDAE—FRINGILLINE AND CARDUELINE FINCHES AND ALLIES**

*Haemorhous mexicanus*—house finch

*Spinus psaltria*—lesser goldfinch

#### *Flycatchers*

#### **TYRANNIDAE—TYRANT FLYCATCHERS**

*Sayornis nigricans*—black phoebe

*Tyrannus vociferans*—Cassin's kingbird

#### *Hawks*

#### **ACCIPITRIDAE—HAWKS, KITES, EAGLES, AND ALLIES**

*Buteo jamaicensis*—red-tailed hawk

#### *New World Vultures*

#### **CATHARTIDAE—NEW WORLD VULTURES**

*Cathartes aura*—turkey vulture

#### *Pigeons and Doves*

#### **COLUMBIDAE—PIGEONS AND DOVES**

*Zenaida macroura*—mourning dove

### Mammals

#### *Squirrels*

#### **SCIURIDAE—SQUIRRELS**

*Spermophilus (Otospermophilus) beecheyi*—California ground squirrel

\* signifies introduced (non-native) species



# Attachment D

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Sensitive Species Lists



## Selected Elements by Scientific Name

### California Department of Fish and Wildlife

#### California Natural Diversity Database



**Query Criteria:** Quad<span style='color:Red'> IS </span>(Anaheim (3311778)<span style='color:Red'> OR </span>Orange (3311777)<span style='color:Red'> OR </span>Los Alamitos (3311871)<span style='color:Red'> OR </span>Whittier (3311881)<span style='color:Red'> OR </span>La Habra (3311788)<span style='color:Red'> OR </span>Yorba Linda (3311787)<span style='color:Red'> OR </span>Seal Beach (3311861)<span style='color:Red'> OR </span>Newport Beach (3311768)<span style='color:Red'> OR </span>Tustin (3311767))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Abronia villosa</i> var. <i>aurita</i></b> chaparral sand-verbena	PDNYC010P1	None	None	G5T2?	S2	1B.1
<b><i>Accipiter cooperii</i></b> Cooper's hawk	ABNKC12040	None	None	G5	S4	WL
<b><i>Agelaius tricolor</i></b> tricolored blackbird	ABPBXB0020	None	Threatened	G2G3	S1S2	SSC
<b><i>Aimophila ruficeps canescens</i></b> southern California rufous-crowned sparrow	ABPBX91091	None	None	G5T3	S3	WL
<b><i>Ammodramus savannarum</i></b> grasshopper sparrow	ABPBXA0020	None	None	G5	S3	SSC
<b><i>Anniella stebbinsi</i></b> Southern California legless lizard	ARACC01060	None	None	G3	S3	SSC
<b><i>Aphanisma blitoides</i></b> aphanisma	PDCHE02010	None	None	G3G4	S2	1B.2
<b><i>Ardea herodias</i></b> great blue heron	ABNGA04010	None	None	G5	S4	
<b><i>Asio otus</i></b> long-eared owl	ABNSB13010	None	None	G5	S3?	SSC
<b><i>Aspidoscelis hyperythra</i></b> orange-throated whiptail	ARACJ02060	None	None	G5	S2S3	WL
<b><i>Aspidoscelis tigris stejnegeri</i></b> coastal whiptail	ARACJ02143	None	None	G5T5	S3	SSC
<b><i>Astragalus hornii</i> var. <i>hornii</i></b> Horn's milk-vetch	PDFAB0F421	None	None	GUT1	S1	1B.1
<b><i>Astragalus pycnostachyus</i> var. <i>lanosissimus</i></b> Ventura Marsh milk-vetch	PDFAB0F7B1	Endangered	Endangered	G2T1	S1	1B.1
<b><i>Athene cunicularia</i></b> burrowing owl	ABNSB10010	None	None	G4	S3	SSC
<b><i>Atriplex coulteri</i></b> Coulter's saltbush	PDCHE040E0	None	None	G3	S1S2	1B.2
<b><i>Atriplex pacifica</i></b> south coast saltscale	PDCHE041C0	None	None	G4	S2	1B.2
<b><i>Atriplex parishii</i></b> Parish's brittlescale	PDCHE041D0	None	None	G1G2	S1	1B.1
<b><i>Atriplex serenana</i> var. <i>davidsonii</i></b> Davidson's saltscale	PDCHE041T1	None	None	G5T1	S1	1B.2
<b><i>Bombus crotchii</i></b> Crotch bumble bee	IIHYM24480	None	Candidate Endangered	G3G4	S1S2	



# Selected Elements by Scientific Name

## California Department of Fish and Wildlife

### California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Branchinecta sandiegonensis</i></b> San Diego fairy shrimp	ICBRA03060	Endangered	None	G2	S2	
<b><i>Buteo regalis</i></b> ferruginous hawk	ABNKC19120	None	None	G4	S3S4	WL
<b><i>Buteo swainsoni</i></b> Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
<b><i>California Walnut Woodland</i></b> California Walnut Woodland	CTT71210CA	None	None	G2	S2.1	
<b><i>Calochortus plummerae</i></b> Plummer's mariposa-lily	PMLIL0D150	None	None	G4	S4	4.2
<b><i>Calochortus weedii</i> var. <i>intermedius</i></b> intermediate mariposa-lily	PMLIL0D1J1	None	None	G3G4T2	S2	1B.2
<b><i>Calystegia felix</i></b> lucky morning-glory	PDCON040P0	None	None	G1Q	S1	1B.1
<b><i>Campylorhynchus brunneicapillus sandiegonensis</i></b> coastal cactus wren	ABPBG02095	None	None	G5T3Q	S3	SSC
<b><i>Catostomus santaanae</i></b> Santa Ana sucker	AFCJC02190	Threatened	None	G1	S1	
<b><i>Centromadia parryi</i> ssp. <i>australis</i></b> southern tarplant	PDAST4R0P4	None	None	G3T2	S2	1B.1
<b><i>Charadrius alexandrinus nivosus</i></b> western snowy plover	ABNNB03031	Threatened	None	G3T3	S2S3	SSC
<b><i>Chelonia mydas</i></b> green turtle	ARAAA02010	Threatened	None	G3	S4	
<b><i>Chloropyron maritimum</i> ssp. <i>maritimum</i></b> salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T1	S1	1B.2
<b><i>Choeronycteris mexicana</i></b> Mexican long-tongued bat	AMACB02010	None	None	G4	S1	SSC
<b><i>Cicindela hirticollis gravida</i></b> sandy beach tiger beetle	IICOL02101	None	None	G5T2	S2	
<b><i>Cicindela latesignata latesignata</i></b> western beach tiger beetle	IICOL02113	None	None	G2G4T1T2	S1	
<b><i>Cicindela senilis frosti</i></b> senile tiger beetle	IICOL02121	None	None	G2G3T1T3	S1	
<b><i>Coccyzus americanus occidentalis</i></b> western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T2T3	S1	
<b><i>Coelus globosus</i></b> globose dune beetle	IICOL4A010	None	None	G1G2	S1S2	
<b><i>Coturnicops noveboracensis</i></b> yellow rail	ABNME01010	None	None	G4	S1S2	SSC
<b><i>Crotalus ruber</i></b> red-diamond rattlesnake	ARADE02090	None	None	G4	S3	SSC



Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Danaus plexippus pop. 1</i></b> monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
<b><i>Dudleya multicaulis</i></b> many-stemmed dudleya	PDCRA040H0	None	None	G2	S2	1B.2
<b><i>Elanus leucurus</i></b> white-tailed kite	ABNKC06010	None	None	G5	S3S4	FP
<b><i>Emys marmorata</i></b> western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
<b><i>Eremophila alpestris actia</i></b> California horned lark	ABPAT02011	None	None	G5T4Q	S4	WL
<b><i>Eriastrum densifolium ssp. sanctorum</i></b> Santa Ana River woollystar	PDPLM03035	Endangered	Endangered	G4T1	S1	1B.1
<b><i>Eryngium aristulatum var. parishii</i></b> San Diego button-celery	PDAP10Z042	Endangered	Endangered	G5T1	S1	1B.1
<b><i>Eumops perotis californicus</i></b> western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC
<b><i>Euphydryas editha quino</i></b> quino checkerspot butterfly	IILEPK405L	Endangered	None	G5T1T2	S1S2	
<b><i>Falco peregrinus anatum</i></b> American peregrine falcon	ABNKD06071	Delisted	Delisted	G4T4	S3S4	FP
<b><i>Glyptostoma gabrielense</i></b> San Gabriel chestnut	IMGASB1010	None	None	G2	S2	
<b><i>Habroscelimorpha gabbii</i></b> western tidal-flat tiger beetle	IICOL02080	None	None	G2G4	S1	
<b><i>Helianthus nuttallii ssp. parishii</i></b> Los Angeles sunflower	PDAST4N102	None	None	G5TX	SX	1A
<b><i>Icteria virens</i></b> yellow-breasted chat	ABPBX24010	None	None	G5	S3	SSC
<b><i>Isocoma menziesii var. decumbens</i></b> decumbent goldenbush	PDAST57091	None	None	G3G5T2T3	S2	1B.2
<b><i>Lasionycteris noctivagans</i></b> silver-haired bat	AMACC02010	None	None	G5	S3S4	
<b><i>Lasiurus cinereus</i></b> hoary bat	AMACC05030	None	None	G5	S4	
<b><i>Lasiurus xanthinus</i></b> western yellow bat	AMACC05070	None	None	G5	S3	SSC
<b><i>Lasthenia glabrata ssp. coulteri</i></b> Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
<b><i>Laterallus jamaicensis coturniculus</i></b> California black rail	ABNME03041	None	Threatened	G3G4T1	S1	FP
<b><i>Lepidium virginicum var. robinsonii</i></b> Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3





Selected Elements by Scientific Name  
California Department of Fish and Wildlife  
California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Microtus californicus stephensi</i></b> south coast marsh vole	AMAFF11035	None	None	G5T1T2	S1S2	SSC
<b><i>Myotis yumanensis</i></b> Yuma myotis	AMACC01020	None	None	G5	S4	
<b><i>Nama stenocarpa</i></b> mud nama	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2
<b><i>Nasturtium gambelii</i></b> Gambel's water cress	PDBRA270V0	Endangered	Threatened	G1	S1	1B.1
<b><i>Navarretia prostrata</i></b> prostrate vernal pool navarretia	PDPLM0C0Q0	None	None	G2	S2	1B.2
<b><i>Nemacaulis denudata var. denudata</i></b> coast woolly-heads	PDPGN0G011	None	None	G3G4T2	S2	1B.2
<b><i>Nyctinomops femorosaccus</i></b> pocketed free-tailed bat	AMACD04010	None	None	G4	S3	SSC
<b><i>Nyctinomops macrotis</i></b> big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
<b><i>Oncorhynchus mykiss irideus pop. 10</i></b> steelhead - southern California DPS	AFCHA0209J	Endangered	None	G5T1Q	S1	
<b><i>Orcuttia californica</i></b> California Orcutt grass	PMPOA4G010	Endangered	Endangered	G1	S1	1B.1
<b><i>Pandion haliaetus</i></b> osprey	ABNKC01010	None	None	G5	S4	WL
<b><i>Panoquina errans</i></b> wandering (=saltmarsh) skipper	IILEP84030	None	None	G4G5	S2	
<b><i>Passerculus sandwichensis beldingi</i></b> Belding's savannah sparrow	ABPBX99015	None	Endangered	G5T3	S3	
<b><i>Pentachaeta aurea ssp. allenii</i></b> Allen's pentachaeta	PDAST6X021	None	None	G4T1	S1	1B.1
<b><i>Perognathus longimembris pacificus</i></b> Pacific pocket mouse	AMAFD01042	Endangered	None	G5T1	S1	SSC
<b><i>Phacelia stellaris</i></b> Brand's star phacelia	PDHYD0C510	None	None	G1	S1	1B.1
<b><i>Phrynosoma blainvillii</i></b> coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
<b><i>Polioptila californica californica</i></b> coastal California gnatcatcher	ABPBJ08081	Threatened	None	G4G5T2Q	S2	SSC
<b><i>Rallus obsoletus levipes</i></b> light-footed Ridgway's rail	ABNME05014	Endangered	Endangered	G5T1T2	S1	FP
<b><i>Riparia riparia</i></b> bank swallow	ABPAU08010	None	Threatened	G5	S2	
<b><i>Rynchops niger</i></b> black skimmer	ABNNM14010	None	None	G5	S2	SSC



# Selected Elements by Scientific Name

## California Department of Fish and Wildlife

### California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<b><i>Salvadora hexalepis virgultea</i></b> coast patch-nosed snake	ARADB30033	None	None	G5T4	S2S3	SSC
<b><i>Senecio aphanactis</i></b> chaparral ragwort	PDAST8H060	None	None	G3	S2	2B.2
<b><i>Setophaga petechia</i></b> yellow warbler	ABPBX03010	None	None	G5	S3S4	SSC
<b><i>Sidalcea neomexicana</i></b> salt spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
<b><i>Sorex ornatus salicornicus</i></b> southern California saltmarsh shrew	AMABA01104	None	None	G5T1?	S1	SSC
<b><i>Southern California Arroyo Chub/Santa Ana Sucker Stream</i></b> Southern California Arroyo Chub/Santa Ana Sucker Stream	CARE2330CA	None	None	GNR	SNR	
<b><i>Southern Coast Live Oak Riparian Forest</i></b> Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
<b><i>Southern Coastal Salt Marsh</i></b> Southern Coastal Salt Marsh	CTT52120CA	None	None	G2	S2.1	
<b><i>Southern Cottonwood Willow Riparian Forest</i></b> Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	
<b><i>Southern Dune Scrub</i></b> Southern Dune Scrub	CTT21330CA	None	None	G1	S1.1	
<b><i>Southern Foredunes</i></b> Southern Foredunes	CTT21230CA	None	None	G2	S2.1	
<b><i>Southern Sycamore Alder Riparian Woodland</i></b> Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	
<b><i>Southern Willow Scrub</i></b> Southern Willow Scrub	CTT63320CA	None	None	G3	S2.1	
<b><i>Spea hammondi</i></b> western spadefoot	AAABF02020	None	None	G3	S3	SSC
<b><i>Sternula antillarum browni</i></b> California least tern	ABNNM08103	Endangered	Endangered	G4T2T3Q	S2	FP
<b><i>Streptocephalus woottoni</i></b> Riverside fairy shrimp	ICBRA07010	Endangered	None	G1G2	S1S2	
<b><i>Suaeda esteroa</i></b> estuary seablite	PDCHE0P0D0	None	None	G3	S2	1B.2
<b><i>Symphyotrichum defoliatum</i></b> San Bernardino aster	PDASTE80C0	None	None	G2	S2	1B.2
<b><i>Taxidea taxus</i></b> American badger	AMAJF04010	None	None	G5	S3	SSC
<b><i>Trigonoscuta dorothea dorothea</i></b> Dorothy's El Segundo Dune weevil	IICOL51021	None	None	G1T1	S1	
<b><i>Tryonia imitator</i></b> mimic tryonia (=California brackishwater snail)	IMGASJ7040	None	None	G2	S2	



# Selected Elements by Scientific Name

## California Department of Fish and Wildlife

### California Natural Diversity Database



Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
<i>Vireo bellii pusillus</i> least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	

Record Count: 104

\*The database used to provide updates to the Online Inventory is under construction. [View updates and changes made since May 2019 here.](#)

## Plant List

43 matches found. [Click on scientific name for details](#)

### Search Criteria

Found in Quads 3311881, 3311788, 3311787, 3311871, 3311778, 3311777, 3311861 3311768 and 3311767;

[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
<a href="#">Abronia maritima</a>	red sand-verbena	Nyctaginaceae	perennial herb	Feb-Nov	4.2	S3?	G4
<a href="#">Abronia villosa var. aurita</a>	chaparral sand-verbena	Nyctaginaceae	annual herb	(Jan)Mar-Sep	1B.1	S2	G5T2?
<a href="#">Aphanisma blitoides</a>	aphanisma	Chenopodiaceae	annual herb	Feb-Jun	1B.2	S2	G3G4
<a href="#">Astragalus pycnostachyus var. lanosissimus</a>	Ventura marsh milk-vetch	Fabaceae	perennial herb	(Jun)Aug-Oct	1B.1	S1	G2T1
<a href="#">Atriplex coulteri</a>	Coulter's saltbush	Chenopodiaceae	perennial herb	Mar-Oct	1B.2	S1S2	G3
<a href="#">Atriplex pacifica</a>	South Coast saltscale	Chenopodiaceae	annual herb	Mar-Oct	1B.2	S2	G4
<a href="#">Atriplex parishii</a>	Parish's brittlescale	Chenopodiaceae	annual herb	Jun-Oct	1B.1	S1	G1G2
<a href="#">Atriplex serenana var. davidsonii</a>	Davidson's saltscale	Chenopodiaceae	annual herb	Apr-Oct	1B.2	S1	G5T1
<a href="#">Calochortus catalinae</a>	Catalina mariposa lily	Liliaceae	perennial bulbiferous herb	(Feb)Mar-Jun	4.2	S3S4	G3G4
<a href="#">Calochortus plummerae</a>	Plummer's mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	4.2	S4	G4
<a href="#">Calochortus weedii var. intermedius</a>	intermediate mariposa lily	Liliaceae	perennial bulbiferous herb	May-Jul	1B.2	S2	G3G4T2
<a href="#">Calystegia felix</a>	lucky morning-glory	Convolvulaceae	annual rhizomatous herb	Mar-Sep	1B.1	S1	G1Q
<a href="#">Camissoniopsis lewisii</a>	Lewis' evening-primrose	Onagraceae	annual herb	Mar-May(Jun)	3	S4	G4
<a href="#">Centromadia parryi ssp. australis</a>	southern tarplant	Asteraceae	annual herb	May-Nov	1B.1	S2	G3T2
<a href="#">Chloropyron maritimum ssp. maritimum</a>	salt marsh bird's-beak	Orobanchaceae	annual herb (hemiparasitic)	May-Oct(Nov)	1B.2	S1	G4?T1
<a href="#">Chorizanthe parryi var. fernandina</a>	San Fernando Valley spineflower	Polygonaceae	annual herb	Apr-Jul	1B.1	S1	G2T1
<a href="#">Convolvulus simulans</a>	small-flowered	Convolvulaceae	annual herb	Mar-Jul	4.2	S4	G4

	morning-glory						
<a href="#"><u>Deinandra paniculata</u></a>	paniculate tarplant	Asteraceae	annual herb	(Mar)Apr-Nov(Dec)	4.2	S4	G4
<a href="#"><u>Dudleya multicaulis</u></a>	many-stemmed dudleya	Crassulaceae	perennial herb	Apr-Jul	1B.2	S2	G2
<a href="#"><u>Dudleya stolonifera</u></a>	Laguna Beach dudleya	Crassulaceae	perennial stoloniferous herb	May-Jul	1B.1	S1	G1
<a href="#"><u>Eryngium aristulatum var. parishii</u></a>	San Diego button-celery	Apiaceae	annual / perennial herb	Apr-Jun	1B.1	S1	G5T1
<a href="#"><u>Helianthus nuttallii ssp. parishii</u></a>	Los Angeles sunflower	Asteraceae	perennial rhizomatous herb	Aug-Oct	1A	SH	G5TH
<a href="#"><u>Hordeum intercedens</u></a>	vernal barley	Poaceae	annual herb	Mar-Jun	3.2	S3S4	G3G4
<a href="#"><u>Juglans californica</u></a>	Southern California black walnut	Juglandaceae	perennial deciduous tree	Mar-Aug	4.2	S4	G4
<a href="#"><u>Juncus acutus ssp. leopoldii</u></a>	southwestern spiny rush	Juncaceae	perennial rhizomatous herb	(Mar)May-Jun	4.2	S4	G5T5
<a href="#"><u>Lasthenia glabrata ssp. coulteri</u></a>	Coulter's goldfields	Asteraceae	annual herb	Feb-Jun	1B.1	S2	G4T2
<a href="#"><u>Lepidium virginicum var. robinsonii</u></a>	Robinson's pepper-grass	Brassicaceae	annual herb	Jan-Jul	4.3	S3	G5T3
<a href="#"><u>Nama stenocarpa</u></a>	mud nama	Namaceae	annual / perennial herb	Jan-Jul	2B.2	S1S2	G4G5
<a href="#"><u>Nasturtium gambelii</u></a>	Gambel's water cress	Brassicaceae	perennial rhizomatous herb	Apr-Oct	1B.1	S1	G1
<a href="#"><u>Navarretia prostrata</u></a>	prostrate vernal pool navarretia	Polemoniaceae	annual herb	Apr-Jul	1B.1	S2	G2
<a href="#"><u>Nemacaulis denudata var. denudata</u></a>	coast woolly-heads	Polygonaceae	annual herb	Apr-Sep	1B.2	S2	G3G4T2
<a href="#"><u>Orcuttia californica</u></a>	California Orcutt grass	Poaceae	annual herb	Apr-Aug	1B.1	S1	G1
<a href="#"><u>Phacelia hubbyi</u></a>	Hubby's phacelia	Hydrophyllaceae	annual herb	Apr-Jul	4.2	S4	G4
<a href="#"><u>Phacelia ramosissima var. austrolitoralis</u></a>	south coast branching phacelia	Hydrophyllaceae	perennial herb	Mar-Aug	3.2	S3	G5?T3Q
<a href="#"><u>Phacelia stellaris</u></a>	Brand's star phacelia	Hydrophyllaceae	annual herb	Mar-Jun	1B.1	S1	G1
<a href="#"><u>Quercus engelmannii</u></a>	Engelmann oak	Fagaceae	perennial deciduous tree	Mar-Jun	4.2	S3	G3
<a href="#"><u>Ribes divaricatum var. parishii</u></a>	Parish's gooseberry	Grossulariaceae	perennial deciduous shrub	Feb-Apr	1A	SX	G5TX
<a href="#"><u>Romneya coulteri</u></a>	Coulter's matilija poppy	Papaveraceae	perennial rhizomatous herb	Mar-Jul(Aug)	4.2	S4	G4
<a href="#"><u>Sagittaria sanfordii</u></a>	Sanford's arrowhead	Alismataceae	perennial rhizomatous herb (emergent)	May-Oct(Nov)	1B.2	S3	G3
<a href="#"><u>Senecio aphanactis</u></a>	chaparral ragwort	Asteraceae	annual herb	Jan-Apr(May)	2B.2	S2	G3
<a href="#"><u>Sidalcea neomexicana</u></a>	salt spring checkerbloom	Malvaceae	perennial herb	Mar-Jun	2B.2	S2	G4
<a href="#"><u>Suaeda esteroa</u></a>	estuary seablite	Chenopodiaceae	perennial herb	(May)Jul-Oct(Jan)	1B.2	S2	G3
<a href="#"><u>Symphyotrichum defoliatum</u></a>	San Bernardino aster	Asteraceae	perennial rhizomatous herb	Jul-Nov(Dec)	1B.2	S2	G2

**Suggested Citation**

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**Appendix C**  
Cultural Resources / Historic Property Analysis

# CULTURAL RESOURCES ASSESSMENT/HISTORIC PROPERTY IDENTIFICATION REPORT FOR THE ANAHEIM PUBLIC UTILITIES WELL AND WATER TREATMENT FACILITIES PROJECT

City of Anaheim, Orange County, California

PREPARED FOR:

CITY OF ANAHEIM  
Public Utilities Department  
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Contact: Jonathan Sanks  
Environmental Services and Safety Manager

PREPARED BY:

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DUDEK

38 North Marengo Avenue  
Pasadena, California 91101

FEBRUARY 2021



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CULTURAL RESOURCES ASSESSMENT/HISTORIC PROPERTY IDENTIFICATION REPORT  
WELL AND WATER TREATMENT FACILITIES PROJECT

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NATIONAL ARCHAEOLOGICAL DATABASE INFORMATION

**Authors:** Linda Kry, BA, RA; Kira Archipov, BS; Jennifer De Alba, BA; and Heather McDaniel McDevitt, MA, RPA

**Firm:** Dudek

**Project Proponent:** City of Anaheim Public Utilities Department

**Report Date:** February 2021

**Report Title:** Cultural Resources Assessment/Historic Property Identification Report for the Anaheim Public Utilities Well and Water Treatment Facilities Project, City of Anaheim, Orange County, California

**Type of Study:** Cultural Resources Inventory/Historic Property Inventory, Pedestrian Survey

**New Resources:** None

**Updated Sites:** None

**USGS Quads:** Anaheim and Orange 7.5' T4S/R10W Section 9, T3S/R9W Section 32, T4S/R10W Section 21, and T4S/R10W Section 14

**Acreage:** Approximately 8.5 acres

**Permit Numbers:** N/A

**Keywords:** California Environmental Quality Act (CEQA); Section 106 of the NHPA, City of Orange; cultural resources inventory; pedestrian survey; Gabrieliño/Gabrieleño; Tongva; Juaneño; negative results

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## ACRONYMS AND ABBREVIATIONS

AB	Assembly Bill
ACHP	Advisory Council on Historic Preservation
APE	Area of Potential Effect
APU	Anaheim Public Utilities
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CHRIS	California Historical Resources Information System
City	City of Anaheim
CRHR	California Register of Historical Resources
DDW	Division of Drinking Water
EPA	Environmental Protection Agency
GPM	gallons per minute
HP	horsepower
HPIR	Historic Property Identification Report
IS	Initial Study
MG	million gallon
MLD	Most Likely Descendant
MND	Mitigated Negative Declaration
NAHC	Native American Heritage Commission
NHPA	National Historic Preservation Act
NRHP	National Register of Historic Places
NPDES	National Pollutant Discharge Elimination System
PRC	California Public Resources Code
Project	Anaheim Public Utilities Well and Water Treatment Facilities Project
OCWD	Orange County Water District
SCCIC	Southern California Coastal Information Center
SHPO	State Historic Preservation Officer
SLF	Sacred Lands File
SR	State Route
TCR	Tribal Cultural Resource
SWRCB	State Water Resources Control Board
USGS	US Geological Survey
WEAP	Workers Environmental Awareness Program
WIFIA	Water Infrastructure Finance and Innovation Act

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## EXECUTIVE SUMMARY

Dudek was retained by the City of Anaheim Public Utilities (APU) Department to complete a cultural resources study for the proposed Anaheim Public Utilities Well and Water Treatment Facilities Project (Project; proposed Project). The proposed Project involves the installation of water treatment facilities at four sites. The number and size of vessels at each treatment site will depend on the volume of water that will require treatment at each location. Site A (La Palma Site) would include a new treatment plant, water well, piping, and security features. Site B (Linda Vista Site) would include a new treatment plant, water well, piping, operations building, and security features. Site C (Boysen Park Site) would include a new treatment plant, piping, and security features. Lastly, Site D (Energy Field Site) would include a new treatment plant, piping, and security features. The City of Anaheim (City), as a municipal utility, would implement and operate the proposed Project and will therefore act as the lead agency under the California Environmental Quality Act (CEQA).

The City will fund the proposed Project and may seek additional funding from available sources, which may include the United States Environmental Protection Agency's (EPA) Water Infrastructure Finance and Innovation Act (WIFIA) program. As a result, and in addition to the CEQA review process, federal crosscutting requirements are often a part of the environmental review for projects that are funded through the WIFIA Program. Therefore, applications for funding must include proof of compliance with federal requirements. This cultural study was prepared in support of the proposed Project's Initial Study and Mitigated Negative Declaration (IS/MND) and in compliance with federal environmental laws in the event that federal funding through the WIFIA program is requested. As such, project-related activities with the potential to affect historic properties are considered federal undertakings, subject to compliance with Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, and its implementing regulations (36 CFR Part 800). Therefore, the purpose of this report is to identify all cultural resources within the proposed Project Area of Potential Effect (APE) and to determine whether the Project would result in a significant impact to a cultural resource under CEQA or an adverse effect to an historic property under Section 106 of the NHPA. The Cultural Resources Assessment/Historic Property Identification Report (HPIR) is used to show that a reasonable and good faith effort was made to identify historic properties.

A CHRIS records search was completed by staff at the South Central Coastal Information Center (SCCIC) on January 22, 2021. The records search identified 22 previously conducted cultural resource technical investigations within the records search area. None of these studies overlap/intersect the Project APE. Additionally, the SCCIC records indicate that one prehistoric archaeological site and one built environment resource were identified within the records search area; none of these resources are within the Project APE. A search of the Native American Heritage Commission's (NAHC) Sacred Lands File (SLF) of the proposed Project APE was completed October 22, 2020. The result of that search was negative for Native American resources at the La Palma, Boysen Park, and Energy Field Sites, and with positive results for Linda Vista Site. The NAHC also provided a list of 11 Native American groups and individuals who may have knowledge of the



presence of Native American resources in the proposed Project APE or Project vicinity. Details of the SLF results are presented in Section 5.4 and provided in Appendix B. The proposed Project is subject to compliance with Assembly Bill (AB) 52. Native American consultation pursuant to AB 52 was completed by the City.

An archaeological pedestrian survey of the Project APE was conducted on December 16, 2020. As a result of existing Project site conditions, an opportunistic approach was employed, that involved walking parallel transects, spaced no more than 3-5 meters apart (approximately 9-16 feet), in areas of exposed ground surface when possible and visually inspecting areas that were physically inaccessible or obscured by buildings, structures, large metal containers, and parked vehicles. No cultural material was observed within the Project APE during the pedestrian survey.

No newly or previously recorded cultural resources were identified within the direct APE as a result of the CHRIS records search, Native American coordination, or pedestrian survey. Although the Project APE has not been subject to any previous investigations, one prehistoric archaeological resource (P-30-00430 (CA-SBA-000430) was identified within 600 meters (approximately 1980 feet) of the Linda Vista Site. This site consists of a metate and a mano and originally documented in 1973. A review of historical maps and aerial photographs indicate that the Project APE has been subject to consistent ground disturbance from as early as the late nineteenth century up to the late twentieth century for the La Palma, Linda Vista, and Boysen Park Sites, and the early twenty-first century for the Energy Field Site. In consideration of these factors, the potential to find unknown archaeological resources is considered low, but possible. The following measures have been developed to ensure that any inadvertent discovery of archaeological resources will be treated appropriately and in accordance with CEQA regulations: preconstruction training, retention of an on-call archaeologist to address inadvertent discoveries, and inadvertent discovery clause implemented and included on all construction plans. These measures would ensure the potential Project impacts to archaeological resources and human remains would be less than significant under CEQA and would result in no historic properties affected under Section 106 of the NHPA.

# 1 INTRODUCTION

Dudek was retained by the City of Anaheim Public Utilities (APU) Department to conduct a cultural resources study in support of the IS/MND for the proposed Anaheim Public Utilities Well and Water Treatment Facilities Project (Project; proposed Project). The purpose of this report is to identify all cultural resources within the proposed Project and to determine whether the Project would result in a significant impact to a cultural resource under CEQA or an adverse effect to a historic property under Section 106 of the NHPA. The Cultural Resources Assessment/Historic Property Identification Report (HPIR) is used to show that a reasonable and good faith effort was made to identify historic properties. This report includes the results of a California Historical Resources Information System (CHRIS) records search; coordination with the California Native American Heritage Commission (NAHC) for a Sacred Lands File (SLF) search; in-depth review of archival, academic, and ethnographic information; and a pedestrian survey by a qualified archaeologist. This report was prepared in conformance with California Environmental Quality Act (CEQA) and Section 106 of the National Historic Preservation Act (NHPA) of 1966. The City of Anaheim (City), as a municipal utility, would implement and operate the proposed Project and will therefore act as the lead agency under CEQA.

The proposed Project would involve new treatment plants, water wells, piping, and security features. The City will fund the proposed Project but may seek additional funding from the United States Environmental Protection Agency's (EPA) Water Infrastructure Finance and Innovation Act (WIFIA) program. Applications for WIFIA funding are subject to compliance with applicable federal environmental laws and therefore, require proof of compliance with federal requirements. Project-related activities with the potential to affect historic properties are considered federal undertakings, subject to compliance with Section 106 of the NHPA of 1966, as amended, and its implementing regulations (36 CFR Part 800). The purpose of this report is to identify all cultural resources within the proposed Project APE and to determine whether the Project, as proposed, would result in a significant impact to a historical resource under CEQA or an adverse effect to an historic property under Section 106 of the NHPA. This cultural study was prepared in support of the proposed Project's Initial Study and Mitigated Negative Declaration (IS/MND) and in compliance with federal environmental laws in the event that federal funding through the WIFIA program is requested.

Dudek Archaeologist Linda Kry, BA, RA, is the technical lead who co-authored the report, conducted the pedestrian survey, and provided management oversight and recommendations. Dudek Paleontologist/Archaeologist Kira Archipov, BS, co-authored the report and addressed the CHRIS records search, historical maps and aerial photographs and geotechnical report review sections. Dudek Archaeologist Jennifer De Alba, BA, contributed to the report and conducted the NAHC SLF request. This report was reviewed for quality assurance/quality control by Dudek Senior Archaeologist Heather McDaniel McDevitt, MA, RPA. Resumes for all key personnel are provided in Appendix A. Preparers Qualifications.

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## 2 PROJECT DESCRIPTION/UNDERTAKING

### 2.1 Project Description

The proposed Project involves the installation of water treatment facilities at four sites. The number and size of vessels at each treatment site will depend on the volume of water that will require treatment at each location. Site A (La Palma Site) would include a new treatment plant, water well, piping, and security features. Site B (Linda Vista Site) would include a new treatment plant, piping, operations building, and security features. Site C (Boysen Park Site) would include a new treatment plant, piping, and security features. Lastly, Site D (Energy Field Site) would include a new treatment plant, piping, and security features. The treatment systems would operate up to 24 hours per day to ensure continuous availability of water. To efficiently distribute the treated water, a new water supply well would be installed at the La Palma site, and several other wells would be rehabilitated to improve their water production capacity at the other sites. The installation of water treatment facilities as proposed by the Project for each of the four sites is further discussed below.

#### La Palma Site

The proposed Project would install a new treatment system in a vacant area of the site east of the existing reservoir and pump station. The system would be designed to treat water at a rate of approximately 8,700 gallons per minute (GPM). Approximately 12 ion exchange resin vessels would be installed at the site. While exact dimensions might vary, the vessels are expected to be approximately 17 feet tall and 12 feet in diameter. The vessels would be installed on the eastern portion of the property with additional smaller treatment equipment such as pre-treatment filters, pipes, pumps, valves, and other appurtenant structures. Upgraded disinfection equipment consisting of pumps and tanks would be installed to store additional sodium hypochlorite (bleach) to disinfect the water leaving the treatment plant. An upgraded electrical switchgear would be added to the site to reliably power the pumping equipment along with electrical equipment connections allowing the facility to operate off a portable emergency backup generator. The treatment plant equipment would be set back from West La Palma Avenue to reduce visibility above the site walls or fences. One new groundwater well, designed to extract up to approximately 4,000 gallons per minute (gpm) of groundwater for use by the City's water system, would be installed in the southeast corner of the site, and drilled to a depth in excess of 1,000 feet. A new booster pump would be installed onsite to convey water into the treatment and distribution systems.

The existing water supply well at the La Palma site would be rehabilitated. This would include conducting an initial video survey, using downhole instrumentation to study the vertical alignment, installing a liner casing, and using chemical processes to remove built up scaling and improve performance of the well. New pumps and control equipment would be installed.

Buried piping would be installed within the Project site to convey water from the new well and treatment system into the reservoir and distribution system. Existing piping beneath La Palma Avenue (between West

Street and Citron Street), and two existing discharge pipes crossing Carbon Creek Channel would be upgraded with larger piping to better accommodate anticipate water demands. The replacement pipe would be installed by boring beneath the existing channel. A new buried pipe would be installed connecting the reservoir to existing piping beneath West Street.

The site has an existing pipe that discharges water into Carbon Creek Channel. These discharges occur during well startup and shutdown, and while conducting maintenance on the reservoir. The new treatment system and well would be connected to this existing discharge point to accommodate flushing water when starting, stopping, or conducting maintenance on the site equipment.

New catch basins and storm drain piping would be installed as necessary to accommodate site grade changes.

To promote site security and better screen the new treatment equipment from view, the existing chain-link fence would be replaced with a new 10-foot high block wall extending along the entire north, south, and east side of the site including a new entrance gate, on the northeast corner of the property providing entrance to the facility from West La Palma Avenue. New security lighting would be installed throughout the site and new landscaping on the northern portion of the property, near Carbon Creek Channel with vines or similar landscaping along the wall for aesthetic improvement and to reduce graffiti. The existing chain link fence has been damaged by trees and vegetation, and some existing trees located along the existing fence may need to be removed to facilitate construction of the new block wall. Additionally, overhead electrical and communication lines are located along the southern boundary of the site. These existing utilities would be removed and relocated underground.

#### Linda Vista Site

The site is located within a commercial/industrial area. It is bound to the east by Tustin Avenue and commercial properties, to the south by additional commercial properties, and to the north and west by Anaheim Lake. Anaheim Lake is a groundwater recharge facility operated by the Orange County Water District (OCWD). It receives water from MWD, sourced from the Colorado River Aqueduct and State Water Project. It also receives water from the Santa Ana River.

The site currently contains a pump station, a large storage tank, water disinfection equipment, storage buildings, and various piping, valves, and other water distribution equipment. The site also has a 2,220 HP diesel-fueled emergency backup generator and a weather station. Several water supply wells are installed around Anaheim Lake. The southern portion of the site is surrounded by a block wall, with chain-link fence on the northern portion. Entrances on North Tustin Avenue allow vehicles to enter and exit the site.

The site formerly contained a 4-million-gallon partially underground reservoir. The reservoir previously extended approximately 15 feet below the current ground surface. The upper 5 feet was demolished and removed. However, portions of the reservoir walls and floors are believed to remain in place at depths ranging

from five feet to 15 feet below ground surface. The ground surface in the construction area is primarily soil and weed-type vegetation.

The proposed Project would install a new treatment system in a vacant area of the site north of the existing tank. All existing vegetation within the treatment system area would be removed. Approximately 20 ion exchange resin vessels would be installed at the site. While exact dimensions might vary, the water treatment system vessels are expected to be approximately 17 feet tall and 12 feet in diameter. Additional smaller treatment equipment would be installed such as pre-treatment filters, pumps, pipes valves, and other appurtenant structures. A new 350-kilowatt (kW) diesel emergency backup generator would be installed to power the treatment plant, pumps, operations building, and associated equipment in the event of a power outage. Upgraded disinfection equipment consisting of pumps and tanks would be installed to store additional sodium hypochlorite (bleach) to disinfect the water leaving the treatment plant. Portions of the abandoned underground reservoir may need to be demolished to facilitate construction. The treatment plant equipment would be set back from North Tustin Avenue, to reduce visibility above the site walls or fences.

Three existing water supply wells near the Linda Vista site would require rehabilitation. This would include conducting an initial video survey, using downhole instrumentation to study the vertical alignment, installing a liner casing, and using chemical processes to remove built up scaling and improve performance of the well. New pumps and control equipment would be installed.

Approximately 4000 feet of undersized piping located on the western and southern sides of Anaheim Lake would be replaced with larger piping to ensure adequate capacity for reliable operation of the well and treatment facility.

It is anticipated that the treatment system and well would have connections to Anaheim Lake to accommodate flushing water when starting, stopping, or conducting maintenance on the site equipment. New pipes would be connected to existing discharge connections to avoid construction within the Lake boundary. Alternatively, the treatment system and well may be connected to storm drains or sewers. In this case, piping would need to be installed beneath Tustin Ave or Miraloma Avenue to accommodate these connections. New catch basins and storm drain piping would be installed as necessary to accommodate changes in pipelines.

To promote site security and better screen the new treatment equipment from view, the existing chain-link fence located along Tustin Avenue would be replaced with a new 10-foot high block wall along the northern and western portions of the site including a new access gate, on the north end of the site, providing entrance to the facility from Tustin Avenue. The existing block walls and entrances would remain unchanged. New security lighting would be installed throughout the site and new landscaping along Tustin Avenue, similar to the landscaping currently located near the existing block wall.

An existing operations center and storage building would be demolished and replaced. The new building would be approximately 45 x 50 feet in size. The new operations building would be connected to the site's existing sewer connection and contain an electrical room, mechanical room, server room, control room,

storage, break areas, and restrooms. The operations building would be connected to the site's existing sewer connection. A weather station is located on site, which is operated by the National Oceanic and Atmospheric Administration (NOAA). Prior to the start of construction, the weather station would be temporarily relocated by NOAA onto an existing site building and would later be installed on the new operations building.

#### Boysen Park Site

The proposed Project would install a new water treatment system in a mostly vacant area located between an existing baseball field and tennis courts, west of the park's parking lot, approximately 200 feet southwest of an existing groundwater well and approximately 375 feet south of Theodore Roosevelt Elementary School. Approximately six ion exchange resin vessels would be installed at the site. While exact dimensions might vary, the water treatment system vessels are expected to be approximately 17 feet tall and 12 feet in diameter. Additional smaller treatment equipment would be installed such as pre-treatment filters, pumps, pipes, valves, and other appurtenant structures. An upgraded electrical transformer would be added to the site to reliably power the pumping equipment with electrical equipment connections installed to allow the facility to operate off a portable emergency backup generator. Upgraded disinfection equipment consisting of pumps and tanks would be installed near the existing well to store additional sodium hypochlorite (bleach) to disinfect the water leaving the treatment plant.

New buried piping would be installed beneath the existing parking lot to convey water from the existing well into the treatment system and City water system. It is anticipated that the treatment system and well would have connections to a storm drain connection located near the existing well. This connection would be used to accommodate flushing water when starting, stopping, or conducting maintenance on the site equipment. New catch basins and storm drain piping would be installed as necessary to accommodate site grade changes.

Some picnic benches, barbecue grills, and a concrete walkway would need to be relocated from outside the proposed treatment area. These features would be relocated to a location approved by the City's Community Services Department to ensure future public access. Trees, grass, and other vegetation would need to be removed from the footprint of the treatment plant to facilitate construction. Trees would be replanted in new locations approved by the City's Community Services Department.

An existing water supply well at the Boysen Park site would be rehabilitated. This would include conducting an initial video survey, using downhole instrumentation to study the vertical alignment, installing a liner casing, and using chemical processes to remove built up scaling and improve performance of the well. New pumps and control equipment would be installed.

To promote site security and better screen the new treatment equipment from view a new 10-foot high no-climb fence and new security lighting would be installed surrounding the new treatment site and the existing water well. A driveway would be connected to the existing park parking lot with retractable bollards, or similar security structures, to prevent unauthorized vehicles from entering the Project site.

## Energy Field Site

The proposed Project would install a new water treatment system in a mostly vacant area located north of the Energy Field Park. Approximately four ion exchange resin vessels would be installed at the site. While exact dimensions might vary, the vessels are expected to be approximately 17 feet tall and 12 feet in diameter. Additional smaller treatment equipment would be installed such as pre-treatment filters, pumps, pipes, valves, and other appurtenant structures. An existing unused control building may be repurposed to hold treatment system equipment. Alternatively, it may be demolished and removed. The unused solar panel foundations would also be removed. An upgraded electrical transformer would be added to the site to reliably power the pumping equipment with electrical equipment connections installed to allow the facility to operate off a portable emergency backup generator. Upgraded disinfection equipment consisting of pumps and tanks would be installed near the existing well to store additional sodium hypochlorite (bleach) to disinfect the water leaving the treatment plant.

New buried piping would be installed to convey water from the existing well into the treatment system and City water system. The piping would either be installed to the northwest, beneath an existing City street sweeping station and electrical substation, toward the existing well, or to the east, beneath the Energy Field Park, and then north beneath South 9th Street.

The treatment system might require a new piped connection to the adjacent Anaheim Barber Channel. This connection would be used to accommodate flushing water when starting, stopping, or conducting maintenance on the site equipment.

To promote site security and better screen the new treatment equipment from view a new 10-foot high no-climb fence and new security lighting would be installed surrounding the new treatment. This would require the removal of an existing portion of fence on the southern portion of the treatment property. To connect the existing entrance on South 9th Street further northeast, a concrete walkway and new access road would be constructed. New lighting would be installed throughout the treatment site.

To promote site security and better screen the new treatment equipment from view a new 8-foot high no-climb fence and new security lighting would be installed surrounding and within the new treatment site. A concrete walkway and new access road would be constructed connecting to the existing site entrance on South 9th Street, extending along the southern park boundary and northeast along the adjacent flood control channel. The new driveway would allow access by construction and maintenance vehicles, and also allow increased pedestrian access through the park.

## Treatment System Construction

At all four proposed treatment system sites, minor grading activities would be necessary to prepare the location for vessel installation. This would involve ensuring the ground surface is level and properly compacted and the installation of a concrete foundation slab. Equipment and materials would be transported to each site by



truck, lifted in place by crane and then anchored to the foundation. Piping would be installed to receive water from existing water wells, move it through the treatment process and pump the treated water into the water distribution system. In most cases, excavation would be conducted at depths of 5 feet or less. However, deeper excavations (up to approximately 10 or more feet) may be necessary for activities such as installing valve vaults. It is anticipated that approximately 100 cubic yards of soil would be excavated from each site to facilitate construction. Typical construction equipment including pickup trucks, dump trucks, backhoes, excavators, air-driven equipment (such as jackhammers), cranes, soil compactors, cement mixers, and other similar equipment would be employed during construction and installation and would be rotated in and out as construction progresses. To expedite construction, multiple treatment sites may be constructed concurrently. All construction activities would be conducted in accordance with local, state, and federal requirements.

A drinking water permit amendment would be obtained from the State Water Resources Control Board (SWRCB) Division of Drinking Water (DDW) prior to operating the treatment plants.

#### Water Well Construction

A new groundwater well would be installed at the La Palma site under a well drilling permit obtained from APU prior to commencing drilling activities. Anaheim Municipal Code Section 10.20 requires that water wells be constructed in accordance with California Department of Water Resources Bulletin 74 (California Water Well Standards). Drilling would commence with drilling of a borehole by a drill rig followed by installation of a steel casing. When completed, the steel-constructed well would be installed and encased in cement to prevent contamination from entering the well. Construction and development of the well will be conducted 24 hours per day 7 days per week. To reduce noise during drilling and development activities, sound walls up to 24 feet high would be installed

Groundwater and drilling fluid will be pumped from the borehole and well during construction. These fluids will be pumped through settling tanks to reduce sediment and neutralize chlorine and then discharged into the storm drain system, in accordance with National Pollutant Discharge Elimination System (NPDES) permit requirements. Upon completion of construction, the well would be equipped with a pump and connected to the water distribution system. The well water would then be sampled and tested, and a drinking water permit amendment obtained from DDW prior to operating the well.

Construction equipment used during this phase is expected to include a drill rig, backhoe, air compressor, diesel-powered test pump, cement mixers and pumps, flatbed trucks, and other similar equipment and will be rotated in and out as construction progresses.

#### Water Well Rehabilitation

Existing water supply wells at the La Palma, Linda Vista, and Boysen Park sites would be rehabilitated. This would entail conducting a downhole video inspection to evaluate the well condition and a survey would be

conducted to verify the well's vertical alignment. A brush would be lowered into the well casing to clean the screen. A steel liner would be lowered into the existing well casing and sealed in place with materials such as gravel, sand, bentonite, and/or cement.

Groundwater would be pumped from the well during rehabilitation. These fluids will be pumped through settling tanks to reduce sediment. Once the sediment has been reduced to an acceptable level and chlorine has been neutralized, the water would be discharged into the storm drain system, in accordance with National Pollutant Discharge Elimination System (NPDES) permit requirements.

Some water treatment chemicals would be temporarily stored on site during well construction. This would include sodium hypochlorite (bleach) for well disinfecting, drilling fluid dispersants, dechlorination agents, hydrochloric acid (to break down accumulated scale in the well), and other similar well rehabilitation products.

Upon completion, the well would be equipped with a pump and connected to the water distribution system. The well water would be sampled and tested, and a drinking water permit amendment would be obtained from DDW prior to operating the well. All well construction activities would be conducted in accordance with local, state, and federal requirements.

Construction equipment used during this phase is expected to include a development rig (similar to a crane), backhoe, air compressor, diesel-powered test pump, cement mixers and pumps, flatbed trucks, and other similar equipment. Equipment would be rotated in and out as construction progresses.

### 2.1.1 Construction Schedule

Construction is expected to begin in September 2021 and to be completed in May 2023. It is possible that multiple treatment sites would be constructed concurrently.

## 2.2 Project Location

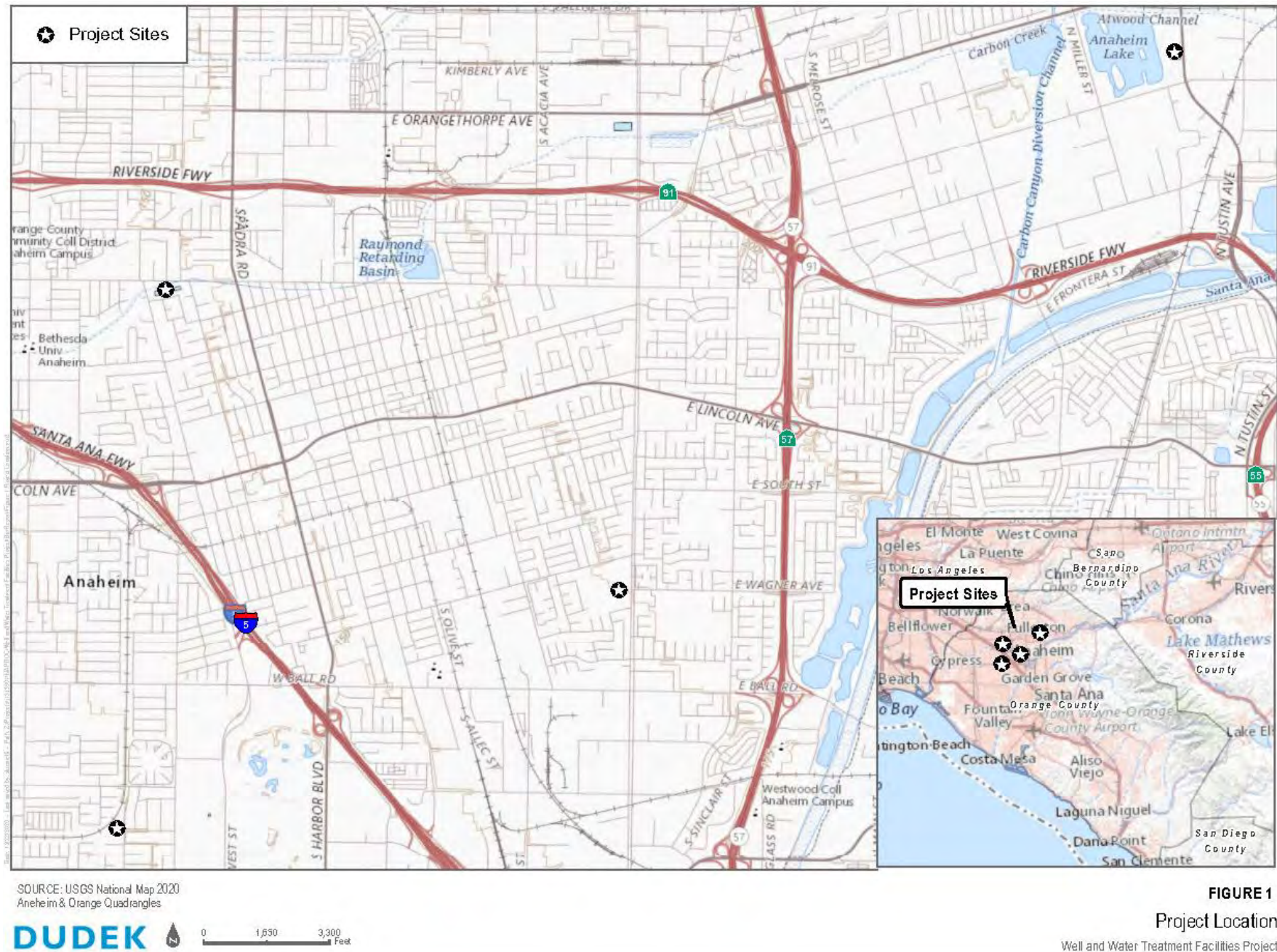
The proposed Project sites are generally located in the City, north and south of State Route 91, and west of State Route 55, in northern Orange County within public land survey system (PLSS) Townships 3 and 4 South, Ranges 9 and 10 West, and Sections 9, 14, 21, and 32 of the U.S. Geological Survey (USGS) 7.5-minute *Anaheim* and *Orange* topographic quadrangle maps. (Figure 1). The four proposed Project sites are specifically located within existing disturbed and developed areas on City-owned property. The La Palma Site is located immediately south of La Palma Avenue, east of West Street, and west of North Citron Street adjacent to an existing reservoir (Figure 2A). The Linda Vista Site is located to the immediate west of Tustin Avenue within a disturbed area adjacent to the Anaheim Lake recharge basin (Figure 2B). The Energy Field Site is located within an existing community park to the west of South Ninth Street (Figure 2C). The Boysen Park Site is located adjacent to tennis courts and a parking lot associated with Boysen Park to the west of State College Boulevard (Figure 2D).

## 2.3 Area of Potential Effect

The APE is the geographic area or areas within which an undertaking may directly or indirectly cause changes in the character or use of historic properties. Determination of the APE is influenced by a project's setting, the scale and nature of the undertaking, and the different kinds of effects that may result from the undertaking (36 CFR 800.16(d)). Archaeological resources are considered only in the proposed Project's direct APE. For the purposes of the present study, the APE will include the footprint for direct impacts that includes ground disturbance for the proposed Project including new treatment plants, water well, piping, operations building, and security features for the La Palma Site, Linda Vista Site, Boysen Park Site, and the Energy Field Site.

The vertical extent of the APE for the Project is defined as the depth of soils disturbed during project construction. The amount of disturbed soils varies according to the topography and construction needs, but is anticipated to be roughly between 5-10 feet below grade for treatment systems footprints and new pumps and control equipment and approximately 1,000 feet below grade for drilling activities associated with the well installation at the La Palma Site. The exact vertical APE for the proposed piping/pipeline work is unknown at this time; however, for the purposes of providing management recommendations, the vertical APE is assumed to not exceed 6 feet below grade for the proposed piping/pipeline work.

# CULTURAL RESOURCES ASSESSMENT/HISTORIC PROPERTY IDENTIFICATION REPORT WELL AND WATER TREATMENT FACILITIES PROJECT



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# CULTURAL RESOURCES ASSESSMENT/HISTORIC PROPERTY IDENTIFICATION REPORT

## WELL AND WATER TREATMENT FACILITIES PROJECT

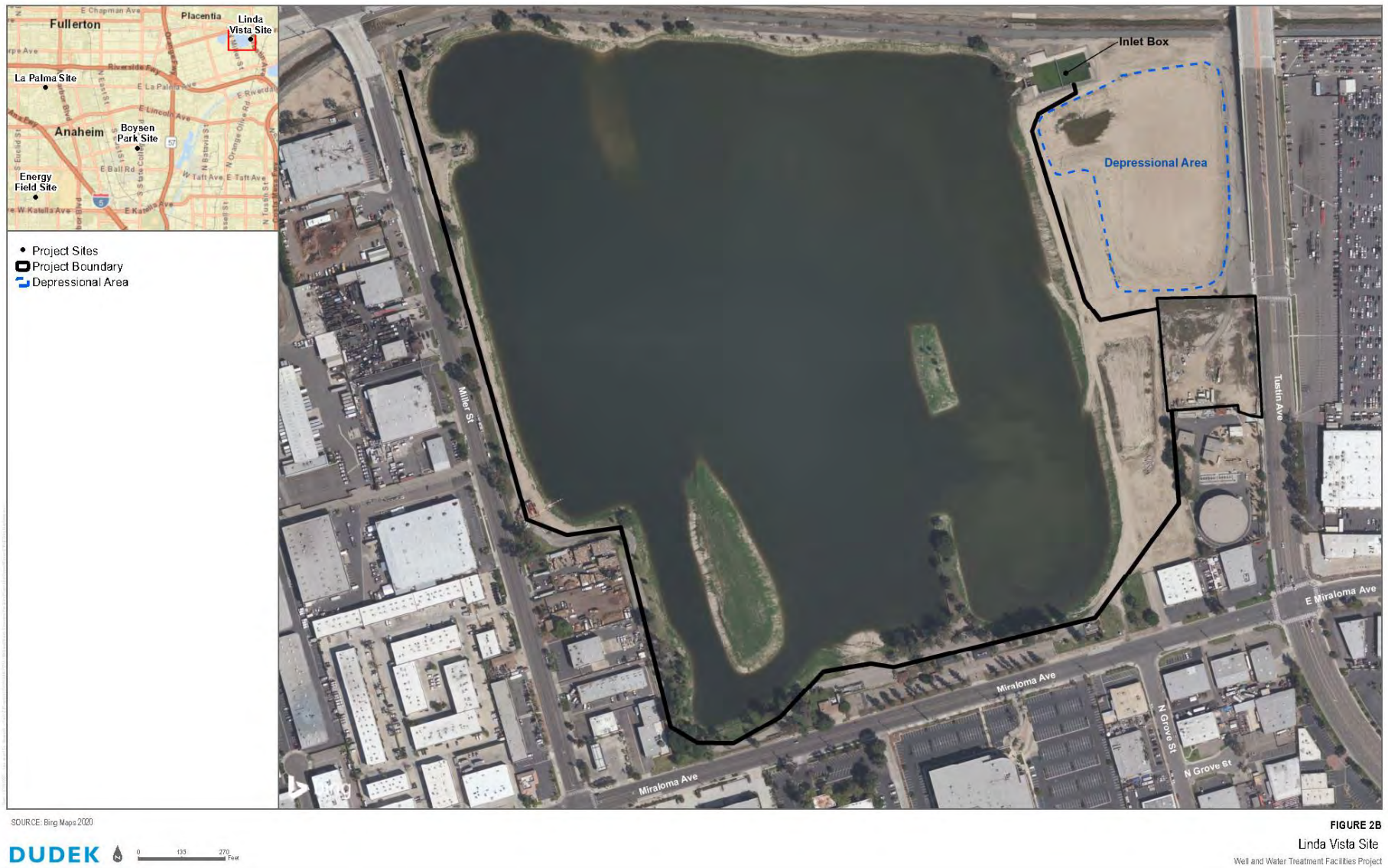


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# CULTURAL RESOURCES ASSESSMENT/HISTORIC PROPERTY IDENTIFICATION REPORT

## WELL AND WATER TREATMENT FACILITIES PROJECT





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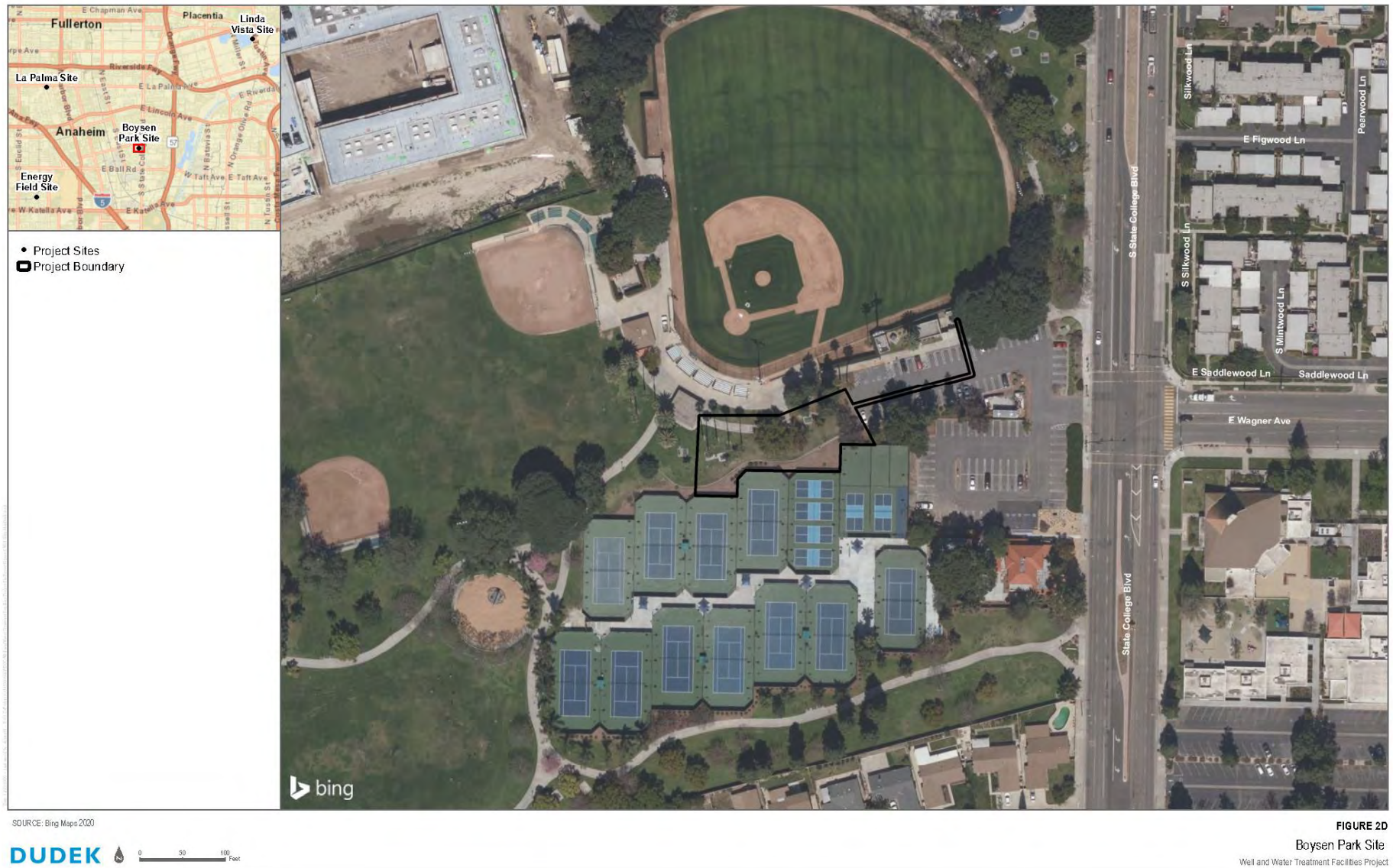
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### 3 REGULATORY SETTING

The regulatory framework for the proposed Project is CEQA+. As such, project-related activities with the potential to affect historic properties are considered federal undertakings, subject to compliance with Section 106 of the NHPA of 1966, as amended, and its implementing regulations (36 CFR Part 800). Under Section 106, historic and archaeological districts, sites, buildings, structures, and objects are assigned significance based on their exceptional value or quality in illustrating or interpreting history, architecture, archaeology, engineering, and culture. A number of criteria are used in demonstrating resource importance; these are described below.

#### 3.1.1 Federal

The National Historic Preservation Act

The NHPA established the National Register of Historic Places (NRHP) and the President's Advisory Council on Historic Preservation (ACHP), and provided that states may establish State Historic Preservation Officers (SHPOs) to carry out some of the functions of the NHPA. Most significantly for federal agencies responsible for managing cultural resources, Section 106 of the NHPA directs that

[t]he head of any Federal agency having direct or indirect jurisdiction over a proposed Federal or federally assisted undertaking in any State and the head of any Federal department or independent agency having authority to license any undertaking shall, prior to the approval of the expenditure of any Federal funds on the undertaking or prior to the issuance of any license, as the case may be, take into account the effect of the undertaking on any district, site, building, structure, or object that is included in or eligible for inclusion in the NRHP.

Section 106 also affords the ACHP a reasonable opportunity to comment on the undertaking (16 U.S.C. 470f).

36 Code of Federal Regulations, Part 800 (36 CFR 800) implements Section 106 of the NHPA. It defines the steps necessary to identify historic properties (those cultural resources listed in or eligible for listing in the NRHP), including consultation with federally recognized Native American tribes to identify resources with important cultural values; to determine whether or not they may be adversely affected by a proposed undertaking; and the process for eliminating, reducing, or mitigating the adverse effects.

The content of 36 CFR 60.4 defines criteria for determining eligibility for listing in the NRHP. The significance of cultural resources identified during an inventory must be formally evaluated for historic significance in consultation with the ACHP and the California SHPO to determine if the resources are eligible for inclusion in the NRHP. Cultural resources may be considered eligible for listing if they possess integrity of location, design, setting, materials, workmanship, feeling, and association.

Regarding criteria A through D of Section 106, the quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, cultural resources, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and that:

- A. Are associated with events that have made a significant contribution to the broad patterns of our history; or
- B. Are associated with the lives of persons significant in our past; or
- C. Embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or
- D. have yielded or may be likely to yield, information important in prehistory or history [36 CFR 60.4].

The 1992 amendments to the NHPA enhance the recognition of tribal governments' roles in the national historic preservation program, including adding a member of an Indian tribe or Native Hawaiian organization to the ACHP.

The NHPA amendments:

- Clarify that properties of traditional religious and cultural importance to an Indian tribe or Native Hawaiian organization may be determined eligible for inclusion in the National Register
- Reinforce the provisions of the Council's regulations that require the federal agency to consult on properties of religious and cultural importance.

The 1992 amendments also specify that the ACHP can enter into agreement with tribes that permit undertakings on tribal land and that are reviewed under tribal regulations governing Section 106. Regulations implementing the NHPA state that a federal agency must consult with any Indian tribe that attaches religious and cultural significance to historic properties that may be affected by an undertaking.

### 3.1.2 State

#### California Register of Historical Resources

In California, the term "historical resource" includes "any object, building, structure, site, area, place, record, or manuscript which is historically or archaeologically significant, or is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California" (PRC Section 5020.1(j)). In 1992, the California legislature established the California Register of Historical Resources (CRHR) "to be used by state and local agencies, private groups, and citizens to identify the state's historical resources and to indicate what properties are to be protected, to the extent prudent and feasible, from substantial

adverse change” (PRC Section 5024.1(a)). The criteria for listing resources in the CRHR were expressly developed to be in accordance with previously established criteria developed for listing in the NRHP, enumerated below. According to PRC Section 5024.1(c)(1–4), a resource is considered historically significant if it (i) retains “substantial integrity,” and (ii) meets at least one of the following criteria:

- (1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage.
- (2) Is associated with the lives of persons important in our past.
- (3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values.
- (4) Has yielded, or may be likely to yield, information important in prehistory or history.

To understand the historic importance of a resource, sufficient time must have passed to obtain a scholarly perspective on the events or individuals associated with the resource. A resource younger than 50 years old may be considered for listing in the CRHR if it can be demonstrated that sufficient time has passed to understand its historical importance (see California Code of Regulations, Title 14, Section 4852(d)(2)).

The CRHR protects cultural resources by requiring evaluations of the significance of prehistoric and historic resources. The criteria for the CRHR are nearly identical to those for the NRHP, and properties listed or formally designated as eligible for listing in the NRHP are automatically listed in the CRHR, as are state landmarks and points of interest. The CRHR also includes properties designated under local ordinances or identified through local historical resource surveys.

#### California Environmental Quality Act

As described further below, the following CEQA statutes and CEQA Guidelines are of relevance to the analysis of archaeological, historical, and tribal cultural resources:

1. California Public Resources Code Section 21083.2(g) defines “unique archaeological resource.”
2. California Public Resources Code Section 21084.1 and CEQA Guidelines Section 15064.5(a) define “historical resources.” In addition, CEQA Guidelines Section 15064.5(b) defines the phrase “substantial adverse change in the significance of an historical resource.” It also defines the circumstances when a project would materially impair the significance of an historical resource.
3. California Public Resources Code Section 21074(a) defines “tribal cultural resources.”
4. California Public Resources Code Section 5097.98 and CEQA Guidelines Section 15064.5(e) set forth standards and steps to be employed following the accidental discovery of human remains in any location other than a dedicated ceremony.



5. California Public Resources Code Sections 21083.2(b)-(c) and CEQA Guidelines Section 15126.4 provide information regarding the mitigation framework for archaeological and historic resources, including examples of preservation-in-place mitigation measures; preservation-in-place is the preferred manner of mitigating impacts to significant archaeological sites because it maintains the relationship between artifacts and the archaeological context and may also help avoid conflict with religious or cultural values of groups associated with the archaeological site(s).

Under CEQA, a project may have a significant effect on the environment if it may cause “a substantial adverse change in the significance of an historical resource” (California Public Resources Code Section 21084.1; CEQA Guidelines Section 15064.5(b)). An “historical resource” is any site listed or eligible for listing in the CRHR. The CRHR listing criteria are intended to examine whether the resource in question: (a) is associated with events that have made a significant contribution to the broad patterns of California’s history and cultural heritage; (b) is associated with the lives of persons important in our past; (c) embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or (d) has yielded, or may be likely to yield, information important in pre-history or history.

The term “historical resource” also includes any site described in a local register of historic resources, or identified as significant in a historical resources survey (meeting the requirements of California Public Resources Code Section 5024.1(q)).

CEQA also applies to “unique archaeological resources.” California Public Resources Code Section 21083.2(g) defines a “unique archaeological resource” as any archaeological artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it meets any of the following criteria:

6. Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.
7. Has a special and particular quality such as being the oldest of its type or the best available example of its type.
8. Is directly associated with a scientifically recognized important prehistoric or historic event or person.

All historical resources and unique archaeological resources – as defined by statute – are presumed to be historically or culturally significant for purposes of CEQA (California Public Resources Code Section 21084.1; CEQA Guidelines Section 15064.5(a)). The lead agency is not precluded from determining that a resource is a historical resource even if it does not fall within this presumption (California Public Resources Code Section 21084.1; CEQA Guidelines Section 15064.5(a)). A site or resource that does not meet the definition of “historical resource” or “unique archaeological resource” is not considered significant under CEQA and need not be analyzed further (California Public Resources Code Section 21083.2(a); CEQA Guidelines Section 15064.5(c)(4)).

Under CEQA and significant cultural impact results from a “substantial adverse change in the significance of an historical resource [including a unique archaeological resource]” due to the “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired” (CEQA Guidelines Section 15064.5(b)(1); California Public Resources Code Section 5020.1(q)). In turn, the significance of a historical resource is materially impaired when a project:

1. Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the California Register; or
2. Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources pursuant to section 5020.1(k) of the Public Resources Code or its identification in an historical resources survey meeting the requirements of section 5024.1(g) of the Public Resources Code, unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or
3. Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the California Register as determined by a lead agency for purposes of CEQA.

*CEQA Guidelines Section 15064.5(b)(2)*

Pursuant to these sections, the CEQA first evaluates evaluating whether a project site contains any “historical resources,” then assesses whether that project will cause a substantial adverse change in the significance of a historical resource such that the resource’s historical significance is materially impaired.

When a project significantly affects a unique archeological resource, CEQA imposes special mitigation requirements. Specifically, “[i]f it can be demonstrated that a project will cause damage to a unique archeological resource, the lead agency may require reasonable efforts to be made to permit any or all of these resources to be preserved in place or left in an undisturbed state. Examples of that treatment, in no order of preference, may include, but are not limited to, any of the following:”

1. “Planning construction to avoid archeological sites.”
2. “Deeding archeological sites into permanent conservation easements.”
3. “Capping or covering archeological sites with a layer of soil before building on the sites.”
4. “Planning parks, greenspace, or other open space to incorporate archeological sites.”

*California Public Resources Code Section 21083.2(b)(1)-(4)*

If these “preservation in place” options are not feasible, mitigation may be accomplished through data recovery (California Public Resources Code Section 21083.2(d); CEQA Guidelines Section 15126.4(b)(3)(C)). California Public Resources Code Section 21083.2(d) states that “[e]xcavation as mitigation shall be restricted to those parts of the unique archeological resource that would be damaged or destroyed by the project. Excavation as mitigation shall not be required for a unique archeological resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the resource, if this determination is documented in the environmental impact report.”

These same requirements are set forth in slightly greater detail in CEQA Guidelines Section 15126.4(b)(3), as follows:

(A) Preservation in place is the preferred manner of mitigating impacts to archeological sites. Preservation in place maintains the relationship between artifacts and the archeological context. Preservation may also avoid conflict with religious or cultural values of groups associated with the site.

(B) Preservation in place may be accomplished by, but is not limited to, the following:

1. Planning construction to avoid archeological sites;
2. Incorporation of sites within parks, greenspace, or other open space;
3. Covering the archeological sites with a layer of chemically stable soil before building tennis courts, parking lots, or similar facilities on the site [; and]
4. Deeding the site into a permanent conservation easement.

(C) When data recovery through excavation is the only feasible mitigation, a data recovery plan, which makes provision for adequately recovering the scientifically consequential information from and about the historical resource, shall be prepared and adopted prior to any excavation being undertaken.

Note that, when conducting data recovery, “[i]f an artifact must be removed during project excavation or testing, curation may be an appropriate mitigation.” However, “[d]ata recovery shall not be required for an historical resource if the lead agency determines that testing or studies already completed have adequately recovered the scientifically consequential information from and about the archeological or historic resource, provided that determination is documented in the EIR and that the studies are deposited with the California Historical Resources Regional Information Center” (CEQA Guidelines Section 15126.4(b)(3)(D)).

## California State Assembly Bill 52

Assembly Bill 52 of 2014 (AB 52) amended PRC Section 5097.94 and added PRC Sections 21073, 21074, 21080.3.1, 21080.3.2, 21082.3, 21083.09, 21084.2, and 21084.3. AB 52 established that Tribal Cultural Resources (TCR) must be considered under CEQA and also provided for additional Native American consultation requirements for the lead agency.

### *Consultation with Native Americans*

AB 52 formalizes the lead agency–tribal consultation process, requiring the lead agency to initiate consultation with California Native American groups that are traditionally and culturally affiliated with the project site, including tribes that may not be federally recognized. Lead agencies are required to begin consultation prior to the release of a negative declaration, mitigated negative declaration, or environmental impact report.

### *Tribal Cultural Resources*

Section 4 of AB 52 adds Sections 21074 (a) and (b) to the PRC, addressing tribal cultural resources and cultural landscapes. Section 21074 (a) defines tribal cultural resources as one of the following:

1. Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:
  - a. Included or determined to be eligible for inclusion in the California Register of Historical Resources.
  - b. Included in a local register of historical resources as defined in subdivision (k) of Section 5020.1.
2. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Section 5024.1. In applying the criteria set forth in subdivision (c) of Section 5024.1 for the purposes of this paragraph, the lead agency shall consider the significance of the resource to a California Native American tribe.

Section 1 (a)(9) of AB 52 establishes that “a substantial adverse change to a tribal cultural resource has a significant effect on the environment.” Effects on tribal cultural resources should be considered under CEQA. Section 6 of AB 52 adds Section 21080.3.2 to the PRC, which states that parties may propose mitigation measures “capable of avoiding or substantially lessening potential significant impacts to a tribal cultural resource or alternatives that would avoid significant impacts to a tribal cultural resource.” Further, if a California Native American tribe requests consultation regarding project alternatives, mitigation measures, or significant effects to tribal cultural resources, the consultation shall include those topics (PRC Section 21080.3.2[a]). The environmental document and the mitigation monitoring and reporting program (where applicable) shall include any mitigation measures that are adopted (PRC Section 21082.3[a]).

### Native American Historic Cultural Sites

The Native American Historic Resources Protection Act (California Public Resources Code Section 5097, et seq.) addresses the disposition of Native American burials in archaeological sites and protects such remains from disturbance, vandalism, or inadvertent destruction; establishes procedures to be implemented if Native American skeletal remains are discovered during construction of a project; and establishes the NRHC to resolve disputes regarding the disposition of such remains. In addition, the Native American Historic Resource Protection Act makes it a misdemeanor punishable by up to 1 year in jail to deface or destroy an Indian historic or cultural site that is listed or may be eligible for listing in the CRHR.

### California Native American Graves Protection and Repatriation Act

The California Native American Graves Protection and Repatriation Act (California Repatriation Act), enacted in 2001, requires all state agencies and museums that receive state funding and that have possession or control over collections of human remains or cultural items, as defined, to complete an inventory and summary of these remains and items on or before January 1, 2003, with certain exceptions. The California Repatriation Act also provides a process for the identification and repatriation of these items to the appropriate tribes.

### California Health and Safety Code

CEQA Guidelines Section 15064.5 assigns special importance to human remains and specifies procedures to be used when Native American remains are discovered. As described below, these procedures are detailed in California Public Resources Code Section 5097.98.

California law protects Native American burials, skeletal remains, and associated grave goods, regardless of their antiquity, and provides for the sensitive treatment and disposition of those remains. Health and Safety Code Section 7050.5 requires that if human remains are discovered in any place other than a dedicated cemetery, no further disturbance or excavation of the site or nearby area reasonably suspected to contain human remains shall occur until the County coroner has examined the remains (Section 7050.5b). California Public Resources Code Section 5097.98 also outlines the process to be followed in the event that remains are discovered. If the coroner determines or has reason to believe the remains are those of a Native American, the coroner must contact the Native American Heritage Commission (NAHC) within 24 hours (section 7050.5c). The NAHC will notify the Most Likely Descendant (MLD). With the permission of the landowner, the MLD may inspect the site of discovery. The inspection must be completed within 48 hours of notification of the MLD by the NAHC. The MLD may recommend means of treating or disposing of, with appropriate dignity, the human remains, and items associated with Native Americans.

### 3.1.3 Local

#### Orange County

Orange County has two sections within its municipal code pertaining to the protection of archaeological and cultural resources. These sections include Section 2-5-27(Ord. No. 99-21, § 2, 8-31-99) and Section 2-5-227 (Ord. No. 99-22, § 1, 8-31-99) the aspects of these sections which relate to archaeological and cultural resources are as follows:

**Section 2-5-27 and Section 2-5-227. - Protection of natural, cultural, structural, and archaeological resources.**

- a) *Artifacts.* No person shall possess, destroy, injure, deface, remove, dig, or disturb from its natural state any fossilized or non-fossilized paleontological specimens, cultural or archaeological resources, or the parts thereof in any park, beach or recreational facility.

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## 4 SETTING

### 4.1 Environmental Setting and Current Conditions

The Project APE (La Palma, Linda Vista, Boysen Park, and Energy Field Sites) are in Orange County and all work will be conducted within the City. The City is approximately seven miles northwest of Downtown Santa Ana and 23 miles southeast of Downtown Los Angeles. The Cities of Yorba Linda, Placentia, Fullerton, Buena Park, Cypress, Stanton, Garden Grove, and Orange and unincorporated Orange County border the City. Interstate 5 (I-5) and State Routes (SR) 39, 55, 57, 90, 91, and 241 provide regional access to the City.

The La Palma Site is located within a heavily urbanized area. It is bound to the north by Carbon Creek Channel, to the east by a small strip mall with retail stores and restaurants, to the south by single family homes, and to the west by North West Street. The site is surrounded by a chain-link fence and currently contains a water supply well, water tank, water disinfection equipment, and various piping, valves, pumps, and other water distribution equipment. A gate is located on North West Street to allow vehicles to enter and exit the site. Existing development is underlain by Quaternary alluvium and marine deposits, generally dating between the Pliocene and the Holocene. According to the United States Department of Agriculture Soil Conservation Service (USDA 2021), soils within this site are dominated by Metz loamy sand (85%), characterized as loamy sand and stratified sand to fine sandy loam and other minor components (15%) with a 0-2% slope. Such low-slope locations are characteristically depositional soils dating to the late Holocene (< 11,700 years ago). The ground surface within the site is primarily soil.

The Linda Vista Site is located northwest of the Miraloma Avenue and North Tustin Avenue intersection within a commercial/industrial area bound to the north and west by groundwater spreading facilities operated by the Orange County Water District, to the east by Tustin Avenue and auto storage and auction facilities, and to the South by commercial properties. The site currently contains a pump station, a large storage tank, water disinfection equipment, storage buildings, and various piping, valves, and other water distribution equipment as well as a 2,220 horsepower (HP) diesel-fueled emergency backup generator and a weather station. The southern portion of the site is surrounded by a block wall, with chain link fence on the northern portion. Entrances on North Tustin Avenue allow vehicles to enter and exit the site. The site formerly contained a 4 million gallon (MG) partially underground reservoir that extended approximately 10 feet below the current ground surface. The upper 5 feet was demolished and removed. However, the lower 5 feet may have been left in place. Existing development is underlain by Quaternary alluvium and marine deposits, generally dating between the Pliocene and the Holocene. According to the USDA (2021), soils within this site are dominated by Metz loamy sand (80%), characterized as loamy sand and stratified sand to fine sandy loam and other minor components (20%) with a 0-2% slope. Such low-slope locations are characteristically depositional soils dating to the late Holocene (< 11,700 years ago). The ground surface in the construction area is primarily soil and weed-type vegetation.



The Boysen Park Site is located southwest of the South State College Boulevard and Vermont Avenue intersection bound to the north, south, and east by residences, and to the west by Theodore Roosevelt Elementary School. Vehicles are able to enter the site through the intersection of South State College Boulevard and East Wagner Avenue. Existing development is underlain by Quaternary alluvium and marine deposits, generally dating between the Pliocene and the Holocene. According to the USDA (2021), soils within this site are dominated by Metz loamy sand (85%), characterized as loamy sand and stratified sand to fine sandy loam and other minor components (15%) with a 0-2% slope. Such low-slope locations are characteristically depositional soils dating to the late Holocene (< 11,700 years ago). The ground surface at this site is currently grass and a concrete walkway.

The Energy Field Site located north of Energy Field Park, west of an existing City street sweeping station and electrical substation, and south and west of Anaheim Barber Channel, an Orange County flood control channel. The park contains a walking path, restrooms, playground, covered benches, and an artificial turf field. Existing development is underlain by Quaternary alluvium and marine deposits, generally dating between the Pliocene and the Holocene. According to the USDA (2021), soils within this site are dominated by San Emigio (85%), characterized as fine sandy loam, moderately fine substratum and other minor components (15%) with a 0-2% slope. Such low-slope locations are characteristically depositional soils dating to the late Holocene (< 11,700 years ago).

## 4.2 Cultural Setting

### 4.2.1 Prehistoric Overview

Evidence for continuous human occupation in Southern California spans the last 10,000 years. Various attempts to parse out variability in archaeological assemblages over this broad period have led to the development of several cultural chronologies; some of these are based on geologic time, most are based on temporal trends in archaeological assemblages, and others are interpretive reconstructions. To be more inclusive, this research employs a common set of generalized terms used to describe chronological trends in assemblage composition: Paleoindian (pre-5500 BC), Archaic (8000 BC–AD 500), Late Prehistoric (AD 500–1769), and Ethnohistoric (post-AD 1769).

#### Paleoindian Period (pre-5500 BC)

Evidence for Paleoindian occupation in the region is tenuous. Our knowledge of associated cultural pattern(s) is informed by a relatively sparse body of data that has been collected from within an area extending from coastal San Diego, through the Mojave Desert, and beyond. One of the earliest dated archaeological assemblages in the region is located in coastal Southern California (though contemporaneous sites are present in the Channel Islands) derives from SDI-4669/W-12 in La Jolla. A human burial from SDI-4669 was radiocarbon dated to 9,590–9,920 years before present (95.4% probability) (Ike et al. 2017). The burial is part of a larger site complex that contained more than 29 human burials associated with an assemblage that fits the Archaic profile (i.e., large amounts of ground stone, battered cobbles, and expedient flake tools). In

contrast, typical Paleoindian assemblages include large stemmed projectile points, high proportions of formal lithic tools, bifacial lithic reduction strategies, and relatively small proportions of ground stone tools. Prime examples of this pattern are sites that were studied by Emma Lou Davis (1978) on Naval Air Weapons Station China Lake near Ridgecrest, California. These sites contained fluted and unfluted stemmed points and large numbers of formal flake tools (e.g., shaped scrapers, blades). Other typical Paleoindian sites include the Komodo site (MNO-679)—a multi-component fluted point site, and MNO-680—a single component Great Basined Stemmed point site (see Basgall et al. 2002). At MNO-679 and -680, ground stone tools were rare while finely made projectile points were common.

Warren et al. (2004) claimed that a biface (prehistoric stone tool that has been flaked on both faces), manufacturing tradition present at the Harris site complex (SDI-149) is representative of typical Paleoindian occupation in the region that possibly dates between 10,365 and 8,200 BC (Warren et al. 2004). Termed San Dieguito (see also Rogers 1945), assemblages at the Harris site are qualitatively distinct from most others in region because the site has large numbers of finely made bifaces (including projectile points), formal flake tools, a biface reduction trajectory, and relatively small amounts of processing tools (see also Warren 1968). Despite the unique assemblage composition, the definition of San Dieguito as a separate cultural tradition is hotly debated. Gallegos (1987) suggested that the San Dieguito pattern is simply an inland manifestation of a broader economic pattern. Gallegos's interpretation of San Dieguito has been widely accepted in recent years, in part because of the difficulty in distinguishing San Dieguito components from other assemblage constituents. In other words, it is easier to ignore San Dieguito as a distinct socioeconomic pattern than it is to draw it out of mixed assemblages.

The large number of finished bifaces (i.e., projectile points and non-projectile blades), along with large numbers of formal flake tools at the Harris site complex, is very different than nearly all other assemblages throughout the region, regardless of age. Warren et al. (2004) made this point, tabulating basic assemblage constituents for key early Holocene sites. Producing finely made bifaces and formal flake tools implies that relatively large amounts of time were spent for tool manufacture. Such a strategy contrasts with the expedient flake-based tools and cobble-core reduction strategy that typifies non-San Dieguito Archaic sites. It can be inferred from the uniquely high degree of San Dieguito assemblage formality that the Harris site complex represents a distinct economic strategy from non-San Dieguito assemblages.

San Dieguito sites are rare in the inland valleys, with one possible candidate, RIV-2798/H, located on the shore of Lake Elsinore. Excavations at Locus B at RIV-2798/H produced a toolkit consisting predominately of flaked stone tools, including crescents, points, and bifaces, and lesser amounts of groundstone tools, among other items (Grenda 1997). A calibrated and reservoir-corrected radiocarbon date from a shell produced a date of 6630 BC. Grenda (1997) suggested this site represents seasonal exploitation of lacustrine resources and small game and resembles coastal San Dieguito assemblages and spatial patterning.

If San Dieguito truly represents a distinct socioeconomic strategy from the non-San Dieguito Archaic processing regime, its rarity implies that it was not only short-lived, but that it was not as economically successful as the Archaic

strategy. Such a conclusion would fit with other trends in Southern California deserts, where hunting-related tools were replaced by processing tools during the early Holocene (see Basgall and Hall 1990).

#### Archaic Period (8000 BC – AD 500)

The more than 2,500-year overlap between the presumed age of Paleoindian occupations and the Archaic period highlights the difficulty in defining a cultural chronology in Southern California. If San Dieguito is the only recognized Paleoindian component in the coastal Southern California, then the dominance of hunting tools implies that it derives from Great Basin adaptive strategies and is not necessarily a local adaptation. Warren et al. (2004) admitted as much, citing strong desert connections with San Dieguito. Thus, the Archaic pattern is the earliest local socioeconomic adaptation in the region (see Hale 2001, 2009).

The Archaic pattern, which has also been termed the Millingstone Horizon (among others), is relatively easy to define with assemblages that consist primarily of processing tools, such as millingsstones, handstones, battered cobbles, heavy crude scrapers, incipient flake-based tools, and cobble-core reduction. These assemblages occur in all environments across the region with little variability in tool composition. Low assemblage variability over time and space among Archaic sites has been equated with cultural conservatism (see Basgall and Hall 1990; Byrd and Reddy 2002; Warren 1968; Warren et al. 2004). Despite enormous amounts of archaeological work at Archaic sites, little change in assemblage composition occurred until the bow and arrow was adopted around AD 500, as well as ceramics at approximately the same time (Griset 1996; Hale 2009). Even then, assemblage formality remained low. After the bow was adopted, small arrow points appear in large quantities and already low amounts of formal flake tools are replaced by increasing amounts of expedient flake tools. Similarly, shaped millingsstones and handstones decreased in proportion relative to expedient, unshaped ground stone tools (Hale 2009). Thus, the terminus of the Archaic period is equally as hard to define as its beginning because basic assemblage constituents and patterns of manufacturing investment remain stable, complemented only by the addition of the bow and ceramics.

#### Late Prehistoric Period (AD 500–1769)

The period of time following the Archaic and before Ethnohistoric times (AD 1769) is commonly referred to as the Late Prehistoric (Rogers 1945; Wallace 1955; Warren et al. 2004); however, several other subdivisions continue to be used to describe various shifts in assemblage composition. In general, this period is defined by the addition of arrow points and ceramics, as well as the widespread use of bedrock mortars. The fundamental Late Prehistoric assemblage is very similar to the Archaic pattern, but includes arrow points and large quantities of fine debitage from producing arrow points, ceramics, and cremations. The appearance of mortars and pestles is difficult to place in time because most mortars are on bedrock surfaces. Some argue that the Ethnohistoric intensive acorn economy extends as far back as AD 500 (Bean and Shipek 1978). However, there is no substantial evidence that reliance on acorns, and the accompanying use of mortars and pestles, occurred before AD 1400. Millingsstones and handstones persisted in higher frequencies than mortars and pestles until the last 500 years (Basgall and Hall 1990); even then, weighing the economic significance of

millingshale-handstone versus mortar-pestle technology is tenuous due to incomplete information on archaeological assemblages.

## 4.2.2 Ethnographic Overview

The history of the Native American communities prior to the mid-1700s has largely been reconstructed through later mission-period and early ethnographic accounts. The first records of the Native American inhabitants of the region come predominantly from European merchants, missionaries, military personnel, and explorers. These brief, and generally peripheral, accounts were prepared with the intent of furthering respective colonial and economic aims and were combined with observations of the landscape. They were not intended to be unbiased accounts regarding the cultural structures and community practices of the newly encountered cultural groups. The establishment of the missions in the region brought more extensive documentation of Native American communities, though these groups did not become the focus of formal and in-depth ethnographic study until the early twentieth century (Bean and Shippek 1978; Boscana 1846; Geiger and Meighan 1976; Harrington 1934; Laylander 2000; Sparkman 1908; White 1963). The principal intent of these researchers was to record the precontact, culturally specific practices, ideologies, and languages that had survived the destabilizing effects of missionization and colonialism. This research, often understood as “salvage ethnography,” was driven by the understanding that traditional knowledge was being lost due to the impacts of modernization and cultural assimilation. Alfred Kroeber applied his “memory culture” approach (Lightfoot 2005: 32) by recording languages and oral histories within the region. Ethnographic research by Dubois, Kroeber, Harrington, Spier, and others during the early twentieth century seemed to indicate that traditional cultural practices and beliefs survived among local Native American communities.

It is important to note that even though there were many informants for these early ethnographies who were able to provide information from personal experiences about native life before the Europeans, a significantly large proportion of these informants were born after 1850 (Heizer and Nissen 1973); therefore, the documentation of pre-contact, aboriginal culture was being increasingly supplied by individuals born in California after considerable contact with Europeans. As Robert F. Heizer (1978) stated, this is an important issue to note when examining these ethnographies, since considerable culture change had undoubtedly occurred by 1850 among the Native American survivors of California. This is also a particularly important consideration for studies focused on TCRs; where concepts of “cultural resource” and the importance of traditional cultural places are intended to be interpreted based on the values expressed by present-day Native American representatives and may vary from archaeological values (Giacinto 2012).

Based on ethnographic information, it is believed that at least 88 different languages were spoken from Baja California Sur to the southern Oregon state border at the time of Spanish contact (Johnson and Lorenz 2006, p. 34). The distribution of recorded Native American languages has been dispersed as a geographic mosaic across California through six primary language families (Golla 2007).

Victor Golla has contended that one can interpret the amount of variability within specific language groups as being associated with the relative “time depth” of the speaking populations (Golla 2007, p. 80). A large amount of variation within the language of a group represents a greater time depth than a group’s language with less internal diversity. One method that he has employed is by drawing comparisons with historically documented changes in Germanic and Romance language groups. Golla (2007: 71) has observed that the “absolute chronology of the internal diversification within a language family” can be correlated with archaeological dates. This type of interpretation is modeled on concepts of genetic drift and gene flows that are associated with migration and population isolation in the biological sciences.

The tribes of this area have traditionally spoken Takic languages that may be assigned to the larger Uto–Aztec family (Golla 2007: 74). These groups include the Gabrielino, Cahuilla, and Serrano. Golla has interpreted the amount of internal diversity within these language-speaking communities to reflect a time depth of approximately 2,000 years. Other researchers have contended that Takic may have diverged from Uto–Aztec ca. 2600 BC–AD 1, which was later followed by the diversification within the Takic speaking tribes, occurring approximately 1500 BC–AD 1000 (Laylander 2010).

#### Gabrielino/Tongva

The archaeological record indicates that the Gabrielino arrived in the Los Angeles Basin around 500 B.C. Surrounding native groups included the Chumash and Tataviam to the northwest, the Serrano and Cahuilla to the northeast, and the Juaneño and Luiseño to the southeast.

The names by which Native Americans identified themselves have, for the most part, been lost and replaced by those derived by the Spanish people administering the local Missions. These names were not necessarily representative of a specific ethnic or tribal group, and traditional tribal names are unknown in the post-Contact period. The name “Gabrielino” or “Gabrieleño” was first established by the Spanish from the San Gabriel Mission and included people from the established Gabrielino area as well as other social groups (Bean and Smith 1978a; Kroeber 1925). Many contemporary Gabrielino identify themselves as descendants of the indigenous people living across the plains of the Los Angeles Basin and refer to themselves as the Tongva (King 1994, p. 12). This term is used in the remainder of this section to refer to the precontact inhabitants of the Los Angeles Basin and their descendants.

The Tongva established large, permanent villages along rivers and streams, and lived in sheltered areas along the coast. Tongva lands included the greater Los Angeles Basin and three Channel Islands—San Clemente, San Nicolas, and Santa Catalina—and stretched from the foothills of the San Gabriel Mountains to the Pacific Ocean. Archaeological sites composed of villages with various sized structures have been identified through the Los Angeles Basin. A total tribal population has been estimated of at least 5,000 (Bean and Smith 1978, p.540), but recent ethnohistoric work suggests a number approaching 10,000 seems more likely (O’Neil 2002). At least one Tongva village was located near Glendora: Ashuukshanga (also Azucsagna), located near the mouth of the San Gabriel River in present-day Azusa (McCawley 1996, p. 44). Within the permanent village sites, the Tongva constructed large, circular, domed houses made of willow poles thatched with tule, each of

which could hold upwards of 50 people (Bean and Smith 1978a). Other structures constructed throughout the villages probably served as sweathouses, menstrual huts, ceremonial enclosures, and communal granaries. Cleared fields for races and games, such as lacrosse and pole throwing, were created adjacent to Tongva villages (McCawley 1996).

The Tongva subsistence economy was centered on gathering and hunting. The surrounding environment was rich and varied, and the tribe exploited mountains, foothills, valleys, and deserts as well as riparian, estuarine, and open and rocky coastal eco-niches. Like most native Californians, acorns were the staple food (an established industry by the time of the early Intermediate Horizon). Acorns were supplemented by the roots, leaves, seeds, and fruits of a variety of flora (e.g., islay, cactus, yucca, sages, and agave). Freshwater and saltwater fish, shellfish, birds, reptiles, and insects, as well as large and small mammals, were also consumed (Bean and Smith 1978a, p. 546; Kroeber 1925, pp. 631–632; McCawley 1996, pp. 119–123, 128–131).

The Tongva participated in an extensive exchange network, trading coastal goods for inland resources. They exported Santa Catalina Island steatite products, roots, seal and otter skins, fish and shellfish, red ochre, and lead ore to neighboring tribes, as well as to people as far away as the Colorado River. In exchange, they received ceramic goods, deerskin shirts, obsidian, acorns, and other items. This burgeoning trade was facilitated by the use of craft specialists, a standard medium of exchange (Olivella bead currency), and the regular destruction of valuables in ceremonies, which maintained a high demand for these goods (McCawley 1996, pp. 112–115).

#### Juaneño

The Juaneño, or Acjachemen, territory was bounded to the north by Aliso Creek, the east by the crest of the Santa Ana Mountains, the south by San Onofre Creek, and west by the Pacific Ocean (Kroeber 1925:636). Ethnographic, linguistic, and archaeological evidence indicate that Juaneño and Luiseño are one cultural/tribal group. There is no existing record of the Juaneño population during the pre-contact period. Records indicated that approximately 1,300 individuals culturally affiliated with the Juaneño resided at Mission San Juan Capistrano in the year 1800 (Engelhardt 1922). The mission death register shows as many as 4,000 native burials in the mission cemetery (White 1963). It is clear from that arrival of the Spanish decimated Native peoples through disease and changed living conditions (Bean and Shipek 1978).

The tribes of the region were organized into patrilineal clans or bands centered on a chief, composed of 25–30 people (Kroeber 1925), each of which had their own territorial land or range where food and other resources were collected at different locations throughout the year (Sparkman 1908). The title of chief was heritable along family lines. Inter-band conflict was most common over trespassing. Sparkman observed that “when questioned as to when or how the land was divided and subdivided, the Indians say they cannot tell, that their fathers told them that it had always been thus” (1908). Place names were assigned to each territory, often reflecting common animals, plants, physical landmarks, or cosmological elements that were understood as being related to that location. Marriages were generally arranged by parents or guardians. Free and widowed women had the option to choose their partner. Polygamy occurred though was not common, often with a

single man marrying a number of sisters and wives. Shamanism was a major component in tribal life. The physical body and its components was thought to be related to the power of an individual, and wastes such as fluids, hair, and nails were discarded with intent. Hair, once cut, was often carefully collected and buried to avoid being affected negatively or controlled by someone who wishes them harm. Some locations and natural resources were of cultural significance. Springs and other water-related features were thought to be related with spirits. These resources, often a component of origin stories, had power that came with a variety of risks and properties to those who became affected. Puberty ceremonies for both boys and girls were complex and rigorous. Mourning ceremonies were similar throughout the region, generally involving cutting of the hair, burning the deceased's clothes a year after death, and redistributing personal items to individuals outside of the immediate tribal group (Sparkman 1908; Kroeber 1925). The center of the Juaneño and Gabrielino religion was *Chinigchinich*, the last of a series of heroic mythological figures. The heroes were originally from the stars and the sagas told of them formed the Juaneño religious beliefs. The most obvious expression of the religion was the *Wankech*, a brush enclosed area where religious observances were performed. The *Wankech* contained an inner enclosure housing a representation of *Chinigchinich*, a coyote skin stuffed with feathers, claws, beaks, and arrows.

Areas or regions, identified by known physical landmarks, could be recognized as band-specific territories that might be violently defended. Other areas or resources, such as water sources and other locations that were rich in natural resources, were generally understood as communal land to be shared. The coastal Juaneño and Gabrielino exchanged a number of local goods, such as seafood, coastal plants, and various types of shell, for items including acorns, agave, mesquite beans, gourds, and other more interior plants of use (Luomala 1978). Shellfish would have been procured from three primary environments, including the sandy open coast, bay and lagoon, and rocky open coast. The availability of these marine resources changed with the rising sea levels, siltation of lagoon and bay environments, changing climatic conditions, and intensity of use by humans and animals (Gallegos and Kyle 1988; Pigniolo 2005; Warren 1964). Shellfish from sandy environments included *Donax*, *Saxidomas*, *Tivela*, and others. Rocky coast shellfish dietary contributions consisted of *Pseudochama*, *Megastrea*, *Saxidomus*, *Protothaca*, *Megathura*, *Mytilus*, and others. Lastly, the bay environment would have provided *Argopecten*, *Chione*, *Ostrea*, *Neverita*, *Macoma*, *Tagelus*, and others. While marine resources were obviously consumed, terrestrial animals and other resources likely provided a large portion of sustenance. Game animals consisted of rabbits, hares (*Leporidae*), birds, ground squirrels, woodrats (*Neotoma*), deer, bears, mountain lions (*Puma concolor*), bobcats (*Lynx rufus*), coyotes (*Canis latrans*), and others. In lesser numbers, reptiles and amphibians may have been consumed.

A number of local plants were used for food and medicine. These were exploited seasonally, and were both traded between regional groups and gathered as a single triblet moved between habitation areas. Some of the more common of these that might have been procured locally, or as higher elevation varieties, would have included buckwheat (*Eriogonum fasciculatum*), Agave, Yucca, lemonade berry (*Rhus integrifolia*), sugar brush (*Rhus ovata*), sage scrub (*Artemisia californica*), yerba santa (*Eriodictyon*), sage (*Salvia*), Ephedra, prickly pear (*Opuntia*), mulefat (*Baccharis salicifolia*), chamise (*Adenostoma fasciculatum*), elderberry (*Sambucus nigra*), oak (*Quercus*), willow (*Salix*), and *Juncus* grass, among many others (Wilken 2012).

### 4.2.3 Historic-Period Overview

Post-Contact history for the State of California is generally divided into three periods: the Spanish Period (1769–1821), Mexican Period (1821–1848), and American Period (1846–present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican–American War, signals the beginning of the American Period when California became a territory of the United States.

#### Spanish Period (1769-1822)

Spanish explorers made sailing expeditions along the coast of southern California between the mid-1500s and mid-1700s. In search of the legendary Northwest Passage, Juan Rodríguez Cabrillo stopped in 1542 at present-day San Diego Bay. With his crew, Cabrillo explored the shorelines of present Catalina Island as well as San Pedro and Santa Monica Bays. Much of the present California and Oregon coastline was mapped and recorded in the next half-century by Spanish naval officer Sebastián Vizcaíno. Vizcaíno's crew also landed on Santa Catalina Island and at San Pedro and Santa Monica Bays, giving each location its long-standing name. The Spanish crown laid claim to California based on the surveys conducted by Cabrillo and Vizcaíno (Bancroft 1885; Cleland 2005; Gumprecht 2001).

More than 200 years passed before Spain began the colonization and inland exploration of Alta California. The 1769 overland expedition by Captain Gaspar de Portolá marks the beginning of California's Historic period, occurring just after the King of Spain installed the Franciscan Order to direct religious and colonization matters in assigned territories of the Americas. With a band of 64 soldiers, missionaries, Baja (lower) California Native Americans, and Mexican civilians, Portolá established the Presidio of San Diego, a fortified military outpost, as the first Spanish settlement in Alta California. In July of 1769, while Portolá was exploring southern California, Franciscan Fr. Junípero Serra founded Mission San Diego de Alcalá at Presidio Hill, the first of the 21 missions that would be established in Alta California by the Spanish and the Franciscan Order between 1769 and 1823, including Mission San Fernando Rey de España. (Cleland 2005; Gumprecht 2001; Jorgensen 1982; Kyle 2002; Roderick 2001)

The Portolá expedition first reached the present-day boundaries of Los Angeles in August 1769, thereby becoming the first Europeans to visit the area. Father Crespi named “the campsite by the river Nuestra Señora la Reina de los Angeles de la Porciúncula” or “Our Lady the Queen of the Angeles of the Porciúncula.” Two years later, Friar Junípero Serra returned to the valley to establish a Catholic mission, the Mission San Gabriel Arcángel, on September 8, 1771. (Gumprecht 2001; Jorgensen 1982; Kyle 2002).

The expedition camped at a watering place at the base of the San Gabriel Mountains in 1769 and the location was noted in Crespi's diary. The mission was founded in September 1797 by Father Fermín Lasuén and Fray



Francisco Dumetz. The mission consisted of a church, fountains, cloisters and extensive agricultural grounds outside the area. The Spanish missionaries impressed the native Tongva, Tatavium, and Chumash tribes into Christianity through baptism and service as neophytes. The land taken by the Spanish was not repatriated to these tribes. (Cleland 2005; Roderick 2001)

#### Mexican Period (1822-1848)

A major emphasis during the Spanish Period in California was the construction of missions and associated ranchos and presidios to integrate the Native American population into Christianity and communal enterprise. Incentives were also provided to bring settlers to pueblos or towns, but just three pueblos were established during the Spanish Period, only two of which were successful and remain as California cities (San José and Los Angeles). Several factors kept growth within Alta California to a minimum, including the threat of foreign invasion, political dissatisfaction, and unrest among the indigenous population. After more than a decade of intermittent rebellion and warfare, New Spain (Mexico and the California territory) won independence from Spain in 1821. In 1822, the Mexican legislative body in California ended isolationist policies designed to protect the Spanish monopoly on trade, and decreed California ports open to foreign merchants (Cleland 2005; Dallas 1955).

Extensive land grants were established in the interior during the Mexican Period, in part to increase the population inland from the more settled coastal areas where the Spanish had first concentrated their colonization efforts. The secularization of the missions following Mexico's independence from Spain resulted in the subdivision of former mission lands and establishment of many additional ranchos.

During the supremacy of the ranchos (1834–1848), landowners largely focused on the cattle industry and devoted large tracts to grazing. Cattle hides became a primary southern California export, providing a commodity to trade for goods from the east and other areas in the United States and Mexico. The number of nonnative inhabitants increased during this period because of the influx of explorers, trappers, and ranchers associated with the land grants. The rising California population contributed to the introduction and rise of diseases foreign to the Native American population, who had no associated immunities.

#### American Period (1848-Present)

War in 1846 between Mexico and the United States precipitated the Battle of Chino, a clash between resident Californios and Americans in the San Bernardino area. The Mexican-American War ended with the Treaty of Guadalupe Hidalgo in 1848, ushering California into its American Period.

California officially became a state with the Compromise of 1850, which also designated Utah and New Mexico (with present-day Arizona) as U.S. Territories (Waugh 2003). Horticulture and livestock, based primarily on cattle as the currency and staple of the rancho system, continued to dominate the southern California economy through 1850s. The Gold Rush began in 1848, and with the influx of people seeking gold, cattle were no longer desired mainly for their hides but also as a source of meat and other goods. During the

1850s cattle boom, rancho vaqueros drove large herds from southern to northern California to feed that region's burgeoning mining and commercial boom. Cattle were at first driven along major trails or roads such as the Gila Trail or Southern Overland Trail, then were transported by trains when available. The cattle boom ended for southern California as neighbor states and territories drove herds to northern California at reduced prices. Operation of the huge ranchos became increasingly difficult, and droughts severely reduced their productivity (Cleland 2005).

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## 5 BACKGROUND RESEARCH

On January 22, 2021, staff at the South Central Coast Information Center (SCCIC), located on the campus of California State University, Fullerton, provided the results of a CHRIS records search for the Project APE and a 0.5-mile radius. Due to COVID-19, the SCCIC notified researchers that they are only able to provide data for Orange County that has already been digitized. As such, not all available data known to CHRIS may be provided in the records search. The CHRIS records search results provided by the SCCIC included their digitized collections of mapped prehistoric and historic archaeological resources and historic built-environment resources; Department of Parks and Recreation site records; technical reports; archival resources; and ethnographic references. Dudek reviewed the SCCIC records to determine whether the implementation of the Project would have the potential to impact known cultural resources/historic properties. The confidential records search results are also provided in Confidential Appendix B.

### 5.1 Previous Cultural Resources Studies

The SCCIC records indicate that 22 previous cultural resources technical studies have been conducted within 0.5-mile of the Project APE between 1974 and 2011. Of these, none intersect the Project APE. All 22 cultural resource investigations are summarized in Table 1, below.

Table 1. Previous Technical Studies Within 0.5-Mile of the Project APE

SCCIC Report No. (OR-)	Authors	Date	Title	Proximity to Project APE
La Palma Site				
2362	Ballard, Hanna	2001	Archaeological Survey and Record Search for World Com 905 Discovery Lane Project	Outside
2736	Duke, Curt	2002	Cultural Resource Assessment at & T Wireless Services Facility No. 13052b Orange County, California	Outside
2753	Duke, Curt	2002	Cultural Resource Assessment at & T Wireless Services Facility No. 13052a Orange County, California	Outside
3522	Billat, Lorna	2009	New Tower ("NT") Submission Packet FFC Form 620, Project Name: Parker, Project Number: LA0883B	Outside
3864	Wood, Catharine M.	2008	Archaeological Survey Report - Finding of no Archaeological Resources present for the State Route 91 Westbound Widening Project from State Route 57 to Interstate 5, Cities of Anaheim and Fullerton, Orange County, CA	Outside
3865	Paul, Daniel	2008	Historic Resources Evaluation Report - State Route 91 Westbound Widening Project from State Route 57 to Interstate 5, Cities of Anaheim and Fullerton, Orange County, CA District 12 - Orange _ 91 - PM 5.4 to 0.9 (KP 1.4 to 8.8)	Outside
3956	Billat, Lorna	2010	Parker, LA0883B, New Tower Submission Packet	Outside

CULTURAL RESOURCES ASSESSMENT/HISTORIC PROPERTY IDENTIFICATION REPORT  
WELL AND WATER TREATMENT FACILITIES PROJECT

Table 1. Previous Technical Studies Within 0.5-Mile of the Project APE

SCCIC Report No. (OR-)	Authors	Date	Title	Proximity to Project APE
Linda Vista Site				
1596	Clelow, William C. Jr.	1974	Preliminary Report of the Potential Impact on Archaeological Resources of the Proposed Gas Transmission Pipeline From Los Angeles Harbor to Yorba Linda - Southern California Gas Co.: Environmental Analysis	Outside
2558	McLean, Deborah K.	2002	Cultural Resource Assessment: Orange County Water District Lakeview Water Transfer Pipeline Project, Cities of Placentia and Anaheim, County of Orange, Ca	Outside
2572	McKenna, Jeanette A.	2002	Historic Property Survey Report-Negative Findings: Orangethorpe Ave. between Kraemer Blvd. and the BNSF Rail Road	Outside
2700	Shepard, Richard S.	2003	Highway Project Consisting of the Rehabilitation of a Portion of Orangethorpe Avenue in the City of Placentia, Orange County	Outside
2731	McKenna, Jeanette A.	2002	Tustin Avenue Widening Survey	Outside
3268	Maki, Mary K.	2000	Phase I Archaeological Investigation of Limited Areas Within the Torrance Refinery and Atwood, Southwestern Marine and Vernon Terminals, Los Angeles and Orange Counties, California	Outside
3916	Tang, Bai "Tom"	2010	Preliminary Historical/Archaeological Resources Study, Olive Subdivision Positive Train Control (PTC) Project, Southern California Regional Rail Authority (SCRRA) Cities of Anaheim, Orange, and Placentia, Orange County, California	Outside
3928	Bonner, Wayne	2010	Cultural Resources Records Search and Site Visit Results for T-Mobile USA Candidate IE05465-F (Jefferson), 1301 East Orangethorpe Ave., Placentia, Orange County, California	Outside
4104	Antram, Marie, Orr, Shannon, Vasquez, Liliana, L. de Graf, and Jertberg, Pat	2002	Historic Resource Inventory for the City of Placentia: Update 2002	Outside
Boysen Park Site				
2256	Demcak, Carol R.	1999	Cultural Resources Assessments for Orange County Sanitation Districts	Outside
2846	Shepard, Richard S.	1993	State College Boulevard at Ball Road Improvements, City of Anaheim, Orange County, California	Outside

Table 1. Previous Technical Studies Within 0.5-Mile of the Project APE

SCCIC Report No. (OR-)	Authors	Date	Title	Proximity to Project APE
3335	Bonner, Wayne H.	2006	Cultural Resources Records Search Results and Site Visit for T-Mobile Candidate La03007d (tm007-boysen Park), 915 South State College Boulevard, Anaheim, Orange County, California	Outside
Energy Field Site				
2353	McKenna, Jeanette A.	2001	Review of Cultural Resource Assessment/evaluation for Cingular Wireless Site Sm-082-02, Orange County, California	Outside
2889	Bonner, Wayne H.	2005	Cultural Resources Records Search and Site Visit Results for Nextel Communications Candidate Ca8760a (Cris Ave.) 1621 Euclid Street, Anaheim, Orange County, California	Outside
4116	Fulton, Phil	2011	Cultural Resource Assessment Verizon Wireless Services Sallie Facility, City of Anaheim, Orange County, California	Outside

## 5.2 Previous Recorded Cultural Resources

SCCIC records indicate that two (2) previously recorded cultural resources are located within 0.5-mile of the Project APE. One resource is a prehistoric archaeological site and the other is a historic built-environment resource, neither of which intersect or overlap the Project APE. Table 2, below, summarizes all two resources identified followed by a brief summary of the prehistoric archaeological site identified within the records search area.

Table 2. Previously Recorded Cultural Resources Within 0.5-Mile of the Project APE

Primary (P-30-)	Trinomial	Age/Type	Description	Recorded By / Year	NRHP Eligibility	Proximity to Project APE
La Palma Site						
No resources were identified within the La Palma Site or 0.5-mile buffer						
Linda Vista Site						
000430	CA-ORA-000430	Prehistoric Site	One large slab metate and one mano with pecking	1973 (T. Cooley, M. Hall)	Not evaluated	Outside
176708	--	Historic/ Built-Environment	Country Estate Fence	2003 (J. Marvin, LSA Associates, Inc)	6Z: Found ineligible	Outside
Boysen Park Site						
No resources were identified within the Boysen Park Site or 0.5-mile buffer						
Energy Field Site						
No resources were identified within the Energy Field Site or 0.5-mile buffer						

P-30-00430/CA-ORA-000430

CA-ORA-000430 is a prehistoric site measuring 30 meters north to south by 92 meters east to west (100x300 feet) and is located within 600 meters (1980 feet) of the Linda Vista Site. CA-ORA-000430 is documented as consisting of a metate and a mano. It was originally documented in 1973 by Cooley and Hall, who describe the two artifacts found as the only archaeological evidence within the area. The metate is described as a large slab metate, and the mano is described as having “pecking” on one side. No further detail about this site is provided.

### 5.3 Review of Historical Maps and Aerial Photographs

Dudek consulted historical topographic maps and aerial photographs to understand development of the Project APE and surrounding properties.

#### La Palma Site

Topographic maps are available for the years 1896, 1899, 1901, 1906, 1912, 1922, 1932, 1935, 1944, 1947, 1950, 1956, 1961, 1967, 1972, 1981, 2012, 2015, and 2018 (NETR 2021a). Historic aerials are available for the years 1953, 1963, 1972, 1980, 1995, 2003, 2004, 2005, 2009, 2010, 2012, 2014, and 2016 (NETR 2021b).

The first USGS topographic map showing the La Palma Site dates to 1896 and shows the La Palma Site as undeveloped, near a wash. The following topographic maps show no significant change to the La Palma Site until 1935. The 1935 topographic map depicts West La Palma Avenue and North West Street. The topographic map from 1944 reflects the pre-1935 maps and shows the La Palma Site as undeveloped. The 1947 topographic map resembles the 1935 map and again shows West La Palma Avenue and North West Street. The topographic map from 1950 shows the La Palma Site occupied with an orchard, as well as an increase in structures in the surrounding areas. The following topographic maps show no significant change to the La Palma Site, until 1967. The 1967 topographic map shows the La Palma Site in use as a water reservoir with two rectangular water tanks, a small structure in between the tanks and in the northeastern corner, and Carbon Creek directly to the north of the northern boundary as well as the addition of West Autumn Drive to the south. The remaining topographic maps show no significant change to the La Palma Site.

The first historic aerial photograph showing the La Palma Site dates to 1953 and shows the La Palma Site covered in vegetation with a large cluster of larger trees in the eastern half and various dirt paths throughout the site. The photograph also shows West La Palma Avenue, North West Street, and West Autumn Drive. The 1963 historic aerial photograph shows the La Palma Site in use as a water reservoir with two rectangular water tanks, the small structures in between the tanks, a large cluster of trees along the western boundary, and the Carbon Creek just to the north of the northern boundary. There appears to be a residential development to the south of the La Palma Site. The aerial from 1972 no longer shows the smaller of the two central structures between the water tanks. The remainder of the historic aerial photographs show no significant change to the La Palma Site or surrounding areas.

## Linda Vista Site

Topographic maps are available for the years 1896, 1899, 1901, 1906, 1912, 1922, 1932, 1935, 1944, 1946, 1950, 1956, 1961, 1966, 1974, 1982, 2012, 2015, and 2018 (NETR 2021a). Aerial photographs are available for the years 1946, 1952, 1963, 1966, 1972, 1977, 1980, 1995, 2002, 2003, 2004, 2005, 2009, 2010, 2012, 2014, and 2016 (NETR 2021b).

The first USGS topographic map showing the Linda Vista Site dates to 1896 and shows the Linda Vista Site as the location of a wash, with East Orangethorpe Avenue directly to the north. The 1901 topographic map shows Miraloma Avenue, directly south of the Linda Vista Site's southern boundary. The following topographic maps show no significant changes to the site and surrounding area until 1932. The topographic map from 1932 no longer shows the Linda Vista Site as a wash; it depicts North Miller Street, directly west of the site's western boundary, as well as an increase in development in the surrounding areas. The following topographic maps show no significant change to the Linda Vista Site or surrounding areas until 1950. The 1950 topographic map depicts a small, square water reservoir along the eastern edge of the site and a dirt road running north from Miraloma Avenue to a cluster of four structures within the southern portion. The 1961 topographic map no longer depicts the reservoir or the road and instead shows the western half of the Linda Vista Site in use as an orchard and five structures just outside the site along Miraloma Avenue and North Miller Street. The topographic map from 1966 depicts the site in use as water reservoir station including various holding tanks, wells, a gaging station, and a gravel pit. The southwestern quadrant of the Linda Vista Site appears to still be in use as an orchard. The site remains unchanged until 1982. The topographic map from 1982 depicts the site in use as the current Anaheim Lake, with an access road running along the western and southern portions. The remainder of the topographic maps show no significant changes to the Linda Vista Site or surrounding areas.

The first historical aerial photograph showing the Linda Vista Site dates to 1946 and shows one third of the site in use as an orchard and the remainder is cleared of vegetation; a square water storage tank is shown along the eastern edge of the site, East Orangethorpe Avenue is just outside of the northern boundary, North Tustin Avenue is just outside of the eastern boundary, Miraloma Avenue is just south of the southern boundary, and North Miller Street is just outside of the western boundary. The historic aerial from 1963 shows the unused two-thirds of the site now in use as a water reservoir, including various water holding tanks of various sizes, a few structures along Miraloma Avenue, and a main access road with shorter ones branching off. The 1966 historic aerial depicts the orchard now as only within the southwestern quadrant. The historic aerial from 1972 shows what is currently known as Anaheim Lake; a large water reservoir with attached treatment facility and associated structures in the corner of Miraloma Avenue and North Tustin Avenue. The historic aerial from 1980 shows what appears to be a section of newly planted trees within the northeastern corner and the southern portion of the Linda Vista Site. The 1995 historic aerial shows the northeastern corner of the Linda Vista Site as barren. The 2002 historic aerial photograph depicts an additional water reservoir in the northeastern corner. The following historic aerial photographs show an increase in development in the surrounding areas, but no significant changes to the Linda Vista Site. The historic aerial from 2014 no longer



shows the water reservoir in the northeastern corner and the water treatment facility along the eastern edge appears to be under construction or possibly being demolished. The most recent historic aerial photograph from 2016 only depicts the treatment facility footprint, no longer a structure, appearing to still be in the process of construction or alteration.

#### Boysen Park Site

Topographic maps are available for the years 1896, 1899, 1901, 1906, 1912, 1922, 1932, 1935, 1944, 1947, 1950, 1956, 1961, 1967, 1972, 1977, 1981, 2012, 2015, and 2018 (NETR 2021a). Aerial photographs are available for the years 1952, 1953, 1963, 1972, 1980, 1995, 2003, 2004, 2005, 2009, 2010, 2012, 2014, and 2016 (NETR 2021b).

The first USGS topographic map showing the Boysen Park Site dates to 1896 and shows the site and the surrounding areas as undeveloped. The following topographic maps show no significant changes to the surrounding area until 1935. The 1935 topographic map depicts Vermont Ave and a road, labeled “Placentia”, where the current South State College Boulevard is, as well as two structures between “Placentia” and the Boysen Park Site. The 1944 topographic map does not reflect the changes depicted in the 1935 map; however, these changes are again reflected in the 1947 topographic map. The 1950 topographic map shows the Boysen Park Site occupied with an orchard. The 1956 and 1961 topographic maps show no change to the Boysen Park Site. The 1967 topographic map shows Boysen Park and an increase of development within the surrounding area. The area bordering the southern edge of Boysen Park was occupied by an orchard, with a well where the tennis courts currently reside. The following topographic maps show no significant changes to the Boysen Park Site until 1981. The 1981 topographic map no longer depicts an orchard south of Boysen Park. The remaining topographic maps show no significant change to the Boysen Park Site.

The first historical aerial photograph showing the Boysen Park Site dates to 1952 and shows the Boysen Park Site as an orchard with three structures in the northern portion. The photograph shows South State College Boulevard and East Wagner Avenue; the two main roads just to the east of Boysen Park Site. The 1953 historic aerial no longer shows the western most structure. The historic aerial from 1963 shows a baseball field directly to the north of Boysen Park Site. The 1972 historic aerial shows the orchard has been cleared leaving an open space, only one structure is shown with a few non-agricultural trees surrounding, and there is an additional structure to the north between the baseball field and the northern boundary. The historic aerial photograph from 1980 does not show any of the three structures originally seen in 1952. Directly to the west of the intersection between South State College Boulevard and East Wagner Avenue is a parking lot and to the west of the parking lot are a series of tennis courts within the Boysen Park Site. The majority of the trees that were south of the baseball field are no longer present. The 1995 historic aerial shows an additional parking lot to the north of the aforementioned one, directly south of the baseball field. The remainder of the historic aerial photographs show an increase in the growth of the surrounding trees; however, there is no significant change to the Boysen Park Site.

## Energy Field Site

Topographic maps are available for the years 1896, 1899, 1901, 1906, 1912, 1922, 1932, 1935, 1944, 1947, 1950, 1956, 1961, 1967, 1972, 1981, 2012, 2015, and 2018 (NETR 2021a). Aerial photographs are available for the years 1953, 1963, 1972, 1980, 1995, 2003, 2004, 2005, 2009, 2010, 2012, 2014, and 2016 (NETR 2021b).

The first USGS topographic map showing the Energy Field Site dates to 1896 and shows the site as undeveloped. The 1901 topographic map shows the Los Alamitos Branch of the Southern Pacific Railroad which serves as the Energy Field Site's western boundary, as well as South 9th Street, which serves as the Energy Field Site's eastern boundary. The following topographic maps show no significant changes to the Energy Field Site or surrounding areas until 1950. The topographic map from 1950 depicts the Energy Field Site in use as an orchard; there is one structure in the southeast corner. The following topographic maps show an increase in development in the surrounding areas; however, no significant changes to the Energy Field Site until 1967. The 1967 topographic map no longer shows the Energy Field Site no longer in use as an orchard; however, the structure remains. There is also the Anaheim Barber Channel between the railroad tracks and the Energy Field Site's western boundary. The following topographic maps show no significant changes to the Energy Field Site, until 2012. The topographic map from 2012 no longer depicts a structure in the southeastern corner. The remainder of the topographic maps show no significant changes to the Energy Field Site or surrounding areas.

The first historical aerial photograph showing the Energy Field Site dates to 1953 and shows the site as an orchard, with the Southern Pacific Railroad serving as the western boundary and South 9th Street serving as the eastern boundary. The historic aerial from 1963 shows the southern portion of Energy Field Site as an open field with minimal vegetation. There is a cluster of three structures in the northeastern quadrant and a dirt path running along the southern boundary. The 1972 historic aerial depicts the Energy Field Site as void of structures with minimal vegetation. The historic aerial from 1980 shows the site containing a few scattered trees. The 1995 historic aerial shows the southern half of Energy Field Site in use as a nursery and the northern half remaining an open field. The historic aerial photograph from 2003 shows the southern half of Energy Field Site unchanged; whereas the northern half now contains two rectangular structures and a series of trees along South 9th Street. The structures are representative of an electrical substation. The 2005 historic aerial depicts the southern half of Energy Field Site as an open and unused field, while the northern half remains unchanged. The historic aerial from 2009 shows the southern half of Energy Field Site in use as a park, currently known as Energy Field Park, with landscaped grass, dirt track, and three structures directly south of the electrical substation. The remainder of the historic aerial photographs show no significant changes to the Energy Field Site or surrounding areas.

## 5.4 Geotechnical Reports Review

Dudek reviewed a series of geotechnical reports for the Project in order to better understand the geomorphology of each Project APE.

## La Palma Site

The La Palma Site geotechnical report, *Geotechnical Data Report PFAS-GWTPS Project New Well and Treatment Plant La Palma Site 1016 North West Street, Anaheim, CA, AESCO Project No. 20200895-F8948* (AESCO 2020a), was prepared for the City of Anaheim in September 2020. The report documents the results of a geotechnical investigation consisting of ground penetrating radar (GPR) investigations to identify the location, direction and depth of existing underground utilities, subsurface borings drilled with a hollow stem auger drill rig, laboratory testing, and a seismic hazard screening. There were three borings drilled to a depth of 25 feet (ft.) below ground surface (bgs). Two bore holes were located on the eastern side of the La Palma Site and one was located on the western side. The GPR investigation confirmed the locations and depths of the underground utilities within the site. According to the report, the geologic materials at the ground surface in the vicinity of the site consist of Quaternary alluvial sediments deposited by the Santa Ana River or its tributaries. The report states, “it is necessary to assume that the subsoil conditions between boring(s) do not change significantly.” The report does not indicate whether any fill soils were encountered during the subsurface investigation. The results of the subsurface exploratory boring investigations are summarized in Table 3, below.

Table 3. AESCO Boring Log Summary – La Palma Site

Boring	0-5 ft.	5-10 ft.	10-15 ft.	15-20 ft.	20-25 ft.
B-1	0-5 ft.: brown, medium dense silty sand with slight clay	5-18 ft.: light brown, medium dense sand; becomes gray at 13 ft.			18-23 ft.: gray medium dense sand/silty sand, dry 23-25 ft.: light gray, medium dense sand
B-2	0-3 ft.: dark brown clayey sand	3-8 ft.: dark brown medium stiff to stiff sandy silt	8-23 ft.: dark gray, loose to medium dense clayey sand		23-25 ft.: dark gray, stiff sandy silt
B-3	0-5 ft.: reddish brown, medium dense clayey sand	5-8 ft.: dark gray, medium sense sand/silty sand	8-18 ft.: dark brown, loose to medium dense clayey sand	18-23 ft.: brown medium sense silty sand	23-25 ft.: gray-brown, loose to medium dense silty gravel

## Linda Vista Site

The Linda Vista Site geotechnical report, *Geotechnical Data Report PFAS-GWTPS Project New Well and Treatment Plant Linda Vista Site, Northwest Corner of North Tustin Avenue and East Miraloma Avenue, Anaheim, CA, AESCO Project NO. 20200925-F8951* (AESCO 2020b), was prepared for the City of Anaheim in September 2020. The report documents the results of a geotechnical investigation consisting of GPR investigations to identify the location, direction and depth of existing underground utilities, subsurface borings drilled with a hollow stem auger drill rig, laboratory testing, and a seismic hazard screening. There were three borings drilled to a depth of 50 ft. bgs. Two bore holes were located on the eastern side of the site and an additional bore hole was in the northwestern corner. The GPR investigation confirmed the locations and depths of the underground utilities within the site. According to the report, the geologic materials at the ground surface in the vicinity of the site

consist of Quaternary alluvial sediments deposited by the Santa Ana River or its tributaries. The report states, “it is necessary to assume that the subsoil conditions between boring(s) do not change significantly.” The report does not indicate whether any fill soils were encountered during the subsurface investigation. The results of the subsurface exploratory boring investigations are summarized in Table 4, below.

Table 4. AESCO Boring Log Summary – Linda Vista Site

Boring	0-10 ft.	10-20 ft.	20-30 ft.	30-40 ft.	40-50 ft.
B-1	0-13 ft.: brown loose silty sand	13-18 ft.: gray-brown medium dense sand	18-45 ft.: gray medium dense to very dense silty sand		45-50 ft.: brown dense silty sand
B-2	0-3 ft.: brown silty sand 3-7 ft.: light gray, whiteish medium dense to very dense silty gravel	Terminated at 7 ft. due to very dense gravel or possible bottom of cistern			
B-3	0-5 ft.: brown medium dense silty sand with some gravel 5-8 ft.: black very dense sand	8-18 ft.: light brown medium dense silty sand with gravel	18-30 ft.: light brown medium dense to dense silty sand	Terminated at 30 ft.	

#### Boysen Park Site

The Boysen Park Site geotechnical report, *Geotechnical Data Report PFAS-GWTPS Project New Well and Treatment Boysen Park Site, 951 South State College Boulevard, Anaheim, CA, AESCO Project NO. 20200925-F8949* (AESCO 2020c), was prepared for the City of Anaheim in September 2020. The report documents the results of a geotechnical investigation consisting of GPR investigations to identify the location, direction and depth of existing underground utilities, subsurface borings drilled with a hollow stem auger drill rig, laboratory testing, and a seismic hazard screening. There were two borings drilled to a depth of 25 ft. bgs. Both bore holes were located in the southeastern portion of the site. The GPR investigation confirmed the locations and depths of the underground utilities within the site. According to the report, the geologic materials at the ground surface in the vicinity of the site consist of Quaternary alluvial sediments deposited by the Santa Ana River or its tributaries. The report states, “it is necessary to assume that the subsoil conditions between boring(s) do not change significantly.” The report does not indicate whether any fill soils were encountered during the subsurface investigation. The results of the subsurface exploratory boring investigations are summarized in Table 5, below.

Table 5. AESCO Boring Log Summary – Boysen Park Site

Boring	0-5 ft.	5-10 ft.	10-15 ft.	15-20 ft.	20-25 ft.
B-1	0-8 ft.: brown to light brown, loose to medium dense silty sand with slight clay		8-13 ft.: brown medium dense sand	13-18 ft.: light brown medium dense silty sand	18-25 ft.: light gray-brown medium dense to very dense
B-2	0-8 ft.: brown medium dense silty sand with slight clay		8-13 ft.: dark brown medium dense sand/silty sand	13-25 ft.: gray medium dense to very dense sand	

### Energy Field Site

The Energy Field site geotechnical report, *Geotechnical Data Report PFAS-GWTPS Project New Well and Treatment Energy Field Site, 9<sup>th</sup> Street, 600 Feet North of West Laster Avenue, Anaheim, CA, AESCO Project NO. 20200915-F8950* (AESCO 2020d), was prepared for the City of Anaheim in September 2020. The report documents the results of a geotechnical investigation consisting of GPR investigations to identify the location, direction and depth of existing underground utilities, subsurface borings drilled with a hollow stem auger drill rig, laboratory testing, and a seismic hazard screening. There were two borings drilled to a depth of 25 ft. bgs. Both bore holes were located in the central portion of the western side of the site. The GPR investigation confirmed the locations and depths of the underground utilities within the site. According to the report, the geologic materials at the ground surface in the vicinity of the site consist of Quaternary alluvial sediments deposited by the Santa Ana River or its tributaries. The report states, “it is necessary to assume that the subsoil conditions between boring(s) do not change significantly.” The report does not indicate whether any fill soils were encountered during the subsurface investigation. The results of the subsurface exploratory boring investigations are summarized in Table 6, below.

Table 6. AESCO Boring Log Summary – Energy Field Site

Boring	0-5 ft.	5-10 ft.	10-15 ft.	15-20 ft.	20-25 ft.
B-1	0-5 ft.: brown to dark brown loose silty sand	5-13 ft.: gray to gray-brown medium dense sand/silty sand		13-18 ft.: gray stiff sandy silt with slight clay	18-23 ft.: gray medium dense sand 23-25 ft.: gray medium dense silty sand
B-2	0-3 ft.: brown sand/silty sand	3-8 ft.: dark brown to gray medium stiff to stiff sandy silt with slight slay	8-13 ft.: gray medium dense sand	13-18 ft.: dark brown loose to medium dense clayey sand with slight silt	18-25 ft.: gray-brown to gray medium dense to very dense sand/silty sand

## 5.5 Native American Correspondence

### 5.5.1 NAHC Sacred Lands File Search

The NAHC SLF search, findings received October 22, 2020, was completed with negative results for the La Palma, Boysen Park, and Energy Field Sites, and with positive results for Linda Vista Site. The SLF record is maintained at a PLSS Section level, which indicates a recorded sacred site could be anywhere within one square mile area of a study area and as such, the NAHC did not specify whether Native American resources were located within the Linda Vista Site. The NAHC suggested contacting Native American individuals and/or tribal organizations who may have direct knowledge of cultural resources in or near the Project. No additional tribal outreach was conducted by Dudek; however, in compliance with AB 52, the City contacted all NAHC-listed traditionally geographically affiliated tribal representatives that have requested Project notification. The consultation efforts are discussed in the following section. Documents related to the NAHC SLF search are included in Appendix C.

### 5.5.2 Assembly Bill 52 Consultation

The Project is subject to compliance with AB 52 (PRC 21074), which requires consideration of impacts to TCRs as part of the CEQA process, and that the lead agency notify California Native American Tribal representatives (that have requested notification) who are traditionally or culturally affiliated with the geographic area of the proposed Project. All NAHC-listed California Native American Tribal representatives that have requested project notification pursuant to AB 52 were sent letters by the City on November 4, 2020 via post mail and email. The letters contained a project description, outline of AB 52 timing, an invitation to consult, and contact information for the appropriate lead agency representative. Documents related to AB 52 consultation are on file with the City.

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## 6 CULTURAL RESOURCES SURVEY

### 6.1 Methods

Dudek Archaeologist Linda Kry conducted an intensive-level pedestrian survey of the Project APE, which includes the Linda Palma Site, Linda Vista Site, Boysen Park Site, and Energy Field Site, on December 16, 2020, using standard archaeological procedures and techniques. All field practices met the Secretary of Interior's standards and guidelines for a cultural resources inventory. Based on the existing site conditions for all four sites, an opportunistic approach was employed, which involved walking parallel transects, spaced no more than 5 meters apart (approximately 16 feet), in areas of exposed ground surface when possible and visually inspecting areas that were physically inaccessible or obscured by buildings, structures, parked vehicles, on-site trailers, or staged equipment. The ground surface was examined for prehistoric artifacts (e.g., flaked stone tools, tool-making debris, stone milling tools, ceramics, fire-affected rock), soil discoloration that might indicate the presence of a cultural midden, soil depressions, features indicative of the current or former presence of structures or buildings (e.g., standing exterior walls, post holes, foundations), and historic artifacts (e.g., metal, glass, ceramics, building materials). Ground disturbances such as burrows, cut banks, and drainages were also visually inspected for exposed subsurface materials. No artifacts were collected during the survey.

Ms. Kry took detailed notes and photographs of the four sites within the Project APE and its surroundings. All fieldwork was documented using field notes; digital photography; iPad technology with close-scale field maps; and aerial photographs. Location-specific photographs were taken using an Apple 3rd Generation iPad equipped with an 8 MP-resolution camera and georeferenced PDF maps of the proposed Project APE. All field notes, photographs, and records related to the current study are on file at Dudek's Pasadena, California, office.

### 6.2 Results

The four sites that make up the Project APE were individually surveyed, and observations documented. Ground visibility was variable based on the existing site conditions as discussed below. Table 7 below summarizes all data regarding previous and proposed ground disturbance, including subsurface soil conditions based on reviewed geotechnical reports prepared for the Project, followed by the results of the survey based on current site conditions for all four sites.



Table 7. Summary of Land Use and Disturbance within the Project APE

Project Location	Previous Ground Disturbance	Proposed Ground Disturbance	Geotech Findings
La Palma Site	<ul style="list-style-type: none"> <li>1950s -1960s - in use as an orchard throughout the La Palma Site (approximately 5 to 8 feet depth of disturbance)</li> <li>1960s - Current in use as a water reservoir throughout the La Palma Site</li> <li>1970s - structure removal in the center of the La Palma Site (depth of disturbance associated with removal of structure is unknown)</li> </ul>	<ul style="list-style-type: none"> <li>5 to 10 feet below grade for new pumps and control equipment</li> <li>5 to 10 feet below grade for treatment systems footprints</li> <li>Assumed up to 6 feet below grade for proposed pipeline work</li> <li>1,000 feet below grade for water well</li> </ul>	Report does not indicate whether soils encountered are native or fill soils.
Linda Vista Site	<ul style="list-style-type: none"> <li>Pre-1930s - entirety of the Linda Vista Site is a wash</li> <li>1930s - 1950s in use as a water reservoir along the eastern edge of the Linda Vista Site; reservoir extended 15 feet below ground surface; upper five feet of reservoir was demolished and removed. Portions of the reservoir walls and floors are believed to remain in place at depths ranging five to 15 feet below ground surface</li> <li>1950s - 1960s western half of Linda Vista Site in use as an orchard (approximately 5 to 8 feet depth of disturbance)</li> <li>1980s - Current in use as Anaheim Lake water reservoir encompassing the entirety of the Linda Vista Site (depth of disturbance associated with this development is unknown)</li> </ul>	<ul style="list-style-type: none"> <li>5 to 10 feet below grade for treatment systems footprints</li> <li>Assumed up to 6 feet below grade for proposed pipeline work</li> </ul>	Report does not indicate whether soils encountered are native or fill soils.
Boysen Park Site	<ul style="list-style-type: none"> <li>1950s - 1970s in use as an orchard throughout the Boysen Park Site (approximately 5 to 8 feet depth of disturbance)</li> <li>1980s various structures removed along the northern boundary and tree removal in the southern portion of the Boysen Park Site (approximately 5 to 8 feet depth of disturbance for tree removal; depth of disturbance associated with removal of structures is unknown)</li> </ul>	<ul style="list-style-type: none"> <li>5 to 10 feet below grade for treatment systems footprints</li> <li>Assumed up to 6 feet below grade for proposed pipeline work</li> </ul>	Report does not indicate whether soils encountered are native or fill soils.
Energy Field Site	<ul style="list-style-type: none"> <li>1950s - 1970s in use as an orchard throughout the Energy Field Site (approximately 5 to 8 feet depth of disturbance)</li> <li>Early 2000s development of two structures along the northern edge of the Energy Field Site (depth of disturbance associated with this development is unknown)</li> </ul>	<ul style="list-style-type: none"> <li>5 to 10 feet below grade for treatment systems footprints</li> <li>Assumed up to 6 feet below grade for proposed pipeline work</li> </ul>	Report does not indicate whether soils encountered are native or fill soils.

The La Palma Site, located within an existing water reservoir facility, consists of disturbed land with exposed ground surface along the western and eastern half of the site and along the perimeter. The western portion of the site is landscaped with ornamental trees and bushes and appears maintained with wood chips overlying most of the ground surface, with an extant building that operates as a bathroom. The central portion of the site is paved and consists of the extant reservoir and associated operational facilities, which accounts for approximately 80% of the site. The eastern portion of the site is unpaved and consists of weeds and grasses. Approximately 20% of the La Palma Site provided exposed ground soils. Visibility of the ground surface that was not obscured by development was fair (50%) within the western portion and fair to good (70%-90%) within the eastern portion. In areas obscured by weeds, grasses, or wood chips, the use of surface scrapes to expose subsurface soils was implemented, as needed. The terrain within the site is generally flat and soils observed are consistent with soils as described by the USDA. No cultural material was identified as a result of the archaeological survey.

The Linda Vista Site, located within the grounds of the Anaheim Lake recharge basin facility, is within a disturbed area that is undeveloped but shows evidence of frequent disturbance from vehicle and heavy machinery use, with stored containers and building materials. Anaheim Lake is a human-made recharge basin that permanently contains water for recharge purposes and receives regular input from the Orange County Water District. The location of the proposed new treatment plant is situated within an unpaved area with extant buildings abutting the site to the south and remnants of a paved road along the eastern perimeter. Observed on site were onsite trailers, staged equipment, parked construction machinery and vehicles, facility-related structures. Approximately 90% of the Linda Vista Site provided exposed ground soils. Ground surface visibility within the footprint of the proposed new treatment plant in areas not obscured by the aforementioned items was fair to good (70%-90%) and consist of weeds and grasses, which required the use of surface scrapes to expose surface soils as needed. The remainder of the proposed impact areas is unpaved or landscaped with grasses, ornamental trees, and bushes with a ground surface visibility of good to excellent (80-100%); however, these unpaved areas are highly disturbed as it appears to be regularly maintained as part of the facility's operation for the Anaheim Lake. Soils observed are consistent with soils as described by the USDA. No cultural material was identified as a result of the archaeological survey.

The Boysen Park Site, located within the grounds of the existing Boysen Park, specifically within a walking area adjacent to tennis courts and a parking lot. Existing developments include the park facilities and parking lots. Less than 50% of the Boysen Park Site provided exposed ground soils. Exposed ground surface visibility was poor to fair (40-50%) as exposed ground soils were limited to the park grounds with grasses and landscaping that includes trees and bushes with wood chips overlying the ground surface. The use of surface scrapes to expose surface soils was implemented, as needed, but proved difficult in the majority of the grass-covered lawn area of the park. Soils observed are consistent with soils as described by the USDA. No cultural material was identified as a result of the archaeological survey.

The Energy Field Site, located within an active community park adjacent to an energy utility substation, consists of a developed area previously used for a solar panel array and the extant substation. The park is

absent of vegetation because the associated field contains artificial turf. Ornamental trees are located to the north of the site associated with the substation. Existing development consists of electrical utility lines and park bench shelters. Within the substation area, unpaved areas along the perimeter are obscured by a mounded gravel/base rock. Based on the current site conditions, 0% of exposed ground surface was encountered within this site and no cultural material was identified as a result of the archaeological survey.

## 7 HISTORIC PROPERTY IDENTIFICATION EFFORTS

No previously recorded archaeological sites have been identified within the Project APE. Although one previously recorded prehistoric archaeological site (P-30-00430/CA-ORA-000430) was identified within 600 meters (1,980 feet) of the Linda Vista Site and the NAHC SLF results were positive for cultural resources for the Linda Vista Site study area. However, no records reviewed for this report indicate that this resource extends into the Project APE, specifically the Linda Vista Site. Further, no evidence of a significant archaeological deposit that would qualify as a historic property was identified on the surface or in exposed sediments during the intensive-level pedestrian archeological survey. In consideration of these factors, no historic properties were identified within the APE as a result of the current study.

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## 8 RESULTS AND RECOMMENDATIONS

### 8.1 Results Summary

Section 106 of the NHPA requires federal agencies to take into account the effects of their undertakings on historic properties, assess the effects, and seek ways to avoid, minimize, or mitigate any adverse effects on such properties (36 CFR 800.1[a]). No historic properties were identified within the Project APE as a result of the CHRIS records search, archival research, and intensive-level pedestrian survey. According to the historical maps and aerial photographs reviewed, each location of the APE has been subject to considerable and consistent ground disturbance (see Section 5.3 and Section 6.2, Table 7). The La Palma site was undeveloped and near a wash in the late nineteenth century and was utilized as an orchard by the 1950s and subsequently transformed to a reservoir in the 1960s with structural changes in the 1970s. The Linda Vista Site was undeveloped and within a wash in the late nineteenth century, with the wash no longer depicted by the early 1930s, followed by development of the reservoir and associated structures in the 1950s; subsequently the site shifted from use as a reservoir to an orchard and then back to use as a reservoir and associated structures in the 1960s, and ultimately reflecting the Anaheim Lake with current site conditions by the early 1980s, undergoing consistent development in the 2010s. The Boysen Park Site was undeveloped in the late nineteenth century, an orchard in the 1950s with structural development in the northern portion of the site, removal of the orchard by the 1970s and removal of the previous structures by 1980, and by the 1990s, the parking lot appears and the site layout is consistent with current site conditions. The Energy Field Site was undeveloped in the late nineteenth century and was transformed into an orchard by the 1950s, which was removed by the 1970s, then transformed into a nursery to the north and the remainder as an open field in the mid-1990s, with changes in the 2000s that included the development of the substation and the current park, reflecting current site conditions. Therefore, the findings of this investigation are that no known historic properties would be affected by the proposed undertaking. As a result, **a finding of “No Historic Properties Affected” is recommended for the proposed undertaking.**

CEQA requires a lead agency to determine whether a project may have a significant effect on cultural resources. No cultural resources were identified within the Project APE as a result of the CHRIS records search, NAHC SLF search, archival research, or intensive-level pedestrian survey. The APE has been subject to consistent ground disturbance as previously discussed above. Therefore, **the proposed Project will have a less-than-significant impact on cultural resources under CEQA.**

### 8.2 Recommendations

Due to a lack of evidence for cultural resources within the Project APE, no further management recommendations are necessary beyond standard measures to address inadvertent discoveries of archaeological resources and human remains (see below). Should any Native American tribal correspondence during consultation result in the identification of tribal cultural resources within the Project APE, the City will consult with Native American tribal representatives to determine if other treatment measures are required.

## 8.2.1 Inadvertent Discovery of Archaeological Resources

All construction personnel and monitors who are not trained archaeologists shall be briefed regarding inadvertent discoveries prior to the start of construction activities. A presentation and handout or pamphlet shall be prepared in order to ensure proper identification and treatment of inadvertent discoveries. The purpose of the Workers Environmental Awareness Program (WEAP) training is to provide specific details on the kinds of archaeological materials that may be identified during construction of the Project and explain the importance of and legal basis for the protection of significant archaeological resources. Each worker shall also learn the proper procedures to follow in the event that cultural resources or human remains are uncovered during ground-disturbing activities. These procedures include work curtailment or redirection, and the immediate contact of the site supervisor and archaeological monitor.

A qualified archaeologist shall be retained and on-call to respond and address any inadvertent discoveries identified during initial excavation in native soil. Initial excavation is defined as initial construction-related earth moving of sediments from their place of deposition. As it pertains to archaeological monitoring, this definition excludes movement of sediments after they have been initially disturbed or displaced by project-related construction. A qualified archaeological principal investigator, meeting the Secretary of the Interior's Professional Qualification Standards, shall oversee and adjust monitoring efforts as needed (increase, decrease, or discontinue monitoring frequency) based on the observed potential for construction activities to encounter cultural deposits or material. The archaeological monitor shall be responsible for maintaining daily monitoring logs.

In the event that archaeological resources (sites, features, or artifacts) are exposed during construction activities for the proposed Project, all construction work occurring within 100 feet of the find shall immediately stop and a qualified archaeologist notified immediately to assess the significance of the find and determine whether or not additional study is warranted. Depending upon the significance of the find, the archaeologist may simply record the find and allow work to continue. If the discovery proves significant under CEQA, additional work such as preparation of an archaeological treatment plan, testing, or data recovery may be warranted.

If monitoring is ultimately required, an archaeological monitoring report shall be prepared within 60 days following completion of ground disturbance. This report shall document compliance with approved mitigation and all monitoring efforts as well as include an appendix with copies of all daily monitoring logs. The final report shall be submitted to the SCCIC.

## 8.2.2 Inadvertent Discovery of Human Remains

In accordance with Section 7050.5 of the California Health and Safety Code, if human remains are found, the County Coroner shall be notified within 24 hours of the discovery. No further excavation or disturbance of the site or any nearby area reasonably suspected to overlie adjacent remains shall occur until the County Coroner has determined, within two working days of notification of the discovery, the appropriate treatment and disposition of the human remains. If the remains are determined to be Native American, the Coroner shall notify the NAHC in Sacramento within 24 hours of the determination. In

accordance with California Public Resources Code, Section 5097.98, the NAHC must immediately notify those persons it believes to be the MLD from the deceased Native American. The MLD shall complete their inspection within 48 hours of being granted access to the site. The MLD shall then determine, in consultation with the property owner, a plan for disposition of the human remains. If no descendants can be identified, the NAHC shall select the representative responsible for the disposition of the remains. All arrangements pertaining to treatment and disposition Native American human remains shall be made in consultation between the MLD/Tribal representative and the landowner.



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# APPENDIX A

## Preparer's Qualifications



# Heather McDaniel McDevitt, RPA

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## Senior Archaeologist and Project Manager

Heather McDaniel McDevitt is an archaeologist and cultural resources lead for Dudek's Santa Barbara office with 15 years' cultural resource management (CRM) experience throughout California and Baja California. Ms. McDaniel McDevitt also serves as Dudek lead human osteologist providing on-call osteological services corporate wide. Ms. McDaniel McDevitt has served as a field supervisor, lab director, principal investigator, and project manager on Phase I, Extended Phase I, Phase II, and Phase III projects conducting surveys, testing, site significance evaluations and recordation, data recovery and laboratory analysis. Her education encompasses archaeology, biological anthropology, and geographic information system (GIS). As a bioarchaeologist, Ms. McDaniel McDevitt combines physical anthropology and archaeology in the study of faunal and human remains to reveal ancient lifeways. Her specific area of GIS research is the use of predictive modeling and remote sensing to better understand settlement and subsistence patterns, which can be used to forecast areas of potential impacts and assist in mitigating damage to cultural resources more efficiently.

Ms. McDaniel McDevitt has worked on projects for the National Park Service, U.S. Environmental Protection Agency, National Aeronautics and Space Administration, U.S. Bureau of Land Management, the Smithsonian Institute, California State Parks, California Department of Transportation, and various private CRM and environmental firms. Ms. McDaniel McDevitt's professional experience in CRM provides significant knowledge and practical experience with state and federal regulations such as the National Environmental Policy Act (NEPA), Section 106 of the National Historic Preservation Act, and the California Environmental Quality Act (CEQA). Ms. McDaniel McDevitt has also served as an adjunct professor at community and state institutions for courses in physical and cultural anthropology, archaeology, and GIS.

## Selected Project Experience

**Pacific Palisades Village Initial Study/Mitigated Negative Declaration, Los Angeles, California.** As Project Manager, responsible for complete project management, facilitation of Pre-Construction Meeting, coordination and supervision of archaeological and paleontological technician crew, as well as document preparation. Conducted Phase 1 Archaeological Investigation, prepared technical report and portions of the MND including a Cultural Landscape Study and Construction Mitigation and Monitoring Treatment Plan.

**Compton Boulevard Over Compton Creek Bridge Project and Wilmington Avenue Bridge Over Compton Creek Bridge Project, City of Compton, Los Angeles County, California.** As Principal Investigator provide oversight and QA/QC of two

### **Education**

*California State University,  
Northridge*

*MA, Public Archaeology*

*MA, GIS (ABT)*

*BA, Anthropology*

### **Certifications**

*Registered Professional  
Archaeologist (RPA)*

*CEQA Training through Advanced,  
Association of Environmental  
Professionals*

*GIS Professional Certificate*

*HAZWOPER Training, Hydrogeologic*

### **Professional Affiliations**

*Society for American Archaeology*

*Society for California Archaeology*

*American Anthropological  
Association*

*American Institute of Archaeology*



separate archaeological Survey reports for projects involving the replacement of two existing two-span, steel-girder Compton Boulevard Bridge and Wilmington Avenue Bridge with new two-span, pre-cast concrete bridges over both Compton Boulevard and Wilmington Avenues. Responsible for ensuring studies for this undertaking were carried out in a manner consistent with Caltrans' regulatory responsibilities under Section 106 of the National Historic Preservation Act.

**5-Year On-Call Archaeological Services, City of Ventura, California.** As project Manager, currently manages Dudek's contract for the City of Ventura on-call archaeological services including archaeological, historical, and Native American services, including but not limited to monitoring, archaeological record searches, historical research, architectural history, surveys for both prehistoric and historical resources, extended Phase I surveys, test excavations, data recovery, Native American coordination, coordination with the Native American Heritage Commission, AB-52 support, treatment protocols, feasibility/concept plan studies and recommendations, hiring and managing applicable sub consultants and specialty disciplines as required, preparation of management plans, design and implementation of mitigation methods. Potential projects include municipal infrastructure improvements such as domestic water distribution system, sanitary sewer collection system, storm drainage collection system and other undertakings as determined.

**Montecito Water District Emergency Technical, Casitas Water District, Ojai, California.** As Cultural Resources Lead, managed the cultural resources efforts that Dudek performed in support of emergency technical services including intensive ground survey and site inventory in conformance with emergency permit applications related to Montecito Water District's emergency repair of water pipes destroyed or damaged by the catastrophic mudslides commencing January 9, 2018. The purpose of the study was to document cultural resources that may have been affected by the emergency repairs already completed and ongoing. The study tasks for this undertaking were carried out in a manner consistent with FEMA's regulatory responsibilities under Section 106 of the National Historic Preservation Act (36 CFR Part 800). Additional services include permit coordination support and services related to the issuance of permits from the following agencies: US Army Corps of Engineers, Central Coast Regional Water Quality Control Board, and the California Department of Fish and Wildlife. Dudek was able to respond immediately (same day) to the District's request and was able to complete a full site inventory, field survey and assessment letter report in conformance with emergency permit applications within 5 business days.

**High Speed Rail, Archaeological Services, Northern and Central California.** Currently serve as the on call human osteologist. Perform full analysis of all suspect remains discovered during ground disturbances. Perform full analysis of recovered human remains during multiple inadvertent discoveries for determination of sex, age at death, pathology, and minimum number of individuals, etc. Excavated and prepared remains for reburial. Compose resulting technical reports as needed.

**Santa Susana Field Laboratory, Hydrogeologic for the EPA, Boeing, and NASA, Simi Valley, California.** Member of the cultural resources team that designed, managed, and implemented a Cultural Resources Monitoring and Protection Plan for the Radiological Characterization Investigation conducted by Hydrogeologic on behalf of the EPA and the United States Department of Energy. Conducted cultural resources assessments in the form of monitoring, survey, and field recordation. Served as project cartographer by creating a mapping strategy and style for more than 130 archaeological sites; trained and supervised a crew for consistent mapping and recordation of sites within the project area; and developed GIS and high quality, precisely scaled hand-drawn maps.

**On-Call Countrywide Archaeological Services, County of Santa Barbara, Flood Control and Water Conservation District, Santa Barbara, California.** As project manager, currently manages Dudek's on-call archaeological, historical, and Native American services, including, but not limited to, monitoring, archaeological record searches, historical research, architectural history, surveys for both prehistoric and historical resources, extended Phase I surveys, test excavations, data recovery, Native American coordination, coordination with the Native American Heritage Commission, Assembly Bill 52 support, treatment protocols, feasibility/concept plan studies and recommendations, hiring and management of applicable subconsultants and specialty disciplines as required, preparation of management plans, and design and implementation of mitigation methods.

# Linda Kry

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## Lead Archaeologist

Linda Kry is an archaeologist with over 14 years' experience in cultural resource management specializing in various aspects of cultural resources investigations within Southern and Central California. Ms. Kry's experience includes archival research, reconnaissance surveys, artifact analysis, assisting CEQA lead agencies with Assembly Bill 52 and Senate Bill 18 notification and consultation process, and authoring technical reports pursuant to CEQA and Section 106 of the NHPA. Ms. Kry's extensive experience includes the management of cultural resources specialists in support of various aspects of cultural resources compliance, construction monitoring, Native American consultation, archaeological testing and treatment, and prehistoric and historical resource significance evaluations.

### **Education**

*University of California, Los Angeles  
BA, Anthropology, 2006*

*Cerritos College  
AA, Anthropology, 2004*

### **Certifications**

*Registered Archaeologist (RA)*

### **Professional Affiliations**

*Society for California Archaeology*

*Society for Historical Archaeology*

## Selected Project Experience

**1225 Cliff Drive Project, City of Laguna Beach, Orange County, California.** As Project Manager, conducted and managed a cultural and paleontological Phase I study in support of the proposed development for the subject property.

**Protea Memory Care Facility Project, City of San Juan Capistrano, Orange County, California.** Technical lead for a Phase I cultural resources study in accordance with CEQA and subject to California Assembly Bill 52 and Senate Bill 18, in support of a project that proposes to construct a 59-unit (72-bed) memory care facility.

**Crowther Sewer Pipeline Project, City of Placentia, Orange County, California.** Archaeological lead for a cultural resources study pursuant to CEQA. The project involves the upsizing of the existing sewer on Crowther Avenue, Placentia Avenue, and Orangethorpe Avenue.

**3175 Ball Road Apartments Project, City of Anaheim, Orange County, California.** Archaeological lead for a cultural resources study pursuant to CEQA. The project involves the construction of an 11-unit, 3-story apartment building.

**Chapman University Specific Plan Amendment Project, City of Orange, Orange County, California.** Archaeological lead for a cultural resources study pursuant to CEQA in support of an environmental document. The project would include the adaptive re-use of the Killefer School with the potential to alter, expand, and/or reconstruct the existing ancillary buildings to be used for research, and/or offices for faculty and administration.

**Orange County Fire Authority, City of Tustin, Orange County, California.** Archaeological lead for a cultural resources study pursuant to CEQA. The project involves the construction of various fire training structures and restroom/shower and dorm facilities and installation of modular classrooms, lighting, landscaping, and associated circulation drive aisles and pedestrian connectivity (e.g., pedestrian bridge) and parking.

**Compton Boulevard over Compton Creek Bridge Replacement Project, Los Angeles County of Public Works, City of Compton, Los Angeles County, California.** Archaeological lead for a cultural resources study pursuant to CEQA and Section 106 of the National Historic Preservation Act (NHPA) and in conformance with Caltrans requirements. As

archaeological lead, tasks include coordination for a cultural resources study, including AB 52 consultation support, and preparation of an Archaeological Survey Report (ASR).

**River Supply Conduit Unit 7 Project, LADWP, Cities of Los Angeles and Burbank, Los Angeles County, California.** Technical lead and monitoring coordinator for the River Supply Conduit (RSC) Unit 7 Project. The existing River Supply Conduit (RSC) is a major transmission pipeline in the LADWP water distribution system. The Project is critical to meet safety of water supplies, reliability of water infrastructure, and sustainability of water supply.

**Haynes Generating Station Demolition Project, LADWP, City of Long Beach, Los Angeles County, California.** Archaeological lead and monitoring coordinator. The project included the demolition of Units 3, 4, 5, and 6 at the Haynes Generating Station (HnGS), which were originally constructed more than five decades ago, to minimize health and safety risks and reduce future maintenance.

**Century Trunk Line Project, Los Angeles County Department of Public Works, City of Inglewood, Los Angeles County, California.** Archaeological lead and monitoring coordinator. The project involves replacement a trunk line due to the deteriorated condition of the existing water line.

**Old Topanga Road Over Old Topanga Creek Bridge Maintenance Repair Project, Los Angeles County Department of Public Works, Val Verde Area of Unincorporated Los Angeles County, California.** Archaeological lead for a cultural resources study pursuant to CEQA in support of a Mitigated Negative Declaration. Tasks include Assembly Bill (AB) 52 consultation support to identify known tribal cultural resources within the project's proposed Area of Potential Effect (APE) to analyze the potential impacts to cultural resources and provide mitigation to a less than significant level.

**February 2019 Storm Repair Project, Los Angeles County Department of Public Works, Malibu, California.** Archaeological lead responsible for managing the cultural resources inventory and assessment of cultural resources within the project area in support of emergency guardrail replacement work in the Woolsey Fire burn area. Responsibilities also include coordinating Native American monitoring needs for the project.

**FLOR 401 E 7<sup>th</sup> Street Construction Monitoring, Skid Row Housing Trust, City of Los Angeles, Los Angeles County, California.** Project manager for construction monitoring for the development of 99 units of permanent supportive housing for homeless veterans and/or special needs populations, and affordable housing for low-income individuals in Downtown Los Angeles.

**Woolsey Fire Guardrails Replacement Project, Los Angeles County Department of Public Works, Malibu, California.** Archaeological lead responsible for managing the cultural resources inventory and assessment of cultural resources within the project area in support of emergency guardrail replacement work in the Woolsey Fire burn area.

**Palmetto Street Project, City of Los Angeles, Los Angeles County, California.** Conducted GPR testing for the Project to determine the location of the zanja system subsurface within the Project site to provide appropriate recommendations in support Project needs. Responsibilities included providing management oversight and reporting for a TCR report and an archaeological assessment/GPR report for the Project. Studies prepared are in support of the impact analysis for archaeological and tribal cultural resources in the CEQA document.

**Buena Vista Project, City of Los Angeles, Los Angeles County, California.** Archaeological lead for a cultural resources study pursuant to CEQA. The project footprint includes the mapped alignment of the Zanja Madre network, a series of interconnected historic-era irrigation system that was established during the 1700s and discontinued in the early 1900s. The study included the use of a ground-penetrating radar (GPR) to locate the presence of the Zanja Madre within the Project's footprint. Conducted a GPR survey and contributed to the reporting of the GPR results and the impacts analysis for cultural resources in the CEQA document.

# Kira Archipov

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## Paleontological and Archaeological Technician I

Kira Archipov is an archeological field technician with a background in both paleontology and geology. Her undergraduate research focuses on microfossils found in the Chuar Group in Utah and their relation to total organic Carbon levels. She has participated in various archeological surveys as well as Phase I, Phase II, and Phase III archeological investigations. Miss Archipov is cross-trained as an archeological and paleontological monitor. Her interests include Pre-Cambrian life, paleoecology, and radiometric dating. She has over 1 year of experience in her field.

### **Education**

*University of California, Santa Barbara*

*BS, Earth Science (Paleobiology emphasis), June 2019*

## Project Experience

### Orange County

**Chapman University – Reporting Support, Orange, California.** Archaeological Letter Report completed in accordance with CEQA and Orange County, consisting of records search, literature review, pedestrian survey, and NAHC Sacred Lands File search. Conducted background research regarding historic aerial photographs and topographic maps.

**Orange County Fire Authority – Reporting Support, Tustin, California.** Cultural Resources technical report consisting of an archival record search, pedestrian survey, and NAHC Sacred Lands File search. Conducted background research regarding previous archaeological reports and resources.

### Los Angeles County

**1000 Seward Street – Reporting Support, Los Angeles, California.** Conducted Tribal Cultural Resource study consisting of record search, literature review, and NAHC Sacred Lands File search. Conducted background research regarding historic aerial photographs, topographic maps, and Sanborn fire insurance maps.

**1235 Vine Street – Reporting Support, Los Angeles, California.** Conducted Tribal Cultural Resource study consisting of record search, literature review, and NAHC Sacred Lands File search. Conducted background research regarding historic aerial photographs, topographic maps, and Sanborn fire insurance maps.

**1520 Cahuenga Boulevard – Reporting Support, Los Angeles, California.** Conducted Tribal Cultural Resource study consisting of record search, literature review, and NAHC Sacred Lands File search. Conducted background research regarding previous archaeology reports and resources.

**8<sup>th</sup>, Hope, and Grand – Reporting Support, Los Angeles, California.** Conducted Tribal Cultural Resource study consisting of record search, literature review, and NAHC Sacred Lands File search. Conducted background research regarding previous archaeology reports and resources.

**Alameda Street – Reporting Support, Los Angeles, California.** Conducted Cultural Resource Technical study consisting of record search and NAHC Sacred Lands File search. Conducted background research regarding previous archaeology reports and resources.

**Angels Landing – Reporting Support, Los Angeles, California.** Conducted Cultural Resource Technical study consisting of record search, literature review, and NAHC Sacred Lands File search.

**Agoura Village East – Extended Phase I Archaeological Investigation, Agoura Hills, California.** An Extended Phase I Archeological Investigation was conducted in support of a proposed mixed-use development. The scope of work associated with the project, involved a pre-excitation intensive pedestrian survey, subsurface exploratory backhoe trenching, shovel tests pits, and the recordation of all findings for evaluation. Tasks included screening excavated soils for artifacts as well as observe backhoe trenching. Additional tasks included standard operations for shovel test pits.

**Century Trunk Line – Archaeological and Paleontological Monitoring, Los Angeles, California.** As a cross-trained archaeological and paleontological field technician, monitored excavations to ensure construction activities are in compliance under CEQA; monitored installation of new water main, trenching, and potholing. Maintenance of a daily log pursuant to CEQA guidelines and weekly memos updating the client of current status.

**Mirman School – Reporting Support, Los Angeles, California.** Conducted Tribal Cultural Resource study consisting of record search, literature review, and NAHC Sacred Lands File search. Conducted background research regarding previous geotechnical reports.

**NoHo District – Reporting Support, North Hollywood, California.** Conducted Tribal Cultural Resource study consisting of record search, literature review, and NAHC Sacred Lands File search. Conducted background research regarding previous archaeology reports and resources, and Sanborn fire insurance maps.

**Red Rover – Pedestrian Survey and Reporting Support, Acton, California.** Cultural Resources technical report consisting of archival record search, pedestrian survey, literature review, and NAHC Sacred Lands File search. Conducted an intensive-level pedestrian survey, as well as background research regarding historic aerial photographs and topographic maps.

**River Supply Conduit Unit 7 Project - Archeological and Paleontological Monitoring, Los Angeles Department of Water and Power, Los Angeles and Burbank, California.** As a cross-trained archaeological and paleontological field technician, monitored excavations to ensure construction activities are in compliance under CEQA; monitored installation of overflow duct, grading, and compaction of soils. The Project is critical to meet safety of water supplies, reliability of water infrastructure, and sustainability of water supply.

**The Meadows at Sierra Madre – Reporting Support, Sierra Madre, California.** Archaeological Letter Report completed in accordance with CEQA and the County of Los Angeles, consisting of archival record search, literature review, pedestrian survey, and NAHC Sacred Lands File search. Conducted background research regarding previous archaeological reports and resources, as well as historic aerial photographs and topographic maps.

**Whitnall Highway Stormwater Capture – Pedestrian Survey and Reporting Support, North Hollywood, California.** Cultural Resources technical report consisting of an archival record search, pedestrian survey, and NAHC Sacred Lands File search. Conducted intensive-level pedestrian survey, as well as background research regarding historic aerial photographs and topographic maps.

**Young's Arcade – Reporting Support, Los Angeles, California.** Conducted Tribal Cultural Resource study consisting of archival record search, literature review, and NAHC Sacred Lands File search. Conducted background research regarding historic aerial photographs, topographic maps, Sanborn fire insurance maps, as well as previous archaeological reports and resources.



# Jennifer De Alba

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## Archaeologist

Jennifer De Alba is an archaeologist with 4 years' experience in both field and laboratory settings, specializing in archaeological and paleontological monitoring, survey, cataloging and curation preparation, technical writing, and data entry. Ms. De Alba has experience studying early hunter-gatherer cultures and has worked on historic archaeological sites, specifically with the Santa Barbara Trust for Historic Preservation at the Santa Barbara Presidio. She works extensively as a monitor and archaeological technician on numerous sites throughout Ventura, Santa Barbara, San Luis Obispo, and Los Angeles Counties; has assisted in archaeological excavations in Ventura, Kings, Santa Cruz and Santa Barbara Counties, as well as the City of Ojai; conducts background research; and verifies requirements are met for the collection and cataloging of artifacts.

### **Education**

*University of California,  
Santa Barbara  
BA, Cultural Anthropology  
(Archaeology emphasis), History  
Minor, 2016*

*Santa Barbara City College  
AA, Cultural Anthropology, 2010*

## Selected Project Experience

**Chapman University, Orange, California.** Archaeological Letter Report completed in accordance with CEQA and Orange County. The project would include the adaptive re-use of the Killefer School with the potential to alter, expand, and/or reconstruct the existing ancillary buildings to be used for research, and/or offices for faculty and administration.

**Orange County Fire Authority, Tustin, California.** Assisted with a cultural resources study pursuant to CEQA. The project involves the construction of various fire training structures and restroom/shower and dorm facilities and installation of modular classrooms, lighting, landscaping, and associated circulation drive aisles and pedestrian connectivity (e.g., pedestrian bridge) and parking.

**Palmetta Avenue Warehouse, Rialto, California.** Assisted with preparation of a Cultural Resources Technical Report, in compliance with CEQA.

**I-15 Industrial Park, Hesperia, California.** Performed background research for a Cultural Resources Inventory Letter Report.

**Hesperia Commerce Center II, Hesperia, California.** Assisted in the preparation of a Supplemental Cultural Resources Inventory Letter Report, in compliance with CEQA and the City of Hesperia General Plan for cultural resources.

**Banana Avenue Warehouse, Fontana, California.** Assisted in completion of a Cultural Resource Records Search Results Letter.

**Tribal Cultural Resource Report for 1000 Seward Street, Los Angeles, California.** Performed background research for a Tribal Cultural Resource Report, in compliance with CEQA.

**Tribal Cultural Resource Report 1235 Vine Street, Los Angeles, California.** Performed background research for a Tribal Cultural Resource Report, in compliance with CEQA.

**14800 Schulte Road Industrial, San Joaquin County, California.** Performed background research for a Phase I Archaeological Study, in compliance with CEQA.

**Tribal Cultural Resource Report for Artisan Hollywood Project, Hollywood, California.** Performed background research for a Tribal Cultural Resource Report, in compliance with CEQA.

**Agoura Village East Multi-Use Complex Cultural Resource Studies, Agoura Hills, California.** Conducted background research and a field survey on previously recorded archaeological site CA-LAN-41. Assisted in compiling the results of an Extended Phase I investigation.

**Angels Landing, Los Angeles, California.** Performed background research for a Tribal Cultural Resource Report and an Archaeological Resources Report, in compliance with CEQA.

**Arcadia Hotel and Annex Mitigated Negative Declaration, Arcadia, California.** Assisted in the preparation of an Initial Study/Mitigated Negative Declaration, in compliance with CEQA.

**Century Trunk Line, Los Angeles, California.** Assisted in creation of Cultural and Paleontological Resource Mitigation pamphlet and a Workers Education Awareness Program. Compile weekly monitoring memos for Los Angeles Department of Water and Power.

**Compton Boulevard over Compton Creek and Wilmington Avenue over Compton Creek Bridge Replacement, Compton, California.** Assisted in a Cultural Resources Study pursuant to CEQA and Section 106 of the NHPA and in conformance with Caltrans requirements. Tasks included background research for Archaeological Survey Reports (ASR) for each project.

**Creative Offices Specific Plan, Los Angeles, California.** Assisted in the preparation of an Archaeological Resources Assessment, in compliance with CEQA.

**District NoHo, Los Angeles, California.** Performed background research for a Tribal Cultural Resource Report and an Archaeological Resources Report, in compliance with CEQA.

**Escondito Drive at Mile Marker 0.49, Los Angeles County, California.** Assisted with preparation of a Cultural Resources Study Letter Report, in conformance with Section 106 of the National Historic Preservation Act

**Hollywood and Cahuenga, Los Angeles, California.** Performed background research for a Tribal Cultural Resource Report and an Archaeological Resources Report, in compliance with CEQA.

**LA Spring Street, Los Angeles, California.** Performed background research for a Tribal Cultural Resource Report and an Archaeological Resources Report, in compliance with CEQA.

**MetroWalk Development, Santa Clarita, California.** Assisted with preparation of a Cultural Resources Inventory Report, in compliance with CEQA.

**Rialto Energy Storage, Rialto, California.** Assisted in preparations of a Cultural and Paleontological Resources Report, in compliance with CEQA.

**Pacific Palisades Village 1, CAH Acquisitions Co. LLC, Pacific Palisades, California.** Provided archaeological and paleontological monitoring for the large mixed-use project in accordance with the monitoring and mitigation treatment plan stated in the environmental impact report.

# APPENDIX B

CONFIDENTIAL

CHRIS Records Search Results





# APPENDIX C

## NAHC SLF Search Results



STATE OF CALIFORNIA

Gavin Newsom, Governor

## NATIVE AMERICAN HERITAGE COMMISSION

October 22, 2020

Jon Sanks  
Anaheim Public Utilities

Via Email to: [jsanks@anaheim.net](mailto:jsanks@anaheim.net)

**Re: Anaheim Public Utilities – Site A Project, Orange County**

Dear Mr. Sanks:

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: [Andrew.Green@nahc.ca.gov](mailto:Andrew.Green@nahc.ca.gov).

Sincerely,



Andrew Green  
Cultural Resources Analyst

Attachment



CHAIRPERSON  
**Laura Miranda**  
Luiseño

VICE CHAIRPERSON  
**Reginald Pagaling**  
Chumash

SECRETARY  
**Merri Lopez-Keifer**  
Luiseño

PARLIAMENTARIAN  
**Russell Attebery**  
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COMMISSIONER  
**Marshall McKay**  
Wintun

COMMISSIONER  
**William Mungary**  
Paiute/White Mountain  
Apache

COMMISSIONER  
**Julie Tumamait-Stenslie**  
Chumash

COMMISSIONER  
[Vacant]

COMMISSIONER  
[Vacant]

EXECUTIVE SECRETARY  
**Christina Snider**  
Pomo

**NAHC HEADQUARTERS**  
1550 Harbor Boulevard  
Suite 100  
West Sacramento,  
California 95691  
(916) 373-3710  
[nahc@nahc.ca.gov](mailto:nahc@nahc.ca.gov)  
[NAHC.ca.gov](http://NAHC.ca.gov)

STATE OF CALIFORNIA

Gavin Newsom, Governor

## NATIVE AMERICAN HERITAGE COMMISSION

October 22, 2020

Jon Sanks  
Anaheim Public Utilities

Via Email to: [jsanks@anaheim.net](mailto:jsanks@anaheim.net)

**Re: Anaheim Public Utilities – Site B Project, Orange County**

Dear Mr. Sanks:

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 positive. Please contact the Juaneno Band of Mission Indians Acjachemen Nation - Belardes on the attached list for more information. 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: [Andrew.Green@nahc.ca.gov](mailto:Andrew.Green@nahc.ca.gov).

Sincerely,



Andrew Green  
Cultural Resources Analyst

Attachment



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## NATIVE AMERICAN HERITAGE COMMISSION

October 22, 2020

Jon Sanks  
Anaheim Public Utilities

Via Email to: [jsanks@anaheim.net](mailto:jsanks@anaheim.net)

**Re: Anaheim Public Utilities – Site C Project, Orange County**

Dear Mr. Sanks:

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: [Andrew.Green@nahc.ca.gov](mailto:Andrew.Green@nahc.ca.gov).

Sincerely,



Andrew Green  
Cultural Resources Analyst

Attachment



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STATE OF CALIFORNIA

Gavin Newsom, Governor

## NATIVE AMERICAN HERITAGE COMMISSION

October 22, 2020

Jon Sanks  
Anaheim Public Utilities

Via Email to: [jsanks@anaheim.net](mailto:jsanks@anaheim.net)

**Re: Anaheim Public Utilities – Site D Project, Orange County**

Dear Mr. Sanks:

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: [Andrew.Green@nahc.ca.gov](mailto:Andrew.Green@nahc.ca.gov).

Sincerely,



Andrew Green  
Cultural Resources Analyst

Attachment



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VICE CHAIRPERSON  
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**Appendix D**  
Geotechnical Reports



**Orange County**

17782 Georgetown Lane  
Huntington Beach, California 92647  
Tele: (714) 375-3830  
Fax: (714) 375-3831

**San Bernardino County**

14163 Arrow Boulevard  
Fontana, California 92335  
Tele: (909) 284-9200  
Fax: (909) 284-9201

---

**GEOTECHNICAL DATA REPORT  
PFAS-GWTPS PROJECT  
NEW WATER TREATMENT FACILITY  
BOYSEN PARK SITE  
951 SOUTH STATE COLLEGE BOULEVARD  
ANAHEIM, CA  
AESCO PROJECT NO. 20200905-F8949**

**Prepared for:**

**City of Anaheim  
200 South Anaheim Boulevard  
Anaheim, CA 92805**

**Attention: Mr. Joel Jordan, Construction Project Manager**

**Prepared By:**

**AESCO  
17782 Georgetown Lane  
Huntington Beach, California 92647**

**Adam Chamaa, P.E., Manager**

**September 3, 2020  
Revised October 29, 2020**

**Orange County**

17782 Georgetown Lane  
Huntington Beach, California 92647  
Tele: (714) 375-3830  
Fax: (714) 375-3831

**San Bernardino County**

14163 Arrow Boulevard  
Fontana, California 92335  
Tele: (909) 284-9200  
Fax: (909) 284-9201

---

September 3, 2020

Revised October 29, 2020

Mr. Joel Jordan, Construction Project Manager  
City of Anaheim  
200 South Anaheim Boulevard  
Anaheim, CA 92805

**Subject: Geotechnical Data Report  
PFAS – GWTPs Project  
Water Treatment Facility  
Boysen Park Site  
951 South State College Boulevard  
Anaheim, California  
AESCO Project No. 20200905-F8949**

Dear Mr. Jordan:

AESCO is pleased to provide you the geotechnical data report for the proposed new water treatment facility to be constructed at the subject site.

AESCO will be happy to assist you further on this project by furnishing any Construction Materials Testing and Inspection Services you may require during the construction phase of the project. We are a full service-testing laboratory and inspection service and can supply the full range of testing and inspection services such as soils, concrete, asphalt, steel, welding, etc. that may be necessary for construction of this project.

Please do not hesitate to contact us if you have any questions or if we may be of any additional assistance. We look forward to assisting you during the construction of the proposed facility.

Sincerely,

**AESCO, Inc.**

Debra L. Perez  
Project Manager

Adam Chamaa, P.E., G.E.

Adam Chamaa, PE, GE  
Engineering Manager

Russell J. Scharlin, P.E., G.E.  
Senior Geotechnical Engineer



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Project No. 20200905-F8369  
Boysen Park Site

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Appendix

Site Plan

Logs of Borings B-1 and B-2

Laboratory Test Data

Seismic Design Data

# SECTION ONE

## Introduction

---

**Geotechnical Data Report  
PFAS – GWTPs Project  
New Water Treatment Facility  
Boysen Park Site  
951 South State College  
Anaheim, California**

This report (authorized by the City of Anaheim), presents the results of a geotechnical investigation performed by AESCO for a proposed water treatment facility to be installed at Boysen Park at 951 South State College, Anaheim, California. The exact location of the water treatment facility has not been determined at this time. The site of the proposed facility is shown on the Site Plan, Figure 1.

We understand that the new facility will consist of a new water treatment plant and appurtenances. Dimensions of the facility were not available at this time.

The purpose of this study was to provide geotechnical data to better understand the site conditions at either location. The scope of our services included the following:

- Coordinating site access for the field investigation;
- Obtaining utility clearances for the field investigation;
- Performing a ground penetrating radar (GPR) study at the site;
- Performing geotechnical drilling and sampling at the site;
- Performing laboratory testing of representative samples;
- Conducting a seismic hazards screening; and
- Preparing this report.

This report summarizes our findings and presents geotechnical data to better understand existing site conditions.

## SECTION TWO

## Field Investigation and Laboratory Testing

---

### 2.1 FIELD INVESTIGATION

Prior to performing the field investigation, a Ground Penetrating Radar (GPR) survey was performed in the work areas to identify the location, direction and depth of existing underground utilities. The locations and depths of the utilities were marked on the ground and the boring locations were adjusted, as required, to avoid damaging the utilities during drilling.

A field investigation was conducted at the site on August 17, 2020 to obtain information on the subsurface conditions. Two borings were drilled with a hollow stem auger drill rig to a depth of 25 feet below the existing ground surface. The borings were placed on the north side of the tennis courts. Boring B-1 was drilled at the west side of the site and B-2 was drilled on the east side. The boring locations are shown on the Site Plan, Figure 1. The site plan is based on an aerial plot from Google Earth. AESCO's Geotechnical Engineer, Mr. Adam Chamaa, P.E., G.E., supervised the utility marking and the drilling operations. Mr. Chamaa met with the utility companies identified within the work area to mark the locations of underground utilities. The GPR study confirmed the locations and depths of underground utilities. AESCO personnel logged the borings and visually classified and collected samples of the subsurface materials encountered in the borings. The borings were backfilled with cuttings. The Logs of Borings B-1 and B-2 are presented in the attached Appendix.

Drive samples were taken in the borings using either a Standard Penetration Test (SPT) or Modified California (MC) sampler. The sampler was driven 18 inches into the bottom of the boreholes using a 140-pound hammer falling a distance of 30 inches. The MC sampler barrel was lined with stainless steel liners to collect relatively undisturbed soil samples. All of the samples were sealed and packaged to help preserve the natural moisture content and to protect them from further disturbance.

### 2.2 LABORATORY TESTING

All testing was performed in accordance with ASTM Standards and California Test Methods. Laboratory testing performed in our Huntington Beach, California geotechnical laboratory consisted of water content (ASTM D4959), dry density (ASTM D2937), direct shear ASTM D3080), and washed sieve analysis (ASTM D1140). Results of the laboratory tests are summarized on the Boring Log and are included in the attached Appendix. Chemical analyses, including pH (ASTM D1293), soluble sulfates (CT417), soluble chlorides (CT422), and minimum resistivity (CT 643) were also performed. Results are presented in Section 4.10.

## SECTION THREE

## Site Conditions

---

### 3.1 REGIONAL GEOLOGIC SETTING

The project site is located in Anaheim, California, within the southern portion of the Los Angeles basin, in the transition between the northern portion of the Peninsular Ranges physiographic province and the southern portion of the Transverse Ranges physiographic province. The project area is considered to be within the Transverse Ranges physiographic province by Norris and Webb (1990) and within the Peninsular Ranges physiographic province by Yerkes et al. (1965). These two physiographic provinces have contrasting tectonic characteristics that overlap within the Los Angeles basin resulting in a complex tectonic environment marked by active faulting and historic seismicity. Geologic materials at the ground surface in the vicinity of the site consist of Quaternary alluvial sediments deposited by the Santa Ana River or its tributaries.

### 3.2 SITE AND SUBSURFACE CONDITIONS

The proposed facility will be located on the north side of the tennis courts at Boysen Park in the City of Anaheim. The site is relatively flat and is covered with bare ground. Existing underground utilities may be present within the site boundary.

The material encountered within boring B-1 consisted of loose to medium dense silty sand with slight clay to a depth of 8 feet, medium dense sand to a depth of 13 feet, medium dense silty sand to a depth of 18 feet, and medium dense to very dense sand to the total depth drilled of 25 feet below the existing ground surface. The material encountered in boring B-2 consisted of medium dense silty sand with slight clay to a depth of 8 feet, medium dense sand/silty sand to a depth of 13 feet, and medium dense to very dense sand to the total depth drilled of 25 feet.

Groundwater was not encountered within the borings. Based on regional data, groundwater is anticipated to occur at a depth greater than 50 feet (CGS, 1997). The depth to groundwater may fluctuate, depending on rainfall and possible groundwater recharge or pumping activity in the site vicinity.

#### 4.1 SEISMIC DESIGN

A seismic hazards screening was performed for this site to evaluate potential seismic hazards. The seismic hazards screening consisted of reviewing available data published by the California Geological Survey (CGS), the 2019 California Building Code (CBC), the ATC Council, and the 2018 International Building Code (IBC). The site is located in the United States Geological Survey Anaheim Quadrangle. Data reviewed yielded the following Seismic Parameters:

Site Class	D
Spectral Response ‘Ss’	1.478g
Spectral Response ‘SMs’	1.478g
Spectral Response ‘S1’	0.523g
Spectral Response ‘SM1’	null

Data published by the USGS was reviewed. Results of the fault search are presented in the Appendix. A listing of faults within 100 miles of the site is also included. The search indicates that the Puente Hills (Coyote Hills) fault is 3.65 miles from the site.

The CGS (CDMG, 2000-003) does not delineate this site as being within an Alquist-Priolo Earthquake Fault Zone. With the active faults in the region, the site could be subjected to future strong ground shaking that may result from earthquakes on local to distant source.

#### 4.2 LIQUEFACTION POTENTIAL

Liquefaction is a mode of ground failure that results from the generation of high pore water pressures during earthquake ground shaking, causing loss of shear strength. Liquefaction is typically a hazard where loose sandy soils exist below groundwater. The CGS has designated certain areas within southern California as potential liquefaction hazard zones. These are areas considered at a risk of liquefaction-related ground failure during a seismic event, based upon mapped surficial deposits and the presence of a relatively shallow water table. Materials encountered at the project site generally consist of loose to very dense granular material. The project site is not located within a mapped liquefaction hazard zone as designated by the CGS (1998). Groundwater was not encountered within the borings which were drilled to a depth of 25 feet beneath the existing ground surface. Based on regional data, groundwater is anticipated to occur at a depth of approximately 50 feet (CGS, 1997). Based on our investigation, we



conclude that the potential for liquefaction at the site is low. Other geologic hazards related to liquefaction, such as lateral spreading, are therefore also low.

#### 4.3 EXISTING UTILITIES

The proposed new facility may be located at and near other existing utilities. Care should be exercised not to disturb the existing utilities and to support them during construction if they will be reused and will not be abandoned.

#### 4.4 SOIL CORROSIVITY

The results of pH, soluble chloride and soluble sulfate laboratory tests on a sample of the near surface soils are summarized in the following table:

Soil Test	Test Results	Corrosion Potential
Soluble Sulfates (per CA 417)	6 ppm	Mild sulfate attack on concrete.
Soluble Chlorides (per CA 422)	150 ppm	Very corrosive potential to buried ferrous metals
pH	8.9	Severe corrosion potential to buried ferrous metals

Concrete should be designed in accordance with the 2019 CBC, ACI 318 Section 4.3, Table 19.3.2.1 (2017).

The test results indicate that the on site soils can be classified as severe corrosive potential to buried metallic structures (e.g. pipes).

## 5.0 LIMITATIONS

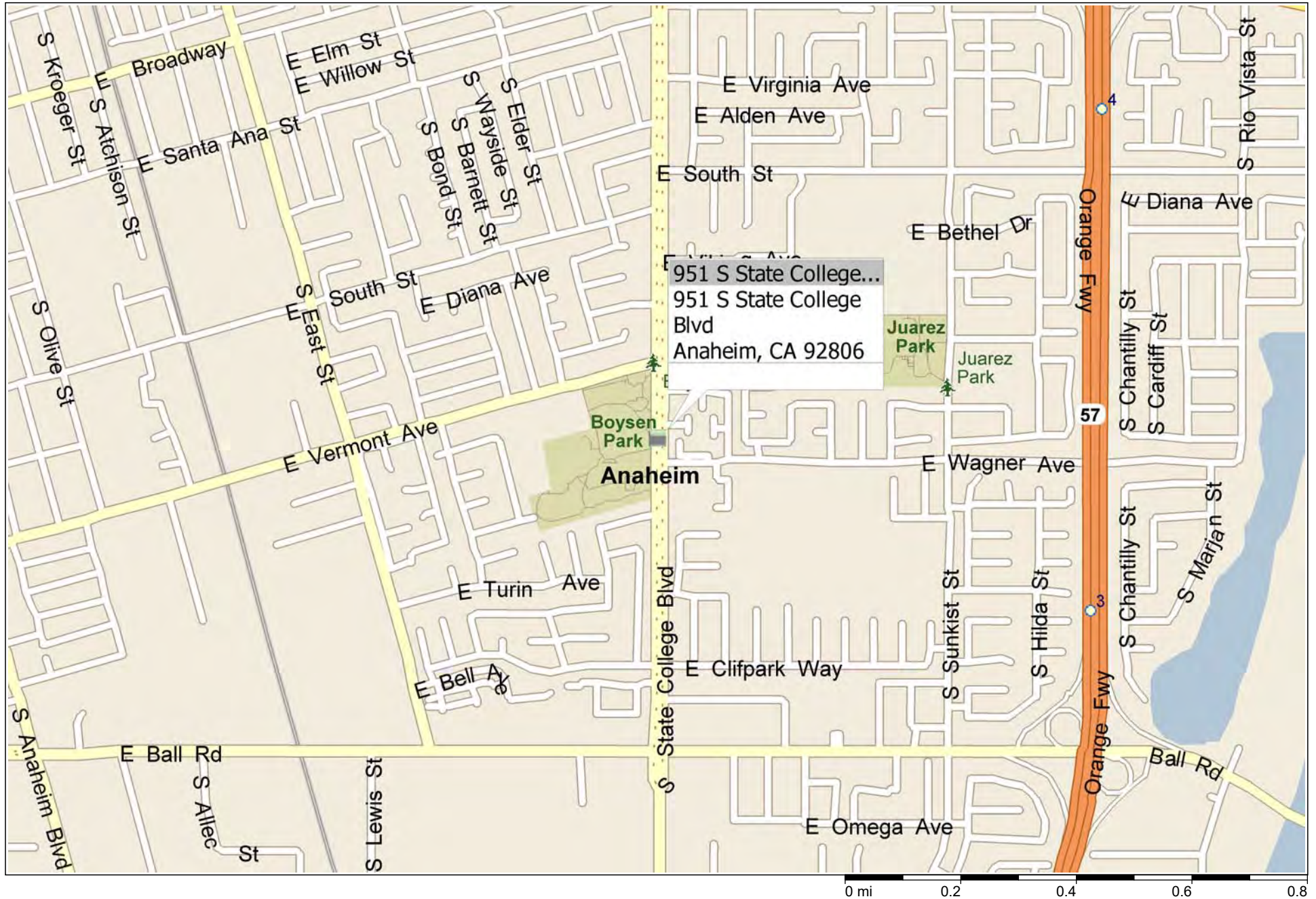
It must be recognized that conclusions reached in this report are based on conditions, which exist at the boring location. In any subsoil investigation, it is necessary to assume that the subsoil conditions between boring(s) do not change significantly. The number of the borings, locations, and spacing are chosen as per the client's direction and available budget. Note that the boring(s) were placed as close to the location of the proposed structure(s) as possible. The boring locations are approximate and surveying is beyond the scope of our work. Consequently, careful observations must be made during construction to detect significant deviations of actual conditions throughout the construction area from those inferred from the exploratory borings.

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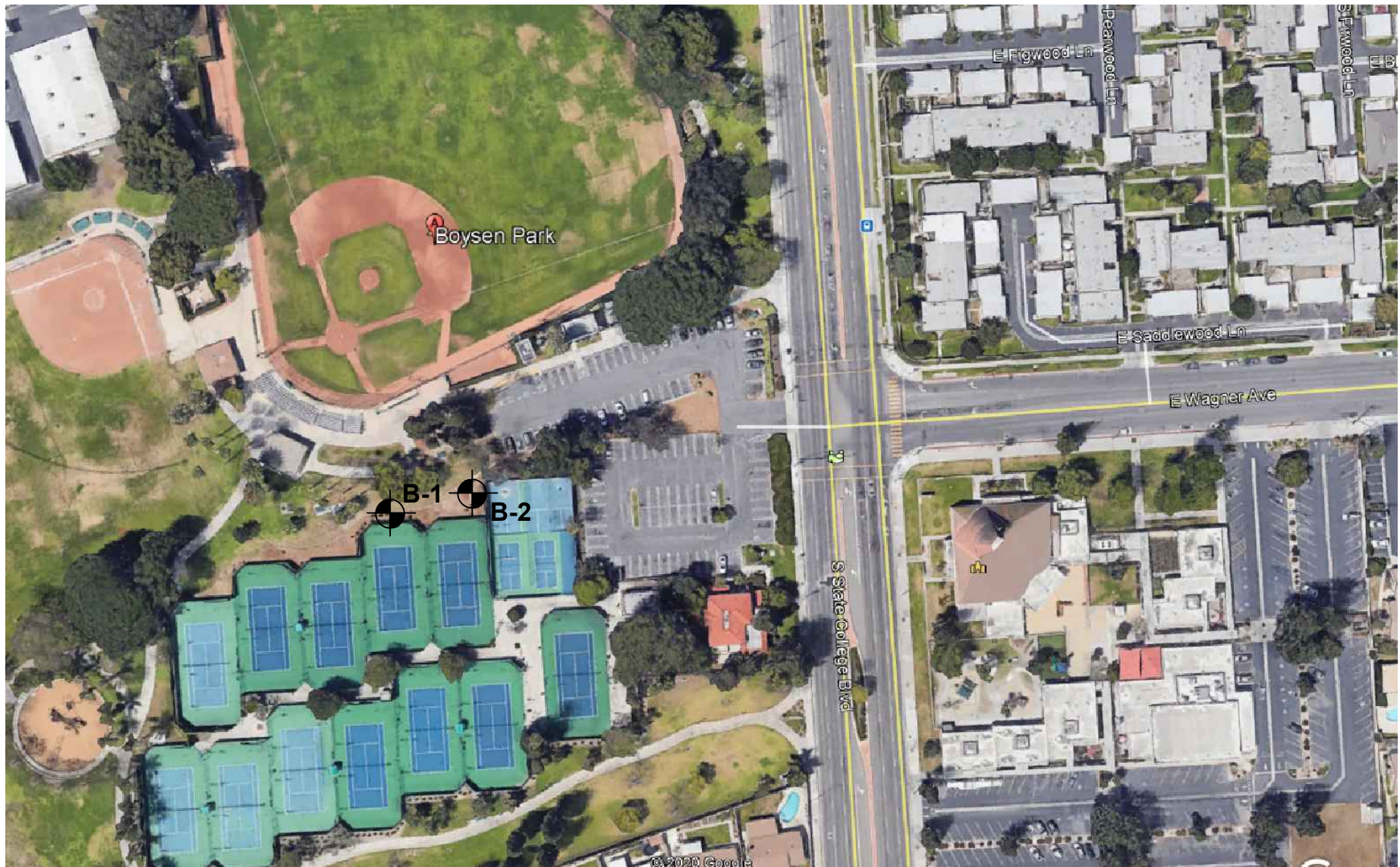
## **APPENDIX**

## **SITE PLAN**

## New Microsoft Streets and Trips map







## LEGEND

 B-1 Approximate Location of Borings



### Anaheim

Project No. : 20200905-F8369

Site Name: Boysen Park Site

Site Address: 951 South State College Boulevard, Anaheim, CA

## SITE PLAN

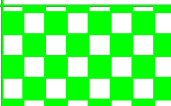
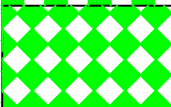
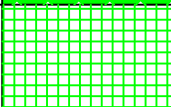
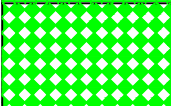
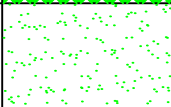
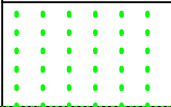

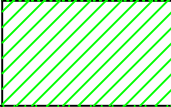
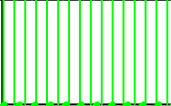
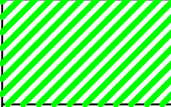

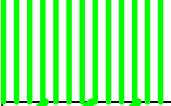
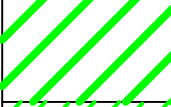
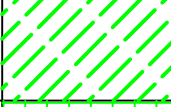

Scale: 1 inch  $\approx$  130 feet

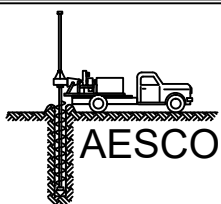
Date: 8-20-20

Figure 1

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**APPENDIX**  
**LOGS OF BORINGS B-1 and B-2**




MAJOR DIVISION			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVEL (LITTLE OR NO FINES)		GW	WELL GRADED GRAVELS, GRAVEL SAND MIXTURES, LITTLE OR NO FINES	
				GP	POORLY GRADED GRAVELS, GRAVEL SAND MIXTURES, LITTLE OR NO FINES	
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL SAND SILT MIXTURE	
				GC	CLAYEY GRAVELS, GRAVEL SAND CLAY MIXTURES	
	MORE THAN 50% BY WEIGHT OF MATERIAL IS LARGER THAN 200 SIEVE	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
					SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINE (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
					SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT <50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR 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		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS	
				CH	INORGANIC CLAYS OF HIGH PLATICITY, FAT CLAYS	
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
HIGHLY ORGANIC SOILS				PT	PEAT, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	




## UNIFIED SOIL CLASSIFICATION SYSTEM

### KEY



-  Split Spoon Sample (SPT)
-  California Modified Sample
-  Hand Auger Sample

-  Ground Water Level
- N** SPT Blows/ft
- P** Penetrometer TSF

LOG OF BORING NO. B - 1														AESCO	
Project: Boysen Park Well Site										Location: 951 South State College Boulevard Anaheim, CA				WATER: Not Encountered	
Client: City of Anaheim										Logger:				DRILLING:	
Date: 08/17/20										Project No. 20200905-F8369				Hollow Stem Auger	
FIELD DATA		TESTS												DESCRIPTION OF STRATUM	
SOIL SYMBOL	DEPTH (FT)	N= T= P=	MOISTURE CONTENT %	DRY DENSITY PCF	LIQUID LIMITS %	PLASTIC LIMITS %	PLASTICITY INDEX %	Unconfined Comp.		PASSING 200 SIEVE %	DIRECT SHEAR		RESISTIVITY ohms/cm		
								TSF	Strain %		COHESION PSF	ANGLE Deg			
	3		6.1											Brown silty SAND (SM), moist, w/slight clay  Light brown, loose at 3'  Medium dense at 5'	
	5	N=7	5.8												
	7	N=28	5.2	114.5							0	29			
	8														
	10	N=12	2.0							3.9				Brown SAND (SP), medium dense, dry, medium grained	
	13														
	15	N=21	7.4	117.5							0	30		Light brown silty SAND (SM), medium dense, moist	
	18														
	20	N=26	2.7							4.1				Light gray-brown SAND (SP), medium dense, dry   Very dense, moist at 23'	
	23														
	25	N=50/6*	4.7	102.0											
Boring Terminated at 25 Feet															

TUBE SAMPLE  
 AUGER SAMPLE  
 CALIFORNIA MODIFIED SAMPLER  
 SPLIT SPOON  
 NO RECOVERY

Groundwater Level  
 Hydrostatic Groundwater Level  
 ----- Approximate Division of Soil Type

N= SPT, BLOWS/FT  
 T= THD.BLOWS/FT  
 P= HAND PEN.,TSF

REMARKS:  
 NP: Non Plastic Materials  
 \* Remolded Samples  
 Blow Counts Corrected for California Modified  
 (0.6 multiplier), Auto-Hammer, 8" HAS

SM

SP



LOG OF BORING NO. B - 2														AESCO	
Project: Boysen Park Well Site										Location: 951 South State College Boulevard Anaheim, CA				WATER: Not Encountered	
Client: City of Anaheim										Logger:				DRILLING:	
Date: 08/17/20										Project No. 20200905-F8369				Hollow Stem Auger	
FIELD DATA		TESTS												DESCRIPTION OF STRATUM	
SOIL SYMBOL	DEPTH (FT)	N= T= P=	MOISTURE CONTENT %	DRY DENSITY PCF	LIQUID LIMITS %	PLASTIC LIMITS %	PLASTICITY INDEX %	Unconfined Comp.		PASSING 200 SIEVE %	DIRECT SHEAR		RESISTIVITY ohms/cm		
								TSF	Strain %		COHESION PSF	ANGLE Deg			
	3		4.8											Brown silty SAND (SM), moist, w/slight clay  Medium dense at 3'  Coarse grained at 5'	
	5	N=22	4.2							26.9					
	7	N=13	5.5	119.7							0	30			
	8														
	10	N=13	3.0							10.8				Dark brown SAND/silty SAND (SP/SM), medium dense, dry	
	13														
	15	N=20	2.3	100.7										Gray SAND (SP), medium dense, dry, coarse grained   Moist at 18'   Very dense, dry, medium grained at 23'	
	18														
	20	N=18	4.9							4.4					
	23														
	25	N=50/6*	3.7	102.6											
Boring Terminated at 25 Feet															

TUBE SAMPLE AUGER SAMPLE CALIFORNIA MODIFIED SAMPLER SPLIT SPOON NO RECOVERY	Groundwater Level Hydrostatic Groundwater Level Approximate Division of Soil Type	N= SPT, BLOWS/FT T= THD.BLOWS/FT P= HAND PEN.,TSF	REMARKS: NP: Non Plastic Materials * Remolded Samples Blow Counts Corrected for California Modified (0.6 multiplier), Auto-Hammer, 8" HAS
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**APPENDIX**  
**LABORATORY TEST DATA**



**Orange County**  
17782 Georgetown Lane  
Huntington Beach, California 92647  
Tele: (714) 375-3830  
Fax: (714)375-3831

**San Bernardino County**  
14163 Arrow Boulevard  
Fontana, California 92335  
Tele:(909) 284-9200  
Fax:(909) 284-9201

Site/Client: La Palma

Project No: 20200905-F8369

Boring No: B-1

Depth (ft): 5-7'

$\gamma_d$  (pcf) = 114.5

$C$  (psf) = 0

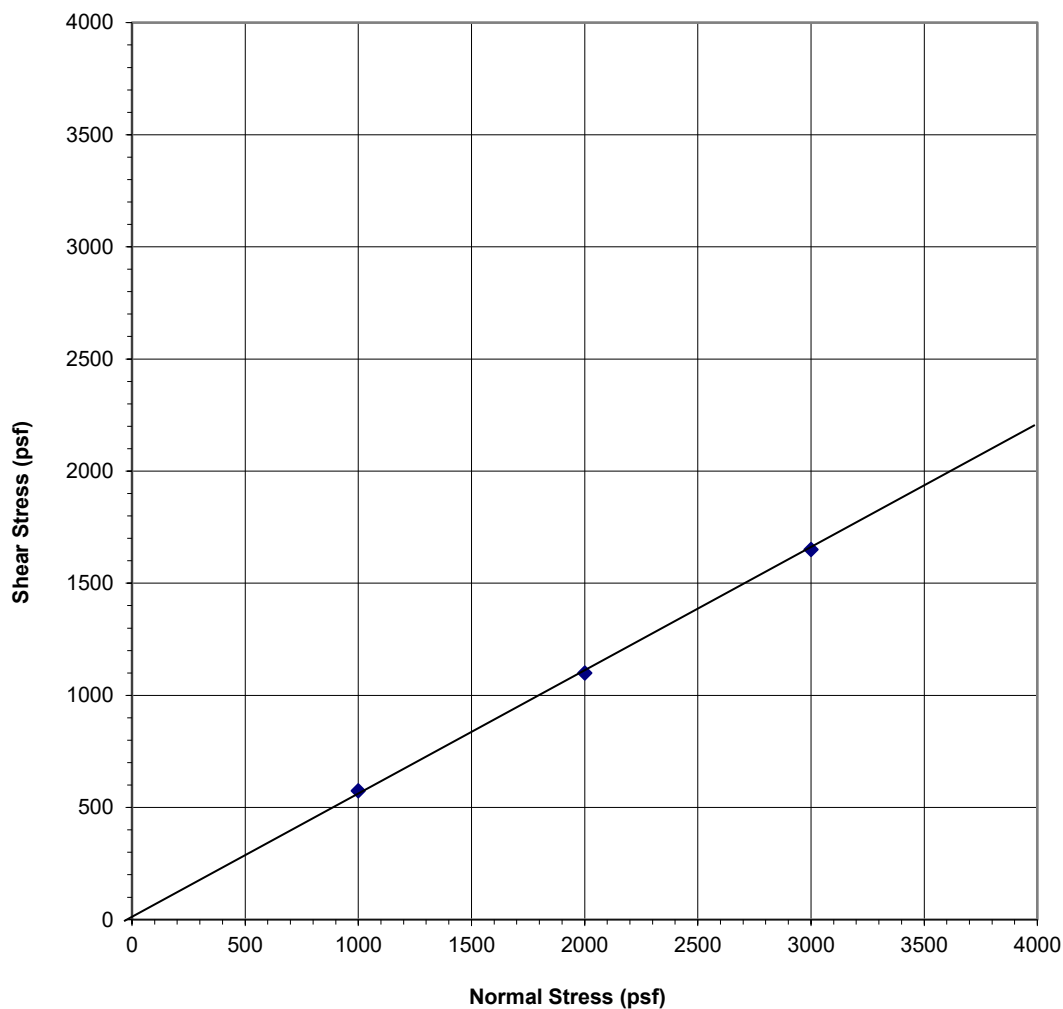
$\phi$  (deg) = 29

$W_{int}$  = 5.2%

Remolded (Y/N): N

Soil Type: SM

### ASTM D3080 Direct Shear Results





**Orange County**  
17782 Georgetown Lane  
Huntington Beach, California 92647  
Tele: (714) 375-3830  
Fax: (714)375-3831

**San Bernardino County**  
14163 Arrow Boulevard  
Fontana, California 92335  
Tele:(909) 284-9200  
Fax:(909) 284-9201

Site/Client: La Palma

Project No: 20200905-F8369

Boring No: B-1

Depth (ft): 13-15'

$\gamma_d$  (pcf) = 117.5

$C$  (psf) = 0

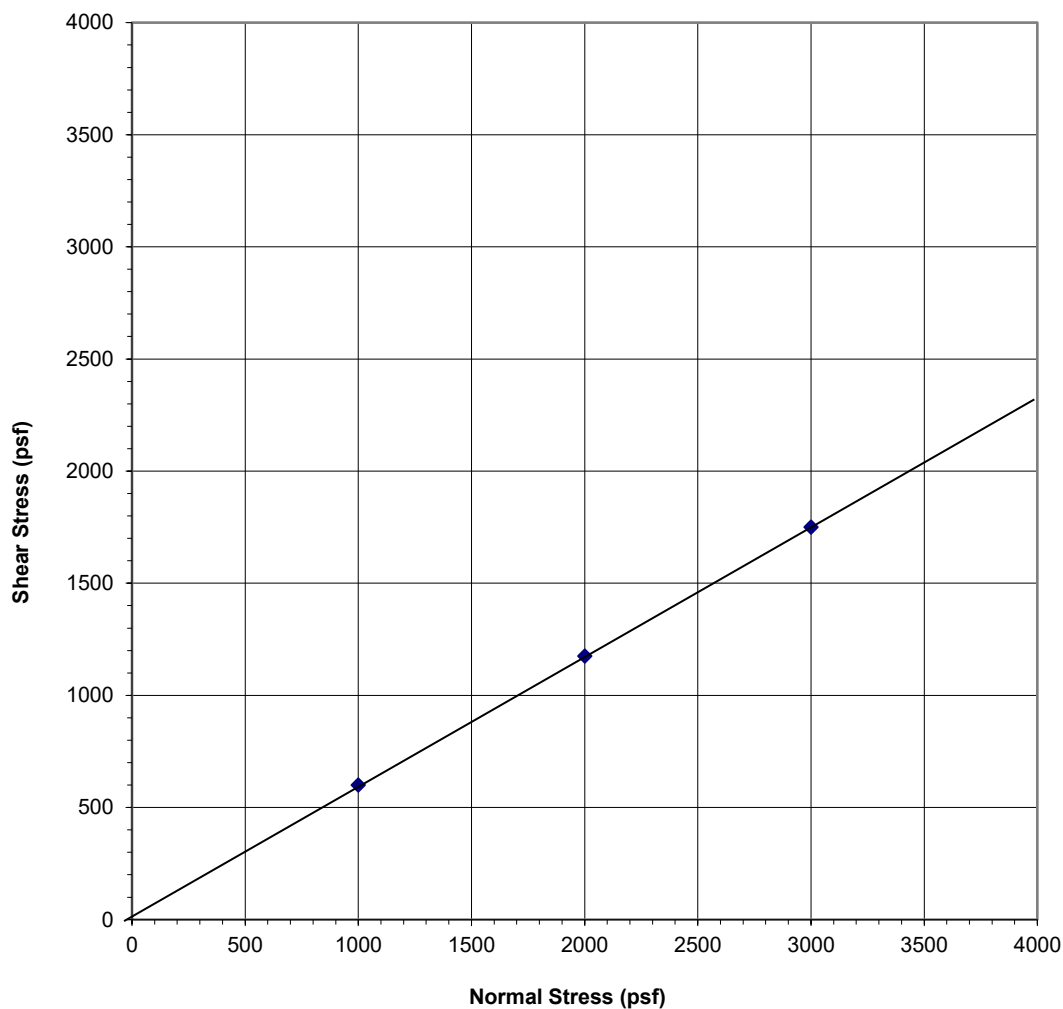
$\phi$  (deg) = 30

$W_{int}$  = 7.4%

Remolded (Y/N): N

Soil Type: SM

### ASTM D3080 Direct Shear Results





**Orange County**  
17782 Georgetown Lane  
Huntington Beach, California 92647  
Tele: (714) 375-3830  
Fax: (714)375-3831

**San Bernardino County**  
14163 Arrow Boulevard  
Fontana, California 92335  
Tele:(909) 284-9200  
Fax:(909) 284-9201

Site/Client: La Palma

Project No: 20200905-F8369

Boring No: B-2

Depth (ft): 5-7'

$\gamma_d$  (pcf) = 119.7

$C$  (psf) = 0

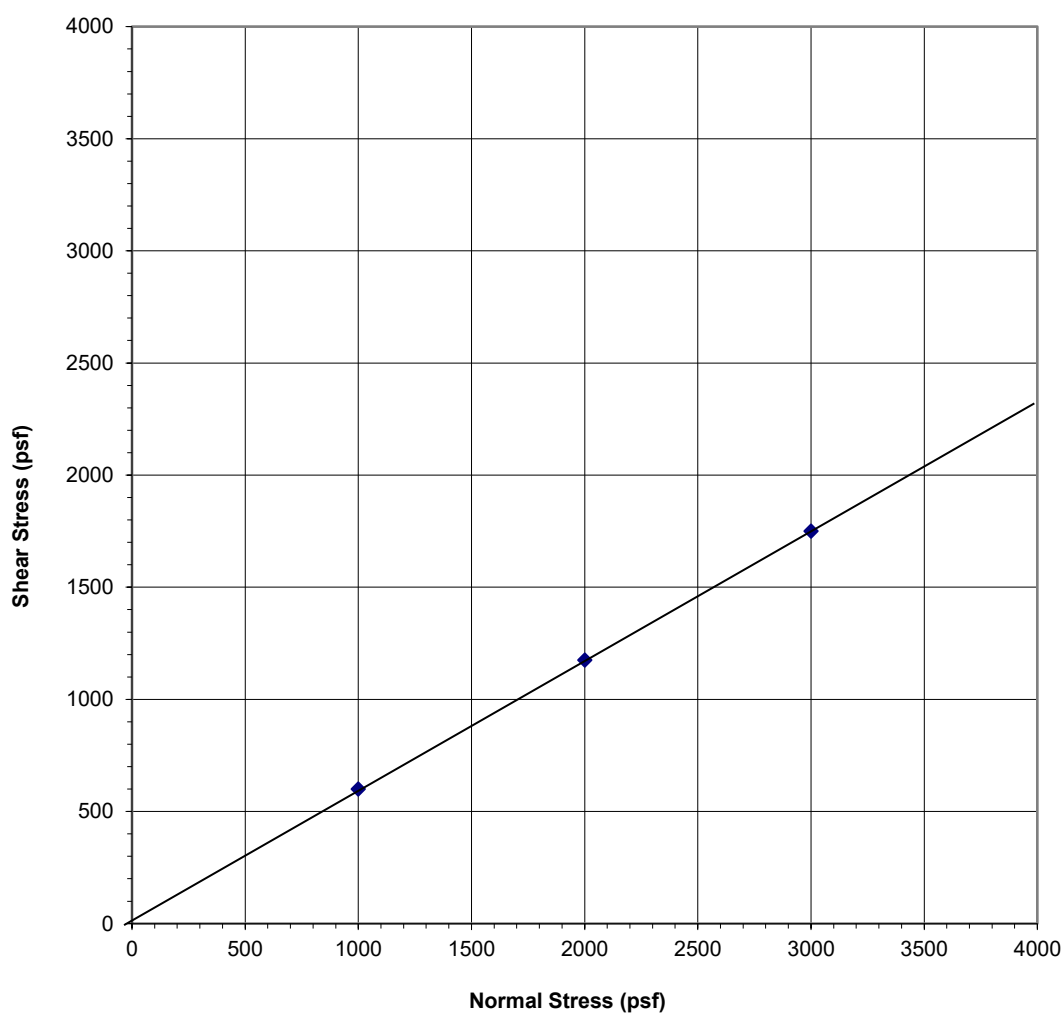
$\phi$  (deg) = 30

$W_{int}$  = 5.5%

Remolded (Y/N): N

Soil Type: SM

### ASTM D3080 Direct Shear Results



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**APPENDIX**  
**SEISMIC DESIGN DATA**

# Unified Hazard Tool



Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the [U.S. Seismic Design Maps web tools](#) (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

## ^ Input

### Edition

Conterminous U.S. 2014 (v4.0.x)

### Spectral Period

Peak Ground Acceleration

### Latitude

Decimal degrees

33.8252

### Time Horizon

Return period in years

2475

### Longitude

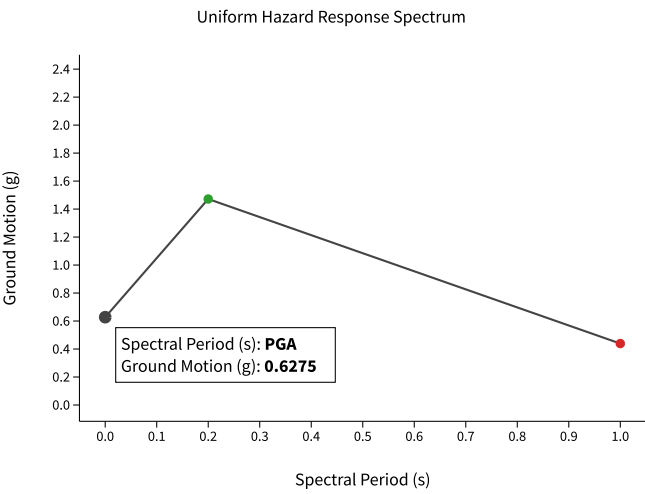
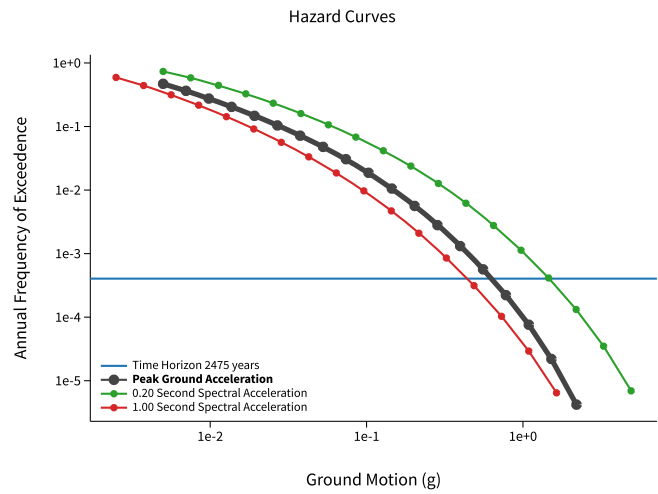
Decimal degrees, negative values for western longitudes

-117.8907

### Site Class

760 m/s (B/C boundary)

^ Hazard Curve



[View Raw Data](#)





## Hazards by Location

### Search Information

<b>Coordinates:</b>	33.8252, -117.8907
<b>Elevation:</b>	171 ft
<b>Timestamp:</b>	2020-09-03T23:10:31.135Z
<b>Hazard Type:</b>	Seismic
<b>Reference Document:</b>	ASCE7-16
<b>Risk Category:</b>	III
<b>Site Class:</b>	D



### Basic Parameters

Name	Value	Description
$S_S$	1.478	$MCE_R$ ground motion (period=0.2s)
$S_1$	0.523	$MCE_R$ ground motion (period=1.0s)
$S_{MS}$	1.478	Site-modified spectral acceleration value
$S_{M1}$	* null	Site-modified spectral acceleration value
$S_{DS}$	0.985	Numeric seismic design value at 0.2s SA
$S_{D1}$	* null	Numeric seismic design value at 1.0s SA

\* See Section 11.4.8

### ▼Additional Information

Name	Value	Description
SDC	* null	Seismic design category
$F_a$	1	Site amplification factor at 0.2s
$F_v$	* null	Site amplification factor at 1.0s
$CR_S$	0.918	Coefficient of risk (0.2s)
$CR_1$	0.918	Coefficient of risk (1.0s)
PGA	0.626	$MCE_G$ peak ground acceleration
$F_{PGA}$	1.1	Site amplification factor at PGA
$PGA_M$	0.688	Site modified peak ground acceleration
$T_L$	8	Long-period transition period (s)
$S_{sRT}$	1.478	Probabilistic risk-targeted ground motion (0.2s)
$S_{sIH}$	1.609	Factored uniform-hazard spectral acceleration (2% probability of

SsD	2.055	Factored uniform hazard spectral acceleration (2% probability of exceedance in 50 years)
S1RT	0.523	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.57	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.698	Factored deterministic acceleration value (1.0s)
PGAd	0.837	Factored deterministic acceleration value (PGA)

\* See Section 11.4.8

*The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.*

## Disclaimer

Hazard loads are provided by the U.S. Geological Survey [Seismic Design Web Services](#).

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U.S. Geological Survey - Earthquake Hazards Program

# 2008 National Seismic Hazard Maps - Source Parameters

[New Search](#)

Fault Name	State
<b>Puente Hills (Coyote Hills)</b>	<b>California</b>

GEOMETRY	
Dip (degrees)	26
Dip direction	N
Sense of slip	thrust
Rupture top (km)	2.8
Rupture bottom (km)	15
Rake (degrees)	90
Length (km)	17

MODEL VALUES		
Slip Rate	0.7	
Probability of activity	1	
	ELLSWORTH	HANKS
Minimum magnitude	6.5	6.5
Maximum magnitude	6.90	6.60
b-value	0.8	0.8

Fault Model	Deformation Model	Char Rate <sup>1</sup>	GR-a-value <sup>1</sup>	Weight

Stitched	2.4	3.52e-04 / 9.91e-04	1.597 / 2.311	0.50
UnStitched	2.4	3.52e-04 / 9.91e-04	1.597 / 2.311	0.50

<sup>1</sup> 1<sup>st</sup> Value is based on Ellsworth relation and 2<sup>nd</sup> value is based on Hanks and Bakun relation

# 2008 National Seismic Hazard Maps - Source Parameters

[New Search](#)

Distance in Miles	Name	State	Pref Slip Rate (mm/yr)	Dip (degrees)	Dip Dir	Slip Sense	Rupture Top (km)	Rupture Bottom (km)	Length (km)
3.65	<a href="#">Puente Hills (Coyote Hills)</a>	CA	0.7	26	N	thrust	2.8	15	17
7.47	<a href="#">Elsinore;W+GI+T</a>	CA	n/a	84	NE	strike slip	0	14	124
7.47	<a href="#">Elsinore;W</a>	CA	2.5	75	NE	strike slip	0	14	46
7.47	<a href="#">Elsinore;W+GI</a>	CA	n/a	81	NE	strike slip	0	14	83
7.47	<a href="#">Elsinore;W+GI+T+J+CM</a>	CA	n/a	84	NE	strike slip	0	16	241
7.47	<a href="#">Elsinore;W+GI+T+J</a>	CA	n/a	84	NE	strike slip	0	16	199
9.13	<a href="#">San Joaquin Hills</a>	CA	0.5	23	SW	thrust	2	13	27
10.37	<a href="#">Puente Hills (Santa Fe Springs)</a>	CA	0.7	29	N	thrust	2.8	15	11
11.80	<a href="#">Newport Inglewood Connected alt 2</a>	CA	1.3	90	V	strike slip	0	11	208
11.91	<a href="#">Newport Inglewood Connected alt 1</a>	CA	1.3	89		strike slip	0	11	208
11.91	<a href="#">Newport-Inglewood, alt 1</a>	CA	1	88		strike slip	0	15	65
14.23	<a href="#">Chino, alt 1</a>	CA	1	50	SW	strike slip	0	9	24
14.39	<a href="#">Chino, alt 2</a>	CA	1	65	SW	strike slip	0	14	29
14.77	<a href="#">San Jose</a>	CA	0.5	74	NW	strike slip	0	15	20
16.19	<a href="#">Newport-Inglewood (Offshore)</a>	CA	1.5	90	V	strike slip	0	10	66
16.80	<a href="#">Puente Hills (LA)</a>	CA	0.7	27	N	thrust	2.1	15	22
17.25	<a href="#">Elsinore;GI+T</a>	CA	5	90	V	strike slip	0	14	78
17.25	<a href="#">Elsinore;GI+T+J</a>	CA	n/a	86	NE	strike slip	0	17	153
17.25	<a href="#">Elsinore;GI+T+J+CM</a>	CA	n/a	86	NE	strike	0	16	195

						slip			
17.25	<a href="#">Elsinore;GI</a>	CA	5	90	V	strike slip	0	13	37
20.66	<a href="#">Elysian Park (Upper)</a>	CA	1.3	50	NE	reverse	3	15	20
21.53	<a href="#">Palos Verdes</a>	CA	3	90	V	strike slip	0	14	99
21.53	<a href="#">Palos Verdes Connected</a>	CA	3	90	V	strike slip	0	10	285
21.57	<a href="#">Sierra Madre</a>	CA	2	53	N	reverse	0	14	57
21.57	<a href="#">Sierra Madre Connected</a>	CA	2	51		reverse	0	14	76
22.66	<a href="#">Cucamonga</a>	CA	5	45	N	thrust	0	8	28
23.61	<a href="#">Raymond</a>	CA	1.5	79	N	strike slip	0	16	22
25.09	<a href="#">Clamshell-Sawpit</a>	CA	0.5	50	NW	reverse	0	14	16
25.97	<a href="#">Verdugo</a>	CA	0.5	55	NE	reverse	0	15	29
28.16	<a href="#">Hollywood</a>	CA	1	70	N	strike slip	0	17	17
29.93	<a href="#">Santa Monica Connected alt 2</a>	CA	2.4	44		strike slip	0.8	11	93
30.81	<a href="#">Elsinore;I</a>	CA	5	90	V	strike slip	0	14	52
30.81	<a href="#">Elsinore;T+J+CM</a>	CA	n/a	85	NE	strike slip	0	16	169
30.81	<a href="#">Elsinore;T+J</a>	CA	n/a	86	NE	strike slip	0	17	127
34.37	<a href="#">Santa Monica Connected alt 1</a>	CA	2.6	51		strike slip	0	16	79
34.37	<a href="#">Santa Monica, alt 1</a>	CA	1	75	N	strike slip	0	18	14
36.77	<a href="#">San Jacinto;SBV+SJV+A+CC+B</a>	CA	n/a	90	V	strike slip	0.1	15	215
36.77	<a href="#">San Jacinto;SBV</a>	CA	6	90	V	strike slip	0	16	45
36.77	<a href="#">San Jacinto;SBV+SJV+A+CC+B+SM</a>	CA	n/a	90	V	strike slip	0.1	15	241
36.77	<a href="#">San Jacinto;SBV+SJV</a>	CA	n/a	90	V	strike slip	0	16	88
36.77	<a href="#">San Jacinto;SBV+SJV+A</a>	CA	n/a	90	V	strike slip	0	16	134
36.77	<a href="#">San Jacinto;SBV+SJV+A+C</a>	CA	n/a	90	V	strike slip	0	17	181

36.77	<a href="#">San Jacinto;SBV+SJV+A+CC</a>	CA	n/a	90	V	strike slip	0	16	181
37.61	<a href="#">Coronado Bank</a>	CA	3	90	V	strike slip	0	9	186
38.94	<a href="#">Sierra Madre (San Fernando)</a>	CA	2	45	N	thrust	0	13	18
39.04	<a href="#">S. San Andreas;NM+SM+NSB+SSB+BG</a>	CA	n/a	83		strike slip	0	14	271
39.04	<a href="#">S. San Andreas;BB+NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	85		strike slip	0.1	13	390
39.04	<a href="#">S. San Andreas;BB+NM+SM+NSB+SSB+BG</a>	CA	n/a	84		strike slip	0	14	321
39.04	<a href="#">S. San Andreas;BB+NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	14	263
39.04	<a href="#">S. San Andreas;SM+NSB+SSB+BG+CO</a>	CA	n/a	83		strike slip	0.1	13	303
39.04	<a href="#">S. San Andreas;SM+NSB+SSB+BG</a>	CA	n/a	81		strike slip	0	13	234
39.04	<a href="#">S. San Andreas;SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	13	176
39.04	<a href="#">S. San Andreas;SM+NSB</a>	CA	n/a	90	V	strike slip	0	13	133
39.04	<a href="#">S. San Andreas;BB+NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0	14	220
39.04	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	86		strike slip	0.1	13	548
39.04	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG</a>	CA	n/a	86		strike slip	0.1	13	479
39.04	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0.1	13	421
39.04	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0.1	13	377
39.04	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM</a>	CA	n/a	90	V	strike slip	0.1	13	342
39.04	<a href="#">S. San Andreas;BB+NM+SM</a>	CA	n/a	90	V	strike slip	0	14	184
39.04	<a href="#">S. San Andreas;CH+CC+BB+NM+SM</a>	CA	n/a	90	V	strike slip	0	14	306
39.04	<a href="#">S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	86		strike slip	0.1	13	512
39.04	<a href="#">S. San Andreas;SM</a>	CA	29	90	V	strike slip	0	13	98
39.04	<a href="#">S. San Andreas;NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	84		strike	0.1	13	340

						slip			
39.04	<a href="#">S. San Andreas;NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	13	213
39.04	<a href="#">S. San Andreas;NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0	13	170
39.04	<a href="#">S. San Andreas;NM+SM</a>	CA	n/a	90	V	strike slip	0	14	134
39.04	<a href="#">S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG</a>	CA	n/a	86		strike slip	0	14	442
39.04	<a href="#">S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	14	384
39.04	<a href="#">S. San Andreas;CH+CC+BB+NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0	14	341
39.04	<a href="#">S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	86		strike slip	0.1	13	449
39.04	<a href="#">S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG</a>	CA	n/a	85		strike slip	0	14	380
39.04	<a href="#">S. San Andreas;CC+BB+NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	14	322
39.04	<a href="#">S. San Andreas;CC+BB+NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0	14	279
39.04	<a href="#">S. San Andreas;CC+BB+NM+SM</a>	CA	n/a	90	V	strike slip	0	14	243
39.09	<a href="#">S. San Andreas;NSB+SSB+BG+CO</a>	CA	n/a	79		strike slip	0.2	12	206
39.09	<a href="#">S. San Andreas;NSB+SSB</a>	CA	n/a	90	V	strike slip	0	13	79
39.09	<a href="#">S. San Andreas;NSB</a>	CA	22	90	V	strike slip	0	13	35
39.09	<a href="#">S. San Andreas;NSB+SSB+BG</a>	CA	n/a	75		strike slip	0	14	136
39.10	<a href="#">Malibu Coast, alt 1</a>	CA	0.3	75	N	strike slip	0	8	38
39.10	<a href="#">Malibu Coast, alt 2</a>	CA	0.3	74	N	strike slip	0	16	38
39.77	<a href="#">San Jacinto;SJV</a>	CA	18	90	V	strike slip	0	16	43
39.77	<a href="#">San Jacinto;SJV+A</a>	CA	n/a	90	V	strike slip	0	17	89
39.77	<a href="#">San Jacinto;SJV+A+C</a>	CA	n/a	90	V	strike slip	0	17	136
39.77	<a href="#">San Jacinto;SJV+A+CC</a>	CA	n/a	90	V	strike slip	0	16	136



39.77	<a href="#">San Jacinto;SJV+A+CC+B</a>	CA	n/a	90	V	strike slip	0.1	15	170
39.77	<a href="#">San Jacinto;SJV+A+CC+B+SM</a>	CA	n/a	90	V	strike slip	0.1	15	196
40.36	<a href="#">Anacapa-Dume, alt 2</a>	CA	3	41	N	thrust	1.2	12	65
40.67	<a href="#">San Gabriel</a>	CA	1	61	N	strike slip	0	15	71
41.45	<a href="#">Cleghorn</a>	CA	3	90	V	strike slip	0	16	25
43.58	<a href="#">Northridge</a>	CA	1.5	35	S	thrust	7.4	17	33
44.40	<a href="#">S. San Andreas;SSB+BG</a>	CA	n/a	71		strike slip	0	13	101
44.40	<a href="#">S. San Andreas;SSB+BG+CO</a>	CA	n/a	77		strike slip	0.2	12	170
44.40	<a href="#">S. San Andreas;SSB</a>	CA	16	90	V	strike slip	0	13	43
45.17	<a href="#">San Jacinto;A+C</a>	CA	n/a	90	V	strike slip	0	17	118
45.17	<a href="#">San Jacinto;A+CC</a>	CA	n/a	90	V	strike slip	0	16	118
45.17	<a href="#">San Jacinto;A+CC+B</a>	CA	n/a	90	V	strike slip	0.1	15	152
45.17	<a href="#">San Jacinto;A+CC+B+SM</a>	CA	n/a	90	V	strike slip	0.1	15	178
45.17	<a href="#">San Jacinto;A</a>	CA	9	90	V	strike slip	0	17	71
47.54	<a href="#">Anacapa-Dume, alt 1</a>	CA	3	45	N	thrust	0	16	51
48.89	<a href="#">Santa Susana, alt 1</a>	CA	5	55	N	reverse	0	16	27
49.17	<a href="#">North Frontal (West)</a>	CA	1	49	S	reverse	0	16	50
55.40	<a href="#">Rose Canyon</a>	CA	1.5	90	V	strike slip	0	8	70
55.59	<a href="#">Holser, alt 1</a>	CA	0.4	58	S	reverse	0	19	20
56.81	<a href="#">Simi-Santa Rosa</a>	CA	1	60		strike slip	1	12	39
60.83	<a href="#">Elsinore;J</a>	CA	3	84	NE	strike slip	0	19	75
60.83	<a href="#">Elsinore;J+CM</a>	CA	3	84	NE	strike slip	0	17	118
61.95	<a href="#">Oak Ridge Connected</a>	CA	3.6	53		reverse	0.6	15	94
61.95	<a href="#">Oak Ridge (Onshore)</a>	CA	4	65	S	reverse	1	19	49

63.18	<a href="#">S. San Andreas;BG+CO</a>	CA	n/a	72		strike slip	0.3	12	125
63.18	<a href="#">S. San Andreas;BG</a>	CA	n/a	58		strike slip	0	13	56
65.36	<a href="#">San Cayetano</a>	CA	6	42	N	thrust	0	16	42
68.27	<a href="#">Helendale-So Lockhart</a>	CA	0.6	90	V	strike slip	0	13	114
69.02	<a href="#">Pinto Mtn</a>	CA	2.5	90	V	strike slip	0	16	74
69.85	<a href="#">S. San Andreas;PK+CH+CC+BB+NM</a>	CA	n/a	90	V	strike slip	0.1	12	245
69.85	<a href="#">S. San Andreas;CC+BB+NM</a>	CA	n/a	90	V	strike slip	0	15	146
69.85	<a href="#">S. San Andreas;CH+CC+BB+NM</a>	CA	n/a	90	V	strike slip	0	14	208
69.85	<a href="#">S. San Andreas;NM</a>	CA	27	90	V	strike slip	0	15	37
69.85	<a href="#">S. San Andreas;BB+NM</a>	CA	n/a	90	V	strike slip	0	15	87
71.78	<a href="#">North Frontal (East)</a>	CA	0.5	41	S	thrust	0	16	27
78.15	<a href="#">Santa Ynez (East)</a>	CA	2	70	S	strike slip	0	13	68
78.15	<a href="#">Santa Ynez Connected</a>	CA	2	70		strike slip	0	11	132
79.49	<a href="#">Santa Cruz Island</a>	CA	1	90	V	strike slip	0	13	69
80.10	<a href="#">Channel Islands Thrust</a>	CA	1.5	20	N	thrust	5	12	59
80.13	<a href="#">Lenwood-Lockhart-Old Woman Springs</a>	CA	0.9	90	V	strike slip	0	13	145
80.16	<a href="#">Ventura-Pitas Point</a>	CA	1	64	N	reverse	1	15	44
80.16	<a href="#">Pitas Point Connected</a>	CA	1	55		reverse	1.2	13	78
81.42	<a href="#">San Jacinto;CC</a>	CA	4	90	V	strike slip	0	16	43
81.42	<a href="#">San Jacinto;CC+B</a>	CA	n/a	90	V	strike slip	0.2	14	77
81.42	<a href="#">San Jacinto;CC+B+SM</a>	CA	n/a	90	V	strike slip	0.2	14	103
82.64	<a href="#">San Jacinto;C</a>	CA	14	90	V	strike slip	0	17	47
84.43	<a href="#">Johnson Valley (No)</a>	CA	0.6	90	V	strike slip	0	16	35

84.63	<a href="#">Oak Ridge (Offshore)</a>	CA	3	32	S	thrust	0	8	38
85.57	<a href="#">Mission Ridge-Arroyo Parida-Santa Ana</a>	CA	0.4	70	S	reverse	0	8	69
86.39	<a href="#">Burnt Mtn</a>	CA	0.6	67	W	strike slip	0	16	21
87.23	<a href="#">Landers</a>	CA	0.6	90	V	strike slip	0	15	95
87.34	<a href="#">Garlock;GW</a>	CA	6	90	V	strike slip	0.7	14	98
87.34	<a href="#">Garlock;GE+GC+GW</a>	CA	n/a	90	V	strike slip	0.3	12	256
87.34	<a href="#">Garlock;GC+GW</a>	CA	n/a	90	V	strike slip	0.4	12	210
87.42	<a href="#">Earthquake Valley</a>	CA	2	90	V	strike slip	0	19	20
88.27	<a href="#">Eureka Peak</a>	CA	0.6	90	V	strike slip	0	15	19
88.49	<a href="#">Red Mountain</a>	CA	2	56	N	reverse	0	14	101
88.65	<a href="#">S. San Andreas;CC+BB</a>	CA	n/a	90	V	strike slip	0	15	109
88.65	<a href="#">S. San Andreas;PK+CH+CC+BB</a>	CA	n/a	90	V	strike slip	0.1	12	208
88.65	<a href="#">S. San Andreas;CH+CC+BB</a>	CA	n/a	90	V	strike slip	0	14	171
88.65	<a href="#">S. San Andreas;BB</a>	CA	34	90	V	strike slip	0	15	50
90.51	<a href="#">Gravel Hills-Harper Lk</a>	CA	0.7	90	V	strike slip	0	11	65
91.31	<a href="#">So Emerson-Copper Mtn</a>	CA	0.6	90	V	strike slip	0	14	54
94.22	<a href="#">Pitas Point (Lower)-Montalvo</a>	CA	2.5	16	N	thrust	0.4	13	30
94.41	<a href="#">North Channel</a>	CA	1	26	N	thrust	1.1	5	51
94.60	<a href="#">S. San Andreas;CO</a>	CA	20	90	V	strike slip	0.6	11	69
95.12	<a href="#">Pleito</a>	CA	2	46	S	reverse	0	14	44
95.34	<a href="#">Blackwater</a>	CA	0.5	90	V	strike slip	0	12	60
97.28	<a href="#">Calico-Hidalgo</a>	CA	1.8	90	V	strike slip	0	14	117

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**GEOTECHNICAL DATA REPORT  
PFAS-GWTPS PROJECT  
NEW TREATMENT PLANT  
ENERGY FIELD-WELL 59 SITE  
9<sup>TH</sup> STREET, 600 FEET NORTH OF WEST LASTER AVENUE  
ANAHEIM, CA  
AESCO PROJECT NO. 20200915-F8950**

**Prepared for:**

**City of Anaheim  
Department of Public Utilities  
200 South Anaheim Boulevard, 6th Floor  
Anaheim, CA 92805**

**Attention: Mr. Jake Hester, P.E.  
Water Engineering and Design Manager**

**Prepared By:**

**AESCO  
17782 Georgetown Lane  
Huntington Beach, California 92647**

**Adam Chamaa, P.E., Manager**

**September 9, 2020  
Revised October 29, 2020**

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September 9, 2020

Revised October 29, 2020

Mr. Jake Hester, P.E., Water Engineering and Design Manager  
City of Anaheim, Department of Public Utilities  
200 South Anaheim Boulevard, 5<sup>th</sup> Floor  
Anaheim, CA 92805

**Subject: Geotechnical Data Report  
PFAS – GWTPs Project  
New Treatment Plant  
Energy Field-Well 59 Site  
9<sup>th</sup> Street, 900 Feet north of West Laster Avenue  
Anaheim, California  
AESCO Project No. 20200915-F8950**

Dear Mr. Hester:

AESCO is pleased to provide you the geotechnical data report for the proposed new well and treatment plant to be constructed at the subject site.

AESCO will be happy to assist you further on this project by furnishing any Construction Materials Testing and Inspection Services you may require during the construction phase of the project. We are a full service-testing laboratory and inspection service and can supply the full range of testing and inspection services such as soils, concrete, asphalt, steel, welding, etc. that may be necessary for construction of this project.

Please do not hesitate to contact us if you have any questions or if we may be of any additional assistance. We look forward to assisting you during the construction of the proposed facility.

Sincerely,

**AESCO, Inc.**

Debra L. Perez  
Project Manager

Adam Chamaa, P.E., G.E.

Adam Chamaa, P.E., G.E.  
Engineering Manager

Russell J. Scharlin, P.E., G.E.  
Senior Geotechnical Engineer



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Project No. 20200915-F8370  
Energy Field-Well 59

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Project No. 20200915-F8370  
Energy Field-Well 59

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Site Plan

Utility Locating

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Laboratory Test Data

Seismic Design Data

## SECTION ONE

## Introduction

**Geotechnical Data Report  
PFAS – GWTPs Project  
New Water Treatment Facility  
Energy Field-Well 59  
9<sup>th</sup> Street, 900 Feet North of West Laster Avenue  
Anaheim, California**

This report (authorized by the City of Anaheim), presents the results of a geotechnical investigation performed by AESCO for a proposed water treatment facility to be installed at Energy Field-Well 59 on 9<sup>th</sup> Street, 900 Feet north of West Laster Avenue, Anaheim, California. The exact location of the water treatment facility has not been determined at this time. The site of the proposed facility is shown on the Site Plan, Figure 1.

We understand that the new facility will consist of a new water treatment plant and appurtenances. Dimensions of the facility were not available at this time.

The purpose of this study was to provide geotechnical input for data to better understand the site conditions at either location. The scope of our services included the following:

- Coordinating site access for the field investigation;
- Obtaining utility clearances for the field investigation;
- Performing a ground penetrating radar (GPR) and standard magnetic study at the site;
- Performing geotechnical drilling and sampling at the site;
- Performing laboratory testing of representative samples;
- Conducting a seismic hazards screening; and
- Preparing this report.

This report summarizes our findings and presents geotechnical data to better understand the existing site conditions.



## SECTION TWO

## Field Investigation and Laboratory Testing

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### 2.1 FIELD INVESTIGATION

Prior to performing the field investigation, a Ground Penetrating Radar (GPR) survey was performed in the work areas to identify the location, direction and depth of existing underground utilities. The locations and depths of the utilities were marked on the ground and the boring locations were adjusted, as required, to avoid damaging the utilities during drilling.

A field investigation was conducted at the site on August 17, 2020 to obtain information on the subsurface conditions. Two borings were drilled with a hollow stem auger drill rig to a depth of 25 feet below the existing ground surface. Boring B-1 was drilled at the southeast side of the site and B-2 was drilled on the northwest side. The boring locations are shown on the Site Plan, Figure 1. The site plan is based on an aerial plot from Google Earth. AESCO's Geotechnical Engineer, Mr. Adam Chamaa, P.E., G.E., and/or David J. Ryan, P.E., supervised the utility marking and the drilling operations. Mr. Chamaa met with the utility companies identified within the work area to mark the locations of underground utilities. The GPR and standard magnetic surveys confirmed the locations and depths of underground utilities. (See the field report showing where the utilities were located adjacent to the electrical substation in the Appendix.) AESCO personnel logged the borings and visually classified and collected samples of the subsurface materials encountered in the borings. The borings were backfilled with cuttings. The Logs of Borings B-1 and B-2 are presented in the attached Appendix.

Drive samples were taken in the borings using either a Standard Penetration Test (SPT) or Modified California (MC) sampler. The sampler was driven 18 inches into the bottom of the boreholes using a 140-pound hammer falling a distance of 30 inches. The MC sampler barrel was lined with stainless steel liners to collect relatively undisturbed soil samples. All of the samples were sealed and packaged to help preserve the natural moisture content and to protect them from further disturbance.

### 2.2 LABORATORY TESTING

All testing was performed in accordance with ASTM Standards and California Test Methods. Laboratory testing performed in our Huntington Beach, California geotechnical laboratory consisted of water content (ASTM D4959), dry density (ASTM D2937), direct shear ASTM D3080), Atterberg Limits (ASTM D4318), and washed sieve analysis (ASTM D1140). Results of the laboratory tests are summarized on the Boring Log and are included in the attached

## SECTION TWO

## Field Investigation and Laboratory Testing

---

Appendix. Chemical analyses, including pH (ASTM D1293), soluble sulfates (CT417) and soluble chlorides (CT422) were also performed. Results are presented in Section 4.10.

## SECTION THREE

## Site Conditions

---

### 3.1 REGIONAL GEOLOGIC SETTING

The project site is located in Anaheim, California, within the southern portion of the Los Angeles basin, in the transition between the northern portion of the Peninsular Ranges physiographic province and the southern portion of the Transverse Ranges physiographic province. The project area is considered to be within the Transverse Ranges physiographic province by Norris and Webb (1990) and within the Peninsular Ranges physiographic province by Yerkes et al. (1965). These two physiographic provinces have contrasting tectonic characteristics that overlap within the Los Angeles basin resulting in a complex tectonic environment marked by active faulting and historic seismicity. Geologic materials at the ground surface in the vicinity of the site consist of Quaternary alluvial sediments deposited by the Santa Ana River or its tributaries.

### 3.2 SITE AND SUBSURFACE CONDITIONS

The proposed facility will be located at the existing well facility and located just east of existing railroad tracks, west of the existing City of Anaheim Electrical Substation and north of Energy Field Park in the City of Anaheim. The site is relatively flat and is covered with gravel. Existing underground utilities may be present within the site boundary.

The material encountered within boring B-1 consisted of loose silty sand to a depth of 5 feet, medium dense sand/silty sand to a depth of 13 feet, stiff sandy silt with slight clay to a depth of 18 feet, medium dense sand to a depth of 23 feet, and medium dense silty sand to the total depth drilled of 25 feet below the existing ground surface. The material encountered in boring B-2 consisted of sand/silty sand to a depth of 3 feet, medium stiff to stiff sandy silt with slight clay to a depth of 8 feet, medium dense sand to a depth of 13 feet, loose to medium dense clayey sand with slight silt to a depth of 18 feet, and medium dense to very dense sand/silty sand to the total depth drilled of 25 feet.

Groundwater was not encountered within the borings. Based on regional data, groundwater is anticipated to occur at a depth greater than 50 feet (CGS, 1997). The depth to groundwater may fluctuate, depending on rainfall and possible groundwater recharge or pumping activity in the site vicinity.

#### 4.1 SEISMIC DESIGN

A seismic hazards screening was performed for this site to evaluate potential seismic hazards. The seismic hazards screening consisted of reviewing available data published by the California Geological Survey (CGS), the 2019 California Building Code (CBC), the Structural Engineers Council, and the 2018 International Building Code (IBC). The site is located in the United States Geological Survey Anaheim Quadrangle. Data reviewed yielded the following Seismic Parameters:

Site Class	D
Spectral Response ‘Ss’	1.422g
Spectral Response ‘SMs’	1.707g
Spectral Response ‘S1’	0.502g
Spectral Response ‘SM1’	null

Data published by the USGS was reviewed. Results of the fault search are presented in the Appendix. A listing of faults within 100 miles of the site is also included. The search indicates that the Puente Hills (Coyote Hills) fault is 4.44 miles from the site.

The CGS (CDMG, 2000-003) does not delineate this site as being within an Alquist-Priolo Earthquake Fault Zone. With the active faults in the region, the site could be subjected to future strong ground shaking that may result from earthquakes on local to distant source.

#### 4.2 LIQUEFACTION POTENTIAL

Liquefaction is a mode of ground failure that results from the generation of high pore water pressures during earthquake ground shaking, causing loss of shear strength. Liquefaction is typically a hazard where loose sandy soils exist below groundwater. The CGS has designated certain areas within southern California as potential liquefaction hazard zones. These are areas considered at a risk of liquefaction-related ground failure during a seismic event, based upon mapped surficial deposits and the presence of a relatively shallow water table. Materials encountered at the project site generally consist of loose to very dense granular material and medium stiff to stiff cohesive soil. The project site is not located within a mapped liquefaction hazard zone as designated by the CGS (1998). Groundwater was not encountered within the borings which were drilled to a depth of 25 feet beneath the existing ground surface. Based on regional data, groundwater is anticipated to occur at a depth greater than 50 feet (CGS, 1997).

Based on our investigation, we conclude that the potential for liquefaction at the site is low. Other geologic hazards related to liquefaction, such as lateral spreading, are therefore also low.

#### 4.3 EXISTING UTILITIES

The proposed new facility may be located at and near other existing utilities. Care should be exercised not to disturb the existing utilities and to support them during construction if they will be reused and will not be abandoned.

#### 4.4 SOIL CORROSIVITY

The results of pH, soluble chloride and soluble sulfate laboratory tests on a sample of the near surface soils are summarized in the following table:

Soil Test	Test Results	Corrosion Potential
Soluble Sulfates (per CA 417)	10 ppm	Mild sulfate attack on concrete.
Soluble Chlorides (per CA 422)	102 ppm	Very corrosive potential to buried ferrous metals
pH	9.1	Severe corrosion potential to buried ferrous metals

Concrete should be designed in accordance with the 2019 CBC, ACI 318 Section 4.3, Table 19.3.2.1 (2017).

The test results indicate that the on site soils can be classified as severe corrosive potential to buried metallic structures (e.g. pipes).

## 5.0 LIMITATIONS

It must be recognized that conclusions reached in this report are based on conditions, which exist at the boring location. In any subsoil investigation, it is necessary to assume that the subsoil conditions between boring(s) do not change significantly. The number of the borings, locations, and spacing are chosen as per the client's direction and available budget. Note that the boring(s) were placed as close to the location of the proposed structure(s) as possible. The boring locations are approximate and surveying is beyond the scope of our work. Consequently, careful observations must be made during construction to detect significant deviations of actual conditions throughout the construction area from those inferred from the exploratory borings.

---

## **APPENDIX**

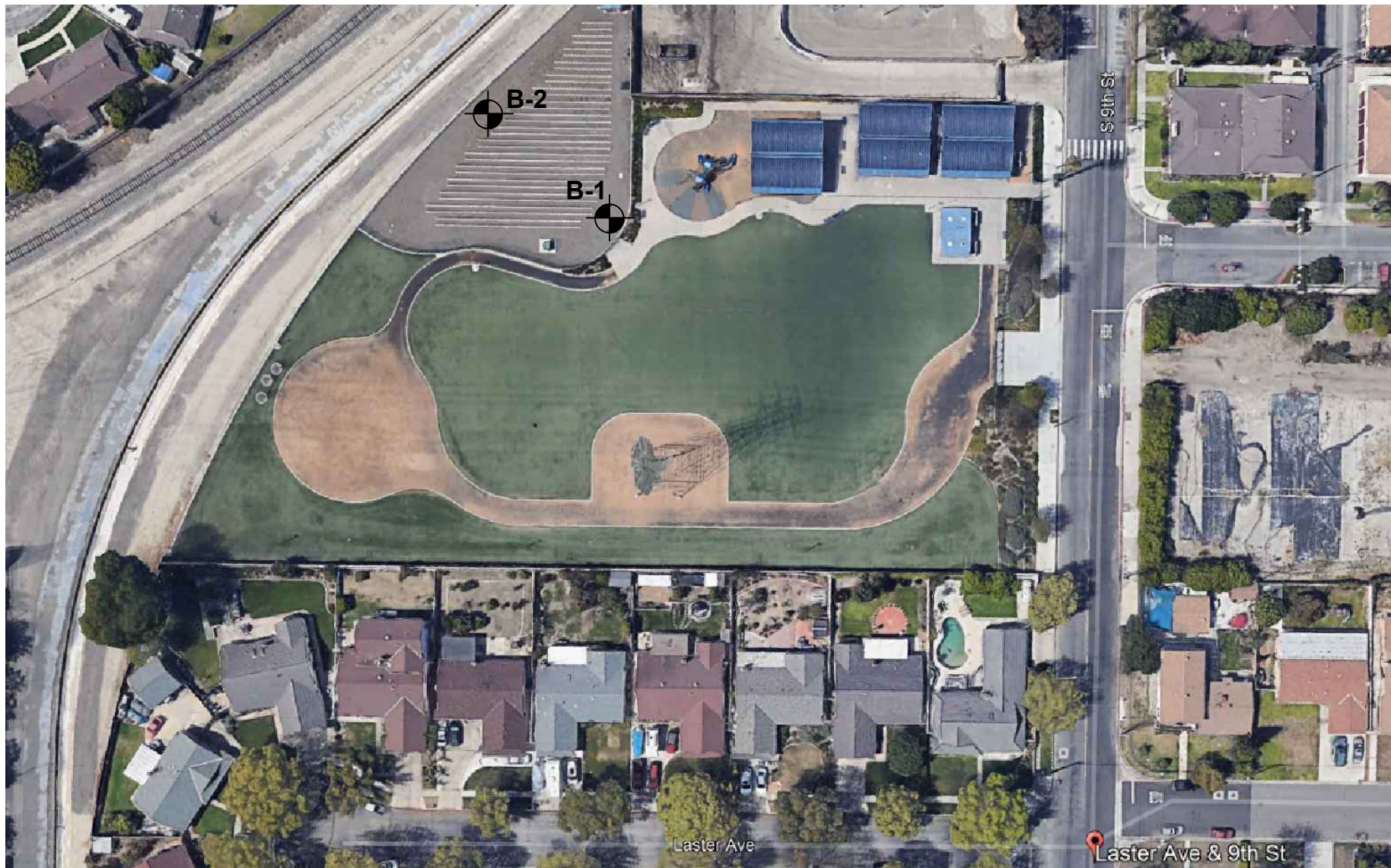
## **SITE PLAN**

20200915



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## LEGEND

 **B-1** Approximate Location of Borings



### Anaheim

Project No. : 20200915-F8370

Site Name: Energy Field - Well 59

Site Address: 9th St (600 ft north of Laster St), Anaheim, CA

## SITE PLAN

Scale: 1 inch  $\approx$  90 feet

Date: 8-20-20

Figure 1

---

## **APPENDIX**

### **UTILITY LOCATING**



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Geotechnical • Environmental • Materials Testing • Inspection

## ENGINEERING INSPECTION REPORT

DSA APP No.: \_\_\_\_\_ Project No.: 20200915 Report No.: F8760  
Job Identification / Address: Utility Base Map & Hydrology, Energy Field – Well 59 (on 9th 600' north of Laster St)-Electrical substation Sheet 1 of 3  
Contractor / Address N/A  
Architect / Address \_\_\_\_\_

**Type of Services**  
☐ Welding ☐ Reinforced Concrete ☐ Prestressed Concrete ☐ Masonry ☐ Fireproofing  
☐ Bolting ☐ Rebar ☐ Foundation ☐ Batch Plant ☐ Hi-Tensile  
☐ Gypsum ☐ Asphalt ☒ Other Utility mark outs  
Inspection Type: ☐ Continuous ☐ Periodic ☐ Test locations shown on attached map

Inspections made, including locations:

Aesco was at the City of Anaheim Electrical Substation on 9th Avenue with representatives of the City Water Department and the Electric Utility Department to locate and mark the underground utilities. A map of the area marked is attached. Photos were taken. Electric lines were located with red paint. Area is very congested along the wall due to three lines in drive way. As requested, AESCO had both the GPR and standard magnetic locating equipment utilized. Marking were placed on the pavements to show depths and number of lines located during this investigation. See attached photos.

Items requiring 1) correction, 2) correction of previously listed items, and 3) previously listed uncorrected items:

Changes to approved plans authorized by engineer or architect of record:

Comments:

To the best of my knowledge, work inspected was in accordance with the building department approved plans, specifications and applicable workmanship provisions of the IBC except as noted above.

### SAMPLES

Set (s) of \_\_\_\_\_ Concrete / Mortar / Grout / Prisms / Soil / Rebar / Asphalt / \_\_\_\_\_  
See AESCO's Report No. (s) \_\_\_\_\_ for test results or additional details

### HOURS

Date	Total Hours	Time In	Time Out	Mileage	Code	Initials
8-26-2020	6	6	12			djr

Signed \_\_\_\_\_ Project Engineer

Received by: \_\_\_\_\_ By \_\_\_\_\_  
Project Superintendent/Inspector Engineer/AESCO

White - AESCO Yellow – Agency Pink – Site Gold - Inspector





17782 Georgetown Lane, Huntington Beach CA 92647

Ph: 714-375-3830 Fax: 714-375-3831

14163 Arrow Boulevard, Fontana CA 92335

Ph: 909-284-9200 Fax: 909-284-9201

Geotechnical • Environmental • Materials Testing • Inspection

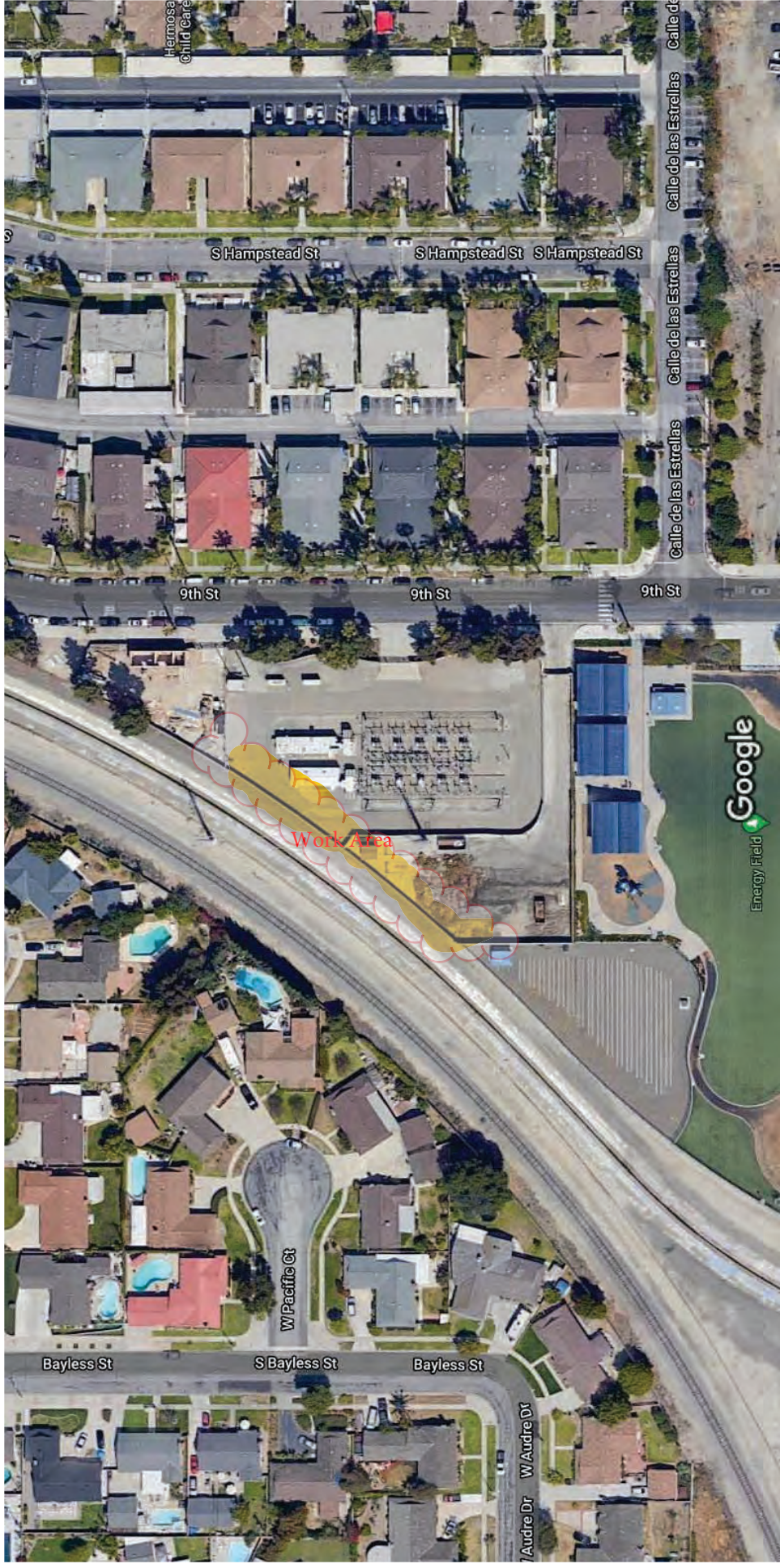
### ADDITIONAL PHOTO LOGS

Sheet: 2 of 3

AESCO's Report No.: F8760

Photo Upload	Summary Description
	South half of wall in Refuse Transfer area outside of the Electrical Substation. Utilities located on CMU wall.
	Electrical lines located on wall.
	Locating communication lines from pole back to source in building.





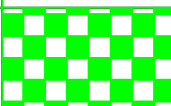
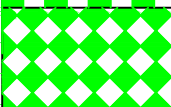
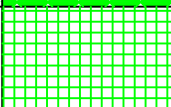
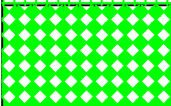
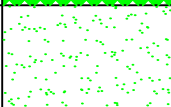
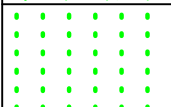

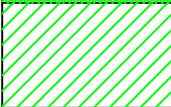
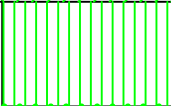
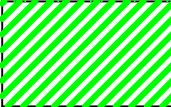

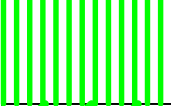

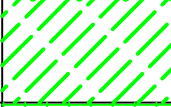

Imagery ©2020 CNES / Airbus, Maxar Technologies, U.S. Geological Survey, Map data ©2020 50 ft

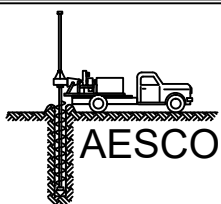
Marked out East side of CMU Wall to 15' from Well Site on the North End to the Building West side of Wall in Refuse transfer station per Jake Hester, City of Anaheim Water Dept.

Highlighted area checked for under ground electrical, water, fiber optic communications and sewer lines.

---

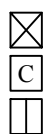
**APPENDIX**  
**LOGS OF BORINGS B-1 and B-2**




MAJOR DIVISION			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVEL (LITTLE OR NO FINES)		GW	WELL GRADED GRAVELS, GRAVEL SAND MIXTURES, LITTLE OR NO FINES	
				GP	POORLY GRADED GRAVELS, GRAVEL SAND MIXTURES, LITTLE OR NO FINES	
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL SAND SILT MIXTURE	
				GC	CLAYEY GRAVELS, GRAVEL SAND CLAY MIXTURES	
	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	
				SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES	
		MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINE (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
					SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT <50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR 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		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS	
				CH	INORGANIC CLAYS OF HIGH PLATICITY, FAT CLAYS	
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
HIGHLY ORGANIC SOILS				PT	PEAT, SWAMP SOILS WITH HIGH ORGANIC CONTENTS	




## UNIFIED SOIL CLASSIFICATION SYSTEM

### KEY



 Split Spoon Sample (SPT)  
 California Modified Sample  
 Hand Auger Sample

 Ground Water Level  
**N** SPT Blows/ft  
**P** Penetrometer TSF



LOG OF BORING NO. B - 1														AESCO	
Project: Energy Field-Well 59										Location: 9ths Street, 600 Feet North of West Laster Avenue Anaheim, CA				WATER: Not Encountered	
Client: City of Anaheim										Logger:				DRILLING:	
Date: 08/17/20										Project No. 20200915-F8370				Hollow Stem Auger	
FIELD DATA		TESTS												DESCRIPTION OF STRATUM	
SOIL SYMBOL	DEPTH (FT)	N= T= P=	MOISTURE CONTENT %	DRY DENSITY PCF	LIQUID LIMITS %	PLASTIC LIMITS %	PLASTICITY INDEX %	Unconfined Comp.		PASSING 200 SIEVE %	DIRECT SHEAR		RESISTIVITY ohms/cm		
								TSF	Strain %		COHESION PSF	ANGLE Deg			
	3		4.5											Brown silty SAND (SM), dry  Dark brown, loose at 3'	
	5	N=4	12.9												
	7	N=13 P=0.5	4.0	92.6						5.7	0	31		Gray SAND/silty SAND (SP/SM), medium dense, dry, medium grained  Gray-brown at 8'	
	8														
	10	N=14	2.9												
	13														
	15	N=11 P=0.5	18.9	97.4						56.7				Gray sandy SILT (ML), stiff, moist, w/slight clay	
	18														
	20	N=14	2.9											Gray SAND (SP), medium dense, dry, medium grained	
	23														
	25	N=17	10.4	112.6						21.2				Gray silty SAND (SM), medium dense, moist	
Boring Terminated at 25 Feet															

TUBE SAMPLE  
 AUGER SAMPLE  
 CALIFORNIA MODIFIED SAMPLER  
 SPLIT SPOON  
 NO RECOVERY

Groundwater Level  
 Hydrostatic Groundwater Level  
 Approximate Division of Soil Type

N= SPT, BLOWS/FT  
T= THD. BLOWS/FT  
P= HAND PEN. TSF

REMARKS:  
NP: Non Plastic Materials  
\* Remolded Samples  
Blow Counts Corrected for California Modified (0.6 multiplier), Auto-Hammer, 8" HAS

SM
 SP/SM
 ML
 SP



LOG OF BORING NO. B - 2													AESCO			
Project: Energy Field-Well 59								Location: 9ths Street, 600 Feet North of West Laster Avenue Anaheim, CA					WATER: Not Encountered			
Client: City of Anaheim Date: 08/17/20								Logger: Project No. 20200915-F8370					DRILLING: Hollow Stem Auger			
FIELD DATA		TESTS												DESCRIPTION OF STRATUM		
SOIL SYMBOL	DEPTH (FT)	N= T= P=	MOISTURE CONTENT %	DRY DENSITY PCF	LIQUID LIMITS %	PLASTIC LIMITS %	PLASTICITY INDEX %	Unconfined Comp.		PASSING 200 SIEVE %	DIRECT SHEAR		RESISTIVITY ohms/cm	Elevation ~ 120 ft. AMSL		
								TSF	Strain %		COHESION PSF	ANGLE Deg				
	3		2.4											Brown SAND /silty SAND (SP/SM), dry		
	5	N=7	18.9	29	21	8				72.8				Dark brown sandy SILT (ML), medium stiff, moist, w/slight clay		
	7	N=14	5.4	101.6						56.2				Gray, stiff, Increase In sand at 5'		
	8															
	10	N=11	3.1											Gray SAND (SP), medium dense, dry, medium grained		
	13															
	15	N=10 P=0.5	24.2	93.9							50	28		Dark brown clayey SAND (SC), loose to medium dense, moist, w/slight silt		
	18															
	20	N=22	4.2							6.8				Gray-brown SAND/silty SAND (SP/SM), medium dense, dry		
	23															
	25	N=50/6*	4.7		106					6.2				Gray, very dense at 23'		
Boring Terminated at 25 Feet																

---

**APPENDIX**  
**LABORATORY TEST DATA**



**Orange County**  
17782 Georgetown Lane  
Huntington Beach, California 92647  
Tele: (714) 375-3830  
Fax: (714)375-3831

**San Bernardino County**  
14163 Arrow Boulevard  
Fontana, California 92335  
Tele:(909) 284-9200  
Fax:(909) 284-9201

Site/Client: Energy Field

Project No: 20200915-F8370

Boring No: B-1

Depth (ft): 5-7'

$\gamma_d$  (pcf) = 92.6

$C$  (psf) = 0

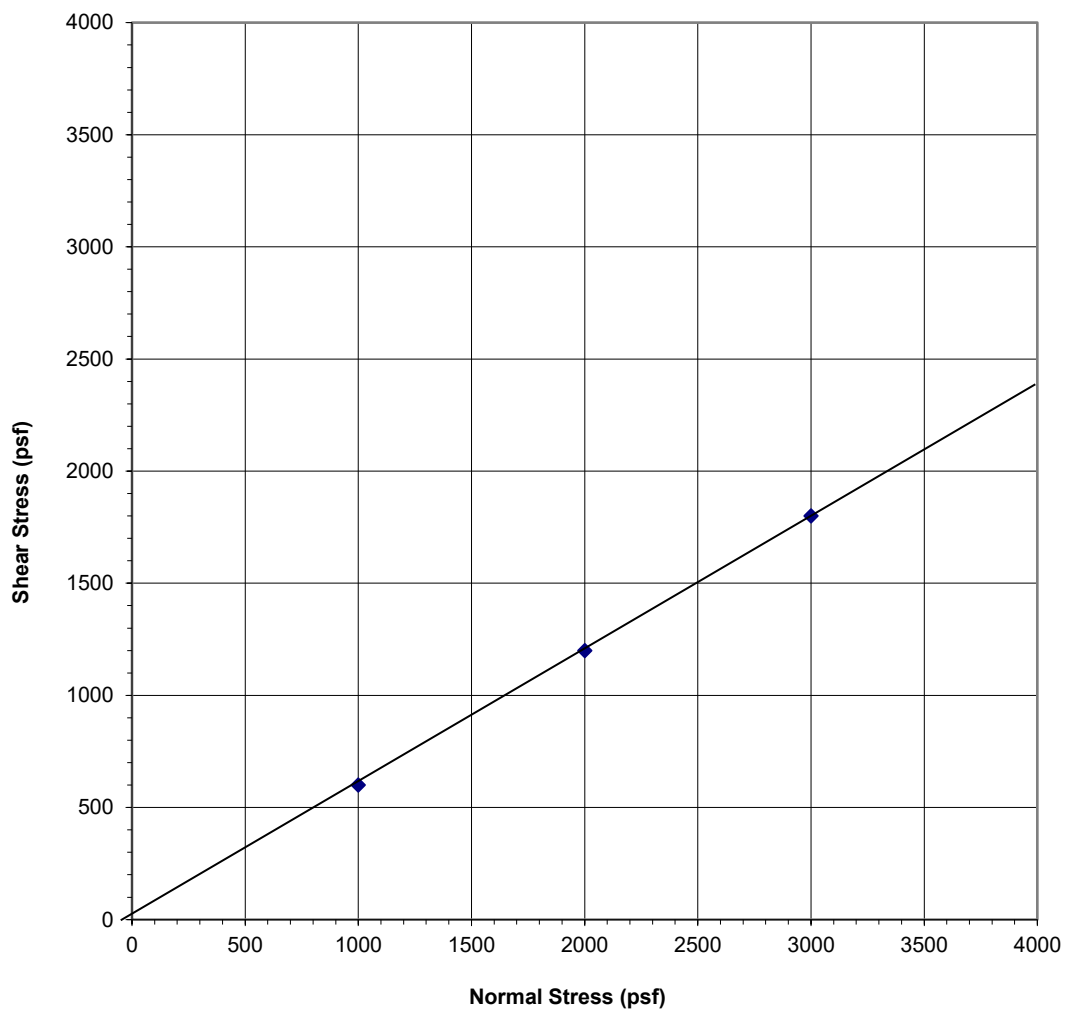
$\phi$  (deg) = 31

$W_{int}$  = 4.0%

Remolded (Y/N): N

Soil Type: SM

### ASTM D3080 Direct Shear Results





**Orange County**  
17782 Georgetown Lane  
Huntington Beach, California 92647  
Tele: (714) 375-3830  
Fax: (714)375-3831

**San Bernardino County**  
14163 Arrow Boulevard  
Fontana, California 92335  
Tele:(909) 284-9200  
Fax:(909) 284-9201

Site/Client: Energy Field

Project No: 20200915-F8370

Boring No: B-2

Depth (ft): 13-15'

$\gamma_d$  (pcf) = 93.9

$C$  (psf) = 50

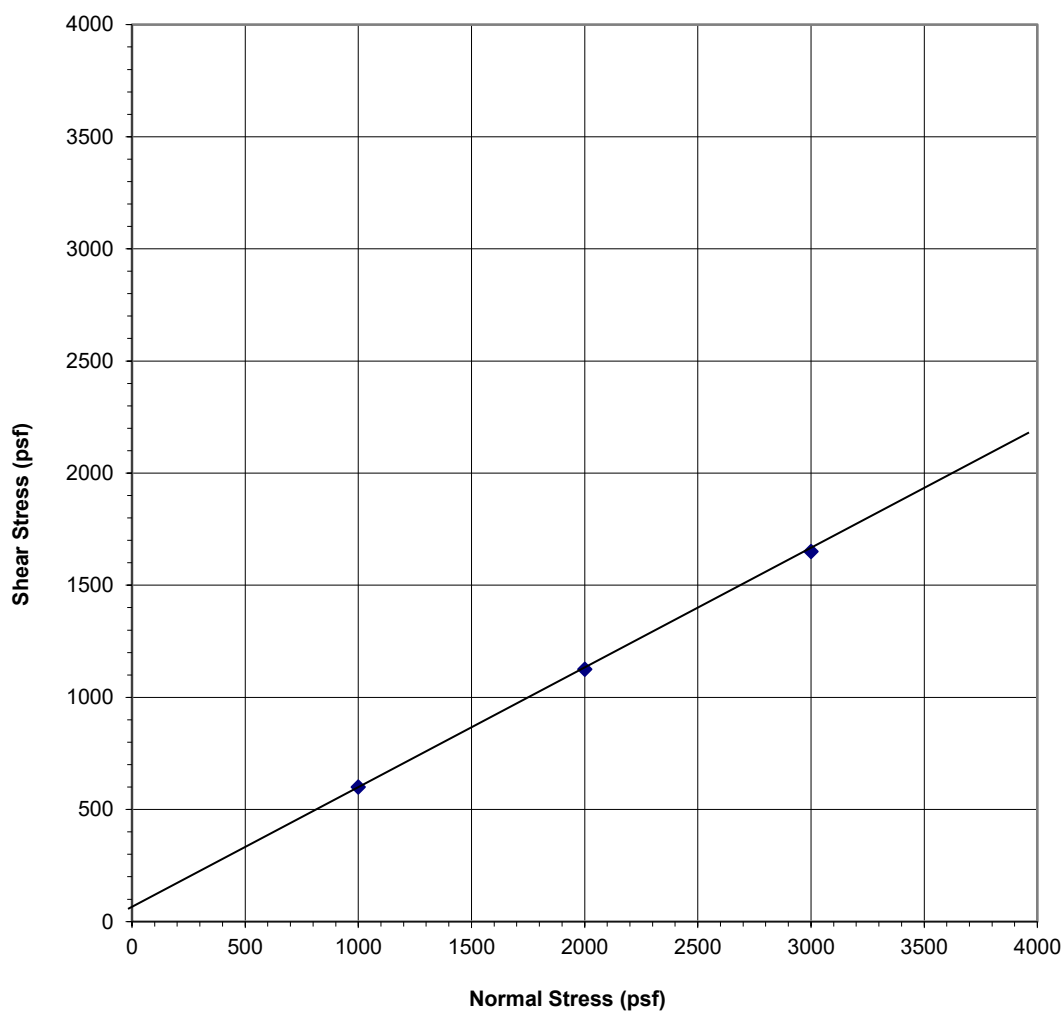
$\phi$  (deg) = 28

$W_{int}$  = 24.2%

Remolded (Y/N): N

Soil Type: SC

### ASTM D3080 Direct Shear Results



---

**APPENDIX**  
**SEISMIC DESIGN DATA**

# Unified Hazard Tool



Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the [U.S. Seismic Design Maps web tools](#) (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

## ^ Input

### Edition

Conterminous U.S. 2014 (v4.0.x)

### Spectral Period

Peak Ground Acceleration

### Latitude

Decimal degrees

33.8077

### Time Horizon

Return period in years

2475

### Longitude

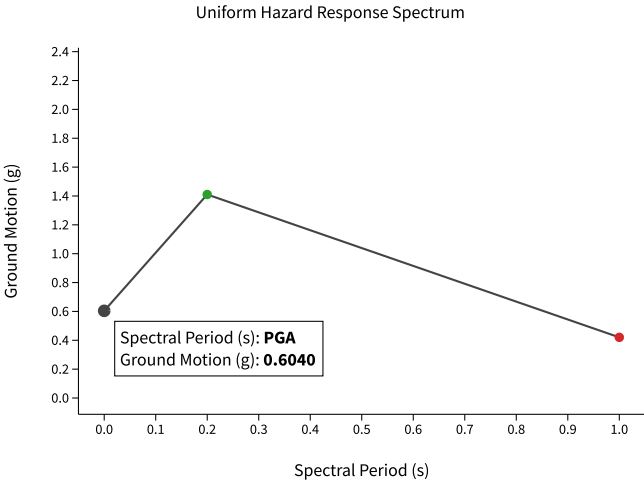
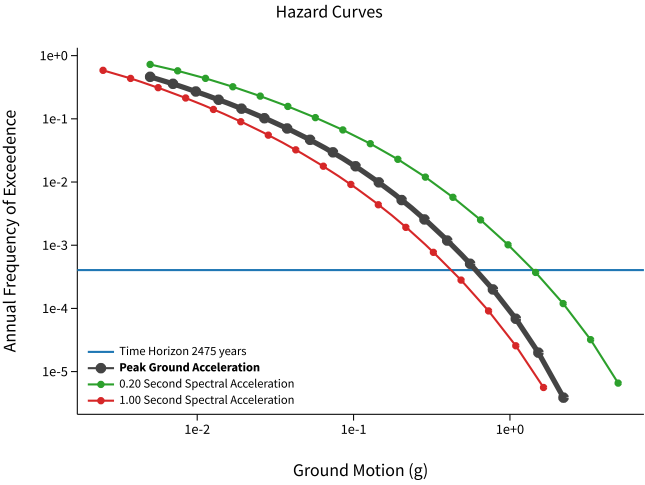
Decimal degrees, negative values for western longitudes

-117.9339

### Site Class

760 m/s (B/C boundary)

^ Hazard Curve



[View Raw Data](#)



Latitude, Longitude: 33.8077, -117.9339



<b>Date</b>	9/9/2020, 12:05:57 PM
<b>Design Code Reference Document</b>	ASCE7-16
<b>Risk Category</b>	III
<b>Site Class</b>	D - Default (See Section 11.4.3)

Type	Value	Description
$S_S$	1.422	$MCE_R$ ground motion. (for 0.2 second period)
$S_1$	0.502	$MCE_R$ ground motion. (for 1.0s period)
$S_{MS}$	1.707	Site-modified spectral acceleration value
$S_{M1}$	null -See Section 11.4.8	Site-modified spectral acceleration value
$S_{DS}$	1.138	Numeric seismic design value at 0.2 second SA
$S_{D1}$	null -See Section 11.4.8	Numeric seismic design value at 1.0 second SA

Type	Value	Description
SDC	null -See Section 11.4.8	Seismic design category
$F_a$	1.2	Site amplification factor at 0.2 second
$F_v$	null -See Section 11.4.8	Site amplification factor at 1.0 second
PGA	0.603	$MCE_G$ peak ground acceleration
$F_{PGA}$	1.2	Site amplification factor at PGA
$PGA_M$	0.724	Site modified peak ground acceleration
$T_L$	8	Long-period transition period in seconds
$S_{sRT}$	1.422	Probabilistic risk-targeted ground motion. (0.2 second)
$S_{sUH}$	1.548	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration
$S_{sD}$	2.317	Factored deterministic acceleration value. (0.2 second)
$S_{1RT}$	0.502	Probabilistic risk-targeted ground motion. (1.0 second)
$S_{1UH}$	0.546	Factored uniform-hazard (2% probability of exceedance in 50 years) spectral acceleration.
$S_{1D}$	0.782	Factored deterministic acceleration value. (1.0 second)
$PGA_d$	0.939	Factored deterministic acceleration value. (Peak Ground Acceleration)
$C_{RS}$	0.919	Mapped value of the risk coefficient at short periods
$C_{R1}$	0.92	Mapped value of the risk coefficient at a period of 1 s



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U.S. Geological Survey - Earthquake Hazards Program

# 2008 National Seismic Hazard Maps - Source Parameters

[New Search](#)

Fault Name	State
<b>Puente Hills (Coyote Hills)</b>	<b>California</b>

GEOMETRY	
Dip (degrees)	26
Dip direction	N
Sense of slip	thrust
Rupture top (km)	2.8
Rupture bottom (km)	15
Rake (degrees)	90
Length (km)	17

MODEL VALUES		
Slip Rate	0.7	
Probability of activity	1	
	ELLSWORTH	HANKS
Minimum magnitude	6.5	6.5
Maximum magnitude	6.90	6.60
b-value	0.8	0.8

Fault Model	Deformation Model	Char Rate <sup>1</sup>	GR-a-value <sup>1</sup>	Weight

Stitched	2.4	3.52e-04 / 9.91e-04	1.597 / 2.311	0.50
UnStitched	2.4	3.52e-04 / 9.91e-04	1.597 / 2.311	0.50

<sup>1</sup> 1<sup>st</sup> Value is based on Ellsworth relation and 2<sup>nd</sup> value is based on Hanks and Bakun relation

# 2008 National Seismic Hazard Maps - Source Parameters

[New Search](#)

Distance in Miles	Name	State	Pref Slip Rate (mm/yr)	Dip (degrees)	Dip Dir	Slip Sense	Rupture Top (km)	Rupture Bottom (km)	Length (km)
4.44	<a href="#">Puente Hills (Coyote Hills)</a>	CA	0.7	26	N	thrust	2.8	15	17
7.76	<a href="#">San Joaquin Hills</a>	CA	0.5	23	SW	thrust	2	13	27
9.43	<a href="#">Newport Inglewood Connected alt 2</a>	CA	1.3	90	V	strike slip	0	11	208
9.48	<a href="#">Newport-Inglewood, alt 1</a>	CA	1	88		strike slip	0	15	65
9.48	<a href="#">Newport Inglewood Connected alt 1</a>	CA	1.3	89		strike slip	0	11	208
9.49	<a href="#">Elsinore;W+GI+T+J+CM</a>	CA	n/a	84	NE	strike slip	0	16	241
9.49	<a href="#">Elsinore;W</a>	CA	2.5	75	NE	strike slip	0	14	46
9.49	<a href="#">Elsinore;W+GI+T</a>	CA	n/a	84	NE	strike slip	0	14	124
9.49	<a href="#">Elsinore;W+GI+T+J</a>	CA	n/a	84	NE	strike slip	0	16	199
9.49	<a href="#">Elsinore;W+GI</a>	CA	n/a	81	NE	strike slip	0	14	83
9.80	<a href="#">Puente Hills (Santa Fe Springs)</a>	CA	0.7	29	N	thrust	2.8	15	11
14.96	<a href="#">Newport-Inglewood (Offshore)</a>	CA	1.5	90	V	strike slip	0	10	66
15.70	<a href="#">Puente Hills (LA)</a>	CA	0.7	27	N	thrust	2.1	15	22
16.26	<a href="#">San Jose</a>	CA	0.5	74	NW	strike slip	0	15	20
16.90	<a href="#">Chino, alt 1</a>	CA	1	50	SW	strike slip	0	9	24
17.09	<a href="#">Chino, alt 2</a>	CA	1	65	SW	strike slip	0	14	29
18.79	<a href="#">Palos Verdes Connected</a>	CA	3	90	V	strike slip	0	10	285
18.79	<a href="#">Palos Verdes</a>	CA	3	90	V	strike slip	0	14	99
19.79	<a href="#">Elsinore;GI</a>	CA	5	90	V	strike	0	13	37

						slip			
19.79	<a href="#">Elsinore;GI+T+J+CM</a>	CA	n/a	86	NE	strike slip	0	16	195
19.79	<a href="#">Elsinore;GI+T+J</a>	CA	n/a	86	NE	strike slip	0	17	153
19.79	<a href="#">Elsinore;GI+T</a>	CA	5	90	V	strike slip	0	14	78
20.37	<a href="#">Elysian Park (Upper)</a>	CA	1.3	50	NE	reverse	3	15	20
23.33	<a href="#">Sierra Madre</a>	CA	2	53	N	reverse	0	14	57
23.33	<a href="#">Sierra Madre Connected</a>	CA	2	51		reverse	0	14	76
23.76	<a href="#">Raymond</a>	CA	1.5	79	N	strike slip	0	16	22
24.83	<a href="#">Cucamonga</a>	CA	5	45	N	thrust	0	8	28
25.65	<a href="#">Verdugo</a>	CA	0.5	55	NE	reverse	0	15	29
25.78	<a href="#">Clamshell-Sawpit</a>	CA	0.5	50	NW	reverse	0	14	16
27.43	<a href="#">Hollywood</a>	CA	1	70	N	strike slip	0	17	17
28.96	<a href="#">Santa Monica Connected alt 2</a>	CA	2.4	44		strike slip	0.8	11	93
32.78	<a href="#">Elsinore;T+J</a>	CA	n/a	86	NE	strike slip	0	17	127
32.78	<a href="#">Elsinore;T</a>	CA	5	90	V	strike slip	0	14	52
32.78	<a href="#">Elsinore;T+J+CM</a>	CA	n/a	85	NE	strike slip	0	16	169
32.88	<a href="#">Santa Monica, alt 1</a>	CA	1	75	N	strike slip	0	18	14
32.88	<a href="#">Santa Monica Connected alt 1</a>	CA	2.6	51		strike slip	0	16	79
36.38	<a href="#">Coronado Bank</a>	CA	3	90	V	strike slip	0	9	186
37.27	<a href="#">Malibu Coast, alt 2</a>	CA	0.3	74	N	strike slip	0	16	38
37.27	<a href="#">Malibu Coast, alt 1</a>	CA	0.3	75	N	strike slip	0	8	38
38.47	<a href="#">Anacapa-Dume, alt 2</a>	CA	3	41	N	thrust	1.2	12	65
38.52	<a href="#">Sierra Madre (San Fernando)</a>	CA	2	45	N	thrust	0	13	18
39.28	<a href="#">San Jacinto;SBV+SJV+A+C</a>	CA	n/a	90	V	strike slip	0	17	181
39.28	<a href="#">San Jacinto;SBV+SJV</a>	CA	n/a	90	V	strike	0	16	88

						slip			
39.28	<a href="#">San Jacinto;SBV+SJV+A+CC+B+SM</a>	CA	n/a	90	V	strike slip	0.1	15	241
39.28	<a href="#">San Jacinto;SBV+SJV+A</a>	CA	n/a	90	V	strike slip	0	16	134
39.28	<a href="#">San Jacinto;SBV+SJV+A+CC</a>	CA	n/a	90	V	strike slip	0	16	181
39.28	<a href="#">San Jacinto;SBV+SJV+A+CC+B</a>	CA	n/a	90	V	strike slip	0.1	15	215
39.28	<a href="#">San Jacinto;SBV</a>	CA	6	90	V	strike slip	0	16	45
40.41	<a href="#">San Gabriel</a>	CA	1	61	N	strike slip	0	15	71
41.24	<a href="#">S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG</a>	CA	n/a	85		strike slip	0	14	380
41.24	<a href="#">S. San Andreas;CC+BB+NM+SM</a>	CA	n/a	90	V	strike slip	0	14	243
41.24	<a href="#">S. San Andreas;BB+NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	85		strike slip	0.1	13	390
41.24	<a href="#">S. San Andreas;BB+NM+SM+NSB+SSB+BG</a>	CA	n/a	84		strike slip	0	14	321
41.24	<a href="#">S. San Andreas;BB+NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	14	263
41.24	<a href="#">S. San Andreas;SM+NSB+SSB+BG+CO</a>	CA	n/a	83		strike slip	0.1	13	303
41.24	<a href="#">S. San Andreas;SM+NSB+SSB+BG</a>	CA	n/a	81		strike slip	0	13	234
41.24	<a href="#">S. San Andreas;SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	13	176
41.24	<a href="#">S. San Andreas;SM+NSB</a>	CA	n/a	90	V	strike slip	0	13	133
41.24	<a href="#">S. San Andreas;BB+NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0	14	220
41.24	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	86		strike slip	0.1	13	548
41.24	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG</a>	CA	n/a	86		strike slip	0.1	13	479
41.24	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0.1	13	421
41.24	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0.1	13	377
41.24	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM</a>	CA	n/a	90	V	strike slip	0.1	13	342

41.24	<a href="#">S. San Andreas;BB+NM+SM</a>	CA	n/a	90	V	strike slip	0	14	184
41.24	<a href="#">S. San Andreas;CH+CC+BB+NM+SM</a>	CA	n/a	90	V	strike slip	0	14	306
41.24	<a href="#">S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	86		strike slip	0.1	13	512
41.24	<a href="#">S. San Andreas;SM</a>	CA	29	90	V	strike slip	0	13	98
41.24	<a href="#">S. San Andreas;NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	84		strike slip	0.1	13	340
41.24	<a href="#">S. San Andreas;NM+SM+NSB+SSB+BG</a>	CA	n/a	83		strike slip	0	14	271
41.24	<a href="#">S. San Andreas;NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	13	213
41.24	<a href="#">S. San Andreas;NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0	13	170
41.24	<a href="#">S. San Andreas;NM+SM</a>	CA	n/a	90	V	strike slip	0	14	134
41.24	<a href="#">S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG</a>	CA	n/a	86		strike slip	0	14	442
41.24	<a href="#">S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	14	384
41.24	<a href="#">S. San Andreas;CH+CC+BB+NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0	14	341
41.24	<a href="#">S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	86		strike slip	0.1	13	449
41.24	<a href="#">S. San Andreas;CC+BB+NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0	14	279
41.24	<a href="#">S. San Andreas;CC+BB+NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	14	322
41.40	<a href="#">S. San Andreas;NSB+SSB</a>	CA	n/a	90	V	strike slip	0	13	79
41.40	<a href="#">S. San Andreas;NSB+SSB+BG+CO</a>	CA	n/a	79		strike slip	0.2	12	206
41.40	<a href="#">S. San Andreas;NSB+SSB+BG</a>	CA	n/a	75		strike slip	0	14	136
41.40	<a href="#">S. San Andreas;NSB</a>	CA	22	90	V	strike slip	0	13	35
42.52	<a href="#">San Jacinto;SJV</a>	CA	18	90	V	strike slip	0	16	43
42.52	<a href="#">San Jacinto;SJV+A</a>	CA	n/a	90	V	strike slip	0	17	89

42.52	<a href="#">San Jacinto;SJV+A+C</a>	CA	n/a	90	V	strike slip	0	17	136
42.52	<a href="#">San Jacinto;SJV+A+CC</a>	CA	n/a	90	V	strike slip	0	16	136
42.52	<a href="#">San Jacinto;SJV+A+CC+B</a>	CA	n/a	90	V	strike slip	0.1	15	170
42.52	<a href="#">San Jacinto;SJV+A+CC+B+SM</a>	CA	n/a	90	V	strike slip	0.1	15	196
43.00	<a href="#">Northridge</a>	CA	1.5	35	S	thrust	7.4	17	33
43.90	<a href="#">Cleghorn</a>	CA	3	90	V	strike slip	0	16	25
45.44	<a href="#">Anacapa-Dume, alt 1</a>	CA	3	45	N	thrust	0	16	51
47.16	<a href="#">S. San Andreas;SSB+BG</a>	CA	n/a	71		strike slip	0	13	101
47.16	<a href="#">S. San Andreas;SSB+BG+CO</a>	CA	n/a	77		strike slip	0.2	12	170
47.16	<a href="#">S. San Andreas;SSB</a>	CA	16	90	V	strike slip	0	13	43
47.77	<a href="#">San Jacinto;A+CC+B+SM</a>	CA	n/a	90	V	strike slip	0.1	15	178
47.77	<a href="#">San Jacinto;A</a>	CA	9	90	V	strike slip	0	17	71
47.77	<a href="#">San Jacinto;A+C</a>	CA	n/a	90	V	strike slip	0	17	118
47.77	<a href="#">San Jacinto;A+CC</a>	CA	n/a	90	V	strike slip	0	16	118
47.77	<a href="#">San Jacinto;A+CC+B</a>	CA	n/a	90	V	strike slip	0.1	15	152
48.05	<a href="#">Santa Susana, alt 1</a>	CA	5	55	N	reverse	0	16	27
51.80	<a href="#">North Frontal (West)</a>	CA	1	49	S	reverse	0	16	50
54.86	<a href="#">Holser, alt 1</a>	CA	0.4	58	S	reverse	0	19	20
55.55	<a href="#">Simi-Santa Rosa</a>	CA	1	60		strike slip	1	12	39
55.63	<a href="#">Rose Canyon</a>	CA	1.5	90	V	strike slip	0	8	70
60.87	<a href="#">Oak Ridge (Onshore)</a>	CA	4	65	S	reverse	1	19	49
60.87	<a href="#">Oak Ridge Connected</a>	CA	3.6	53		reverse	0.6	15	94
62.30	<a href="#">Elsinore;J</a>	CA	3	84	NE	strike slip	0	19	75
62.30	<a href="#">Elsinore;J+CM</a>	CA	3	84	NE	strike slip	0	17	118



64.30	<a href="#">San Cayetano</a>	CA	6	42	N	thrust	0	16	42
65.82	<a href="#">S. San Andreas;BG</a>	CA	n/a	58		strike slip	0	13	56
65.82	<a href="#">S. San Andreas;BG+CO</a>	CA	n/a	72		strike slip	0.3	12	125
69.69	<a href="#">S. San Andreas;CH+CC+BB+NM</a>	CA	n/a	90	V	strike slip	0	14	208
69.69	<a href="#">S. San Andreas;BB+NM</a>	CA	n/a	90	V	strike slip	0	15	87
69.69	<a href="#">S. San Andreas;CC+BB+NM</a>	CA	n/a	90	V	strike slip	0	15	146
69.69	<a href="#">S. San Andreas;NM</a>	CA	27	90	V	strike slip	0	15	37
69.69	<a href="#">S. San Andreas;PK+CH+CC+BB+NM</a>	CA	n/a	90	V	strike slip	0.1	12	245
70.87	<a href="#">Helendale-So Lockhart</a>	CA	0.6	90	V	strike slip	0	13	114
71.72	<a href="#">Pinto Mtn</a>	CA	2.5	90	V	strike slip	0	16	74
74.53	<a href="#">North Frontal (East)</a>	CA	0.5	41	S	thrust	0	16	27
77.17	<a href="#">Santa Ynez Connected</a>	CA	2	70		strike slip	0	11	132
77.17	<a href="#">Santa Ynez (East)</a>	CA	2	70	S	strike slip	0	13	68
77.22	<a href="#">Santa Cruz Island</a>	CA	1	90	V	strike slip	0	13	69
77.89	<a href="#">Channel Islands Thrust</a>	CA	1.5	20	N	thrust	5	12	59
78.51	<a href="#">Pitas Point Connected</a>	CA	1	55		reverse	1.2	13	78
78.51	<a href="#">Ventura-Pitas Point</a>	CA	1	64	N	reverse	1	15	44
82.76	<a href="#">Oak Ridge (Offshore)</a>	CA	3	32	S	thrust	0	8	38
82.89	<a href="#">Lenwood-Lockhart-Old Woman Springs</a>	CA	0.9	90	V	strike slip	0	13	145
83.46	<a href="#">San Jacinto;CC+B</a>	CA	n/a	90	V	strike slip	0.2	14	77
83.46	<a href="#">San Jacinto;CC+B+SM</a>	CA	n/a	90	V	strike slip	0.2	14	103
83.46	<a href="#">San Jacinto;CC</a>	CA	4	90	V	strike slip	0	16	43
84.12	<a href="#">Mission Ridge-Arroyo Parida-Santa Ana</a>	CA	0.4	70	S	reverse	0	8	69
84.72	<a href="#">San Jacinto;C</a>	CA	14	90	V	strike slip	0	17	47

86.74	<a href="#">Red Mountain</a>	CA	2	56	N	reverse	0	14	101
87.17	<a href="#">Johnson Valley_(No)</a>	CA	0.6	90	V	strike slip	0	16	35
87.53	<a href="#">Garlock;GC+GW</a>	CA	n/a	90	V	strike slip	0.4	12	210
87.53	<a href="#">Garlock;GE+GC+GW</a>	CA	n/a	90	V	strike slip	0.3	12	256
87.53	<a href="#">Garlock;GW</a>	CA	6	90	V	strike slip	0.7	14	98
88.02	<a href="#">S. San Andreas;CC+BB</a>	CA	n/a	90	V	strike slip	0	15	109
88.02	<a href="#">S. San Andreas;BB</a>	CA	34	90	V	strike slip	0	15	50
88.02	<a href="#">S. San Andreas;CH+CC+BB</a>	CA	n/a	90	V	strike slip	0	14	171
88.02	<a href="#">S. San Andreas;PK+CH+CC+BB</a>	CA	n/a	90	V	strike slip	0.1	12	208
88.99	<a href="#">Earthquake Valley</a>	CA	2	90	V	strike slip	0	19	20
89.07	<a href="#">Burnt Mtn</a>	CA	0.6	67	W	strike slip	0	16	21
89.97	<a href="#">Landers</a>	CA	0.6	90	V	strike slip	0	15	95
90.98	<a href="#">Eureka Peak</a>	CA	0.6	90	V	strike slip	0	15	19
92.15	<a href="#">Pitas Point (Lower)-Montalvo</a>	CA	2.5	16	N	thrust	0.4	13	30
92.56	<a href="#">North Channel</a>	CA	1	26	N	thrust	1.1	5	51
92.95	<a href="#">Gravel Hills-Harper Lk</a>	CA	0.7	90	V	strike slip	0	11	65
94.05	<a href="#">So Emerson-Copper Mtn</a>	CA	0.6	90	V	strike slip	0	14	54
94.67	<a href="#">Pleito</a>	CA	2	46	S	reverse	0	14	44
97.07	<a href="#">S. San Andreas;CO</a>	CA	20	90	V	strike slip	0.6	11	69
97.66	<a href="#">Blackwater</a>	CA	0.5	90	V	strike slip	0	12	60
99.83	<a href="#">Calico-Hidalgo</a>	CA	1.8	90	V	strike slip	0	14	117



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**GEOTECHNICAL DATA REPORT  
PFAS-GWTPS PROJECT  
NEW WELL AND TREATMENT PLANT  
LA PALMA SITE  
1016 NORTH WEST STREET  
ANAHEIM, CA  
AESCO PROJECT NO. 20200895-F8948**

**Prepared for:**

**City of Anaheim  
Department of Public Utilities  
200 South Anaheim Boulevard, 6th Floor  
Anaheim, CA 92805**

**Attention: Mr. Jake Hester, P.E.  
Water Engineering and Design Manager**

**Prepared By:**

**AESCO  
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**Adam Chamaa, P.E., Manager**

**September 4, 2020  
Revised October 29, 2020**

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September 4, 2020

Revised October 29, 2020

Mr. Jake Hester, P.E., Water Engineering and Design Manager  
City of Anaheim, Department of Public Utilities  
200 South Anaheim Boulevard, 5<sup>th</sup> Floor  
Anaheim, CA 92805

**Subject: Geotechnical Data Report  
PFAS – GWTPs Project  
New Well and Treatment Plant  
La Palma Site  
1016 North West Street  
Anaheim, California  
AESCO Project No. 20200895-F8948**

Dear Mr. Hester:

AESCO is pleased to provide you the geotechnical data report for the proposed new well and treatment plant to be constructed at the subject site.

AESCO will be happy to assist you further on this project by furnishing any Construction Materials Testing and Inspection Services you may require during the construction phase of the project. We are a full service-testing laboratory and inspection service and can supply the full range of testing and inspection services such as soils, concrete, asphalt, steel, welding, etc. that may be necessary for construction of this project.

Please do not hesitate to contact us if you have any questions or if we may be of any additional assistance. We look forward to assisting you during the construction of the proposed facility.

Sincerely,

**AESCO, Inc.**

Debra L. Perez  
Project Manager

Adam Chamaa, PE, GE  
Engineering Manager

Russell J. Scharlin, P.E., G.E.  
Senior Geotechnical Engineer



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Project No. 20200895-F8368

La Palma Site

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Project No. 20200895-F8368

La Palma Site

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Appendix

Site Plan

Logs of Borings B-1 through B-3

Laboratory Test Data

Seismic Design Data

# SECTION ONE

## Introduction

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**Geotechnical Data Report  
PFAS – GWTPs Project  
New Well and Treatment Plant  
La Palma Site  
1016 North West Street  
Anaheim, California**

This geotechnical data report (authorized by the City of Anaheim), presents the results of a geotechnical investigation performed by AESCO for a proposed new well and treatment plant to be installed at 1016 North West Street, Anaheim, California. The exact location of the well and treatment plant has not been determined at this time. The site of the proposed facility is shown on the Site Plan, Figure 1.

We understand that the new facility will consist of a new well, to be designed by others, a treatment plant and appurtenances. Dimensions of the facility were not available at this time.

The purpose of this study was to provide geotechnical input for the design of the facility at either location. The scope of our services included the following:

- Coordinating site access for the field investigation;
- Obtaining utility clearances for the field investigation;
- Performing a ground penetrating radar (GPR) study at the site;
- Performing geotechnical drilling and sampling at the site;
- Performing laboratory testing of representative samples;
- Conducting a seismic hazards screening; and
- Preparing this report.

This report summarizes our findings and presents geotechnical data to better understand existing site conditions.

## SECTION TWO

## Field Investigation and Laboratory Testing

---

### 2.1 FIELD INVESTIGATION

Prior to performing the field investigation, a Ground Penetrating Radar (GPR) survey was performed in the work areas to identify the location, direction and depth of existing underground utilities. The locations and depths of the utilities were marked on the ground and the boring locations were adjusted, as required, to avoid damaging the utilities during drilling.

A field investigation was conducted at the site on August 14, 2020 to obtain information on the subsurface conditions. A total of three borings were drilled with a hollow stem auger drill rig to a depth of 25 feet below the existing ground surface. Boring B-1 was drilled at the west side of the site and B-2 and B-3 were drilled on the east side. The boring locations are shown on the Site Plan, Figure 1. The site plan is based on an aerial plot from Google Earth. AESCO's Geotechnical Engineer, Mr. Adam Chamaa, P.E., G.E., supervised the utility marking and the drilling operations. Mr. Chamaa met with the utility companies identified within the work area to mark the locations of underground utilities. The GPR study confirmed the locations and depths of underground utilities. AESCO personnel logged the borings and visually classified and collected samples of the subsurface materials encountered in the borings. The borings were backfilled with cuttings. The Logs of Borings B-1 through B-3 are presented in the attached Appendix.

Drive samples were taken in the borings using either a Standard Penetration Test (SPT) or Modified California (MC) sampler. The sampler was driven 18 inches into the bottom of the boreholes using a 140-pound hammer falling a distance of 30 inches. The MC sampler barrel was lined with stainless steel liners to collect relatively undisturbed soil samples. All of the samples were sealed and packaged to help preserve the natural moisture content and to protect them from further disturbance.

### 2.2 LABORATORY TESTING

All testing was performed in accordance with ASTM Standards and California Test Methods. Laboratory testing performed in our Huntington Beach, California geotechnical laboratory consisted of water content (ASTM D4959), dry density (ASTM D2937), direct shear ASTM D3080), Atterberg Limits (ASTM D4318), expansion index (ASTM D4829, and washed sieve analysis (ASTM D1140). Results of the laboratory tests are summarized on the Boring Log and are included in the attached Appendix. Chemical analyses, including pH (ASTM D1293),



## SECTION TWO

## Field Investigation and Laboratory Testing

---

soluble sulfates (CT417), soluble chlorides (CT422), and minimum resistivity (CT 643) were also performed. Results are presented in Section 4.10.

Based on Expansion Index testing, the surficial clayey sand material has a low expansion potential (EI=26).

## SECTION THREE

## Site Conditions

---

### 3.1 REGIONAL GEOLOGIC SETTING

The project site is located in Anaheim, California, within the southern portion of the Los Angeles basin, in the transition between the northern portion of the Peninsular Ranges physiographic province and the southern portion of the Transverse Ranges physiographic province. The project area is considered to be within the Transverse Ranges physiographic province by Norris and Webb (1990) and within the Peninsular Ranges physiographic province by Yerkes et al. (1965). These two physiographic provinces have contrasting tectonic characteristics that overlap within the Los Angeles basin resulting in a complex tectonic environment marked by active faulting and historic seismicity. Geologic materials at the ground surface in the vicinity of the site consist of Quaternary alluvial sediments deposited by the Santa Ana River or its tributaries.

### 3.2 SITE AND SUBSURFACE CONDITIONS

The proposed facility will be located either west of an existing water reservoir facility or at the northeast or southeast side of the site, in the City of Anaheim. The site is relatively flat and is covered with bare ground. Existing underground utilities may be present within the site boundary.

The material encountered within boring B-1 consisted of medium dense silty sand with slight clay to a depth of 5 feet, medium dense sand to a depth of 18 feet, medium dense sand/silty sand to a depth of 23 feet, and medium dense sand to the total depth drilled of 25 feet. The material encountered in boring B-2 consisted of clayey sand to a depth of 3 feet, medium stiff to stiff sandy silt to a depth of 8 feet, loose to medium dense clayey sand to a depth of 23 feet, and stiff sandy silt to the total depth drilled of 25 feet. The material encountered in boring B-3 consisted of medium dense clayey sand to a depth of 5 feet, medium dense sand/silty sand to a depth of 8 feet, loose to medium dense clayey sand to a depth of 18 feet, medium dense silty sand to a depth of 23 feet, and loose to medium dense silty gravel to the total depth drilled of 25 feet.

Groundwater was not encountered within the borings. Based on regional data, groundwater is anticipated to occur at a depth greater than 50 feet (CGS, 1997). The depth to groundwater may fluctuate, depending on rainfall and possible groundwater recharge or pumping activity in the site vicinity.

#### 4.1 SEISMIC DESIGN

A seismic hazards screening was performed for this site to evaluate potential seismic hazards. The seismic hazards screening consisted of reviewing available data published by the California Geological Survey (CGS), the 2019 California Building Code (CBC), the ATC Council, and the 2018 International Building Code (IBC). The site is located in the United States Geological Survey Anaheim Quadrangle. Data reviewed yielded the following Seismic Parameters:

Site Class	D
Spectral Response ‘Ss’	1.518g
Spectral Response ‘SMs’	1.518g
Spectral Response ‘S1’	0.535g
Spectral Response ‘SM1’	null

Data published by the USGS was reviewed. Results of the fault search are presented in the Appendix. A listing of faults within 100 miles of the site is also included. The search indicates that the Puente Hills (Coyote Hills) fault is 1.78 miles from the site.

The CGS (CDMG, 2000-003) does not delineate this site as being within an Alquist-Priolo Earthquake Fault Zone. With the active faults in the region, the site could be subjected to future strong ground shaking that may result from earthquakes on local to distant source.

#### 4.2 LIQUEFACTION POTENTIAL

Liquefaction is a mode of ground failure that results from the generation of high pore water pressures during earthquake ground shaking, causing loss of shear strength. Liquefaction is typically a hazard where loose sandy soils exist below groundwater. The CGS has designated certain areas within southern California as potential liquefaction hazard zones. These are areas considered at a risk of liquefaction-related ground failure during a seismic event, based upon mapped surficial deposits and the presence of a relatively shallow water table. Materials encountered at the project site generally consist of loose to medium dense granular material and medium stiff to stiff cohesive soil. The project site is not located within a mapped liquefaction hazard zone as designated by the CGS (1998). Groundwater was not encountered within the borings which were drilled to a depth of 25 feet beneath the existing ground surface. Based on regional data, groundwater is anticipated to occur at a depth of approximately 50 feet (CGS, 1997). Based on our investigation, we conclude that the potential for liquefaction at the site is

low. Other geologic hazards related to liquefaction, such as lateral spreading, are therefore also low.

#### 4.3 EXISTING UTILITIES

The proposed new facility may be located at and near other existing utilities. Care should be exercised not to disturb the existing utilities and to support them during construction if they will be reused and will not be abandoned.

#### 4.4 SOIL CORROSIVITY

The preliminary results of pH, soluble chloride and soluble sulfate laboratory tests on a sample of the near surface soils are summarized in the following table:

Soil Test	Test Results	Corrosion Potential
Soluble Sulfates (per CA 417)	3 ppm	Mild sulfate attack on concrete.
Soluble Chlorides (per CA 422)	114 ppm	Very corrosive potential to buried ferrous metals
pH	8.2	Mild to moderate corrosion potential to buried ferrous metals

Concrete should be designed in accordance with the 2019 CBC, ACI 318 Section 4.3, Table 19.3.2.1 (2017).

The test results indicate that the on site soils can be classified as very corrosive potential to buried metallic structures (e.g. pipes).

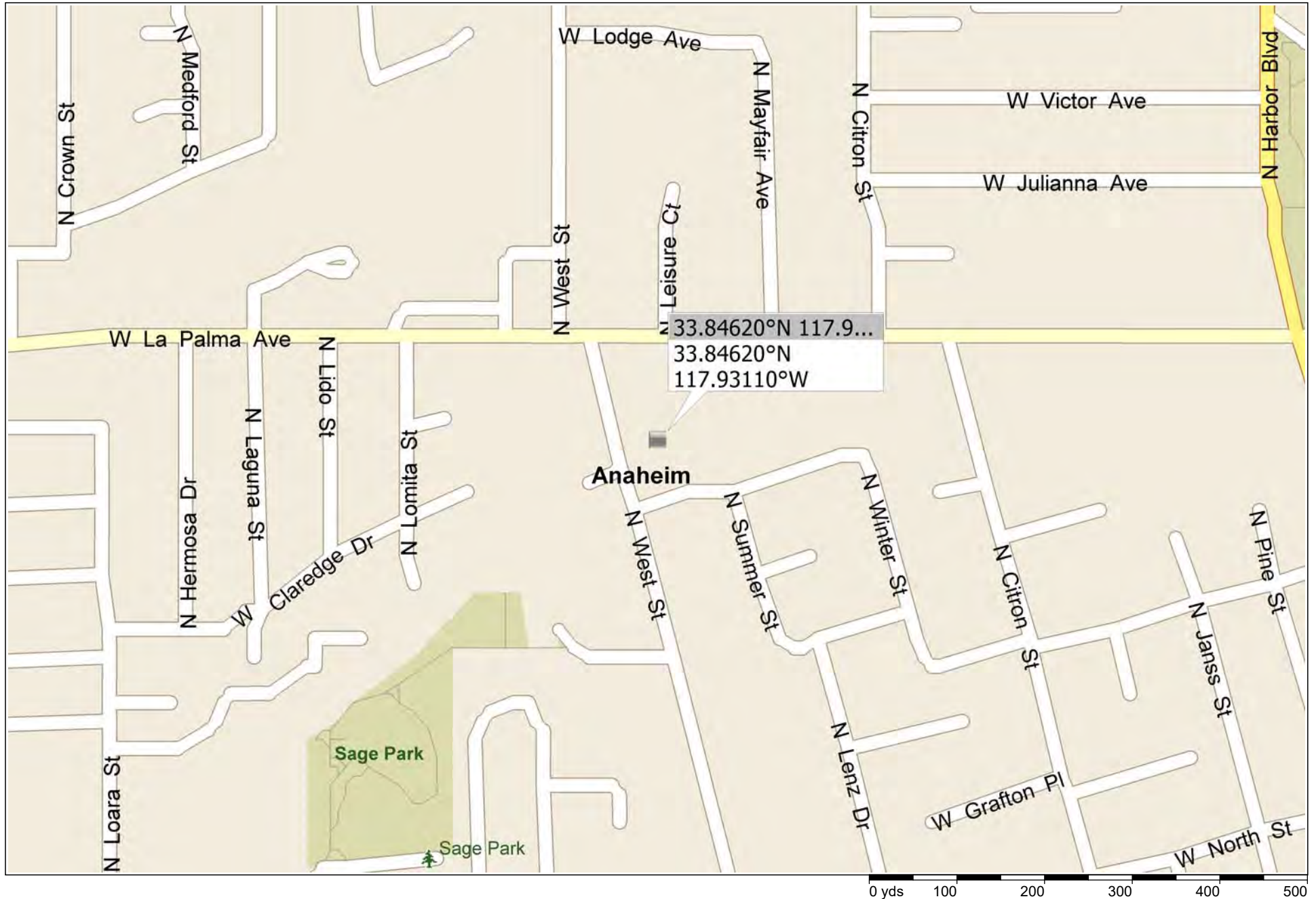
## 5.0 LIMITATIONS

It must be recognized that conclusions reached in this report are based on conditions, which exist at the boring location. In any subsoil investigation, it is necessary to assume that the subsoil conditions between boring(s) do not change significantly. The number of the borings, locations, and spacing are chosen as per the client's direction and available budget. Note that the boring(s) were placed as close to the location of the proposed structure(s) as possible. The boring locations are approximate and surveying is beyond the scope of our work. Consequently, careful observations must be made during construction to detect significant deviations of actual conditions throughout the construction area from those inferred from the exploratory borings.

---

## **APPENDIX SITE PLAN**


20200895







## LEGEND

 B-1 Approximate Location of Borings



### Anaheim

Project No. : 20200895-F8368

Site Name: La Palma

Site Address: 1016 N West St, Anaheim, CA

## SITE PLAN

Scale: 1 inch  $\approx$  110 feet

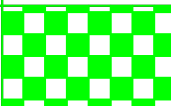
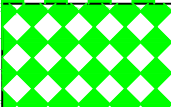
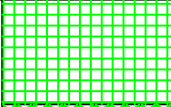
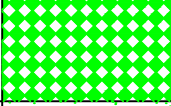
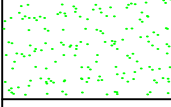
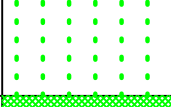
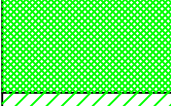
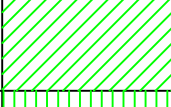
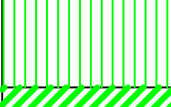
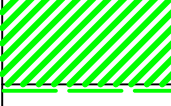
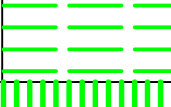
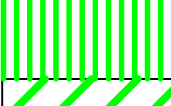
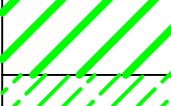
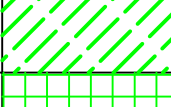

Date: 8-20-20

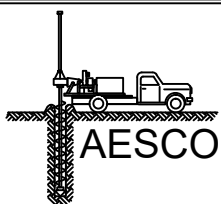
Figure 1



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**APPENDIX**  
**LOGS OF BORINGS B-1 through B-3**




MAJOR DIVISION			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVEL (LITTLE OR NO FINES)		GW	WELL GRADED GRAVELS, GRAVEL SAND MIXTURES, LITTLE OR NO FINES	
				GP	POORLY GRADED GRAVELS, GRAVEL SAND MIXTURES, LITTLE OR NO FINES	
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL SAND SILT MIXTURE	
				GC	CLAYEY GRAVELS, GRAVEL SAND CLAY MIXTURES	
	MORE THAN 50% BY WEIGHT OF MATERIAL IS LARGER THAN 200 SIEVE	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
					SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINE (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
					SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT <50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR 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		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS	
				CH	INORGANIC CLAYS OF HIGH PLATICITY, FAT CLAYS	
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS	
			HIGHLY ORGANIC SOILS			PT




## UNIFIED SOIL CLASSIFICATION SYSTEM

### KEY



-  Split Spoon Sample (SPT)
-  California Modified Sample
-  Hand Auger Sample

-  Ground Water Level
- N** SPT Blows/ft
- P** Penetrometer TSF

LOG OF BORING NO. B - 1														AESCO	
Project: La Palma Well Site										Location: 1016 North West Street Anaheim, CA				WATER: Not Encountered	
Client: City of Anaheim										Logger:				DRILLING:	
Date: 08/14/20										Project No. 20200895-F8368				Hollow Stem Auger	
FIELD DATA		TESTS												DESCRIPTION OF STRATUM	
SOIL SYMBOL	DEPTH (FT)	N=	MOISTURE CONTENT	DRY DENSITY	LIQUID LIMITS	PLASTIC LIMITS	PLASTICITY INDEX	Unconfined Comp.		PASSING 200 SIEVE	DIRECT SHEAR		RESISTIVITY		
								T=	P=		%	PCF			%
	3		5.1												Brown silty SAND (SM), moist, w/slight clay  Medium dense at 3'
	5	N=20	7.1												
	7	N=22	2.4	101.0								0	29°		Light brown SAND (SP), medium dense, dry    Gray at 13'
	8														
	10	N=10	2.2							3.4					
	13														
	15	N=22	3.4	95.2											Gray SAND/silty SAND (SP/SM), medium dense, dry
	18														
	20	N=19	4.0							9.3					Gray SAND/silty SAND (SP/SM), medium dense, dry
	23														
	25	N=25	2.9	101.5						3.6					Light gray SAND (SP), medium dense, dry, fine grained
Boring Terminated at 25 Feet															

TUBE SAMPLE  
 AUGER SAMPLE  
 CALIFORNIA MODIFIED SAMPLER  
 SPLIT SPOON  
 NO RECOVERY

Groundwater Level  
 Hydrostatic Groundwater Level  
 Approximate Division of Soil Type

N= SPT, BLOWS/FT  
T= THD. BLOWS/FT  
P= HAND PEN. TSF

REMARKS:  
NP: Non Plastic Materials  
\* Remolded Samples  
Blow Counts Corrected for California Modified (0.6 multiplier), Auto-Hammer, 8" HAS

LOG OF BORING NO. B - 2														AESCO	
Project: La Palma Well Site								Location: 1016 North West Street Anaheim, CA				WATER: Not Encountered			
Client: City of Anaheim								Logger:				DRILLING:			
Date: 08/14/20								Project No. 20200895-F8368				Hollow Stem Auger			
FIELD DATA		TESTS												DESCRIPTION OF STRATUM	
SOIL SYMBOL	DEPTH (FT)	N= T= P=	MOISTURE CONTENT %	DRY DENSITY PCF	LIQUID LIMITS %	PLASTIC LIMITS %	PLASTICITY INDEX %	Unconfined Comp.		PASSING 200 SIEVE %	DIRECT SHEAR		RESISTIVITY ohms/cm		
								TSF	Strain %		COHESION PSF	ANGLE Deg			
	3		4.9		23	17	12			32.3				Dark brown clayey SAND (SC), moist	
	5	N=14	8.1											Dark brown sandy SILT (ML), stiff, moist	
	7	N=7	14.5	118.9	22	17	4			51.3				Medlum stiff at 5'	
	8														
	10	N=4	12.3											Dark gray clayey SAND (SC), loose, moist	
	13														
	15	N=13	10.7	122.4						33.0	50	27		Medlum dense at 13'	
	18														
	20	N=11	15.7											Continues same at 18'	
	23														
	25	N=14	17.9	113.8	29	15	4			69.3				Dark gray sandy SILT (ML), stiff, moist	
Boring Terminated at 25 Feet															

TUBE SAMPLE  
 AUGER SAMPLE  
 CALIFORNIA MODIFIED SAMPLER  
 SPLIT SPOON  
 NO RECOVERY

Groundwater Level  
 Hydrostatic Groundwater Level  
 ----- Approximate Division of Soil Type

N= SPT, BLOWS/FT  
 T= THD.BLOWS/FT  
 P= HAND PEN, TSF

REMARKS:  
 NP: Non Plastic Materials  
 \* Remolded Samples  
 Blow Counts Corrected for California Modified  
 (0.6 multiplier). Auto-Hammer. 8" HAS

SC

ML

LOG OF BORING NO. B - 3														AESCO	
Project: La Palma Well Site								Location: 1016 North West Street Anaheim, CA				WATER: Not Encountered			
Client: City of Anaheim								Logger:				DRILLING:			
Date: 08/14/20								Project No. 20200895-F8368				Hollow Stem Auger			
FIELD DATA		TESTS												DESCRIPTION OF STRATUM	
SOIL SYMBOL	DEPTH (FT)	N= T= P=	MOISTURE CONTENT %	DRY DENSITY PCF	LIQUID LIMITS %	PLASTIC LIMITS %	PLASTICITY INDEX %	Unconfined Comp.		PASSING 200 SIEVE %	DIRECT SHEAR		EXPANSION INDEX		
								TSF	Strain %		COHESION PSF	ANGLE Deg			
X	3	N=30	11.5		28	14	14			41.6			26	Reddish-brown clayey SAND (SC), moist	
	5		13.0										Brown-gray, medium dense at 3'		
C	7	N=23 P=1.5	12.9	112.6						12.9	0	30		Dark gray SAND/silty SAND (SP/SM), medium dense, moist	
	8														
X	10	N=12	17.1											Dark brown clayey SAND (SC), medium dense, moist	
	13														
C	15	N=8	15.5	113.7						36.9				Dark gray, loose at 13'	
	18														
X	20	N=13	8.4											Brown silty SAND (SM), medium dense, moist	
	23														
C	25	N=10	15.0	119.5						46.2				Gray-brown silty GRAVEL (GM), loose to medium dense, moist	
Boring Terminated at 25 Feet															

TUBE SAMPLE  
 AUGER SAMPLE  
 CALIFORNIA MODIFIED SAMPLER  
 SPLIT SPOON  
 NO RECOVERY

Groundwater Level  
 Hydrostatic Groundwater Level  
 Approximate Division of Soil Type

N= SPT, BLOWS/FT  
 T= THD. BLOWS/FT  
 P= HAND PEN., TSF

**REMARKS:**  
 NP: Non Plastic Materials  
 \* Remolded Samples  
 Blow Counts Corrected for California Modified (0.6 multiplier), Auto-Hammer, 8" HAS

SC

SP/SM

SM

GM

---

**APPENDIX**  
**LABORATORY TEST DATA**



**Orange County**  
17782 Georgetown Lane  
Huntington Beach, California 92647  
Tele: (714) 375-3830  
Fax: (714)375-3831

**San Bernardino County**  
14163 Arrow Boulevard  
Fontana, California 92335  
Tele:(909) 284-9200  
Fax:(909) 284-9201

Site/Client: La Palma

Project No: 2020895-F8368

Boring No: B-1

Depth (ft): 5-7'

$\gamma_d$  (pcf) = 105.0

$C$  (psf) = 0

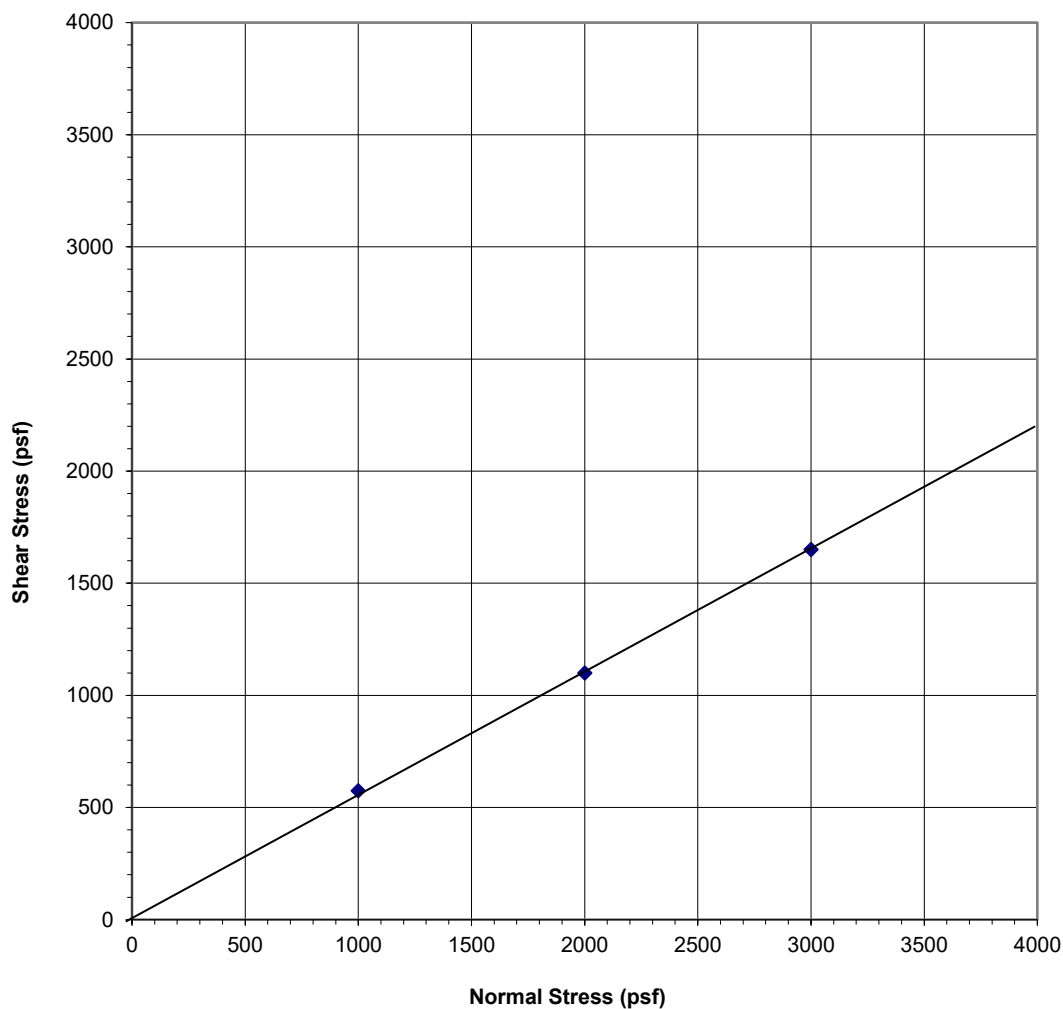
$\phi$  (deg) = 29

$W_{int}$  = 5.0%

Remolded (Y/N): Y

Soil Type: SP

### ASTM D3080 Direct Shear Results





**Orange County**  
17782 Georgetown Lane  
Huntington Beach, California 92647  
Tele: (714) 375-3830  
Fax: (714)375-3831

**San Bernardino County**  
14163 Arrow Boulevard  
Fontana, California 92335  
Tele:(909) 284-9200  
Fax:(909) 284-9201

Site/Client: La Palma

Project No: 2020895-F8368

Boring No: B-2

Depth (ft): 13-15'

$\gamma_d$  (pcf) = 122.4

C (psf) = 50

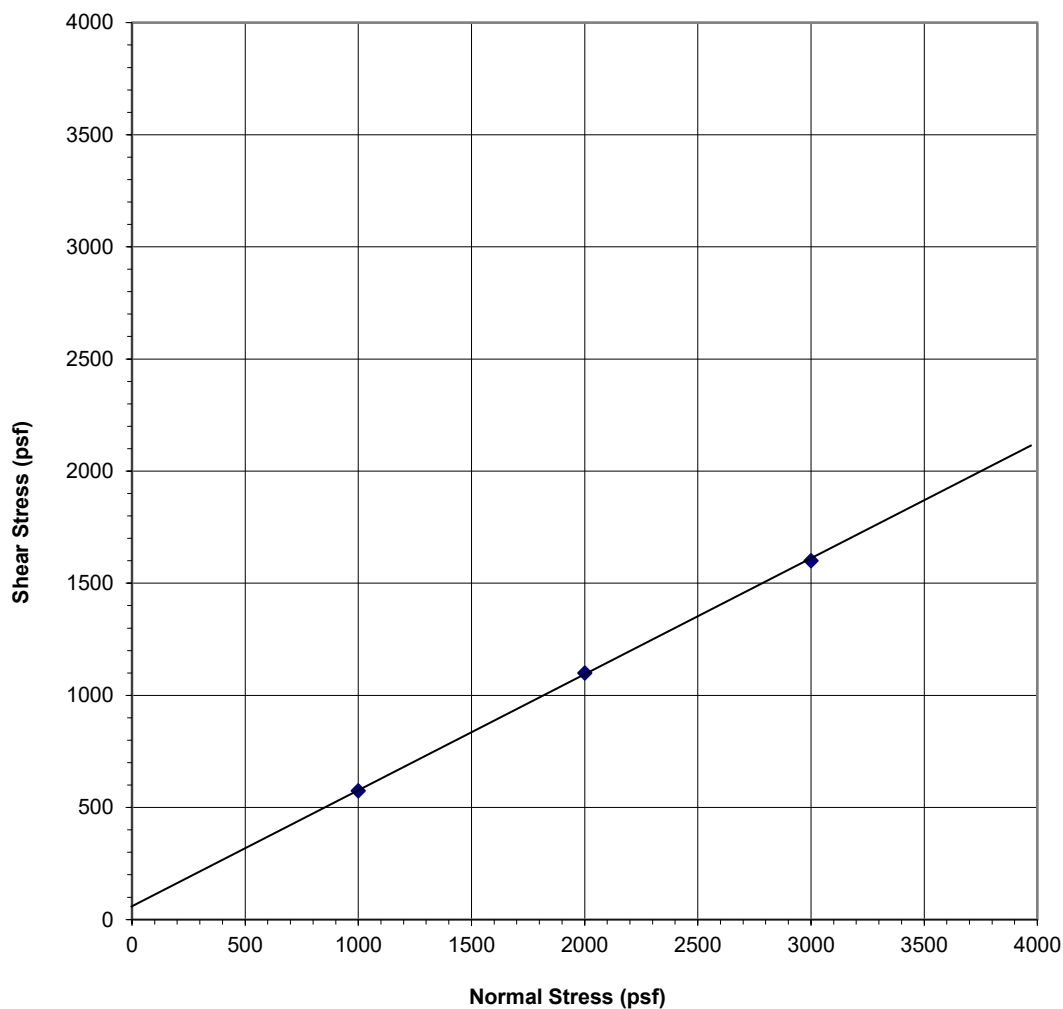
$\phi$  (deg) = 27

W int = 10.7%

Remolded (Y/N): N

Soil Type: SC

### ASTM D3080 Direct Shear Results







**Orange County**  
17782 Georgetown Lane  
Huntington Beach, California 92647  
Tele: (714) 375-3830  
Fax: (714)375-3831

**San Bernardino County**  
14163 Arrow Boulevard  
Fontana, California 92335  
Tele:(909) 284-9200  
Fax:(909) 284-9201

Site/Client: La Palma

Project No: 2020895-F8368

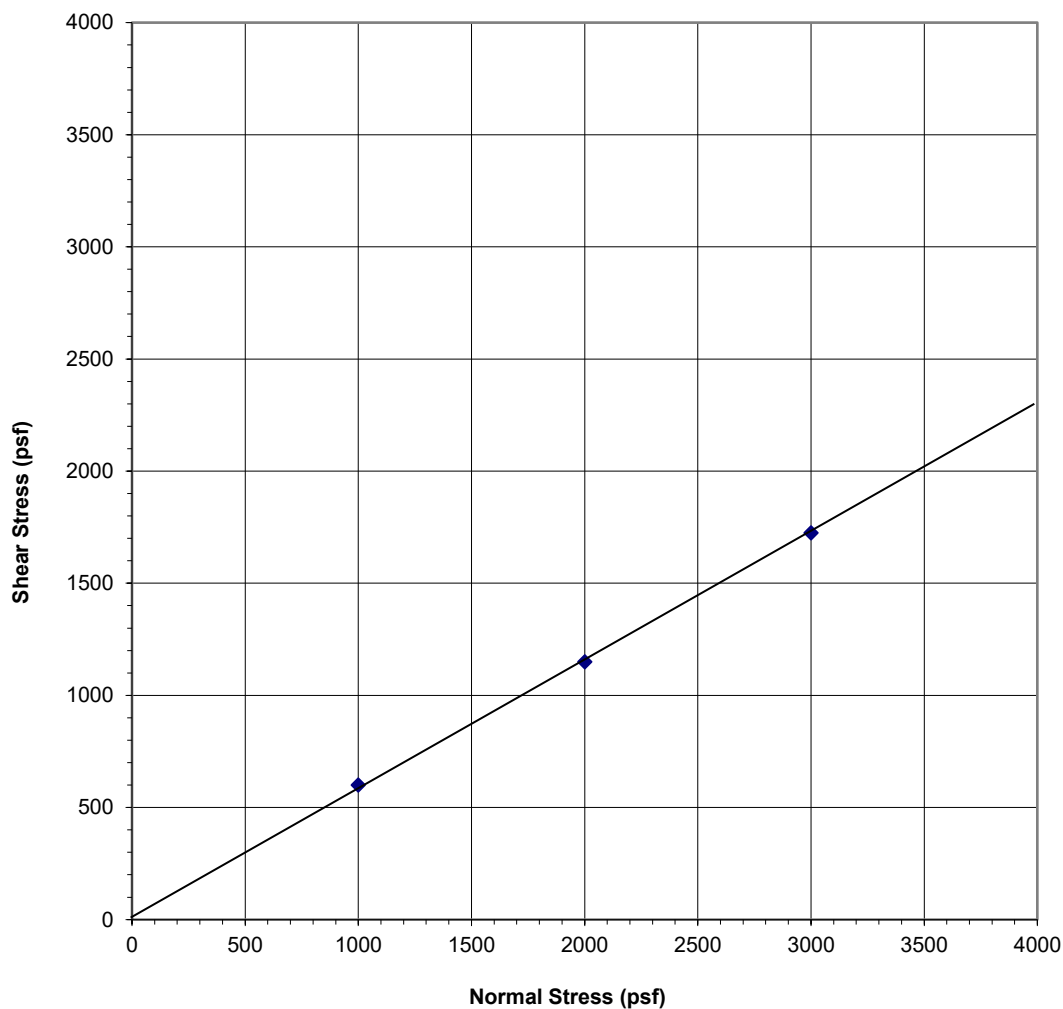
Boring No: B-3

Depth (ft): 5-7'

$\gamma_d$  (pcf) = 112.6       $C$  (psf) = 0       $\phi$  (deg) = 30       $W_{int}$  = 12.9%

Remolded (Y/N): N      Soil Type: SP/SM

### ASTM D3080 Direct Shear Results



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**APPENDIX**  
**SEISMIC DESIGN DATA**

# Unified Hazard Tool



Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the [U.S. Seismic Design Maps web tools](#) (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

## ^ Input

### Edition

Conterminous U.S. 2014 (v4.0.x)

### Spectral Period

Peak Ground Acceleration

### Latitude

Decimal degrees

33.8462

### Time Horizon

Return period in years

2475

### Longitude

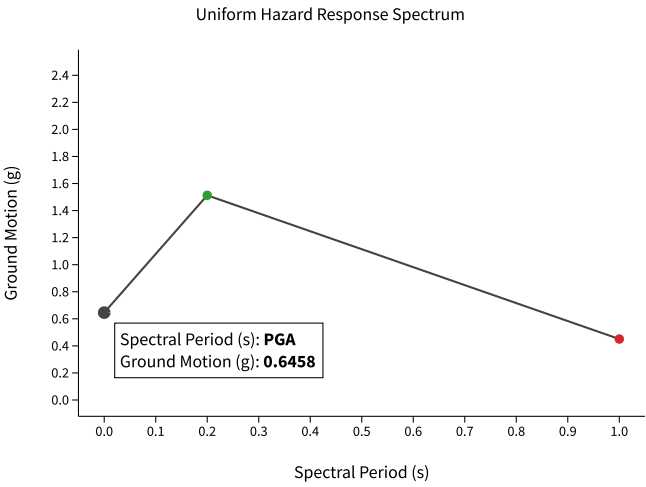
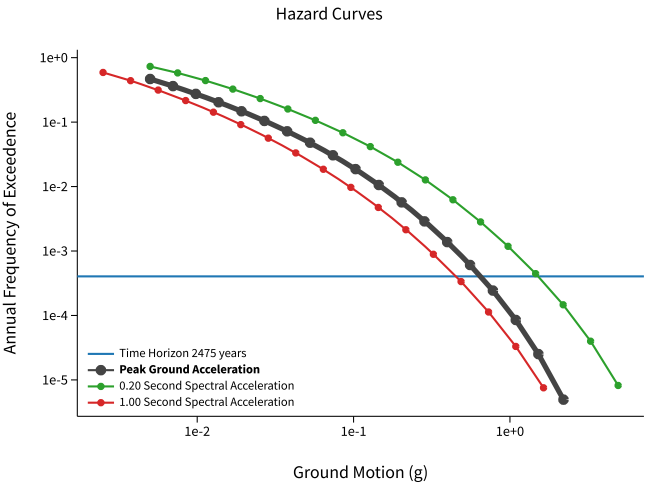
Decimal degrees, negative values for western longitudes

-117.9311

### Site Class

760 m/s (B/C boundary)

^ Hazard Curve



[View Raw Data](#)



## Hazards by Location

### Search Information

<b>Coordinates:</b>	33.8462, -117.9311
<b>Elevation:</b>	144 ft
<b>Timestamp:</b>	2020-09-02T20:08:26.939Z
<b>Hazard Type:</b>	Seismic
<b>Reference Document:</b>	ASCE7-16
<b>Risk Category:</b>	III
<b>Site Class:</b>	D



### Basic Parameters

Name	Value	Description
$S_S$	1.518	$MCE_R$ ground motion (period=0.2s)
$S_1$	0.535	$MCE_R$ ground motion (period=1.0s)
$S_{MS}$	1.518	Site-modified spectral acceleration value
$S_{M1}$	* null	Site-modified spectral acceleration value
$S_{DS}$	1.012	Numeric seismic design value at 0.2s SA
$S_{D1}$	* null	Numeric seismic design value at 1.0s SA

\* See Section 11.4.8

### ▼Additional Information

Name	Value	Description
SDC	* null	Seismic design category
$F_a$	1	Site amplification factor at 0.2s
$F_v$	* null	Site amplification factor at 1.0s
$CR_S$	0.913	Coefficient of risk (0.2s)
$CR_1$	0.914	Coefficient of risk (1.0s)
PGA	0.645	$MCE_G$ peak ground acceleration
$F_{PGA}$	1.1	Site amplification factor at PGA
$PGA_M$	0.71	Site modified peak ground acceleration
$T_L$	8	Long-period transition period (s)
$S_{sRT}$	1.518	Probabilistic risk-targeted ground motion (0.2s)
$S_{sIH}$	1.662	Factored uniform-hazard spectral acceleration (2% probability of

SsD	2.387	Factored uniform hazard spectral acceleration (2% probability of exceedance in 50 years)
S1RT	0.535	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.585	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.799	Factored deterministic acceleration value (1.0s)
PGAd	0.963	Factored deterministic acceleration value (PGA)

\* See Section 11.4.8

*The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.*

## Disclaimer

Hazard loads are provided by the U.S. Geological Survey [Seismic Design Web Services](#).

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U.S. Geological Survey - Earthquake Hazards Program

# 2008 National Seismic Hazard Maps - Source Parameters

[New Search](#)

Fault Name	State
<b>Puente Hills (Coyote Hills)</b>	<b>California</b>

GEOMETRY	
Dip (degrees)	26
Dip direction	N
Sense of slip	thrust
Rupture top (km)	2.8
Rupture bottom (km)	15
Rake (degrees)	90
Length (km)	17

MODEL VALUES		
Slip Rate	0.7	
Probability of activity	1	
	ELLSWORTH	HANKS
Minimum magnitude	6.5	6.5
Maximum magnitude	6.90	6.60
b-value	0.8	0.8

Fault Model	Deformation Model	Char Rate <sup>1</sup>	GR-a-value <sup>1</sup>	Weight

Stitched	2.4	3.52e-04 / 9.91e-04	1.597 / 2.311	0.50
UnStitched	2.4	3.52e-04 / 9.91e-04	1.597 / 2.311	0.50

<sup>1</sup> 1<sup>st</sup> Value is based on Ellsworth relation and 2<sup>nd</sup> value is based on Hanks and Bakun relation



# 2008 National Seismic Hazard Maps - Source Parameters

[New Search](#)

Distance in Miles	Name	State	Pref Slip Rate (mm/yr)	Dip (degrees)	Dip Dir	Slip Sense	Rupture Top (km)	Rupture Bottom (km)	Length (km)
1.78	<a href="#">Puente Hills (Coyote Hills)</a>	CA	0.7	26	N	thrust	2.8	15	17
6.93	<a href="#">Elsinore;W</a>	CA	2.5	75	NE	strike slip	0	14	46
6.93	<a href="#">Elsinore;W+Gl</a>	CA	n/a	81	NE	strike slip	0	14	83
6.93	<a href="#">Elsinore;W+Gl+T</a>	CA	n/a	84	NE	strike slip	0	14	124
6.93	<a href="#">Elsinore;W+Gl+T+J</a>	CA	n/a	84	NE	strike slip	0	16	199
6.93	<a href="#">Elsinore;W+Gl+T+J+CM</a>	CA	n/a	84	NE	strike slip	0	16	241
7.72	<a href="#">Puente Hills (Santa Fe Springs)</a>	CA	0.7	29	N	thrust	2.8	15	11
10.41	<a href="#">San Joaquin Hills</a>	CA	0.5	23	SW	thrust	2	13	27
11.33	<a href="#">Newport Inglewood Connected alt 1</a>	CA	1.3	89		strike slip	0	11	208
11.33	<a href="#">Newport-Inglewood, alt 1</a>	CA	1	88		strike slip	0	15	65
11.33	<a href="#">Newport Inglewood Connected alt 2</a>	CA	1.3	90	V	strike slip	0	11	208
13.63	<a href="#">San Jose</a>	CA	0.5	74	NW	strike slip	0	15	20
14.07	<a href="#">Puente Hills (LA)</a>	CA	0.7	27	N	thrust	2.1	15	22
15.19	<a href="#">Chino, alt 1</a>	CA	1	50	SW	strike slip	0	9	24
15.35	<a href="#">Chino, alt 2</a>	CA	1	65	SW	strike slip	0	14	29
17.60	<a href="#">Newport-Inglewood (Offshore)</a>	CA	1.5	90	V	strike slip	0	10	66
18.16	<a href="#">Elysian Park (Upper)</a>	CA	1.3	50	NE	reverse	3	15	20
19.60	<a href="#">Elsinore;Gl+T</a>	CA	5	90	V	strike slip	0	14	78
19.60	<a href="#">Elsinore;Gl+T+J+CM</a>	CA	n/a	86	NE	strike slip	0	16	195

19.60	<a href="#">Elsinore;GI</a>	CA	5	90	V	strike slip	0	13	37
19.60	<a href="#">Elsinore;GI+T+J</a>	CA	n/a	86	NE	strike slip	0	17	153
19.84	<a href="#">Palos Verdes</a>	CA	3	90	V	strike slip	0	14	99
19.84	<a href="#">Palos Verdes Connected</a>	CA	3	90	V	strike slip	0	10	285
20.75	<a href="#">Sierra Madre Connected</a>	CA	2	51		reverse	0	14	76
20.75	<a href="#">Sierra Madre</a>	CA	2	53	N	reverse	0	14	57
21.36	<a href="#">Raymond</a>	CA	1.5	79	N	strike slip	0	16	22
22.45	<a href="#">Cucamonga</a>	CA	5	45	N	thrust	0	8	28
23.19	<a href="#">Clamshell-Sawpit</a>	CA	0.5	50	NW	reverse	0	14	16
23.46	<a href="#">Verdugo</a>	CA	0.5	55	NE	reverse	0	15	29
25.51	<a href="#">Hollywood</a>	CA	1	70	N	strike slip	0	17	17
27.23	<a href="#">Santa Monica Connected alt 2</a>	CA	2.4	44		strike slip	0.8	11	93
31.63	<a href="#">Santa Monica Connected alt 1</a>	CA	2.6	51		strike slip	0	16	79
31.63	<a href="#">Santa Monica, alt 1</a>	CA	1	75	N	strike slip	0	18	14
33.50	<a href="#">Elsinore;T+J+CM</a>	CA	n/a	85	NE	strike slip	0	16	169
33.50	<a href="#">Elsinore;T+J</a>	CA	n/a	86	NE	strike slip	0	17	127
33.50	<a href="#">Elsinore;I</a>	CA	5	90	V	strike slip	0	14	52
36.40	<a href="#">Sierra Madre (San Fernando)</a>	CA	2	45	N	thrust	0	13	18
36.41	<a href="#">Malibu Coast, alt 2</a>	CA	0.3	74	N	strike slip	0	16	38
36.41	<a href="#">Malibu Coast, alt 1</a>	CA	0.3	75	N	strike slip	0	8	38
37.12	<a href="#">San Jacinto;SBV+SJV+A+CC</a>	CA	n/a	90	V	strike slip	0	16	181
37.12	<a href="#">San Jacinto;SBV</a>	CA	6	90	V	strike slip	0	16	45
37.12	<a href="#">San Jacinto;SBV+SJV</a>	CA	n/a	90	V	strike slip	0	16	88
37.12	<a href="#">San Jacinto;SBV+SJV+A+CC+B+SM</a>	CA	n/a	90	V	strike	0.1	15	241

						slip			
37.12	<a href="#">San Jacinto;SBV+SJV+A+C</a>	CA	n/a	90	V	strike slip	0	17	181
37.12	<a href="#">San Jacinto;SBV+SJV+A</a>	CA	n/a	90	V	strike slip	0	16	134
37.12	<a href="#">San Jacinto;SBV+SJV+A+CC+B</a>	CA	n/a	90	V	strike slip	0.1	15	215
37.69	<a href="#">Anacapa-Dume, alt 2</a>	CA	3	41	N	thrust	1.2	12	65
38.20	<a href="#">San Gabriel</a>	CA	1	61	N	strike slip	0	15	71
38.80	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG</a>	CA	n/a	86		strike slip	0.1	13	479
38.80	<a href="#">S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG</a>	CA	n/a	85		strike slip	0	14	380
38.80	<a href="#">S. San Andreas;CC+BB+NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	14	322
38.80	<a href="#">S. San Andreas;BB+NM+SM</a>	CA	n/a	90	V	strike slip	0	14	184
38.80	<a href="#">S. San Andreas;BB+NM+SM+NSB+SSB+BG</a>	CA	n/a	84		strike slip	0	14	321
38.80	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0.1	13	377
38.80	<a href="#">S. San Andreas;BB+NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	14	263
38.80	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0.1	13	421
38.80	<a href="#">S. San Andreas;CH+CC+BB+NM+SM</a>	CA	n/a	90	V	strike slip	0	14	306
38.80	<a href="#">S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	86		strike slip	0.1	13	512
38.80	<a href="#">S. San Andreas;SM</a>	CA	29	90	V	strike slip	0	13	98
38.80	<a href="#">S. San Andreas;SM+NSB+SSB+BG+CO</a>	CA	n/a	83		strike slip	0.1	13	303
38.80	<a href="#">S. San Andreas;CC+BB+NM+SM</a>	CA	n/a	90	V	strike slip	0	14	243
38.80	<a href="#">S. San Andreas;SM+NSB+SSB+BG</a>	CA	n/a	81		strike slip	0	13	234
38.80	<a href="#">S. San Andreas;BB+NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	85		strike slip	0.1	13	390
38.80	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM</a>	CA	n/a	90	V	strike slip	0.1	13	342

38.80	<a href="#">S. San Andreas;NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	84		strike slip	0.1	13	340
38.80	<a href="#">S. San Andreas;NM+SM+NSB+SSB+BG</a>	CA	n/a	83		strike slip	0	14	271
38.80	<a href="#">S. San Andreas;NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	13	213
38.80	<a href="#">S. San Andreas;NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0	13	170
38.80	<a href="#">S. San Andreas;NM+SM</a>	CA	n/a	90	V	strike slip	0	14	134
38.80	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	86		strike slip	0.1	13	548
38.80	<a href="#">S. San Andreas;CC+BB+NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0	14	279
38.80	<a href="#">S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG</a>	CA	n/a	86		strike slip	0	14	442
38.80	<a href="#">S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	14	384
38.80	<a href="#">S. San Andreas;CH+CC+BB+NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0	14	341
38.80	<a href="#">S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	86		strike slip	0.1	13	449
38.80	<a href="#">S. San Andreas;SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	13	176
38.80	<a href="#">S. San Andreas;SM+NSB</a>	CA	n/a	90	V	strike slip	0	13	133
38.80	<a href="#">S. San Andreas;BB+NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0	14	220
39.03	<a href="#">Coronado Bank</a>	CA	3	90	V	strike slip	0	9	186
39.09	<a href="#">S. San Andreas;NSB+SSB+BG</a>	CA	n/a	75		strike slip	0	14	136
39.09	<a href="#">S. San Andreas;NSB+SSB+BG+CO</a>	CA	n/a	79		strike slip	0.2	12	206
39.09	<a href="#">S. San Andreas;NSB+SSB</a>	CA	n/a	90	V	strike slip	0	13	79
39.09	<a href="#">S. San Andreas;NSB</a>	CA	22	90	V	strike slip	0	13	35
40.99	<a href="#">Northridge</a>	CA	1.5	35	S	thrust	7.4	17	33
41.53	<a href="#">San Jacinto;SJV</a>	CA	18	90	V	strike slip	0	16	43
41.53	<a href="#">San Jacinto;SJV+A</a>	CA	n/a	90	V	strike slip	0	17	89

41.53	<a href="#">San Jacinto;SJV+A+C</a>	CA	n/a	90	V	strike slip	0	17	136
41.53	<a href="#">San Jacinto;SJV+A+CC</a>	CA	n/a	90	V	strike slip	0	16	136
41.53	<a href="#">San Jacinto;SJV+A+CC+B</a>	CA	n/a	90	V	strike slip	0.1	15	170
41.53	<a href="#">San Jacinto;SJV+A+CC+B+SM</a>	CA	n/a	90	V	strike slip	0.1	15	196
41.73	<a href="#">Cleghorn</a>	CA	3	90	V	strike slip	0	16	25
44.95	<a href="#">Anacapa-Dume, alt 1</a>	CA	3	45	N	thrust	0	16	51
45.74	<a href="#">S. San Andreas;SSB+BG</a>	CA	n/a	71		strike slip	0	13	101
45.74	<a href="#">S. San Andreas;SSB</a>	CA	16	90	V	strike slip	0	13	43
45.74	<a href="#">S. San Andreas;SSB+BG+CO</a>	CA	n/a	77		strike slip	0.2	12	170
46.23	<a href="#">Santa Susana, alt 1</a>	CA	5	55	N	reverse	0	16	27
47.36	<a href="#">San Jacinto;A+C</a>	CA	n/a	90	V	strike slip	0	17	118
47.36	<a href="#">San Jacinto;A+CC</a>	CA	n/a	90	V	strike slip	0	16	118
47.36	<a href="#">San Jacinto;A+CC+B</a>	CA	n/a	90	V	strike slip	0.1	15	152
47.36	<a href="#">San Jacinto;A+CC+B+SM</a>	CA	n/a	90	V	strike slip	0.1	15	178
47.36	<a href="#">San Jacinto;A</a>	CA	9	90	V	strike slip	0	17	71
49.91	<a href="#">North Frontal (West)</a>	CA	1	49	S	reverse	0	16	50
52.96	<a href="#">Holser, alt 1</a>	CA	0.4	58	S	reverse	0	19	20
54.08	<a href="#">Simi-Santa Rosa</a>	CA	1	60		strike slip	1	12	39
57.82	<a href="#">Rose Canyon</a>	CA	1.5	90	V	strike slip	0	8	70
59.24	<a href="#">Oak Ridge Connected</a>	CA	3.6	53		reverse	0.6	15	94
59.24	<a href="#">Oak Ridge (Onshore)</a>	CA	4	65	S	reverse	1	19	49
62.66	<a href="#">San Cayetano</a>	CA	6	42	N	thrust	0	16	42
63.57	<a href="#">Elsinore;J</a>	CA	3	84	NE	strike slip	0	19	75
63.57	<a href="#">Elsinore;J+CM</a>	CA	3	84	NE	strike	0	17	118

						slip			
65.30	<a href="#">S. San Andreas;BG</a>	CA	n/a	58		strike slip	0	13	56
65.30	<a href="#">S. San Andreas;BG+CO</a>	CA	n/a	72		strike slip	0.3	12	125
67.44	<a href="#">S. San Andreas;BB+NM</a>	CA	n/a	90	V	strike slip	0	15	87
67.44	<a href="#">S. San Andreas;CC+BB+NM</a>	CA	n/a	90	V	strike slip	0	15	146
67.44	<a href="#">S. San Andreas;NM</a>	CA	27	90	V	strike slip	0	15	37
67.44	<a href="#">S. San Andreas;CH+CC+BB+NM</a>	CA	n/a	90	V	strike slip	0	14	208
67.44	<a href="#">S. San Andreas;PK+CH+CC+BB+NM</a>	CA	n/a	90	V	strike slip	0.1	12	245
68.88	<a href="#">Helendale-So Lockhart</a>	CA	0.6	90	V	strike slip	0	13	114
70.96	<a href="#">Pinto Mtn</a>	CA	2.5	90	V	strike slip	0	16	74
73.12	<a href="#">North Frontal (East)</a>	CA	0.5	41	S	thrust	0	16	27
75.46	<a href="#">Santa Ynez (East)</a>	CA	2	70	S	strike slip	0	13	68
75.46	<a href="#">Santa Ynez Connected</a>	CA	2	70		strike slip	0	11	132
77.00	<a href="#">Santa Cruz Island</a>	CA	1	90	V	strike slip	0	13	69
77.43	<a href="#">Ventura-Pitas Point</a>	CA	1	64	N	reverse	1	15	44
77.43	<a href="#">Pitas Point Connected</a>	CA	1	55		reverse	1.2	13	78
77.56	<a href="#">Channel Islands Thrust</a>	CA	1.5	20	N	thrust	5	12	59
81.57	<a href="#">Lenwood-Lockhart-Old Woman Springs</a>	CA	0.9	90	V	strike slip	0	13	145
81.95	<a href="#">Oak Ridge (Offshore)</a>	CA	3	32	S	thrust	0	8	38
82.83	<a href="#">Mission Ridge-Arroyo Parida-Santa Ana</a>	CA	0.4	70	S	reverse	0	8	69
84.07	<a href="#">San Jacinto;CC+B</a>	CA	n/a	90	V	strike slip	0.2	14	77
84.07	<a href="#">San Jacinto;CC+B+SM</a>	CA	n/a	90	V	strike slip	0.2	14	103
84.07	<a href="#">San Jacinto;CC</a>	CA	4	90	V	strike slip	0	16	43
85.13	<a href="#">Garlock;GW</a>	CA	6	90	V	strike slip	0.7	14	98

85.13	<a href="#">Garlock;GE+GC+GW</a>	CA	n/a	90	V	strike slip	0.3	12	256
85.13	<a href="#">Garlock;GC+GW</a>	CA	n/a	90	V	strike slip	0.4	12	210
85.27	<a href="#">San Jacinto;C</a>	CA	14	90	V	strike slip	0	17	47
85.57	<a href="#">Johnson Valley_(No)</a>	CA	0.6	90	V	strike slip	0	16	35
85.78	<a href="#">Red Mountain</a>	CA	2	56	N	reverse	0	14	101
86.05	<a href="#">S. San Andreas;PK+CH+CC+BB</a>	CA	n/a	90	V	strike slip	0.1	12	208
86.05	<a href="#">S. San Andreas;CC+BB</a>	CA	n/a	90	V	strike slip	0	15	109
86.05	<a href="#">S. San Andreas;BB</a>	CA	34	90	V	strike slip	0	15	50
86.05	<a href="#">S. San Andreas;CH+CC+BB</a>	CA	n/a	90	V	strike slip	0	14	171
88.41	<a href="#">Burnt Mtn</a>	CA	0.6	67	W	strike slip	0	16	21
89.04	<a href="#">Landers</a>	CA	0.6	90	V	strike slip	0	15	95
90.16	<a href="#">Earthquake Valley</a>	CA	2	90	V	strike slip	0	19	20
90.20	<a href="#">Eureka Peak</a>	CA	0.6	90	V	strike slip	0	15	19
90.73	<a href="#">Gravel Hills-Harper Lk</a>	CA	0.7	90	V	strike slip	0	11	65
91.60	<a href="#">Pitas Point (Lower)-Montalvo</a>	CA	2.5	16	N	thrust	0.4	13	30
91.72	<a href="#">North Channel</a>	CA	1	26	N	thrust	1.1	5	51
92.52	<a href="#">So Emerson-Copper Mtn</a>	CA	0.6	90	V	strike slip	0	14	54
92.59	<a href="#">Pleito</a>	CA	2	46	S	reverse	0	14	44
95.31	<a href="#">Blackwater</a>	CA	0.5	90	V	strike slip	0	12	60
96.96	<a href="#">S. San Andreas;CO</a>	CA	20	90	V	strike slip	0.6	11	69
97.57	<a href="#">Calico-Hidalgo</a>	CA	1.8	90	V	strike slip	0	14	117
99.22	<a href="#">Garlock;GC</a>	CA	7	90	V	strike slip	0	12	111
99.22	<a href="#">Garlock;GE+GC</a>	CA	n/a	90	V	strike slip	0	12	156

99.96	<a href="#">So Sierra Nevada</a>	CA	0.1	50	E	normal	0	14	112
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**GEOTECHNICAL DATA REPORT  
PFAS-GWTPS PROJECT  
NEW WELL AND TREATMENT PLANT  
LINDA VISTA SITE  
NORTHWEST CORNER OF NORTH TUSTIN AVENUE AND  
EAST MIRALOMA AVENUE  
ANAHEIM, CA  
AESCO PROJECT NO. 20200925-F8951**

**Prepared for:**

**City of Anaheim  
Department of Public Utilities  
200 South Anaheim Boulevard, 6th Floor  
Anaheim, CA 92805**

**Attention: Mr. Jake Hester, P.E.  
Water Engineering and Design Manager**

**Prepared By:**

**AESCO  
17782 Georgetown Lane  
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**Adam Chamaa, P.E., Manager**

**September 8, 2020  
Revised October 29, 2020**

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September 8, 2020

Revised October 29, 2020

Mr. Jake Hester, P.E., Water Engineering and Design Manager  
City of Anaheim, Department of Public Utilities  
200 South Anaheim Boulevard, 5<sup>th</sup> Floor  
Anaheim, CA 92805

**Subject:       Geotechnical Data Report  
                  PFAS – GWTPs Project  
                  New Well and Treatment Plant  
                  Linda Vista Site  
                  Northwest Corner of North Tustin Avenue and East Miraloma Avenue  
                  Anaheim, California  
                  AESCO Project No. 20200925-F8951**

Dear Mr. Hester:

AESCO is pleased to provide you the geotechnical data report for the proposed new well and treatment plant to be constructed at the subject site.

AESCO will be happy to assist you further on this project by furnishing any Construction Materials Testing and Inspection Services you may require during the construction phase of the project. We are a full service-testing laboratory and inspection service and can supply the full range of testing and inspection services such as soils, concrete, asphalt, steel, welding, etc. that may be necessary for construction of this project.

Please do not hesitate to contact us if you have any questions or if we may be of any additional assistance. We look forward to assisting you during the construction of the proposed facility.

Sincerely,

**AESCO, Inc.**

Debra L. Perez  
Project Manager

Russell J. Scharlin, P.E., G.E.  
Senior Geotechnical Engineer

Adam Chamaa, P.E., G.E.

Adam Chamaa, PE, GE  
Engineering Manager



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Project No. 20200925-F8541

Linda Vista Site

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Linda Vista Site

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Site Plan

Logs of Borings B-1 through B-3

Laboratory Test Data

Liquefaction Analysis

Seismic Design Data

## SECTION ONE

## Introduction

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**Geotechnical Data Report  
PFAS – GWTPs Project  
New Well and Treatment Plant  
Linda Vista Site  
Northwest Corner of North Tustin Avenue and East Miraloma Avenue  
Anaheim, California**

This report (authorized by the City of Anaheim), presents the results of a geotechnical investigation performed by AESCO for a proposed new well and treatment plant to be installed at the northwest corner of North Tustin Avenue and East Miraloma Avenue, Anaheim, California. The exact location of the well and treatment plant has not been determined at this time. The site of the proposed facility is shown on the Site Plan, Figure 1.

We understand that the new facility, to be constructed adjacent to Anaheim Lake, will consist of a new well, to be designed by others, a treatment plant and appurtenances. The new well with appurtenances (possibly a small slab and CMU wall) are to be constructed at the northwest corner of the property and the water treatment plant is to be constructed on the east side of the site, at the current location of a buried cistern. Dimensions of the facility were not available at this time.

The purpose of this study was to provide geotechnical data to better understand the site conditions of the facility at either location. The scope of our services included the following:

- Coordinating site access for the field investigation;
- Obtaining utility clearances for the field investigation;
- Performing a ground penetrating radar (GPR) study at the site;
- Performing geotechnical drilling and sampling at the site;
- Performing laboratory testing of representative samples;
- Conducting a seismic hazards screening; and
- Preparing this report.

This report summarizes our findings and presents geotechnical data to better understand the existing site conditions.

## SECTION TWO

## Field Investigation and Laboratory Testing

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### 2.1 FIELD INVESTIGATION

Prior to performing the field investigation, a Ground Penetrating Radar (GPS) survey was performed in the work areas to identify the location, direction and depth of existing underground utilities. The locations and depths of the utilities were marked on the ground and the boring locations were adjusted, as required, to avoid damaging the utilities during drilling.

A field investigation was conducted at the site on August 14, 2020 to obtain information on the subsurface conditions. A total of three borings were drilled with a hollow stem auger drill rig to a maximum depth of 50 feet below the existing ground surface. Boring B-1 was drilled at the northwest side of the site at the proposed well location and B-2 and B-3 were drilled on the east side of the site at the proposed treatment plant location. The boring locations are shown on the Site Plan, Figure 1. The site plan is based on an aerial plot from Google Earth. AESCO's Geotechnical Engineer, Mr. Adam Chamaa, P.E., G.E., supervised the utility marking and the drilling operations. Mr. Chamaa met with the utility companies identified within the work area to mark the locations of underground utilities. The GPR study confirmed the locations and depths of underground utilities. AESCO personnel logged the borings and visually classified and collected samples of the subsurface materials encountered in the borings. The borings were backfilled with cuttings. The Logs of Borings B-1 through B-3 are presented in the attached Appendix.

Drive samples were taken in the borings using either a Standard Penetration Test (SPT) or Modified California (MC) sampler. The sampler was driven 18 inches into the bottom of the boreholes using a 140-pound hammer falling a distance of 30 inches. The MC sampler barrel was lined with stainless steel liners to collect relatively undisturbed soil samples. All of the samples were sealed and packaged to help preserve the natural moisture content and to protect them from further disturbance.

### 2.2 LABORATORY TESTING

All testing was performed in accordance with ASTM Standards and California Test Methods. Laboratory testing performed in our Huntington Beach, California geotechnical laboratory consisted of water content (ASTM D4959), dry density (ASTM D2937), direct shear ASTM D3080), and washed sieve analysis (ASTM D1140). Results of the laboratory tests are summarized on the Boring Log and are included in the attached Appendix. Chemical analyses,

## SECTION TWO

## Field Investigation and Laboratory Testing

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including pH (ASTM D1293), soluble sulfates (CT417) and soluble chlorides (CT422) were also performed. Results are presented in Section 4.10.

## SECTION THREE

## Site Conditions

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### 3.1 REGIONAL GEOLOGIC SETTING

The project site is located in Anaheim, California, within the southern portion of the Los Angeles basin, in the transition between the northern portion of the Peninsular Ranges physiographic province and the southern portion of the Transverse Ranges physiographic province. The project area is considered to be within the Transverse Ranges physiographic province by Norris and Webb (1990) and within the Peninsular Ranges physiographic province by Yerkes et al. (1965). These two physiographic provinces have contrasting tectonic characteristics that overlap within the Los Angeles basin resulting in a complex tectonic environment marked by active faulting and historic seismicity. Geologic materials at the ground surface in the vicinity of the site consist of Quaternary alluvial sediments deposited by the Santa Ana River or its tributaries.

### 3.2 SITE AND SUBSURFACE CONDITIONS

The proposed facility will be located at an existing water facility at Anaheim Lake, in the City of Anaheim. The site is relatively flat and is covered with bare ground. Existing underground utilities may be present within the site boundary.

The material encountered within boring B-1 consisted of loose silty sand to a depth of 13 feet, medium dense sand to a depth of 18 feet, medium dense to very dense silty sand to a depth of 45 feet, and dense silty sand to the total depth drilled of 50 feet below the existing ground surface. In boring B-2, silty sand was encountered to a depth of 3 feet which is underlain by medium dense to very dense silty gravel to a depth of 7 feet where refusal was encountered on very dense gravel or possibly the bottom of the cistern. The material encountered in boring B-3 consisted of medium dense silty sand with some gravel to a depth of 5 feet, very dense sand to a depth of 8 feet, medium dense silty sand with gravel to a depth of 18 feet, and medium dense to dense sand/silty sand to the total depth drilled of 30 feet.

Groundwater was not encountered within the borings. Based on regional data, groundwater is anticipated to occur at a depth of approximately 10 feet (CGS, 1997). The depth to groundwater may fluctuate, depending on rainfall and possible groundwater recharge or pumping activity in the site vicinity.



#### 4.1 SEISMIC DESIGN

A seismic hazards screening was performed for this site to evaluate potential seismic hazards. The seismic hazards screening consisted of reviewing available data published by the California Geological Survey (CGS), the 2019 California Building Code (CBC), the ATC Council, and the 2018 International Building Code (IBC). The site is located in the United States Geological Survey Orange Quadrangle. Data reviewed yielded the following Seismic Parameters:

Site Class	D
Spectral Response ‘Ss’	1.656g
Spectral Response ‘SMs’	1.656g
Spectral Response ‘S1’	0.584g
Spectral Response ‘SM1’	null

Data published by the USGS was reviewed. Results of the fault search are presented in the Appendix. A listing of faults within 100 miles of the site is also included. The search indicates that the Puente Hills (Coyote Hills) fault is 2.33 miles from the site.

The CGS (CDMG, 2000-003) does not delineate this site as being within an Alquist-Priolo Earthquake Fault Zone. With the active faults in the region, the site could be subjected to future strong ground shaking that may result from earthquakes on local to distant source.

#### 4.2 LIQUEFACTION POTENTIAL

Liquefaction is a mode of ground failure that results from the generation of high pore water pressures during earthquake ground shaking, causing loss of shear strength. Liquefaction is typically a hazard where loose sandy soils exist below groundwater. The CGS has designated certain areas within southern California as potential liquefaction hazard zones. These are areas considered at a risk of liquefaction-related ground failure during a seismic event, based upon mapped surficial deposits and the presence of a relatively shallow water table. Materials encountered at the project site generally consist of loose to very dense granular material. The project site is located within a mapped liquefaction hazard zone as designated by the CGS (1998). Groundwater was not encountered within the borings which were drilled to a maximum depth of 50 feet beneath the existing ground surface. Based on regional data, groundwater is anticipated to occur at a depth of approximately 10 feet (CGS, 1997). Liquefaction analyses for the site was performed in accordance with the DMG Special Publication 117 and is attached.

The analyses were performed on borings B-1 and a combination of B-1 and B-3. The liquefaction study utilized the software “LiquefyPro” by CivilTech Software and calculated liquefaction assuming a high depth to groundwater of 10 feet below the existing ground surface. These analyses were based on the soils data from the exploratory boring logs and laboratory test results. Maximum acceleration was calculated using the PGA of 0.710g utilizing a hazard level of 2 percent probability of exceedance over 50 years as determined by the USGS website. Liquefaction potential was calculated from a depth of 0 to 50 feet below the ground surface. The analyses was performed using the data from boring B-1 at the location of the proposed new well and from a combination of borings B-1 (soil below a depth of 30 feet) and B-3 (soil up to a depth of 30 feet) at the location of the proposed water treatment facility. Liquefaction analyses performed at the location of the proposed new well yielded a factor of safety less than 1.3 between a depth of 10 feet and 17 feet where the factor of safety ranged between 0.31 to 0.59. Liquefaction analyses performed on the combination of borings B-1 and B-3 yielded a factor of safety of 0.47 to 0.7 between a depth of 10 feet and 14 feet. Based on our analysis and test results we have concluded that the potential for liquefaction at the site is high

Based on calculation results, seismically-induced settlement of saturated and dry sand at the location of the proposed well (boring B-1) is estimated to be 4.10 inches and differential settlement is estimated to be between 2.0 and 2.7 inches. The seismically-induced settlement of saturated and dry sand at the location of the proposed water treatment facility (borings B-1 and B-3) is estimated to be 0.93 inches and differential settlement is estimated to be between 0.47 and 0.62 inches. The liquefaction analyses are presented in the Appendix.

## 4.3 EXISTING UTILITIES

The proposed new facility may be located at and near other existing utilities. Care should be exercised not to disturb the existing utilities and to support them during construction if they will be reused and will not be abandoned.

## 4.4 SOIL CORROSIVITY

The results of pH, soluble chloride and soluble sulfate laboratory tests on a sample of the near surface soils are summarized in the following table:

## SECTION FOUR

Project No. 20200925-F8541

Linda Vista Site

Conclusions

---

Soil Test	Test Results	Corrosion Potential
Soluble Sulfates (per CA 417)	42 ppm	Mild sulfate attack on concrete.
Soluble Chlorides (per CA 422)	108 ppm	Very corrosive potential to buried ferrous metals
pH	8.8	Severe corrosion potential to buried ferrous metals

Concrete should be designed in accordance with the 2019 CBC, ACI 318 Section 4.3, Table 19.3.2.1 (2017).

The test results indicate that the on site soils can be classified as very corrosive potential to buried metallic structures (e.g. pipes).

## 5.0 LIMITATIONS

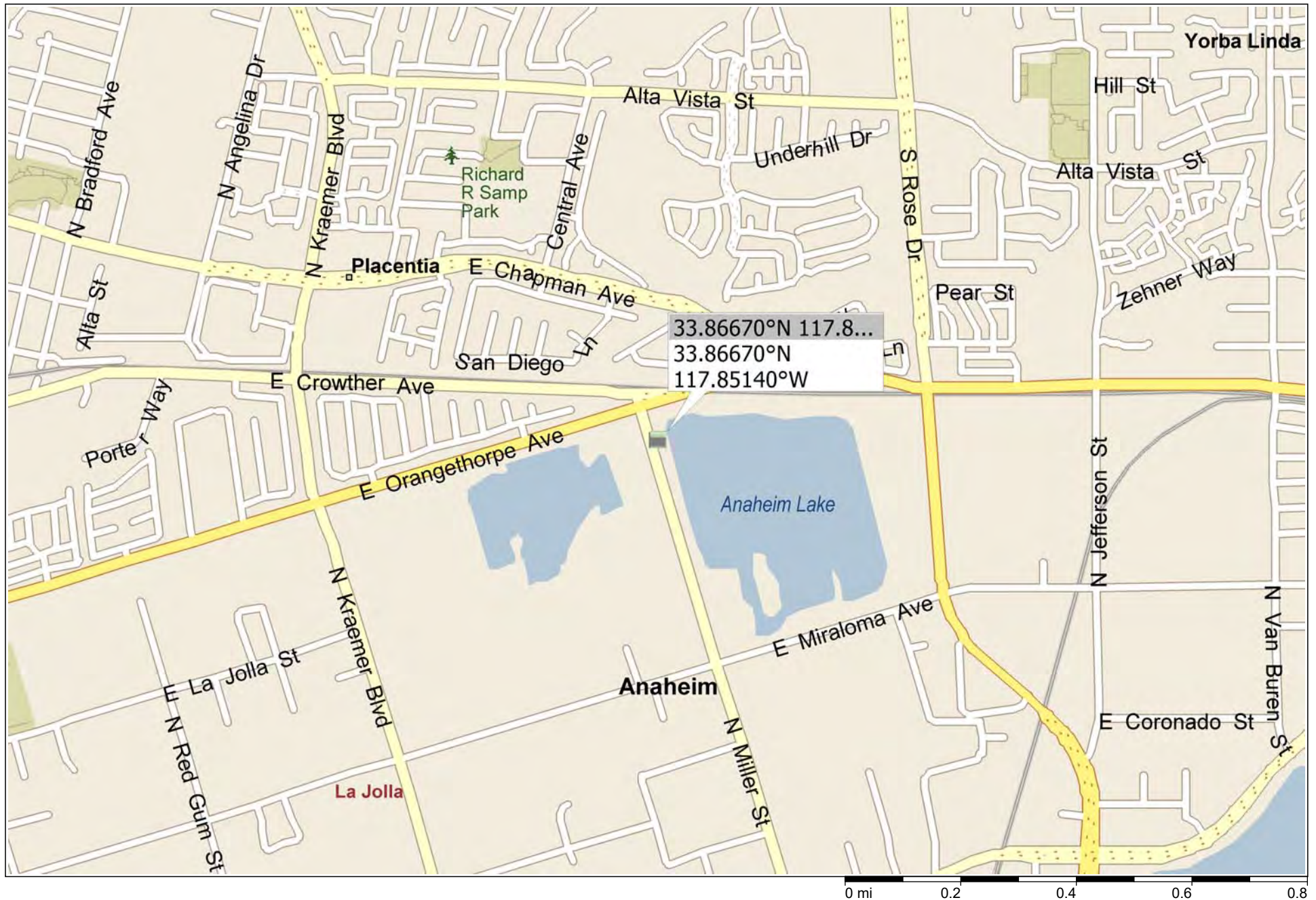
It must be recognized that conclusions reached in this report are based on conditions, which exist at the boring location. In any subsoil investigation, it is necessary to assume that the subsoil conditions between boring(s) do not change significantly. The number of the borings, locations, and spacing are chosen as per the client's direction and available budget. Note that the boring(s) were placed as close to the location of the proposed structure(s) as possible. The boring locations are approximate and surveying is beyond the scope of our work. Consequently, careful observations must be made during construction to detect significant deviations of actual conditions throughout the construction area from those inferred from the exploratory borings.

---

## **APPENDIX**

## **SITE PLAN**

20200925







## LEGEND


**B-1**      Approximate Location of Borings



### Anaheim

Project No. : 20200925-F8541

Site Name: Linda Vista (Anaheim Lake)

Site Address: Northwest Corner of North Tustin Avenue and East Miraloma Avenue

**SITE PLAN**

Scale: 1 inch  $\cong$  410 feet

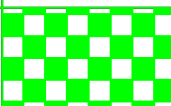
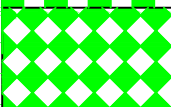
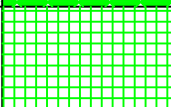
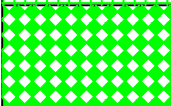
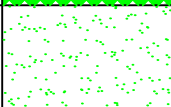
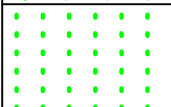

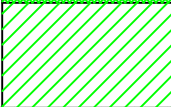
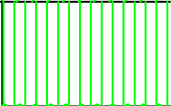
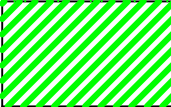

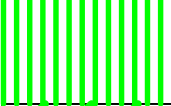

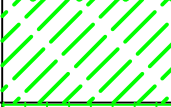

Date: 8-20-20

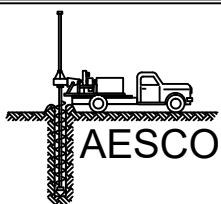
Figure 1

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**APPENDIX**  
**LOGS OF BORINGS B-1 through B-3**






MAJOR DIVISION			GRAPHIC SYMBOL	LETTER SYMBOL	TYPICAL DESCRIPTIONS	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVEL (LITTLE OR NO FINES)		GW	WELL GRADED GRAVELS, GRAVEL SAND MIXTURES, LITTLE OR NO FINES	
				GP	POORLY GRADED GRAVELS, GRAVEL SAND MIXTURES, LITTLE OR NO FINES	
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVEL WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL SAND SILT MIXTURE	
				GC	CLAYEY GRAVELS, GRAVEL SAND CLAY MIXTURES	
	MORE THAN 50% BY WEIGHT OF MATERIAL IS LARGER THAN 200 SIEVE	SAND AND SANDY SOILS	CLEAN SAND (LITTLE OR NO FINES)		SW	WELL GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
					SP	POORLY GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		MORE THAN 50% OF COARSE FRACTION PASSING NO. 4 SIEVE	SANDS WITH FINE (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND-SILT MIXTURES
					SC	CLAYEY SANDS, SAND-CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT <50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR 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	
	MORE THAN 50% BY WEIGHT OF MATERIAL IS SMALLER THAN 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT >50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
					CH	INORGANIC CLAYS OF HIGH PLATICITY, FAT CLAYS
					OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
					PT	PEAT, SWAMP SOILS WITH HIGH ORGANIC CONTENTS
HIGHLY ORGANIC SOILS						




## UNIFIED SOIL CLASSIFICATION SYSTEM

### KEY



-  Split Spoon Sample (SPT)
-  California Modified Sample
-  Hand Auger Sample

-  Ground Water Level
- N** SPT Blows/ft
- P** Penetrometer TSF




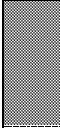

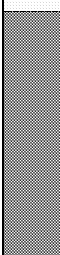











LOG OF BORING NO. B -2														AESCO	
Project: Linda Vista Site										Location: Northwest Corner of North Tustin Avenue and East Miraloma Ave. Anaheim, CA				WATER: Not Encountered	
Client: City of Anaheim										Logger:				DRILLING:	
Date: 08/14/20										Project No. 20200925-F8541				Hollow Stem Auger	
FIELD DATA		TESTS												DESCRIPTION OF STRATUM	
SOIL SYMBOL	DEPTH (FT)	N= T= P=	MOISTURE CONTENT %	DRY DENSITY PCF	LIQUID LIMITS %	PLASTIC LIMITS %	PLASTICITY INDEX %	Unconfined Comp.		PASSING 200 SIEVE %	DIRECT SHEAR		RESISTIVITY ohms/cm		
								TSF	Strain %		COHESION PSF	ANGLE Deg			
	3		6.3											Brown silty SAND (SM), moist	
	5	N=24	8.2											Light gray whitish, silty GRAVEL (GM), medium dense, moist, possibly crushed gravel or concrete	
	7	N=50/5*	8.1		29	30	1			21.3				Very dense at 5'	
Refusal at 7 Feet on Gravel or Concrete															
Brown silty SAND (SM), dense, moist															

TUBE SAMPLE  
 AUGER SAMPLE  
 CALIFORNIA MODIFIED SAMPLER  
 SPLIT SPOON  
 NO RECOVERY

Groundwater Level  
 Hydrostatic Groundwater Level  
 Approximate Division of Soil Type

N= SPT, BLOWS/FT  
T= THD. BLOWS/FT  
P= HAND PEN. TSF

**REMARKS:**  
NP: Non Plastic Materials  
\* Remolded Samples  
Blow Counts Corrected for California Modified (0.6 multiplier), Auto-Hammer, 8" HAS

<div><div></div><div>LOG OF BORING NO. B -3</div></div>														AESCO	
Project: Linda Vista Site										Location: Northwest Corner of North Tustin Avenue and East Miraloma Ave. Anaheim, CA				WATER: Not Encountered	
Client: City of Anaheim										Logger:				DRILLING:	
Date: 08/14/20										Project No. 20200925-F8541				Hollow Stem Auger	
FIELD DATA		TESTS												DESCRIPTION OF STRATUM	
SOIL SYMBOL	DEPTH (FT)	N=	MOISTURE CONTENT	DRY DENSITY	LIQUID LIMITS	PLASTIC LIMITS	PLASTICITY INDEX	Unconfined Comp.		PASSING 200 SIEVE	DIRECT SHEAR		RESISTIVITY ohms/cm	Elevation ~ 145 ft. AMSL	
		T=	%	PCF	%	%	%	TSF	Strain %	%	COHESION PSF	ANGLE Deg			
	3		3.5											Brown silty SAND (SM), dry	
	5	N=14	4.2											Medium dense, w/some gravel at 3'	
	7	N=50/5*	2.2							4.5				Black SAND (SP), very dense, dry	
	8														
	10	N=14	3.4							24.7				Light brown silty SAND (SM), medium dense, dry	
	13														
	15	N=11	1.7							27.1	0	30*		w/gravel at 13'	
	18														
	20	N=28	2.5							6.8				Light brown SAND/silty SAND (SP/SM), medium dense, dry	
	23														
	25	N=31	2.1	108.1						5.3				Dense at 23'	
	28														
	30	N=42												Brown at 28'	
Boring Terminated at 30 Feet															
Brown silty SAND (SM), dense, moist															
<div><div><div> TUBE SAMPLE</div><div> AUGER SAMPLE</div><div> CALIFORNIA MODIFIED SAMPLER</div><div> SPLIT SPOON</div><div> NO RECOVERY</div></div><div><div> Groundwater Level</div><div> Hydrostatic Groundwater Level</div><div> Approximate Division of Soil Type</div></div><div><div>N= SPT, BLOWS/FT</div><div>T= THD. BLOWS/FT</div><div>P= HAND PEN. TSF</div></div><div><div> SM</div><div> SP</div><div> SP/SM</div></div></div>														REMARKS: NP: Non Plastic Materials * Remolded Samples Blow Counts Corrected for California Modified (0.6 multiplier). Auto-Hammer - 8" HAS	

---

**APPENDIX**  
**LABORATORY TEST DATA**



**Orange County**  
17782 Georgetown Lane  
Huntington Beach, California 92647  
Tele: (714) 375-3830  
Fax: (714) 375-3831

**San Bernardino County**  
14163 Arrow Boulevard  
Fontana, California 92335  
Tele: (909) 284-9200  
Fax: (909) 284-9201

Site/Client: Linda Vista

Project No: 20200925-F8541

Boring No: B-1

Depth (ft): 5-7'

$\gamma_d$  (pcf) = 101.9

$C$  (psf) = 0

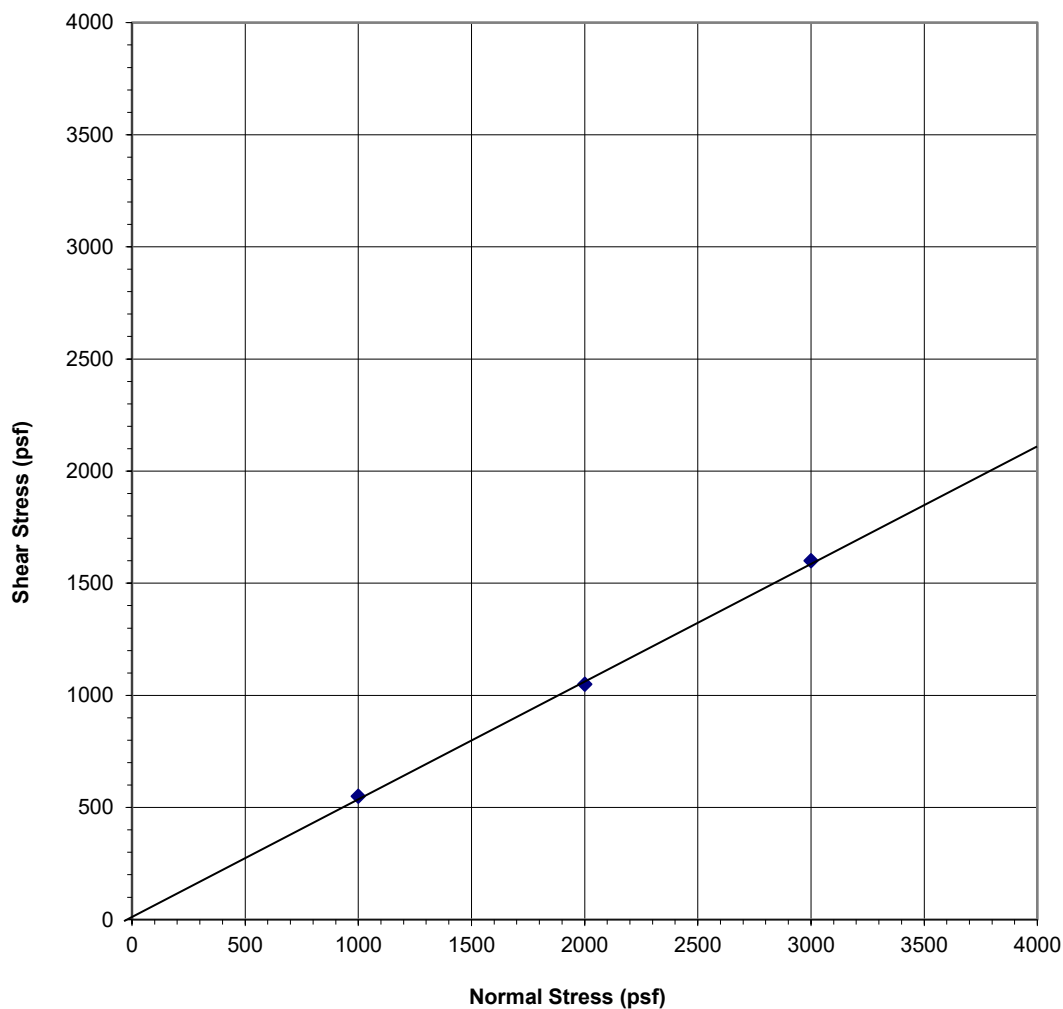
$\phi$  (deg) = 28

$W_{int}$  = 4.1%

Remolded (Y/N): N

Soil Type: SM

### ASTM D3080 Direct Shear Results





**Orange County**  
17782 Georgetown Lane  
Huntington Beach, California 92647  
Tele: (714) 375-3830  
Fax: (714)375-3831

**San Bernardino County**  
14163 Arrow Boulevard  
Fontana, California 92335  
Tele:(909) 284-9200  
Fax:(909) 284-9201

Site/Client: Linda Vista

Project No: 20200925-F8541

Boring No: B-1

Depth (ft): 13-15'

$\gamma_d$  (pcf) = 105.0

$C$  (psf) = 0

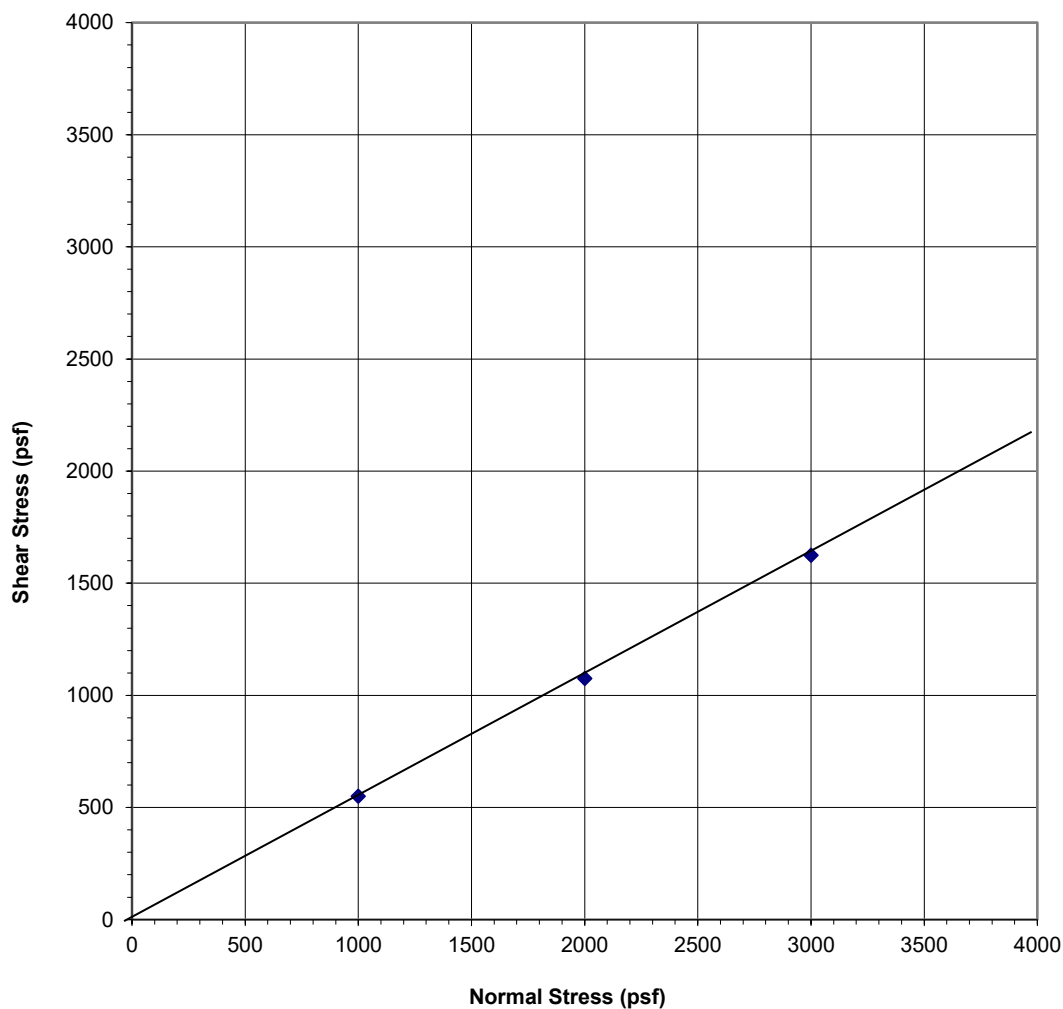
$\phi$  (deg) = 29

$W_{int}$  = 5.0%

Remolded (Y/N): Y

Soil Type: SM

### ASTM D3080 Direct Shear Results





**Orange County**  
17782 Georgetown Lane  
Huntington Beach, California 92647  
Tele: (714) 375-3830  
Fax: (714)375-3831

**San Bernardino County**  
14163 Arrow Boulevard  
Fontana, California 92335  
Tele:(909) 284-9200  
Fax:(909) 284-9201

Site/Client: Linda Vista

Project No: 20200925-F8541

Boring No: B-3

Depth (ft): 13-15'

$\gamma_d$  (pcf) = 105.0

$C$  (psf) = 0

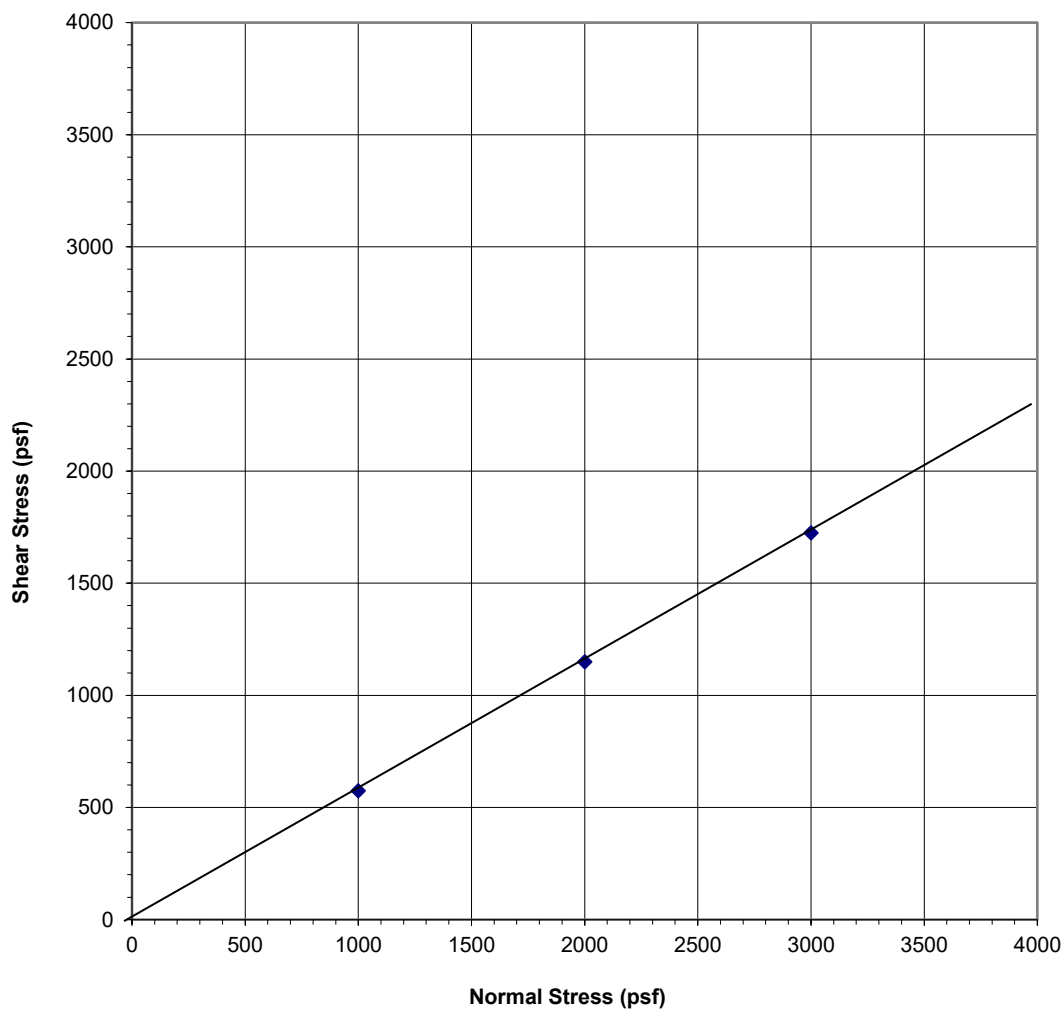
$\phi$  (deg) = 30

$W_{int}$  = 5.0%

Remolded (Y/N): Y

Soil Type: SM

### ASTM D3080 Direct Shear Results





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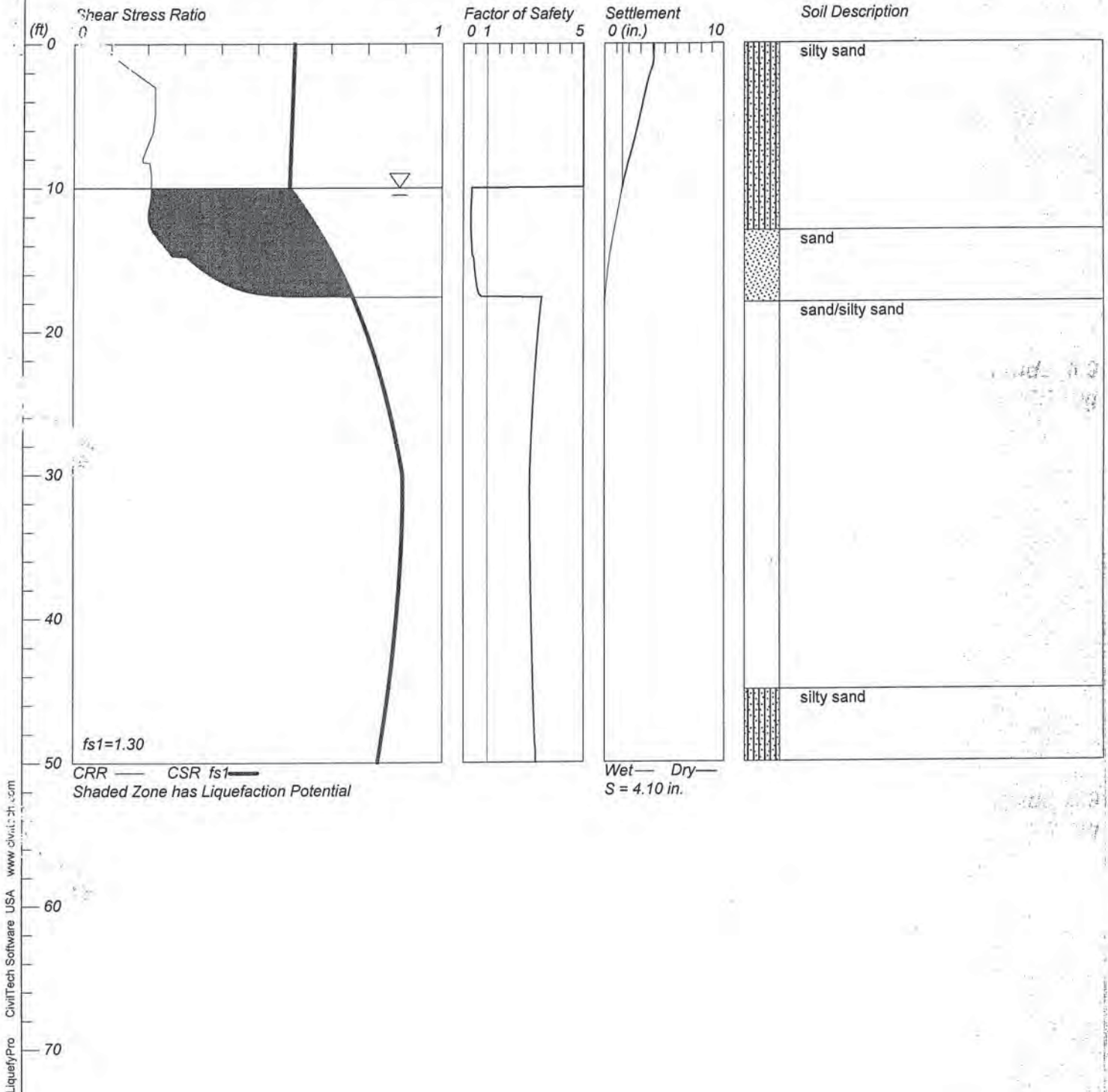
**APPENDIX**  
**LIQUEFACTION ANALYSES**

# LIQUEFACTION ANALYSIS

Linda Vista boring B-1

Hole No.=B-1 Water Depth=10 ft

Magnitude=6.9  
Acceleration=0.710g



# L i q u e f a c t i o n

\*\*\*\*\*  
\*\*\*\*\*

## L I Q U E F A C T I O N   A N A L Y S I S   C A L C U L A T I O N   S H E E T

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\*\*\*\*\*  
\*\*\*\*\*

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Input File Name: J:\2020\20200925 Anaheim Geotech, Utility Base Map &  
Hydrology Linda Vista, N. Miller & No. Rose, Anaheim\geo\Liquefaction.Liq  
Title: Linda Vista boring B-1  
Subtitle: 20200925-F8541

Surface Elev. =  
Hole No. =B-1  
Depth of Hole= 50.0 ft  
Water Table during Earthquake= 10.0 ft  
Water Table during In-Situ Testing= 10.0 ft  
Max. Acceleration= 0.71 g  
Earthquake Magnitude= 6.9

### Input Data:

Surface Elev. =  
Hole No. =B-1  
Depth of Hole=50.0 ft  
Water Table during Earthquake= 10.0 ft  
Water Table during In-Situ Testing= 10.0 ft  
Max. Acceleration=0.71 g  
Earthquake Magnitude=6.9

1. SPT or BPT Calculation.
  2. Settlement Analysis Method: Tokimatsu / Seed
  3. Fines Correction for Liquefaction: Idriess/Seed (SPT only)
  4. Fine Correction for Settlement: During Liquefaction\*
  5. Settlement Calculation in: All zones\*
  6. Hammer Energy Ratio, Ce = 1.25
  7. Borehole Diameter, Cb= 1
  8. Sampling Method, Cs= 1
  9. User request factor of safety (apply to CSR) ,      User= 1.3  
    Plot one CSR curve (fs1=User)
  10. Use Curve Smoothing: Yes\*
- \* Recommended Options

### In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
0.0	0.0	125.0	23.3
3.0	7.0	108.8	23.3
5.0	7.0	106.0	23.3
8.0	6.0	125.0	26.9
13.0	12.0	100.6	3.0
18.0	22.0	110.0	9.4
23.0	50.0	110.0	9.4
28.0	48.0	110.0	6.5
33.0	50.0	115.0	6.5
38.0	34.0	115.0	6.2
43.0	50.0	115.0	6.2
48.0	35.0	120.0	32.4

## Liquefaction

### Output Results:

Settlement of saturated sands=1.47 in.

Settlement of dry sands=2.63 in.

Total settlement of saturated and dry sands=4.10 in.

Differential Settlement=2.049 to 2.704 in.

Depth ft	CRRm	CSRfs	F. S.	S_sat. in.	S_dry in.	S_all in.
0.00	0.07	0.60	5.00	1.47	2.63	4.10
1.00	0.11	0.60	5.00	1.47	2.60	4.07
2.00	0.16	0.60	5.00	1.47	2.34	3.81
3.00	0.22	0.60	5.00	1.47	2.01	3.48
4.00	0.22	0.59	5.00	1.47	1.73	3.20
5.00	0.22	0.59	5.00	1.47	1.48	2.94
6.00	0.21	0.59	5.00	1.47	1.20	2.66
7.00	0.20	0.59	5.00	1.47	0.90	2.37
8.00	0.19	0.59	5.00	1.47	0.58	2.04
9.00	0.21	0.59	5.00	1.47	0.27	1.74
10.00	0.21	0.59	0.36*	1.47	0.00	1.47
11.00	0.21	0.61	0.33*	1.24	0.00	1.24
12.00	0.20	0.64	0.31*	1.01	0.00	1.01
13.00	0.21	0.67	0.32*	0.78	0.00	0.78
14.00	0.24	0.69	0.35*	0.57	0.00	0.57
15.00	0.31	0.71	0.44*	0.39	0.00	0.39
16.00	0.37	0.73	0.50*	0.24	0.00	0.24
17.00	0.44	0.75	0.59*	0.12	0.00	0.12
18.00	2.48	0.77	3.23	0.02	0.00	0.02
19.00	2.48	0.78	3.17	0.00	0.00	0.00
20.00	2.48	0.80	3.11	0.00	0.00	0.00
21.00	2.48	0.81	3.06	0.00	0.00	0.00
22.00	2.48	0.82	3.02	0.00	0.00	0.00
23.00	2.48	0.83	2.97	0.00	0.00	0.00
24.00	2.48	0.84	2.94	0.00	0.00	0.00
25.00	2.48	0.85	2.90	0.00	0.00	0.00
26.00	2.48	0.86	2.87	0.00	0.00	0.00
27.00	2.48	0.87	2.84	0.00	0.00	0.00
28.00	2.48	0.88	2.82	0.00	0.00	0.00
29.00	2.48	0.89	2.79	0.00	0.00	0.00
30.00	2.48	0.89	2.77	0.00	0.00	0.00
31.00	2.48	0.89	2.77	0.00	0.00	0.00
32.00	2.48	0.89	2.77	0.00	0.00	0.00
33.00	2.48	0.89	2.77	0.00	0.00	0.00
34.00	2.48	0.89	2.78	0.00	0.00	0.00
35.00	2.48	0.89	2.78	0.00	0.00	0.00
36.00	2.48	0.89	2.79	0.00	0.00	0.00
37.00	2.48	0.89	2.80	0.00	0.00	0.00
38.00	2.48	0.88	2.80	0.00	0.00	0.00
39.00	2.48	0.88	2.81	0.00	0.00	0.00
40.00	2.48	0.88	2.83	0.00	0.00	0.00
41.00	2.48	0.87	2.84	0.00	0.00	0.00
42.00	2.48	0.87	2.85	0.00	0.00	0.00
43.00	2.48	0.86	2.87	0.00	0.00	0.00
44.00	2.48	0.86	2.88	0.00	0.00	0.00
45.00	2.48	0.85	2.90	0.00	0.00	0.00
46.00	2.48	0.85	2.91	0.00	0.00	0.00
47.00	2.48	0.84	2.93	0.00	0.00	0.00
48.00	2.48	0.84	2.95	0.00	0.00	0.00
49.00	2.49	0.83	2.99	0.00	0.00	0.00
50.00	2.48	0.83	3.01	0.00	0.00	0.00

\* F. S. <1, Liquefaction Potential Zone  
(F. S. is limited to 5, CRR is limited to 2, CSR is limited to 2)

Liquefaction

Units                      Depth = ft, Stress or Pressure = tsf (atm), Unit  
 Weight = pcf, Settlement = in.

---

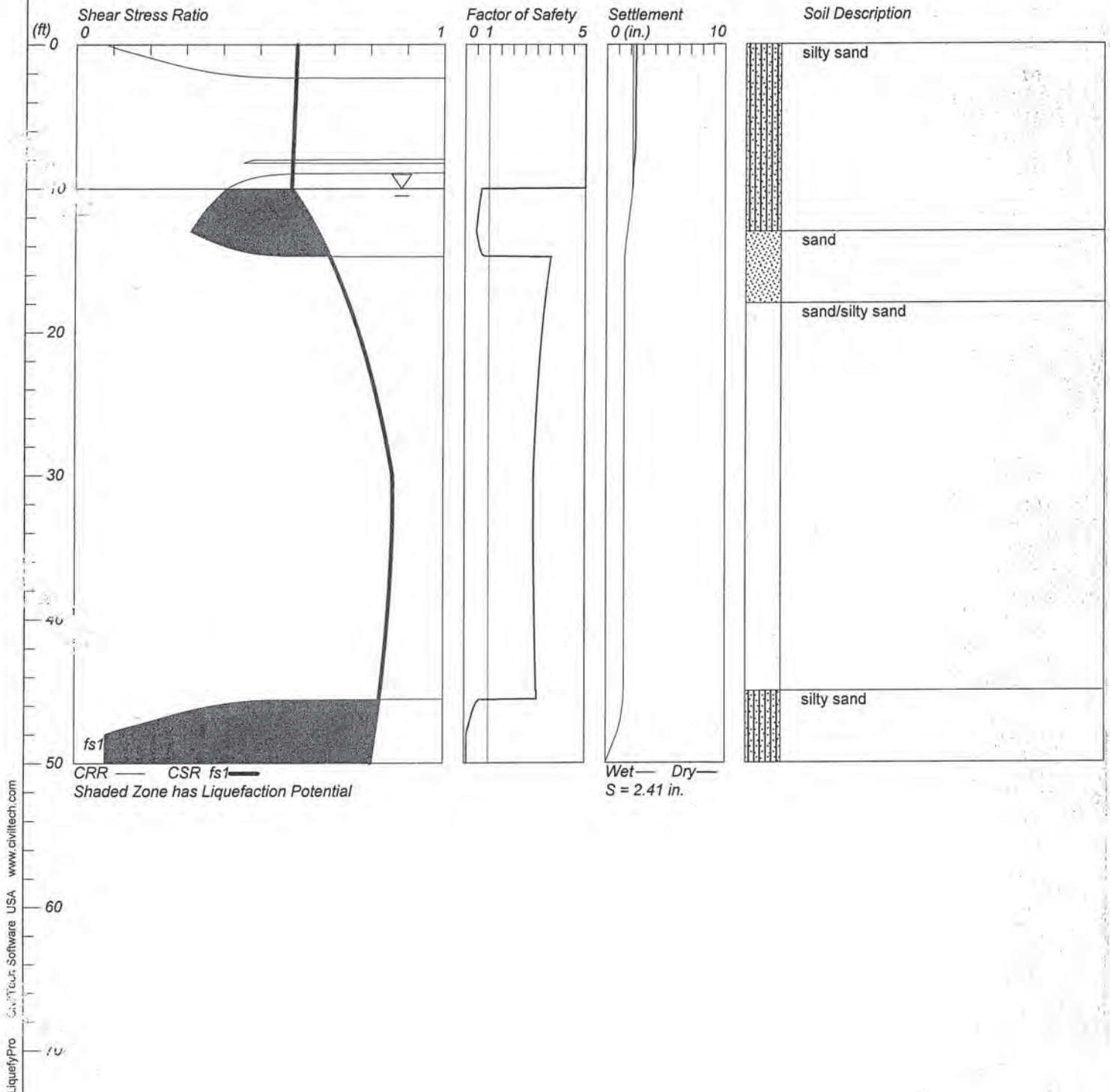
CRRm	Cyclic resistance ratio from soils
CSRfs	Cyclic stress ratio induced by a given earthquake
(with user request factor of safety)	
F. S.	Factor of Safety against Liquefaction, F. S. =CRRm/CSRfs
S_sat	Settlement from saturated sands
S_dry	Settlement from dry sands
S_all	Total settlement from saturated and dry sands
NoLi q	No-Liquefy Soils

# LIQUEFACTION ANALYSIS

Linda Vista boring B-1 and B-3

Hole No.=B-1 Water Depth=10 ft

Magnitude=6.9  
Acceleration=0.710g



# Liquefaction w boring w B-1 and B-3

\*\*\*\*\*  
\*\*\*\*\*

## LIQUEFACTION ANALYSIS CALCULATION SHEET

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\*\*\*\*\*  
\*\*\*\*\*

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Input File Name: J:\2020\20200925 Anaheim Geotech, Utility Base Map & Hydrology Linda Vista, N. Miller & No. Rose, Anaheim\geo\Liquefaction w boring w B-1 and B-3.liq

Title: Linda Vista boring B-1 and B-3  
Subtitle: 20200925-F8541

Surface Elev. =  
Hole No. =B-1  
Depth of Hole= 50.0 ft  
Water Table during Earthquake= 10.0 ft  
Water Table during In-Situ Testing= 10.0 ft  
Max. Acceleration= 0.71 g  
Earthquake Magnitude= 6.9

### Input Data:

Surface Elev. =  
Hole No. =B-1  
Depth of Hole=50.0 ft  
Water Table during Earthquake= 10.0 ft  
Water Table during In-Situ Testing= 10.0 ft  
Max. Acceleration=0.71 g  
Earthquake Magnitude=6.9

1. SPT or BPT Calculation.
2. Settlement Analysis Method: Tokimatsu / Seed
3. Fines Correction for Liquefaction: Idriss/Seed (SPT only)
4. Fines Correction for Settlement: During Liquefaction\*
5. Settlement Calculation in: All zones\*
6. Hammer Energy Ratio, Ce = 1.25
7. Borehole Diameter, Cb= 1
8. Sampling Method, Cs= 1
9. User request factor of safety (apply to CSR) , User= 1.3  
Plot one CSR curve (fs1=User)
10. Use Curve Smoothing: Yes\*

\* Recommended Options

### In-Situ Test Data:

Depth ft	SPT	gamma pcf	Fines %
0.0	0.0	125.0	35.0
3.0	17.0	125.0	35.0
5.0	50.0	125.0	4.5
8.0	17.0	125.0	24.7
13.0	13.0	125.0	27.1
18.0	34.0	110.8	6.8
23.0	31.0	110.4	5.3
28.0	50.0	110.0	5.3
33.0	50.0	115.0	6.5
38.0	34.0	115.0	6.2
43.0	50.0	115.0	6.2

48.0      35.0      Liquefaction w boring w B-1 and B-3  
120.0      32.4

Output Results:

Settlement of saturated sands=0.67 in.

Settlement of dry sands=0.26 in.

Total settlement of saturated and dry sands=0.93 in.

Differential Settlement=0.466 to 0.615 in.

Depth ft	CRRm	CSRfs	F. S.	S_sat. in.	S_dry in.	S_all in.
0.00	0.08	0.60	5.00	0.67	0.26	0.93
1.00	0.21	0.60	5.00	0.67	0.25	0.92
2.00	0.39	0.60	5.00	0.67	0.24	0.91
3.00	2.48	0.60	5.00	0.67	0.23	0.90
4.00	2.48	0.59	5.00	0.67	0.23	0.89
5.00	2.48	0.59	5.00	0.67	0.22	0.89
6.00	2.48	0.59	5.00	0.67	0.22	0.89
7.00	2.48	0.59	5.00	0.67	0.21	0.87
8.00	0.48	0.59	5.00	0.67	0.13	0.80
9.00	0.55	0.59	5.00	0.67	0.04	0.71
10.00	0.41	0.59	0.70*	0.67	0.00	0.67
11.00	0.37	0.61	0.60*	0.54	0.00	0.54
12.00	0.34	0.64	0.53*	0.40	0.00	0.40
13.00	0.31	0.66	0.47*	0.24	0.00	0.24
14.00	0.40	0.68	0.60*	0.10	0.00	0.10
15.00	2.48	0.69	3.56	0.01	0.00	0.01
16.00	2.48	0.71	3.48	0.00	0.00	0.00
17.00	2.48	0.73	3.40	0.00	0.00	0.00
18.00	2.48	0.74	3.34	0.00	0.00	0.00
19.00	2.48	0.76	3.27	0.00	0.00	0.00
20.00	2.48	0.77	3.22	0.00	0.00	0.00
21.00	2.48	0.78	3.17	0.00	0.00	0.00
22.00	2.48	0.79	3.12	0.00	0.00	0.00
23.00	2.48	0.80	3.08	0.00	0.00	0.00
24.00	2.48	0.81	3.04	0.00	0.00	0.00
25.00	2.48	0.82	3.01	0.00	0.00	0.00
26.00	2.48	0.83	2.98	0.00	0.00	0.00
27.00	2.48	0.84	2.95	0.00	0.00	0.00
28.00	2.48	0.85	2.92	0.00	0.00	0.00
29.00	2.48	0.85	2.89	0.00	0.00	0.00
30.00	2.48	0.86	2.87	0.00	0.00	0.00
31.00	2.48	0.86	2.87	0.00	0.00	0.00
32.00	2.48	0.86	2.87	0.00	0.00	0.00
33.00	2.48	0.86	2.87	0.00	0.00	0.00
34.00	2.48	0.86	2.87	0.00	0.00	0.00
35.00	2.48	0.86	2.88	0.00	0.00	0.00
36.00	2.48	0.86	2.88	0.00	0.00	0.00
37.00	2.48	0.86	2.89	0.00	0.00	0.00
38.00	2.48	0.85	2.90	0.00	0.00	0.00
39.00	2.48	0.85	2.91	0.00	0.00	0.00
40.00	2.48	0.85	2.92	0.00	0.00	0.00
41.00	2.48	0.84	2.93	0.00	0.00	0.00
42.00	2.48	0.84	2.94	0.00	0.00	0.00
43.00	2.48	0.84	2.96	0.00	0.00	0.00
44.00	2.48	0.83	2.97	0.00	0.00	0.00
45.00	2.49	0.83	3.01	0.00	0.00	0.00
46.00	2.48	0.82	3.01	0.00	0.00	0.00
47.00	2.48	0.82	3.02	0.00	0.00	0.00
48.00	2.47	0.81	3.04	0.00	0.00	0.00
49.00	2.46	0.81	3.05	0.00	0.00	0.00
50.00	2.45	0.80	3.06	0.00	0.00	0.00

\* F. S. <1, Liquefaction Potential Zone  
(F. S. is limited to 5, CRR is limited to 2, CSR is limited to 2)



# Liquefaction w boring w B-1 and B-3

Units Depth = ft, Stress or Pressure = tsf (atm), Unit  
Weight = pcf, Settlement = in.

---

CRRm	Cyclic resistance ratio from soils
CSRfs	Cyclic stress ratio induced by a given earthquake
(with user request factor of safety)	
F. S.	Factor of Safety against Liquefaction, F. S. =CRRm/CSRfs
S_sat	Settlement from saturated sands
S_dry	Settlement from dry sands
S_all	Total settlement from saturated and dry sands
NoLi q	No-Liquefy Soils

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**APPENDIX**  
**SEISMIC DESIGN DATA**

# Unified Hazard Tool



Please do not use this tool to obtain ground motion parameter values for the design code reference documents covered by the [U.S. Seismic Design Maps web tools](#) (e.g., the International Building Code and the ASCE 7 or 41 Standard). The values returned by the two applications are not identical.

## ^ Input

### Edition

Conterminous U.S. 2014 (v4.0.x)

### Spectral Period

Peak Ground Acceleration

### Latitude

Decimal degrees

33.8667

### Time Horizon

Return period in years

2475

### Longitude

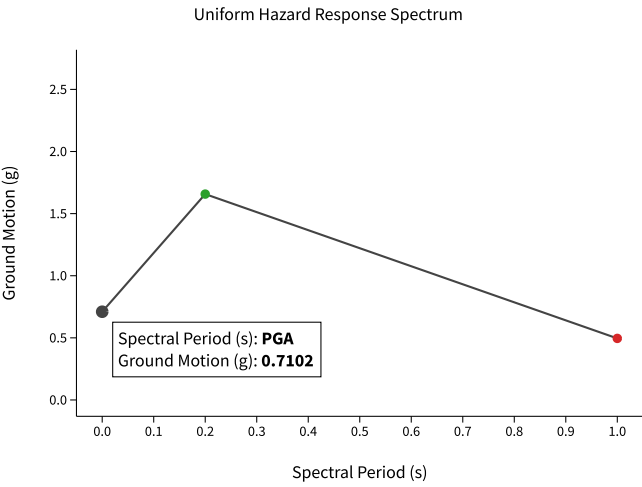
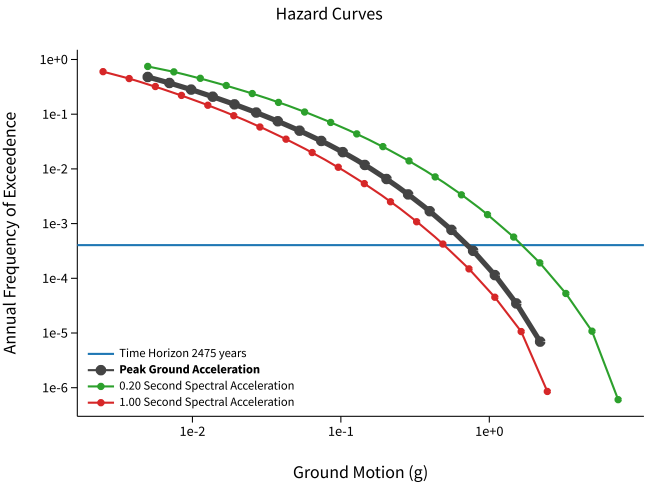
Decimal degrees, negative values for western longitudes

-117.8514

### Site Class

760 m/s (B/C boundary)

^ Hazard Curve



[View Raw Data](#)



## Hazards by Location

### Search Information

<b>Coordinates:</b>	33.8667, -117.8514
<b>Elevation:</b>	226 ft
<b>Timestamp:</b>	2020-09-04T20:08:33.529Z
<b>Hazard Type:</b>	Seismic
<b>Reference Document:</b>	ASCE7-16
<b>Risk Category:</b>	III
<b>Site Class:</b>	D



### Basic Parameters

Name	Value	Description
$S_S$	1.656	$MCE_R$ ground motion (period=0.2s)
$S_1$	0.584	$MCE_R$ ground motion (period=1.0s)
$S_{MS}$	1.656	Site-modified spectral acceleration value
$S_{M1}$	* null	Site-modified spectral acceleration value
$S_{DS}$	1.104	Numeric seismic design value at 0.2s SA
$S_{D1}$	* null	Numeric seismic design value at 1.0s SA

\* See Section 11.4.8

### ▼Additional Information

Name	Value	Description
SDC	* null	Seismic design category
$F_a$	1	Site amplification factor at 0.2s
$F_v$	* null	Site amplification factor at 1.0s
$CR_S$	0.912	Coefficient of risk (0.2s)
$CR_1$	0.91	Coefficient of risk (1.0s)
PGA	0.707	$MCE_G$ peak ground acceleration
$F_{PGA}$	1.1	Site amplification factor at PGA
$PGA_M$	0.778	Site modified peak ground acceleration
$T_L$	8	Long-period transition period (s)
$S_{sRT}$	1.656	Probabilistic risk-targeted ground motion (0.2s)
$S_{sIH}$	1.816	Factored uniform-hazard spectral acceleration (2% probability of

SsD	2.311	Factored uniform hazard spectral acceleration (2% probability of exceedance in 50 years)
SsD	2.311	Factored deterministic acceleration value (0.2s)
S1RT	0.584	Probabilistic risk-targeted ground motion (1.0s)
S1UH	0.641	Factored uniform-hazard spectral acceleration (2% probability of exceedance in 50 years)
S1D	0.697	Factored deterministic acceleration value (1.0s)
PGAd	0.941	Factored deterministic acceleration value (PGA)

\* See Section 11.4.8

*The results indicated here DO NOT reflect any state or local amendments to the values or any delineation lines made during the building code adoption process. Users should confirm any output obtained from this tool with the local Authority Having Jurisdiction before proceeding with design.*

## Disclaimer

Hazard loads are provided by the U.S. Geological Survey [Seismic Design Web Services](#).

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U.S. Geological Survey - Earthquake Hazards Program

# 2008 National Seismic Hazard Maps – Source Parameters

[New Search](#)

Fault Name	State
<b>Puente Hills (Coyote Hills)</b>	<b>California</b>

GEOMETRY	
Dip (degrees)	26
Dip direction	N
Sense of slip	thrust
Rupture top (km)	2.8
Rupture bottom (km)	15
Rake (degrees)	90
Length (km)	17

MODEL VALUES		
Slip Rate	0.7	
Probability of activity	1	
	ELLSWORTH	HANKS
Minimum magnitude	6.5	6.5
Maximum magnitude	6.90	6.60
b-value	0.8	0.8

Fault Model	Deformation Model	Char Rate <sup>1</sup>	GR-a-value <sup>1</sup>	Weight

Stitched	2.4	3.52e-04 / 9.91e-04	1.597 / 2.311	0.50
UnStitched	2.4	3.52e-04 / 9.91e-04	1.597 / 2.311	0.50

<sup>1</sup> 1<sup>st</sup> Value is based on Ellsworth relation and 2<sup>nd</sup> value is based on Hanks and Bakun relation



# 2008 National Seismic Hazard Maps - Source Parameters

[New Search](#)

Distance in Miles	Name	State	Pref Slip Rate (mm/yr)	Dip (degrees)	Dip Dir	Slip Sense	Rupture Top (km)	Rupture Bottom (km)	Length (km)
2.33	<a href="#">Puente Hills (Coyote Hills)</a>	CA	0.7	26	N	thrust	2.8	15	17
3.93	<a href="#">Elsinore;W+GI</a>	CA	n/a	81	NE	strike slip	0	14	83
3.93	<a href="#">Elsinore;W+GI+T</a>	CA	n/a	84	NE	strike slip	0	14	124
3.93	<a href="#">Elsinore;W+GI+T+J</a>	CA	n/a	84	NE	strike slip	0	16	199
3.93	<a href="#">Elsinore;W</a>	CA	2.5	75	NE	strike slip	0	14	46
3.93	<a href="#">Elsinore;W+GI+T+J+CM</a>	CA	n/a	84	NE	strike slip	0	16	241
10.59	<a href="#">Puente Hills (Santa Fe Springs)</a>	CA	0.7	29	N	thrust	2.8	15	11
10.65	<a href="#">Chino, alt 1</a>	CA	1	50	SW	strike slip	0	9	24
10.84	<a href="#">Chino, alt 2</a>	CA	1	65	SW	strike slip	0	14	29
12.01	<a href="#">San Jose</a>	CA	0.5	74	NW	strike slip	0	15	20
12.15	<a href="#">San Joaquin Hills</a>	CA	0.5	23	SW	thrust	2	13	27
15.20	<a href="#">Elsinore;GI+T</a>	CA	5	90	V	strike slip	0	14	78
15.20	<a href="#">Elsinore;GI</a>	CA	5	90	V	strike slip	0	13	37
15.20	<a href="#">Elsinore;GI+T+J+CM</a>	CA	n/a	86	NE	strike slip	0	16	195
15.20	<a href="#">Elsinore;GI+T+J</a>	CA	n/a	86	NE	strike slip	0	17	153
15.42	<a href="#">Newport Inglewood Connected alt 2</a>	CA	1.3	90	V	strike slip	0	11	208
15.55	<a href="#">Newport-Inglewood, alt 1</a>	CA	1	88		strike slip	0	15	65
15.55	<a href="#">Newport Inglewood Connected alt 1</a>	CA	1.3	89		strike slip	0	11	208

17.33	<a href="#">Puente Hills (LA)</a>	CA	0.7	27	N	thrust	2.1	15	22
18.35	<a href="#">Sierra Madre Connected</a>	CA	2	51		reverse	0	14	76
18.35	<a href="#">Sierra Madre</a>	CA	2	53	N	reverse	0	14	57
19.14	<a href="#">Cucamonga</a>	CA	5	45	N	thrust	0	8	28
19.35	<a href="#">Newport-Inglewood (Offshore)</a>	CA	1.5	90	V	strike slip	0	10	66
19.96	<a href="#">Elysian Park (Upper)</a>	CA	1.3	50	NE	reverse	3	15	20
21.94	<a href="#">Raymond</a>	CA	1.5	79	N	strike slip	0	16	22
23.07	<a href="#">Clamshell-Sawpit</a>	CA	0.5	50	NW	reverse	0	14	16
24.63	<a href="#">Palos Verdes</a>	CA	3	90	V	strike slip	0	14	99
24.63	<a href="#">Palos Verdes Connected</a>	CA	3	90	V	strike slip	0	10	285
25.20	<a href="#">Verdugo</a>	CA	0.5	55	NE	reverse	0	15	29
27.90	<a href="#">Hollywood</a>	CA	1	70	N	strike slip	0	17	17
29.90	<a href="#">Elsinore;T+J+CM</a>	CA	n/a	85	NE	strike slip	0	16	169
29.90	<a href="#">Elsinore;T</a>	CA	5	90	V	strike slip	0	14	52
29.90	<a href="#">Elsinore;T+J</a>	CA	n/a	86	NE	strike slip	0	17	127
29.99	<a href="#">Santa Monica Connected alt 2</a>	CA	2.4	44		strike slip	0.8	11	93
33.12	<a href="#">San Jacinto;SBV+SJV+A+CC+B+SM</a>	CA	n/a	90	V	strike slip	0.1	15	241
33.12	<a href="#">San Jacinto;SBV+SJV+A+CC+B</a>	CA	n/a	90	V	strike slip	0.1	15	215
33.12	<a href="#">San Jacinto;SBV</a>	CA	6	90	V	strike slip	0	16	45
33.12	<a href="#">San Jacinto;SBV+SJV+A+CC</a>	CA	n/a	90	V	strike slip	0	16	181
33.12	<a href="#">San Jacinto;SBV+SJV+A</a>	CA	n/a	90	V	strike slip	0	16	134
33.12	<a href="#">San Jacinto;SBV+SJV</a>	CA	n/a	90	V	strike slip	0	16	88
33.12	<a href="#">San Jacinto;SBV+SJV+A+C</a>	CA	n/a	90	V	strike slip	0	17	181
35.12	<a href="#">Santa Monica, alt 1</a>	CA	1	75	N	strike slip	0	18	14

35.12	<a href="#">Santa Monica Connected alt 1</a>	CA	2.6	51		strike slip	0	16	79
35.46	<a href="#">S. San Andreas;SM+NSB+SSB+BG+CO</a>	CA	n/a	83		strike slip	0.1	13	303
35.46	<a href="#">S. San Andreas;NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	84		strike slip	0.1	13	340
35.46	<a href="#">S. San Andreas;BB+NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	14	263
35.46	<a href="#">S. San Andreas;BB+NM+SM+NSB+SSB+BG</a>	CA	n/a	84		strike slip	0	14	321
35.46	<a href="#">S. San Andreas;BB+NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	85		strike slip	0.1	13	390
35.46	<a href="#">S. San Andreas;CH+CC+BB+NM+SM</a>	CA	n/a	90	V	strike slip	0	14	306
35.46	<a href="#">S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	86		strike slip	0.1	13	512
35.46	<a href="#">S. San Andreas;SM</a>	CA	29	90	V	strike slip	0	13	98
35.46	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0.1	13	377
35.46	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0.1	13	421
35.46	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG</a>	CA	n/a	86		strike slip	0.1	13	479
35.46	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	86		strike slip	0.1	13	548
35.46	<a href="#">S. San Andreas;PK+CH+CC+BB+NM+SM</a>	CA	n/a	90	V	strike slip	0.1	13	342
35.46	<a href="#">S. San Andreas;BB+NM+SM</a>	CA	n/a	90	V	strike slip	0	14	184
35.46	<a href="#">S. San Andreas;BB+NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0	14	220
35.46	<a href="#">S. San Andreas;SM+NSB</a>	CA	n/a	90	V	strike slip	0	13	133
35.46	<a href="#">S. San Andreas;SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	13	176
35.46	<a href="#">S. San Andreas;SM+NSB+SSB+BG</a>	CA	n/a	81		strike slip	0	13	234
35.46	<a href="#">S. San Andreas;NM+SM+NSB+SSB+BG</a>	CA	n/a	83		strike slip	0	14	271
35.46	<a href="#">S. San Andreas;NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	13	213

35.46	<a href="#">S. San Andreas;NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0	13	170
35.46	<a href="#">S. San Andreas;NM+SM</a>	CA	n/a	90	V	strike slip	0	14	134
35.46	<a href="#">S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB+BG</a>	CA	n/a	86		strike slip	0	14	442
35.46	<a href="#">S. San Andreas;CH+CC+BB+NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	14	384
35.46	<a href="#">S. San Andreas;CH+CC+BB+NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0	14	341
35.46	<a href="#">S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG+CO</a>	CA	n/a	86		strike slip	0.1	13	449
35.46	<a href="#">S. San Andreas;CC+BB+NM+SM+NSB+SSB+BG</a>	CA	n/a	85		strike slip	0	14	380
35.46	<a href="#">S. San Andreas;CC+BB+NM+SM+NSB+SSB</a>	CA	n/a	90	V	strike slip	0	14	322
35.46	<a href="#">S. San Andreas;CC+BB+NM+SM+NSB</a>	CA	n/a	90	V	strike slip	0	14	279
35.46	<a href="#">S. San Andreas;CC+BB+NM+SM</a>	CA	n/a	90	V	strike slip	0	14	243
35.48	<a href="#">S. San Andreas;NSB+SSB+BG+CO</a>	CA	n/a	79		strike slip	0.2	12	206
35.48	<a href="#">S. San Andreas;NSB+SSB</a>	CA	n/a	90	V	strike slip	0	13	79
35.48	<a href="#">S. San Andreas;NSB</a>	CA	22	90	V	strike slip	0	13	35
35.48	<a href="#">S. San Andreas;NSB+SSB+BG</a>	CA	n/a	75		strike slip	0	14	136
36.74	<a href="#">San Jacinto;SJV</a>	CA	18	90	V	strike slip	0	16	43
36.74	<a href="#">San Jacinto;SJV+A+C</a>	CA	n/a	90	V	strike slip	0	17	136
36.74	<a href="#">San Jacinto;SJV+A+CC</a>	CA	n/a	90	V	strike slip	0	16	136
36.74	<a href="#">San Jacinto;SJV+A+CC+B+SM</a>	CA	n/a	90	V	strike slip	0.1	15	196
36.74	<a href="#">San Jacinto;SJV+A+CC+B</a>	CA	n/a	90	V	strike slip	0.1	15	170
36.74	<a href="#">San Jacinto;SJV+A</a>	CA	n/a	90	V	strike slip	0	17	89
37.80	<a href="#">Cleghorn</a>	CA	3	90	V	strike slip	0	16	25
38.15	<a href="#">Sierra Madre (San Fernando)</a>	CA	2	45	N	thrust	0	13	18

39.67	<a href="#">San Gabriel</a>	CA	1	61	N	strike slip	0	15	71
40.32	<a href="#">Malibu Coast, alt 1</a>	CA	0.3	75	N	strike slip	0	8	38
40.32	<a href="#">Malibu Coast, alt 2</a>	CA	0.3	74	N	strike slip	0	16	38
40.62	<a href="#">Coronado Bank</a>	CA	3	90	V	strike slip	0	9	186
41.03	<a href="#">S. San Andreas;SSB+BG+CO</a>	CA	n/a	77		strike slip	0.2	12	170
41.03	<a href="#">S. San Andreas;SSB</a>	CA	16	90	V	strike slip	0	13	43
41.03	<a href="#">S. San Andreas;SSB+BG</a>	CA	n/a	71		strike slip	0	13	101
41.67	<a href="#">Anacapa-Dume, alt 2</a>	CA	3	41	N	thrust	1.2	12	65
42.70	<a href="#">San Jacinto;A+CC</a>	CA	n/a	90	V	strike slip	0	16	118
42.70	<a href="#">San Jacinto;A</a>	CA	9	90	V	strike slip	0	17	71
42.70	<a href="#">San Jacinto;A+CC+B+SM</a>	CA	n/a	90	V	strike slip	0.1	15	178
42.70	<a href="#">San Jacinto;A+C</a>	CA	n/a	90	V	strike slip	0	17	118
42.70	<a href="#">San Jacinto;A+CC+B</a>	CA	n/a	90	V	strike slip	0.1	15	152
42.98	<a href="#">Northridge</a>	CA	1.5	35	S	thrust	7.4	17	33
45.56	<a href="#">North Frontal (West)</a>	CA	1	49	S	reverse	0	16	50
48.61	<a href="#">Santa Susana, alt 1</a>	CA	5	55	N	reverse	0	16	27
49.18	<a href="#">Anacapa-Dume, alt 1</a>	CA	3	45	N	thrust	0	16	51
55.13	<a href="#">Holser, alt 1</a>	CA	0.4	58	S	reverse	0	19	20
56.90	<a href="#">Rose Canyon</a>	CA	1.5	90	V	strike slip	0	8	70
57.09	<a href="#">Simi-Santa Rosa</a>	CA	1	60		strike slip	1	12	39
60.59	<a href="#">S. San Andreas;BG</a>	CA	n/a	58		strike slip	0	13	56
60.59	<a href="#">S. San Andreas;BG+CO</a>	CA	n/a	72		strike slip	0.3	12	125
60.61	<a href="#">Elsinore;J+CM</a>	CA	3	84	NE	strike slip	0	17	118

60.61	<a href="#">Elsinore;J</a>	CA	3	84	NE	strike slip	0	19	75
61.97	<a href="#">Oak Ridge (Onshore)</a>	CA	4	65	S	reverse	1	19	49
61.97	<a href="#">Oak Ridge Connected</a>	CA	3.6	53		reverse	0.6	15	94
64.64	<a href="#">Helendale-So Lockhart</a>	CA	0.6	90	V	strike slip	0	13	114
65.33	<a href="#">San Cayetano</a>	CA	6	42	N	thrust	0	16	42
66.19	<a href="#">Pinto Mtn</a>	CA	2.5	90	V	strike slip	0	16	74
68.41	<a href="#">North Frontal (East)</a>	CA	0.5	41	S	thrust	0	16	27
68.60	<a href="#">S. San Andreas;PK+CH+CC+BB+NM</a>	CA	n/a	90	V	strike slip	0.1	12	245
68.60	<a href="#">S. San Andreas;CC+BB+NM</a>	CA	n/a	90	V	strike slip	0	15	146
68.60	<a href="#">S. San Andreas;CH+CC+BB+NM</a>	CA	n/a	90	V	strike slip	0	14	208
68.60	<a href="#">S. San Andreas;NM</a>	CA	27	90	V	strike slip	0	15	37
68.60	<a href="#">S. San Andreas;BB+NM</a>	CA	n/a	90	V	strike slip	0	15	87
76.82	<a href="#">Lenwood-Lockhart-Old Woman Springs</a>	CA	0.9	90	V	strike slip	0	13	145
77.99	<a href="#">Santa Ynez (East)</a>	CA	2	70	S	strike slip	0	13	68
77.99	<a href="#">Santa Ynez Connected</a>	CA	2	70		strike slip	0	11	132
80.18	<a href="#">San Jacinto;CC+B</a>	CA	n/a	90	V	strike slip	0.2	14	77
80.18	<a href="#">San Jacinto;CC+B+SM</a>	CA	n/a	90	V	strike slip	0.2	14	103
80.18	<a href="#">San Jacinto;CC</a>	CA	4	90	V	strike slip	0	16	43
80.96	<a href="#">Pitas Point Connected</a>	CA	1	55		reverse	1.2	13	78
80.96	<a href="#">Ventura-Pitas Point</a>	CA	1	64	N	reverse	1	15	44
80.97	<a href="#">Johnson Valley (No)</a>	CA	0.6	90	V	strike slip	0	16	35
81.31	<a href="#">San Jacinto;C</a>	CA	14	90	V	strike slip	0	17	47
81.38	<a href="#">Santa Cruz Island</a>	CA	1	90	V	strike slip	0	13	69
81.88	<a href="#">Channel Islands Thrust</a>	CA	1.5	20	N	thrust	5	12	59

83.65	<a href="#">Burnt Mtn</a>	CA	0.6	67	W	strike slip	0	16	21
84.24	<a href="#">Landers</a>	CA	0.6	90	V	strike slip	0	15	95
85.42	<a href="#">Eureka Peak</a>	CA	0.6	90	V	strike slip	0	15	19
85.61	<a href="#">Garlock;GW</a>	CA	6	90	V	strike slip	0.7	14	98
85.61	<a href="#">Garlock;GC+GW</a>	CA	n/a	90	V	strike slip	0.4	12	210
85.61	<a href="#">Garlock;GE+GC+GW</a>	CA	n/a	90	V	strike slip	0.3	12	256
85.81	<a href="#">Oak Ridge (Offshore)</a>	CA	3	32	S	thrust	0	8	38
86.07	<a href="#">Mission Ridge-Arroyo Parida-Santa Ana</a>	CA	0.4	70	S	reverse	0	8	69
86.87	<a href="#">Gravel Hills-Harper Lk</a>	CA	0.7	90	V	strike slip	0	11	65
86.98	<a href="#">Earthquake Valley</a>	CA	2	90	V	strike slip	0	19	20
87.87	<a href="#">So Emerson-Copper Mtn</a>	CA	0.6	90	V	strike slip	0	14	54
87.98	<a href="#">S. San Andreas;PK+CH+CC+BB</a>	CA	n/a	90	V	strike slip	0.1	12	208
87.98	<a href="#">S. San Andreas;CH+CC+BB</a>	CA	n/a	90	V	strike slip	0	14	171
87.98	<a href="#">S. San Andreas;BB</a>	CA	34	90	V	strike slip	0	15	50
87.98	<a href="#">S. San Andreas;CC+BB</a>	CA	n/a	90	V	strike slip	0	15	109
89.46	<a href="#">Red Mountain</a>	CA	2	56	N	reverse	0	14	101
91.73	<a href="#">Blackwater</a>	CA	0.5	90	V	strike slip	0	12	60
92.44	<a href="#">S. San Andreas;CO</a>	CA	20	90	V	strike slip	0.6	11	69
93.84	<a href="#">Calico-Hidalgo</a>	CA	1.8	90	V	strike slip	0	14	117
94.21	<a href="#">Pleito</a>	CA	2	46	S	reverse	0	14	44
95.52	<a href="#">North Channel</a>	CA	1	26	N	thrust	1.1	5	51
95.71	<a href="#">Pitas Point (Lower)-Montalvo</a>	CA	2.5	16	N	thrust	0.4	13	30
98.16	<a href="#">Garlock;GC</a>	CA	7	90	V	strike slip	0	12	111
98.16	<a href="#">Garlock;GE+GC</a>	CA	n/a	90	V	strike	0	12	156

						slip			
98.89	<a href="#">So Sierra Nevada</a>	CA	0.1	50	E	normal	0	14	112
99.22	<a href="#">Pisgah-Bullion Mtn-Mesquite Lk</a>	CA	0.8	90	V	strike slip	0	13	88



**Appendix E**  
Paleontological Record Search

Natural History Museum  
of Los Angeles County  
900 Exposition Boulevard  
Los Angeles, CA 90007

tel 213.763.DINO  
www.nhm.org

Research & Collections

e-mail: [paleorecords@nhm.org](mailto:paleorecords@nhm.org)

January 26, 2021

Anaheim Public Utilities

Attn: Jon Sanks

re: Paleontological resources for the Groundwater Treatment Facilities at La Palma, Linda Vista, Boysen Park, and Energy Field Sites Project

Dear Jon:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at the Groundwater Treatment Facilities at La Palma, Linda Vista, Boysen Park, and Energy Field Sites project area as outlined on the portion of the Anaheim and Orange USGS topographic quadrangles map that you sent via e-mail on January 21, 2021. We do not have any fossil localities that lie directly within the proposed project area, but we do have fossil localities nearby from the same sedimentary deposits that occur in the proposed project area, either at the surface or at depth.

The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County.

Locality Number	Location	Formation	Taxa	Depth
LACM VP 1652	Rio Vista Avenue south of Lincoln Avenue	Alluvium (Pleistocene)	Sheep ( <i>Ovis</i> )	Unknown (excavations for housing project)
LACM IP 4933	Near the intersection of Navajo Rd & Meinhardt Rd	Niguel Formation	Invertebrates	Unknown
LACM IP 4560	east of Hwy. 39; north from Rosecrans Ave.; near L.A. - Orange Co. line	Unknown (Pliocene)	Invertebrates ( <i>Pecten caurinus</i> )	Surface in stream bed
LACM VP 3524	North of Malvern Avenue & approximately 1/2 mile west of Gilbert Street; Fullerton	Terrace deposits (silty sandstone)	Plants; Invertebrates; Fish (Chondrichthyes)	Unknown
LACM VP	100 feet NE of	Unknown formation	Unspecified	Surface, in bed of

4185, 6689	intersection of creek with La Mirada Boulevard bridge	(Pleistocene; sandy silt shot through with caliche)	mammals	Coyote Creek
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*VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface*

This records search covers only the records of the Natural History Museum of Los Angeles County (“NHMLA”). It is not intended as a paleontological assessment of the project area for the purposes of CEQA or NEPA. Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a full paleontological assessment of the project area be conducted by a paleontologist meeting Bureau of Land Management or Society of Vertebrate Paleontology standards.

Sincerely,



Alyssa Bell, Ph.D.  
Natural History Museum of Los Angeles County

enclosure: invoice

**Appendix F**  
Noise Analysis

## MEMORANDUM

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**To:** Jonathan Sanks, Anaheim Public Utilities  
**From:** Mike Greene, Dudek  
**Subject:** Noise Technical Memorandum for the Well and Water Treatment Facilities Project  
**Date:** February 8, 2021  
**cc:** Collin Ramsey, Dudek  
**Attachments:** A Figures 1–10  
B Noise Input/Output Data

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Dudek is pleased to submit this noise impacts assessment to assist Anaheim Public Utilities (APU) with initial environmental planning requirements for the proposed Well and Water Treatment Facilities Project (project) in Anaheim, California (City).

The purpose of this memorandum is to assess the noise and groundborne vibration impacts of the project. Accordingly, this assessment uses the significance threshold questions in Appendix G of the California Environmental Quality Act (CEQA) Guidelines (14 CCR 15000 et seq.), and is based on the noise/vibration emissions-based significance thresholds from the City of Anaheim and other agencies as deemed appropriate.

The contents and organization of this memorandum are as follows: project description, noise and vibration terminology, existing conditions, thresholds of significance, approach and methodology, impact analyses for the noise and vibration assessments, mitigation measures, conclusions, and references cited.

## 1 Project Description

### 1.1 Regional Setting

The project sites are located in Orange County, and all work will be conducted within the City. The City is approximately 7 miles northwest of downtown Santa Ana and 23 miles southeast of downtown Los Angeles. The cities of Yorba Linda, Placentia, Fullerton, Buena Park, Cypress, Stanton, Garden Grove, and Orange and unincorporated Orange County border the City. Interstate 5 and State Routes 39, 55, 57, 90, 91, and 241 provide regional access to the City.

### 1.2 Project Overview

Ion exchange treatment is commonly used to remove perfluoroalkyl substances (PFOS and PFOA) from groundwater. Treatment vessels are filled with polymer-based ion exchange resin that removes the PFOS and PFOA compounds as water passes over it. The resins are small plastic beads with affixed charges balanced by counter ions. The PFOS and PFOA is removed when the counter ion is exchanged for the charged contaminant ion. The rate of removal depends on initial concentration of the contaminant, the concentration of competing ions, loading rate, size and types of resin beads, and the water chemistry. Over time, the resin becomes loaded with PFOS and PFOA. When

saturated, the resin is removed from the vessel and transported to a disposal or incineration facility. Fresh resin is added to the treatment vessels, and treatment continues.

The project involves installation of water treatment facilities at four sites, as described below. The number and size of vessels at each treatment site will depend on the volume of water that will require treatment at each location. While estimated dimensions are included in this memorandum, exact sizes may vary to ensure the treatment systems can adequately supply the necessary volume of water. To ensure continuous availability of water, the treatment systems would operate up to 24 hours per day. To most efficiently distribute the treated water, a new water supply well would be installed at the La Palma site, and several other wells would be rehabilitated to improve their water production capacity.

### 1.3 La Palma Site

The La Palma site would include a new treatment plant, water well, piping, and security features.

#### 1.4.1 Current Use

A water treatment system would be installed at the location of the existing La Palma Reservoir. The La Palma site is located southeast of the intersection of West La Palma Avenue and North West Street. The site is located within a heavily urbanized area. It is bound to the north by Carbon Creek Channel, to the east by a small strip mall with retail stores and restaurants, to the south by single-family homes, and to the west by North West Street.

The site currently contains a water supply well, a water reservoir, water disinfection equipment, a 2,000 gallon diesel fuel tank, a restroom, control buildings, and various piping, valves, pumps, and other water distribution equipment. The site is surrounded by a chain-link fence. A gate is located on North West Street to allow vehicles to enter and exit the site. The ground surface is primarily soil, some areas paved with asphalt, and some areas paved with permeable concrete.

#### 1.4.2 Proposed Use

##### 1.4.2.1 Treatment Plant

The project would include installation of a new treatment system in a vacant area of the site east of the existing reservoir and pump station. The system would be designed to treat water at a rate of approximately 8,700 gallons per minute (gpm). Approximately 12 ion exchange resin vessels would be installed at the site. While exact dimensions might vary, the vessels are expected to be approximately 17 feet tall and 12 feet in diameter. The vessels would be installed on the eastern portion of the property. Additional smaller treatment equipment would be installed such as pre-treatment filters, pumps, pipes, valves, and other appurtenant structures. Upgraded disinfection equipment consisting of pumps and tanks would be installed to store additional sodium hypochlorite (bleach) to disinfect the water leaving the treatment plant. An upgraded electrical transformer would be added to the site to reliably power the pumping equipment. Electrical equipment connections would be installed to allow the facility to operate off a portable emergency backup generator. The treatment plant equipment would be set back from West La Palma Avenue to reduce visibility above the site walls or fences.

#### 1.4.2.2 Water Well Installation and Rehabilitation

One new groundwater well would be installed in the southeast corner of the site. The well would be drilled to a depth in excess of 1,000 feet and would be designed to extract up to approximately 4,000 gpm of groundwater that would be available for the City's water system. The well would be equipped with an electric pump. The pump is anticipated to be sized at approximately 500 horsepower (HP). However, the exact sizing will be determined based on the depth to groundwater and the rate at which water can be reliably extracted from the well.

A new booster pump would be installed onsite to convey water into the treatment and distribution systems.

The existing water supply well at the La Palma site would be rehabilitated. This would include conducting an initial video survey, using downhole instrumentation to study the vertical alignment, installing a liner casing, and using chemical processes to remove built up scaling and improve performance of the well. New pumps and control equipment would be installed.

#### 1.4.2.3 Piping

Buried piping would be installed within the project site to convey water from the new well into the treatment system and reservoir and distribution system. Existing piping on North West Street and piping on La Palma Avenue would be upgraded with larger piping to better accommodate anticipated water demands.

The replacement pipe would be installed by boring beneath the existing channel. A new buried pipe would be installed connecting the reservoir to existing piping beneath West Street.

The site has an existing pipe that discharges water into Carbon Creek Channel. These discharges occur during well startup and shutdown, and while conducting maintenance on the reservoir. The new treatment system and well would be connected to this existing discharge point to accommodate flushing water when starting, stopping, or conducting maintenance on the site equipment.

New catch basins and storm drain piping would be installed as necessary to accommodate site grade changes.

#### 1.4.2.4 Security, Entrance, and Landscaping

To promote site security and better screen the new treatment equipment from view, the existing chain-link fence would be replaced with a new 10-foot-high block wall. The wall would extend along the entire north, south, and east sides of the site. A new entrance gate would be installed on the northeast corner of the property, which would connect to West La Palma Avenue. The gate would be used to allow construction and maintenance vehicles to access the site. The existing site entrance on North West Street would be unchanged. New security lighting would be installed throughout the site. New landscaping would be installed on the north portion of the property, near Carbon Creek Channel. Vines or similar landscaping would be planted along the southern wall for aesthetic improvement and to reduce graffiti. The existing chain link fence has been damaged by trees and vegetation, and some existing trees located along the existing fence may need to be removed to facilitate construction of the new block wall. Additionally, overhead electrical and communication lines are located along the southern boundary of the site. These existing utilities would be removed and relocated underground.

## 1.5 Linda Vista Site

The Linda Vista site would include a new treatment plant, piping, operations building, and security features.

### 1.5.1 Current Use

A water treatment system would be installed at the location of the existing Linda Vista Reservoir. The Linda Vista site is located northwest of the intersection of Miraloma Avenue and North Tustin Avenue. The site is located within a commercial/industrial area. It is bound to the east by Tustin Avenue and commercial properties, to the south by additional commercial properties, and to the north and west by Anaheim Lake. Anaheim Lake is a groundwater recharge facility operated by the Orange County Water District (OCWD). It receives water from MWD, sourced from the Colorado River Aqueduct and State Water Project. It also receives water from the Santa Ana River.

The site currently contains a pump station, a large storage tank, water disinfection equipment, storage buildings, and various piping, valves, and other water distribution equipment. The site also has a 2,220 HP diesel-fueled emergency backup generator and a weather station. Several water supply wells are installed around Anaheim Lake. The southern portion of the site is surrounded by a block wall, with chain-link fence on the northern portion. Entrances on North Tustin Avenue allow vehicles to enter and exit the site.

The site formerly contained a 4-million-gallon partially underground reservoir. The reservoir previously extended approximately 15 feet below the current ground surface. The upper 5 feet was demolished and removed. However, portions of the reservoir walls and floors are believed to remain in place at depths ranging from five feet to 15 feet below ground surface. The ground surface in the construction area is primarily soil and weed-type vegetation.

### 1.5.2 Proposed Use

#### 1.5.2.1 Treatment Plant

The project would include installation of a new treatment system in a vacant area of the site north of the existing tank. All existing vegetation within the treatment system area would be removed. The system would be designed to treat produced water at up to approximately 20,000 gpm. Approximately 20 ion exchange resin vessels would be installed at the site. While exact dimensions might vary, the vessels are expected to be approximately 17 feet tall and 12 feet in diameter. Additional smaller treatment equipment would be installed such as pre-treatment filters, pumps, pipes, valves, and other appurtenant structures. An upgraded electrical transformer and switchgear would be added to the site to reliably power the pumping equipment. A new 350 kilowatt (kW) diesel emergency backup generator would be installed to power the treatment plant, pumps, operations building, and associated equipment in the event of a power outage. Upgraded disinfection equipment consisting of pumps and tanks would be installed to store additional sodium hypochlorite (bleach) to disinfect the water leaving the treatment plant. Portions of the abandoned underground reservoir may need to be demolished to facilitate construction. The treatment plant equipment would be set back from North Tustin Avenue, to reduce visibility above the site walls or fences.

#### 1.5.2.2 Water Well

Three existing water supply wells near the Linda Vista site would require rehabilitation. This would include conducting an initial video survey, using downhole instrumentation to study the vertical alignment, installing a liner



casing, and using chemical processes to remove built up scaling and improve performance of the well. New pumps and control equipment would be installed.

#### 1.5.2.3 Piping

Approximately 4,000 feet of undersized piping located on the western and southern sides of Anaheim Lake would be replaced with larger piping to ensure adequate capacity for reliable operation of the well and treatment facility.

It is anticipated that the treatment system and well would have connections to Anaheim Lake to accommodate flushing water when starting, stopping, or conducting maintenance on the site equipment. New pipes would be connected to existing discharge connections to avoid construction within the Lake boundary. Alternatively, the treatment system and well may be connected to storm drains or sewers. In this case, piping would need to be installed beneath Tustin Avenue or Miraloma Avenue to accommodate these connections. If a sewer connection is deemed necessary, an Industrial Waste Discharge Permit would be obtained from the Orange County Sanitation District. Any piping connections leading to Anaheim Lake would be coordinated with OCWD, to ensure any discharges do not affect OCWD's groundwater recharge operations.

New catch basins and storm drain piping would be installed as necessary to accommodate site grade changes.

#### 1.5.2.4 Security, Entrance, and Landscaping

To promote site security and better screen the new treatment equipment from view, the existing chain-link fence located along Tustin Avenue would be replaced with a new 10-foot-high block wall, designed to match the existing block wall to the south. The existing chain-link fence that would not be replaced would be equipped with a new green screen. A new access gate would be installed on the north end of the site, which would connect to Tustin Avenue. New security lighting would be installed throughout the site. New landscaping would be installed along Tustin Avenue, similar to the landscaping currently located near the existing block wall. New security cameras would also be installed. New on-site parking would be constructed for APU staff and site visitors. New on-site access paths and roadways would be replaced.

#### 1.5.2.5 Operations Building

An existing operations center and storage building would be demolished and replaced. The new building would be approximately 45 by 50 feet in size. It would be used by maintenance staff and would contain an electrical room, mechanical room, server room, control room, storage, break areas, and restrooms. The operations building would be connected to the site's existing sewer connection. A weather station is located on site, which is operated by the National Oceanic and Atmospheric Administration (NOAA). Prior to the start of construction, the weather station would be temporarily relocated by NOAA onto an existing site building and would later be installed on the new operations building.

### 1.6 Boysen Park Site

The Boysen Park site would include a new treatment plant, piping, and security features.

## 1.6.1 Current Use

An additional water treatment system would be installed within existing Boysen Park. Boysen Park consists of grassy fields, baseball fields, parking areas, playgrounds, and tennis courts. Boysen Park is located southwest of the intersection of South State College Boulevard and Vermont Avenue. The site is bound to the north, south, and east by residences, and to the west by Theodore Roosevelt Elementary School. A tennis center is located immediately south of the site. An existing water supply well is located north of the proposed treatment plant location. The well site includes disinfection equipment and electric and control equipment. Vehicles enter the project area through the intersection of South State College Boulevard and East Wagner Avenue. The ground surface at the project area is currently grass and a concrete walkway.

## 1.6.2 Proposed Use

### 1.6.2.1 Treatment Plant

The project would include installation of a new water treatment system in a mostly vacant area located between an existing baseball field and tennis courts, west of the park's parking lot, approximately 200 feet southwest of an existing groundwater well and approximately 375 feet south of Theodore Roosevelt Elementary School. The system would be designed to treat produced water at up to approximately 4,400 gpm. Approximately six ion exchange resin vessels would be installed at the site. While exact dimensions might vary, the vessels are expected to be approximately 17 feet tall and 12 feet in diameter. Additional smaller treatment equipment would be installed, such as pre-treatment filters, pumps, pipes, valves, and other appurtenant structures.

An upgraded electrical transformer would be added to the site to reliably power the pumping equipment. Electrical equipment connections would be installed to allow the facility to operate off a portable emergency backup generator. Upgraded disinfection equipment consisting of pumps and tanks would be installed near the existing well to store additional sodium hypochlorite (bleach) to disinfect the water leaving the treatment plant.

Some picnic benches, barbecue grills, and a concrete walkway would need to be relocated from outside the proposed treatment area. These features would be relocated to a location approved by the City's Community Services Department to ensure future public access. Trees, grass, and other vegetation would need to be removed from the footprint of the treatment plant to facilitate construction. Trees would be replanted in new locations approved by the City's Community Services Department.

### 1.6.2.2 Well Rehabilitation

An existing water supply well at the Boysen Park site would be rehabilitated. This would include conducting an initial video survey, using downhole instrumentation to study the vertical alignment, installing a liner casing, and using chemical processes to remove built up scaling and improve performance of the well. New pumps and control equipment would be installed.

### 1.6.2.3 Piping

New buried piping would be installed beneath the existing parking lot to convey water from the existing well into the treatment system and City water system.

The treatment system and well would be connected to the storm drain system located near the existing well. This connection would be used to accommodate flushing water when starting, stopping, or conducting maintenance on the site equipment.

New catch basins and storm drain piping would be installed as necessary to accommodate site grade changes.

#### 1.6.2.4 Security, Entrance, and Landscaping

To promote site security and better screen the new treatment equipment from view, a new 10-foot-high no-climb fence would be installed surrounding the new treatment site and the existing water well. Existing fences around the park's tennis courts would be increased in height to up to 12-feet tall. A driveway would be connected to the existing park parking lot. Retractable bollards, or similar security structures would be used to prevent unauthorized vehicles from entering the project site. New security lighting would be installed around the treatment site and existing well.

Some parking areas might be temporarily disrupted during construction and some trees and vegetation would need to be removed from the project area prior to constructing the new treatment system. Activities affecting park usage would be coordinated with the City Community Services Department to minimize the impacts.

### 1.7 Energy Field Site

The Energy Field site would include a new treatment plant, piping, and security features.

#### 1.7.1 Current Use

An additional water treatment system would be installed approximately 400 feet southwest of an existing City water supply well. The site is located north of Energy Field Park, west of an existing City street sweeping station and electrical substation, and south and west of Anaheim Barber Channel, an Orange County flood control channel. An unused control building is located at the site, along with unused solar panel foundations. The park contains a walking path, restrooms, playground, covered benches, and an artificial turf field. An existing water supply well is located north of the proposed treatment plant location.

#### 1.7.2 Proposed Use

##### 1.7.2.1 Treatment Plant

The project would include installation of a new water treatment system in a mostly vacant area located north of the Energy Field Park. The system would be designed to treat produced water at up to approximately 3,000 gpm. Approximately four ion exchange resin vessels would be installed at the site. While exact dimensions might vary, the vessels are expected to be approximately 17 feet tall and 12 feet in diameter. Additional smaller treatment equipment would be installed, such as pre-treatment filters, pumps, piping, valves, and other appurtenant structures. An existing unused control building may be repurposed to hold treatment system equipment. Alternatively, it may be demolished and removed. The unused solar panel foundations would also be removed.

An upgraded electrical transformer would be added to the site to reliably power the pumping equipment. Electrical equipment connections would be installed to allow the facility to operate off a portable emergency backup generator.

Upgraded disinfection equipment consisting of pumps and tanks would be installed near the existing well to store additional sodium hypochlorite (bleach) to disinfect the water leaving the treatment plant.

#### 1.7.2.2 Piping

New buried piping would be installed to convey water from the existing well into the treatment system and City water system. The piping would either be installed to the northwest, beneath an existing City street sweeping station and electrical substation, toward the existing well, or to the east, beneath the Energy Field Park, and then north beneath South 9th Street.

The treatment system might require a new piped connection to the adjacent Anaheim Barber Channel. This connection would be used to accommodate flushing water when starting, stopping, or conducting maintenance on the site equipment. An encroachment permit would be obtained from Orange County Public Works prior to installing new connections to the flood control channel.

#### 1.7.2.3 Security, Entrance, and Landscaping

To promote site security and better screen the new treatment equipment from view, a new 10-foot-high no-climb fence would be installed surrounding the new treatment site. This would require demolition of an existing portion of fence on the south portion of the treatment property. A concrete walkway and new access road would be constructed connecting to the existing site entrance on South 9th Street, extending along the southern park boundary, extending further northeast along the adjacent flood control channel. The new driveway would allow access by construction and maintenance vehicles, and also allow increased pedestrian access through the park. New security lighting would be installed around the treatment site and existing well.

### 1.8 Treatment System Construction

At all four treatment system sites, minor grading activities would be necessary to prepare the location for vessel installation. This would involve ensuring the ground surface is level and properly compacted to support the vessels. A concrete foundation slab would be installed to accommodate the vessels. Equipment and materials would be transported to each site by truck and would be lifted in place by crane and anchored to the foundation. Piping would be installed to receive water from existing water wells, move it through the treatment process, and pump the treated water into the water distribution system. In most cases, excavation would be conducted at depths of 5 feet or less. However, deeper excavations (up to approximately 10 or more feet) may be necessary for activities such as installing valve vaults. It is anticipated that approximately 100 cubic yards of soil would be excavated from each site to facilitate construction. Work would generally be conducted from 7:00 AM to 7:00 PM, Monday through Friday. For impact generating equipment, work hours would be further restricted to between 9:00 AM and 4:00 PM, Monday through Friday. Any work in street right-of-way would be conducted from 8:30 AM to 3:30 PM. However, project work may occasionally occur outside of these hours. Work outside these hours would be subject to approval by APU. Typical construction equipment would be used during this project. This would include pickup trucks, dump trucks, backhoes, excavators, air-driven equipment (such as jackhammers), cranes, soil compactors, cement mixers, and other similar equipment. Equipment would be rotated in and out as construction progresses. To expedite construction, multiple treatment sites may be constructed concurrently.

A drinking water permit amendment would be obtained from the State Water Resources Control Board Division of Drinking Water prior to operating the treatment plants. All construction activities would be conducted in accordance with local, state, and federal requirements. All additives that come in contact with water would meet the requirements of NSF-61 to ensure they are compatible with drinking water.

## 1.9 Water Well Construction

A new groundwater well would be installed at the La Palma Site. A well drilling permit would be obtained from APU prior to commencing drilling activities. Anaheim Municipal Code Section 10.20 requires that water wells be constructed in accordance with California Department of Water Resources Bulletin 74 (California Water Well Standards).

A drill rig would be used to drill a borehole and install a steel casing at both sites. When completed, the well would be constructed of steel and cement would be used to prevent contamination from entering the well. Construction and development of the well will be conducted 24 hours per day 7 days per week for several weeks. Because work will be conducted at night, sound walls up to approximately 24 feet high would be installed to reduce noise during drilling and development activities.

Groundwater and drilling fluid will be pumped from the borehole and well during construction. These fluids will be pumped through settling tanks to reduce sediment. Once the sediment has been reduced to an acceptable level and chlorine has been neutralized, the water would be discharged into the storm drain system, in accordance with National Pollutant Discharge Elimination System permit requirements.

Some water treatment chemicals would be temporarily stored on site during well construction. This would include sodium hypochlorite (bleach) for well disinfecting, drilling fluid dispersants, and dechlorination agents.

Upon completion, the well would be equipped with a pump and connected to the water distribution system. The well water would be sampled and tested, and a drinking water permit amendment would be obtained from the State Water Resources Control Board Division of Drinking Water prior to operating the well. All well construction activities would be conducted in accordance with local, state, and federal requirements.

Construction equipment used during this phase is expected to include a drill rig, backhoe, air compressor, diesel-powered test pump, cement mixers and pumps, flatbed trucks, and other similar equipment. Equipment would be rotated in and out as construction progresses.

## 1.10 Water Well Rehabilitation

Existing water supply wells at the La Palma, Linda Vista, and Boysen Park sites would be rehabilitated. This would entail conducting a downhole video inspection to evaluate the well condition and a survey would be conducted to verify the well's vertical alignment. A brush would be lowered into the well casing to clean the screen. A steel liner would be lowered into the existing well casing and sealed in place with materials such as gravel, sand, bentonite, and/or cement.

Groundwater would be pumped from the well during rehabilitation. These fluids will be pumped through settling tanks to reduce sediment. Once the sediment has been reduced to an acceptable level and chlorine has been

neutralized, the water would be discharged into the storm drain system or Anaheim Lake, in accordance with National Pollutant Discharge Elimination System (NPDES) permit requirements.

Some water treatment chemicals would be temporarily stored on site during well construction. This would include sodium hypochlorite (bleach) for well disinfecting, drilling fluid dispersants, dechlorination agents, hydrochloric acid (to break down accumulated scale in the well), and other similar well rehabilitation products. All products used in the well would comply with NSF-61 to ensure they are safe for use in the water distribution system.

Upon completion, the well would be equipped with a pump and connected to the water distribution system. The well water would be sampled and tested, and a drinking water permit amendment would be obtained from DDW prior to operating the well. All well construction activities would be conducted in accordance with local, state, and federal requirements.

Construction equipment used during this phase is expected to include a development rig (similar to a crane), backhoe, air compressor, diesel-powered test pump, cement mixers and pumps, flatbed trucks, and other similar equipment. Equipment would be rotated in and out as construction progresses.

## 1.11 Treatment System and Well Operation

Operation and maintenance activities will be conducted to ensure the treatment systems operate safely and efficiently. APU technicians would generally visit each treatment and well site daily to verify the system is operated as designed. The workers would typically be able to conduct their activities using an ordinary pickup truck or similar vehicle. In most cases, maintenance work would be conducted during daytime. However, it is possible that unplanned repairs would need to be conducted at night.

Resin change-out would need to be conducted at each treatment site. Change-outs would be scheduled when the resin becomes saturated and cannot effectively treat the water. This is expected to occur once per year at each treatment site. However, the exact frequency will vary based on the flow through the treatment plants and the chemistry of the water. A water hose would be used to flush the spent resin from the treatment vessels into a tanker truck for transportation. The resin would be taken to an appropriately permitted facility for incineration or disposal. State, local, and federal laws pertaining to waste transportation and disposal would be followed.

## 2 Noise and Vibration Terminology

### 2.1 Sound Pressure Levels and Decibels

The amplitude of a sound determines its loudness. Loudness of sound increases with increasing amplitude. Sound pressure amplitude is measured in units of micronewton per square meter, also called micropascal. One micropascal is approximately one-hundred billionth (0.0000000001) of normal atmospheric pressure. The pressure of a very loud sound may be 200 million micropascals, or 10 million times the pressure of the weakest audible sound. Because expressing sound levels in terms of micropascal would be very cumbersome, sound pressure level in logarithmic units is used instead to describe the ratio of actual sound pressure to a reference pressure squared. These units are called Bels. To provide a finer resolution, a Bel is subdivided into 10 decibels (dB).

### 2.1.1 A-Weighted Sound Level

Sound pressure level alone is not a reliable indicator of loudness. The frequency, or pitch, of a sound also has a substantial effect on how humans will respond. Although the intensity (energy per unit area) of the sound is a purely physical quantity, the loudness, or human response, is determined by the characteristics of the human ear.

Human hearing is limited not only in the range of audible frequencies, but also in the way it perceives the sound in that range. In general, the healthy human ear is most sensitive to sounds between 1,000 and 5,000 hertz<sup>1</sup>, and it perceives a sound within that range as more intense than a sound of higher or lower frequency with the same magnitude. To approximate the frequency response of the human ear, a series of sound level adjustments is usually applied to the sound measured by a sound level meter. The adjustments (referred to as a weighting network) are frequency-dependent.

The A-scale weighting network approximates the frequency response of the average young ear when listening to ordinary sounds. When people make judgments about the relative loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Other weighting networks have been devised to address high noise levels or other special situations (e.g., B-scale, C-scale, D-scale), but these scales are rarely used in conjunction with most environmental noise. Noise levels are typically reported in terms of A-weighted sound levels. All sound levels discussed in this report are A-weighted decibels (dBA). Examples of typical noise levels for common indoor and outdoor activities are listed in Table 1.

**Table 1. Typical Sound Levels in the Environment and Industry**

Common Outdoor Activities	Noise Level (dB)	Common Indoor Activities
	110	Rock band
Jet fly over at 300 meters (1,000 feet)	100	
Gas lawn mower at 1 meter (3 feet)	90	
Diesel truck at 15 meters (50 feet), at 80 kilometers per hour (50 miles per hour)	80	Food blender at 1 meter (3 feet); garbage disposal at 1 meter (3 feet)
Noisy urban area, daytime; gas lawn mower at 30 meters (100 feet)	70	Vacuum cleaner at 3 meters (10 feet)
Commercial area; heavy traffic at 90 meters (300 feet)	60	Normal speech at 1 meter (3 feet)
Quiet urban, daytime	50	Large business office; dishwasher next room
Quiet urban, nighttime	40	Theater; large conference room (background)
Quiet suburban, nighttime	30	Library
Quiet rural, nighttime	20	Bedroom at night; concert hall (background)
	10	Broadcast/recording studio
Lowest threshold of human hearing	0	Lowest threshold of human hearing

Source: Caltrans 2013.

<sup>1</sup> The SI (International System of Units) unit of frequency, equal to cycles per second; thus, a vibration of 1,000 hertz is equivalent to 1,000 1,000 cycles per second.



Under controlled conditions in an acoustics laboratory, the trained, healthy human ear is able to discern changes in sound levels of 1 dBA when exposed to steady, single-frequency signals in the mid-frequency range. Outside such controlled conditions, the trained ear can detect changes of 2 dBA in normal environmental noise. It is widely accepted that the average healthy ear, however, can barely perceive noise level changes of 3 dBA. A change of 5 dBA is readily perceptible, and a change of 10 dBA is perceived as twice or half as loud. A doubling of sound energy results in a 3 dBA increase in sound, which means that a doubling of sound energy (e.g., doubling the volume of traffic on a road) would result in a barely perceptible change in sound level).

### 2.1.2 Noise Descriptors

Additional units of measure (i.e., noise metrics) have been developed to evaluate the long-term characteristics of sound. The equivalent sound level ( $L_{eq}$ ) is also referred to as the time-average sound level. It is the equivalent steady-state sound level that in a stated period of time would contain the same acoustical energy as the time-varying sound level during the same time period. The 1-hour A-weighted equivalent sound level,  $L_{eq(h)}$ , is the energy average of the A-weighted sound levels occurring during a 1-hour period, and is the primary basis for the City of Anaheim noise ordinance criteria for stationary sources. Additional noise metrics include the  $L_{max}$ ,  $L_{min}$  (the maximum and minimum instantaneous noise levels, respectively) and  $L_n$ . The  $L_n$  noise metric represents the noise level equaled or exceeded "n" percent of the time. For example,  $L_{10}$  is the level equaled or exceeded 10% of the time.

People are generally more sensitive and annoyed by noise occurring during the evening and nighttime hours. Thus, another noise descriptor used in community noise assessments—the community noise equivalent level (CNEL)—was introduced. The CNEL scale represents a time-weighted, 24-hour average noise level based on the A-weighted sound level. The CNEL accounts for the increased noise sensitivity during the evening hours (7:00 p.m. to 10:00 p.m.) and nighttime hours (10:00 p.m. to 7:00 a.m.) by adding 5 dBA and 10 dBA, respectively, to the average sound levels occurring during the evening and nighttime hours. The CNEL noise metric (or a similar noise metric the Day Night Level ( $L_{dn}$ )<sup>2</sup> is the basis for the City's standards for mobile source noise such as traffic and aircraft noise.

### 2.1.3 Sound Propagation

Sound propagation (i.e., the passage of sound from a noise source to a receiver) is influenced by geometric spreading, ground absorption, atmospheric effects, and shielding by natural and/or built features.

Sound levels attenuate (or diminish) at a rate of approximately 6 dBA per doubling of distance from an outdoor point source due to the geometric spreading of the sound waves. Atmospheric conditions such as humidity, temperature, and wind gradients can also temporarily either increase or decrease sound levels. In general, the greater the distance the receiver is from the source, the greater the potential for variation in sound levels due to atmospheric effects. Additional sound attenuation can result from built features such as intervening walls and buildings, and by natural features such as hills and dense woods.

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<sup>2</sup>  $L_{dn}$  (also known as DNL) is comparable to CNEL, except that there is no evening component: the period from 7 a.m. to 10 p.m. is classified as daytime, and no adjustment to the noise levels is made during these hours; the period from 10 p.m. to 7 a.m. is classified as nighttime and 10 decibels is added to the hourly  $L_{eqs}$  occurring during these hours.



## 2.2 Groundborne Vibration Fundamentals

Groundborne vibration is a small, rapidly fluctuating motion transmitted through the ground, and can be described in terms of displacement, velocity, or acceleration. Displacement is the distance that a point on a surface moves away from its original static position; vibration velocity is the instantaneous speed that a point on a surface moves; and acceleration is the velocity's rate of change. Each of these descriptors can be used to correlate vibration to environmental effects such as human response and building damage.

In contrast to airborne noise, groundborne vibration is not a common environmental problem. Some common sources of groundborne vibration are construction activities such as blasting, pile driving, and operating heavy earth-moving equipment. Trains and similar rail vehicles can also produce vibration. It is unusual for vibration from sources such as buses and trucks to be perceptible because these vehicles travel on rubber tires and have relatively soft suspensions.

In quantifying vibration, the peak particle velocity (ppv) is most frequently used to describe vibration impacts and is typically measured in inches per second (in/sec). Vibration levels may also be presented and discussed in terms of dB relative to one microinch per second (abbreviated as VdB). A comparison of common groundborne vibration levels, in terms of VdB, is shown in Figure 6. As shown in Figure 6, the threshold of perception is approximately 65 VdB. Typical background vibration levels are between 50 and 60 VdB, and the level for minor cosmetic damage to fragile buildings or blasting generally begins at 100 VdB, which is equivalent to approximately 0.42 inches per second in terms of ppv (FTA 2018).

The strength of groundborne vibration attenuates fairly rapidly over distance. Some soil types transmit vibration quite efficiently; other types (primarily sandy soils) do not. Typically, groundborne vibration generated by humans attenuates rapidly with distance from the source of the vibration. Manmade vibration problems are usually confined to relatively short distances (approximately 500 to 600 feet or less) from the source (FTA 2018).

The calculation to determine PPV at a given distance is as follows:

$$PPV_{\text{distance}} = PPV_{\text{ref}} * (25/D)^{1.5}$$

Where:

PPV<sub>equip</sub> = the peak particle velocity in inches per second of the equipment adjusted for distance

PPV<sub>ref</sub> = the reference vibration level in inches per second at 25 feet

D = the distance from the equipment to the receiver

Groundborne vibration information related to construction activities has been collected by the California Department of Transportation (Caltrans 2020). Structural response to vibration is typically evaluated in terms of ppv, which is often used since it is related to the stresses that are experienced by the buildings. Information from Caltrans indicates that continuous vibrations with a ppv of approximately 0.1 inches per second begin to annoy people. Various general standards are contained in the International Standards Organization's Standards 3945, 4866, and 7626-1. Limits set by these standards indicate a low probability of structural damage occurring to common structures at a ppv of 2.0 inches per second. Older (and non-reinforced) masonry structures would have a limit of 0.75 to 1.0 inch per second (Caltrans 2020). The Federal Transit Administration identifies a vibration damage threshold criterion of 0.20 inches per second for non-engineered timber and masonry buildings (i.e., fragile

buildings), or 0.12 inches per second for buildings extremely susceptible to vibration (i.e., fragile historic buildings) (FTA 2018). For the purposes of this analysis, in which no historic or fragile buildings exist in the immediate vicinity, a damage threshold of 0.50 inches per second ppv is utilized.

## 3 Existing Conditions

### 3.1 Existing Noise Setting

The individual projects addressed in this analysis would be located at four sites within the APU service area, which covers an area of approximately 50 square miles within the northwestern portion of Orange County. Given the wide geographical area encompassed by the proposed project, the existing noise environment is varied. In general, the project areas consist of suburban land uses and are located adjacent to parks, schools, residences, and commercial uses. The noise environments through most of the project areas are characterized by a background, or “ambient,” noise level generated by vehicular traffic. Typical secondary noise sources include recreational activities noise, distant aircraft, distant construction noise, birds, children playing, and passing conversations. Noise-sensitive receptors are locations where human activity may be adversely affected by noise. Examples of noise-sensitive receptors in the vicinity of the project sites are residences, parks, a school and churches.

### 3.2 Ambient Noise Monitoring

Noise measurements were made using a SoftdB Piccolo integrating sound-level meter equipped with a 0.5-inch pre-polarized condenser microphone with pre-amplifier. The sound-level meter meets the current American National Standards Institute (ANSI) standard for a Type 2 (General Purpose) sound-level meter. The sound-level meter was calibrated before and after the measurements, and the measurements were conducted with the microphone positioned 5 feet above the ground and covered with a windscreen.

Short-term noise measurements were conducted at a total of 13 locations vicinity of the 4 project sites on December 16, 2020, as depicted in Figures 7 through 10, Noise Measurement Locations. These selected noise measurement locations are representative of the existing noise conditions around the project sites. In addition, one long-term (i.e., 24-hour) noise measurement was conducted at the La Palma site, because proposed water well drilling activity would take place as part of project construction at this location continuously throughout the daytime and nighttime hours, and the work would take place relatively close to adjacent residences.

The location where each short-term noise measurement was conducted, as well as the measured time-averaged sound level and maximum sound level during the measurement interval ( $L_{max}$ ), is presented in Table 2. The noise data from the long-term noise measurement is summarized in Table 3. Detailed noise measurement data are included as Attachment B to this memorandum. As shown in Table 2, noise levels near the La Palma site ranged from approximately 53 dBA  $L_{eq}$  (at location LP-ST3) to 69 dBA  $L_{eq}$  (at location LP-ST4). Noise levels near the Linda Vista site ranged from approximately 63 dBA  $L_{eq}$  (at location LV-ST1) to 67 dBA  $L_{eq}$  (at location LV-ST2). Noise levels near the Boysen Park site ranged from approximately 58 dBA  $L_{eq}$  (at locations B-ST3 and B-ST4) to 61 dBA  $L_{eq}$  (at location B-ST1). Noise levels near the Energy Field site ranged from approximately 54 dBA  $L_{eq}$  (at location E-ST1) to 60 dBA  $L_{eq}$  (at location E-ST2).

At the La Palma site, the long-term noise measurement (Table 3) resulted in a 24-hour noise average level of 57 dBA  $L_{eq}$  24-Hr. The lowest hourly average noise level was approximately 53 dBA  $L_{eq}$ , and the highest hourly average noise level was approximately 60 dBA  $L_{eq}$ .

**Table 2. Summary of Short-Term Noise Measurement Data**

Receptors	Description	dBA $L_{eq}$	dBA $L_{max}$
<b>La Palma Site</b>			
LP-ST1	1105 West Mishreki Place, west of La Palma site; adjacent to residences	65.7	82.7
LP-ST2	1010 North West Street, south of La Palma site drilling location; adjacent to residences	61	78.1
LP-ST3	901 West Autumn Drive, south of La Palma site; adjacent to residences	53.4	68.7
LP-ST4	825 West La Palma Avenue, north of La Palma site; adjacent to residences	68.9	86.8
<b>Linda Vista Site</b>			
LV-ST1	248 Pasteur Place, north of Linda Vista site drilling location; adjacent to residences	63.4	78.5
LV-ST2	1030 San Fernando Lane, north of project site; adjacent to residences	67.3	81.3
<b>Boysen Park Site</b>			
B-ST1	South end of main baseball field, north of Boysen Park site	60.9	75.6
B-ST2	Boysen Park Tennis Center, near southeast portion of park, south of Boysen Park site	59.5	67.6
B-ST3	South side of Boysen Park, south of project site; adjacent to residences to the south	58.2	83.3
B-ST4	Southeast corner of Theodore Roosevelt Elementary School, north of project site	57.8	67.9
<b>Energy Field Site</b>			
E-ST1	Northwestern area of Energy Field Park, east of project site; adjacent to playground	53.8	66.4
E-ST2	Northwestern area of Energy Field Park, east of project site; adjacent to picnic benches	60.4	81.1
E-ST3	South-central area of Energy Field Park, south of project site; adjacent to residences located to the south	57.8	75.5

Source: Attachment B; Figures 7 through 10 (Attachment A).

**Notes:** dBA = A-weighted decibel;  $L_{eq}$  = equivalent continuous sound level (time-averaged sound level);  $L_{max}$  = maximum sound level during the measurement interval.

**Table 3. Summary of Long-Term Noise Measurement Data**

Receptors	Description	24-Hour Average Level dBA $L_{eq}$ 24-Hr	Lowest Hourly Average Level dBA $L_{eq}$ Lowest (Hour(s) Beginning)	Highest Hourly Average Level dBA $L_{eq}$ Highest (Hour(s) Beginning)
LP-LT1	On site, adjacent to proposed water well location	57.1	53.0 (1:00 p.m., 2:00 a.m.)	60.4 (6:00 a.m., 7:00 a.m.)

**Notes:** dBA = A-weighted decibel;  $L_{eq}$  24-Hr = 24-hour noise average level;  $L_{eq}$  = equivalent continuous sound level (time-averaged sound level).

## 4 Relevant Plans, Policies, and Ordinances

### 4.1 Federal

There are no federal regulations related to noise that would apply to the project. However, the Federal Transit Administration (FTA) has established vibration impact criteria that are described below for informational purposes only.

#### 4.1.1 Federal Transit Administration

Although these criteria are not regulatory in nature, FTA has established noise and vibration impact standards that may be used in the absence of such limits at the state and local jurisdictional levels. In its Transit Noise and Vibration Impact Assessment guidance manual, the FTA recommends a daytime construction noise level threshold of 80 dBA  $L_{eq}$  over an 8-hour period (FTA 2018) when “detailed” construction noise assessments are performed to evaluate potential impacts to community residences surrounding a project.

#### 4.1.2 Government Code Section 65302(g)

California Government Code Section 65302(g) requires the preparation of a Noise Element as part of each General Plan, which shall identify and appraise the noise problems in the community. The Noise Element shall recognize the guidelines adopted by the Office of Noise Control in the State Department of Health Services and shall quantify, to the extent practicable, current and projected noise levels for the following sources:

1. Highways and freeways
2. Primary arterials and major local streets
3. Passenger and freight online railroad operations and ground rapid transit systems
4. Aviation and airport-related operations
5. Local industrial plants
6. Other ground stationary noise sources contributing to the community noise environment

## 4.2 Local

### 4.2.1 City of Anaheim Municipal Code

The City of Anaheim's Municipal Code Noise Ordinance (City of Anaheim 2006) is designed to control unnecessary, excessive, and annoying sounds from sources on one property to receivers on another; this is achieved by setting limits that cannot be exceeded at adjacent properties. Noise taking place on public roadways or resulting from rail transit or other interstate commerce is preempted by federal and state law.

Chapter 6.70 of the City of Anaheim Municipal Code ("Sound Pressure Levels") specifies that noise levels cannot exceed 60 dBA at any point on the property line "for extended periods." Construction noise is exempt from this standard per Section 6.70.010, from the City Sound Pressure Level standards provided that such work takes place between the hours of 7:00 a.m. to 7:00 p.m. Additional work hours may be permitted if deemed necessary by the Director of Public Works or Building Official.

## 5 Thresholds of Significance

The significance criteria used to evaluate the project's impacts to noise are based on Appendix G of the CEQA Guidelines. According to CEQA Guidelines Appendix G, a significant impact related to noise would occur if the project would result in:

1. Generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
2. Generation of excessive groundborne vibration or groundborne noise levels.
3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, exposure of people residing or working in the project area to excessive noise levels.

## 6 Approach and Methodology

### 6.1 On-Site Construction Noise

The Federal Highway Administration's Roadway Construction Noise Model (RCNM) (FHWA 2008) and the project's equipment information were used to estimate construction noise levels at nearby noise-sensitive land uses. The RCNM is a national model based on the noise calculations and extensive construction noise data compiled for the Central Artery/Tunnel Project in Boston, Massachusetts. This project, which began in the early 1990s, was one of the largest urban construction projects ever built in the United States. The basis for the national model is a spreadsheet tool developed in support of the Central Artery/Tunnel Project. The Central Artery/Tunnel Project predictions originated from U.S. Environmental Protection Agency noise-level work and an Empire State Electric Energy Research Corporation Guide, which uses an "acoustical usage factor" to estimate the fraction of time each piece of construction equipment is operating at full power (i.e., its loudest condition) during a construction operation (FHWA 2006).

Table 4 provides construction equipment reference noise data, which is used to predict construction noise in the RCNM (FHWA 2006). The noise levels listed represent the A-weighted maximum sound level ( $L_{max}$ ), measured at a distance of 50 feet from the construction equipment (FHWA 2006).

**Table 4. Road Construction Noise Model Noise Emission Reference Levels and Usage Factors**

Equipment	Acoustical Usage Factor (percentage of time)	Maximum Sound Level at 50 feet (dBA $L_{max}$ )
Backhoe	40	80
Compressor (air)	40	80
Concrete pump truck	20	82
Concrete mixer truck	40	85
Crane	16	85
Drill rig	100	79
Excavator	40	85
Front-end loader	40	80
Generator	50	82
Grader	40	85
Paver	50	85
Pickup truck	40	55
Pump	50	77
Roller	20	85
Tractor	40	84

Source: FHWA 2006.

Notes: dBA = A-weighted decibels;  $L_{max}$  = maximum sound level.

Input variables for the RCNM consist of the receiver/land use types, the equipment type and number of each equipment type (e.g., two excavators, one loader, one dump truck), the duty cycle for each piece of equipment (i.e., percentage of hours the equipment typically works per day), and the distance from the noise source to the sensitive noise receptor. The RCNM has default duty cycle values for the various pieces of equipment, which were derived from an extensive study of typical construction activity patterns. Those default duty cycle values were used for this analysis. Because of the rigor with which the RCNM was created, it is widely used and recognized as a reliable, conservative tool for the estimation of construction activity noise.

Key construction assumptions for purposes of construction noise modeling include phasing, the mix (i.e., the type and number) of construction equipment for each phase, and vehicle trips (haul trucks, vendor trucks, and worker vehicles). For purposes of consistency, the assumptions used for the noise analysis were the same as those developed for the air quality impacts analysis, which were derived using the California Emissions Estimator Model (CalEEMod Version 2016.3.2) and information provided by the City. For each of the four project sites, the respective distances from each project site to the nearest noise-sensitive receivers was measured using aerial imagery.

Tables 5 through 8 present the construction equipment assumptions for each of the four project sites (La Palma, Linda Vista, Boysen Park, and Energy Field).

## 6.2 Off-Site Construction Noise

Potential impacts from off-site construction vehicles (worker and vendor vehicles, and haul trucks) was estimated based upon information provided by the City and CalEEMod Version 2016.3.2. Noise increase from project-related construction vehicles was assessed by comparing the estimated number of these vehicles to the existing daily traffic volumes, as provided by the City of Anaheim Department of Public Works (City of Anaheim 2008). Based upon the fundamentals of acoustics, a doubling (a 100 % increase) would be needed to result in a 3 dB increase in noise levels, which is the level corresponding to an audible change to the typical human listener (Caltrans 2013).

## 6.3 Operational Noise

Noise emissions from project operations were assessed using the equipment information provided by Anaheim Public Utilities and by calculating the resulting noise levels using standard acoustical equations for distance propagation and for noise reduction due to intervening barriers, where applicable.

Table 5. La Palma Site Construction Equipment Assumptions

Phase Name	Schedule			One-Way Vehicle Trips			Equipment		
	Duration	Start Date	End Date	Avg Daily Worker Trips	Avg Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Usage Hours
<b>Water Well Construction</b>									
Grading - Well Pad	10 Days	9/1/2021	9/14/2021	12	6	0	Cement and Mortar Mixers	1	4
							Excavators	1	4
Building Construction - Well Construction	50 Days	9/15/2021	11/23/2021	8	2	40	Bore/Drill Rigs (Well Drilling Rigs)	1	24
							Excavators	1	8
Building Construction - Equipment Installation	5 Days	11/24/2021	11/30/2021	8	2	0	Rough Terrain Forklifts	1	8
							Cranes	1	4
<b>Pipeline Construction</b>									
Grading - Installation (estimated 200 feet)	20 Days	9/1/2021	9/28/2021	12	4	0	Concrete/Industrial Saws	1	8
							Excavator	1	8
							Tractors/Loaders/Backhoes	1	8
Final Paving	5 Days	9/29/2021	10/5/2021	6	4	0	Pavers	1	8
							Rollers	1	8
							Paving Equipment	1	8
Pavement Striping	1 Days	10/6/2021	10/6/2021	4	4	0	N/A	N/A	N/A



Table 5. La Palma Site Construction Equipment Assumptions

Phase Name	Schedule			One-Way Vehicle Trips			Equipment		
	Duration	Start Date	End Date	Avg Daily Worker Trips	Avg Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Usage Hours
<b>Water Treatment Plant Construction</b>									
Site Preparation and Grading	5 Days	10/7/2021	10/13/2021	12	0	0	Graders	1	8
							Rubber Tired Dozers	1	8
							Tractors/Loaders/Backhoes	2	8
Building Construction/Equipment Installation	66 Days	10/14/2021	1/13/2022	10	2	0	Cranes	1	4
							Rough Terrain Forklifts	1	4
							Air Compressors	1	8
							Tractors/Loaders/Backhoes	1	8
Security, Entrance, and Landscaping	10 Days	1/14/2022	1/27/2022	8	2	0	Skid Steer Loader	1	4
							Cement and Mortar Mixers	1	8
Architectural Coating	5 Days	1/28/2022	2/3/2022	6	2	0	Air Compressors	1	8
Paving	5 Days	1/28/2022	2/3/2022	6	2	0	Pavers	1	8
							Rollers	1	8

Table 6. Linda Vista Site Construction Equipment Assumptions

Phase Name	Schedule			One-Way Vehicle Trips			Equipment		
	Duration	Start Date	End Date	Avg Daily Worker Trips	Avg Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Usage Hours
<b>Pipeline Construction</b>									
Grading - Installation (estimated 3,500 feet)	70 Days	2/4/2022	5/12/2022	12	4	0	Concrete/ Industrial Saws	1	8
							Excavator	1	8
							Tractors/Loaders/ Backhoes	1	8
Final Paving	5 Days	5/13/2022	5/19/2022	6	4	0	Pavers	1	8
							Rollers	1	8
							Paving Equipment	1	8
<b>Water Treatment Plant Construction</b>									
Demolition (storage building)	10 Days	5/20/2022	6/2/2022	4	0	6	Concrete/ Industrial Saws	1	8
							Tractors/Loaders/ Backhoes	1	8
Site Preparation and Grading	5 Days	6/3/2022	6/9/2022	12	0	0	Graders	1	8
							Rubber-Tired Dozers	1	8
							Tractors/Loaders/ Backhoes	2	8
Building Construction/Equipment Installation	131 Days	6/10/2022	12/10/2022	10	2	0	Cranes	1	4

Table 6. Linda Vista Site Construction Equipment Assumptions

Phase Name	Schedule			One-Way Vehicle Trips			Equipment		
	Duration	Start Date	End Date	Avg Daily Worker Trips	Avg Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Usage Hours
							Rough Terrain Forklifts	1	4
							Tractors/Loaders/Backhoes	1	8
Security, Entrance, and Landscaping	20 Days	12/11/2022	1/8/2023	8	2	0	Skid Steer Loader	1	4
							Cement and Mortar Mixers	1	8
Architectural Coating	10 Days	1/9/2023	1/20/2023	6	2	0	Air Compressors	1	8
Paving	10 Days	1/9/2023	1/20/2023	6	2	0	Pavers	1	8
							Rollers	1	8

Table 7. Boysen Park Site Construction Equipment Assumptions

Phase Name	Schedule			One-Way Vehicle Trips			Equipment		
	Duration	Start Date	End Date	Avg Daily Worker Trips	Avg Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Usage Hours
Pipeline Construction									
Grading - Installation (estimated 200 feet)	5 Days	1/21/2023	1/27/2023	12	4	4	Concrete/Industrial Saws	1	8
							Excavator	1	8

Table 7. Boysen Park Site Construction Equipment Assumptions

Phase Name	Schedule			One-Way Vehicle Trips			Equipment		
	Duration	Start Date	End Date	Avg Daily Worker Trips	Avg Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Usage Hours
							Tractors/Loaders/Backhoes	1	8
Final Paving	5 Days	1/28/2023	2/3/2023	6	4	0	Pavers	1	8
							Rollers	1	8
							Paving Equipment	1	8
Pavement Striping	5 Days	2/4/2023	2/10/2023	4	4	0	N/A	N/A	N/A
Water Treatment Plant Construction									
Demolition	5 Days	1/21/2023	1/28/2023	4	0	4	Tractors/Loaders/Backhoes	1	8
Site Preparation	10 Days	1/29/2023	2/10/2023	4	0	0	Tractors/Loaders/Backhoes	1	8
Building Construction/Equipment Installation	30 Days	2/11/2023	3/24/2023	10	2	0	Cranes	0	2
							Rough Terrain Forklifts	1	4
							Tractors/Loaders/Backhoes	1	8
Security, Entrance, and Landscaping	15 Days	3/25/2023	4/14/2023	8	2	0	Skid Steer Loader	1	4
							Cement and Mortar Mixers	1	8
Architectural Coating	1 Days	4/15/2023	4/17/2023	6	2	0	Air Compressors	1	8
Paving	1 Days	4/15/2023	4/17/2023	6	2	0	Pavers	1	8
							Rollers	1	8

Table 8. Energy Field Site Construction Equipment Assumptions

Phase Name	Schedule			One-Way Vehicle Trips			Equipment		
	Duration	Start Date	End Date	Avg Daily Worker Trips	Avg Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Usage Hours
<b>Pipeline Construction</b>									
Grading - Installation (estimated 2,000 feet)	40 Days	4/18/2023	6/12/2023	12	4	2	Concrete/Industrial Saws	1	8
							Excavator	1	8
							Tractors/Loaders/Backhoes	1	8
Final Paving	20 Days	6/13/2023	7/10/2023	6	4	0	Pavers	1	8
							Rollers	1	8
							Paving Equipment	1	8
Pavement Striping	2 Days	7/11/2023	7/12/2023	4	4	0	N/A	N/A	N/A
<b>Water Treatment Plant Construction</b>									
Demolition	5 Days	4/18/2023	4/24/2023	4	0	4	Concrete/Industrial Saws	1	8
							Excavator	1	8
							Tractors/Loaders/Backhoes	1	8
Building Construction/Equipment Installation	45 Days	4/25/2023	6/26/2023	10	2	0	Cranes	1	2
							Rough Terrain Forklifts	1	4

Table 8. Energy Field Site Construction Equipment Assumptions

Phase Name	Schedule			One-Way Vehicle Trips			Equipment		
	Duration	Start Date	End Date	Avg Daily Worker Trips	Avg Daily Vendor Truck Trips	Total Haul Truck Trips	Equipment Type	Quantity	Usage Hours
							Tractors/Loaders/Backhoes	1	8
Security, Entrance, and Landscaping, Park Restoration	23 Days	6/27/2023	7/27/2023	8	2	0	Skid Steer Loader	1	4
							Cement and Mortar Mixers	1	8
Architectural Coating	2 Days	7/28/2023	7/31/2023	6	2	0	Air Compressors	1	8
Paving	2 Days	7/28/2023	7/31/2023	6	2	0	Pavers	1	8
							Rollers	1	8

## 7 Impacts Analysis

***Would the project result in the generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?***

### 7.1 On-Site Construction Noise

Construction activities under the project would generate noise from the use of heavy equipment (tractors, backhoes, cement and mortar mixers, drilling rigs, and other similar equipment) at the sites or from vehicles transporting material to or from the project sites. Equipment anticipated for the project would typically not include those with substantially higher noise-generation characteristics (e.g., pile drivers, rock drills, or blasting equipment). This type of equipment would not be necessary for implementation of the project. However, at one of the project sites (La Palma), construction of the new water well would necessitate the operation of a drilling rig continuously (24 hours per day).

As described in Section 5, Approach and Methodology, the Federal Highway Administration's RCNM and equipment assumptions, based on input from project engineers and operations staff, were used to estimate noise levels at the nearest receivers, as well as at typical noise source-receiver distances. The input and output from the RCNM analyses are included in Attachment B, and the results are summarized below by location, in Tables 9 through 12.

Table 9. Construction Noise Summary of Results (dBA L<sub>eq</sub>): La Palma Site

Receiver Location/ Description	Land Use	Construction Noise Level by Construction Phase									
		Water Well Construction			Pipeline Construction		Water Treatment Plant Construction				
		Grading	Well Construction	Equipment Installation	Grading, Installation	Pipeline Construction - Final Paving	Site Preparation and Grading	Building Construction and Equipment Installation	Security, Entrance and Landscaping	Architectural Coating	Paving
Residences to the south	Residential	73	76	68	88	81	87	82	81	78	80
Residences to the west	Residential	67	69	62	72	65	68	68	68	68	64
Residences to the north	Residential	59	62	54	66	60	63	63	63	63	66

Source: Attachment B.  
Notes: dBA = A-weighted decibel; L<sub>eq</sub> = equivalent continuous sound level (time-averaged sound level).  
Source: Attachment B.  
Notes: dBA = A-weighted decibel; L<sub>eq</sub> = equivalent continuous sound level (time-averaged sound level).

Table 10. Construction Noise Summary of Results (dBA L<sub>eq</sub>): Linda Vista Site

Receiver Location/ Description	Land Use	Construction Noise Level by Construction Phase								
		Pipeline Construction		Water Treatment Plant Construction						
		Grading, Installation	Pipeline Construction - Final Paving	Demolition	Site Preparation and Grading	Building Construction and Equipment Installation	Security, Entrance and Landscaping	Architectural Coating	Paving	
Residences to the north	Residential	63	57	56	57	53	50	46	49	



Table 11. Construction Noise Summary of Results (dBA L<sub>eq</sub>): Boysen Park Site

Receiver Location/ Description	Land Use	Construction Noise Level by Construction Phase							
		Pipeline Construction		Water Treatment Plant Construction					
		Grading, Installation	Pipeline Construction - Final Paving	Demolition	Site Preparation and Grading	Building Construction and Equipment Installation	Security, Entrance and Landscaping	Architectural Coating	Paving
Tennis courts to the south	Recreation	80	74	77	78	76	76	77	79
Baseball field to the north	Recreation	78	71	69	71	70	73	69	71
Residences to the south	Residential	66	60	57	58	59	61	57	60

Source: Attachment B.  
Notes: dBA = A-weighted decibel; L<sub>eq</sub> = equivalent continuous sound level (time-averaged sound level).

Table 12. Construction Noise Summary of Results (dBA L<sub>eq</sub>): Energy Field Site

Receiver Location/ Description	Land Use	Construction Noise Level by Construction Phase						
		Pipeline Construction		Water Treatment Plant Construction				
		Grading, Installation	Pipeline Construction - Final Paving	Demolition	Building Construction and Equipment Installation	Security, Entrance and Landscaping, Park Restoration	Architectural Coating	Paving
Playground & Picnic Benches	Recreation	91	83	91	86	77	86	77
Residences to the west	Residential	81	74	74	74	63	74	74
Residences to the south	Residential	66	60	66	63	63	65	61

Source: Attachment B.  
Notes: dBA = A-weighted decibel; L<sub>eq</sub> = equivalent continuous sound level (time-averaged sound level).

### 7.1.1 La Palma Site

As shown in Table 9, construction activity noise levels at the nearest source-receiver distances (residences to the south) are estimated to range from approximately 73 dBA  $L_{eq}$  during water well construction grading to approximately 88 dBA  $L_{eq}$  during pipeline construction grading and installation. At further locations such as the residences to the west and the north, construction noise levels would be considerably lower. Work would typically occur between the hours of 7:00 a.m. and 7:00 p.m., and thus, would not exceed applicable local noise standards.

However, well construction activities would take place 24 hours per day until well drilling is complete. During well construction, the estimated noise level is approximately 76 dBA  $L_{eq}$  at the nearest noise-sensitive receivers (residences to the south). At the residences to the west and to the north, well construction noise is estimated to be approximately 69 and 62 dBA  $L_{eq}$ , respectively. Because the well drilling activities would take place outside of the hours (7:00 a.m. to 7:00 p.m.) for which construction noise is exempted from the noise standard of 60 dBA per Section 6.70.010 of the City of Anaheim Municipal Code, this would be a potentially significant noise impact. Additionally, daytime construction noise levels would exceed the FTA's noise standard of 80 dBA  $L_{eq}$  at nearby noise-sensitive land uses. Implementation of mitigation measures MM-NOI-1 and MM-NOI-2 (provided in Section 8) would be required to reduce the noise impacts from construction activities to less than significant with mitigation.

### 7.1.2 Linda Vista Site

As shown in Table 10, construction activity noise levels at the nearest source-receiver distances (residences to the north) are estimated to range from approximately 46 dBA  $L_{eq}$  during water treatment plant architectural coating to approximately 63 dBA  $L_{eq}$  during pipeline grading and installation. Work would typically occur between the hours of 7:00 a.m. and 7:00 p.m., and thus, would not exceed applicable local noise standards or the FTA's advisory noise standard. Therefore, construction impacts would be less than significant at this site; no mitigation is required.

### 7.1.3 Boysen Park Site

As shown in Table 11, construction activity noise levels at the nearest source-receiver distances (the tennis courts to the south) are estimated to range from approximately 74 dBA  $L_{eq}$  during the paving phase of pipeline construction to approximately 80 dBA  $L_{eq}$  during pipeline construction grading and installation. At further locations such as the baseball field to the north and residences to the south, construction noise levels would be lower. At the nearest residences, construction noise would range from approximately 57 dBA  $L_{eq}$  to 66 dBA  $L_{eq}$ . Work would typically occur between the hours of 7:00 a.m. and 7:00 p.m., and thus, would not exceed applicable local noise standards; however, maximum noise levels would be equivalent to the FTA's advisory noise standard (80 dBA  $L_{eq}$ ), and would approach this standard during other construction activities. Implementation of mitigation measure MM-NOI-1 (provided in Section 8) would be required to ensure that noise impacts from construction activities are less than significant with mitigation.

### 7.1.4 Energy Field Site

As shown in Table 12, construction activity noise levels at the nearest source-receiver distances (the playground and picnic benches) are estimated to range from approximately 77 dBA  $L_{eq}$  during the paving and landscaping phases of water treatment plant construction to approximately 91 dBA  $L_{eq}$  during pipeline construction grading and installation and the demolition phase of water treatment plant construction. At further locations such as the

residences to the west and to the south, construction noise levels would be lower. At the nearest residences, construction noise would range from approximately 63 dBA  $L_{eq}$  to 81 dBA  $L_{eq}$ . Work would typically occur between the hours of 7:00 a.m. and 7:00 p.m., and thus, would not exceed applicable local noise standards; however, maximum noise levels would exceed the FTA's advisory noise standard (80 dBA  $L_{eq}$ ). Implementation of mitigation measure MM-NOI-1 (provided in Section 8) would be required to reduce the noise impacts from construction activities to less than significant with mitigation.

## 7.2 Off-Site Construction Noise

As shown in Tables 5 through 8, construction-related vehicle trips would be relatively low. During the peak of construction worker vehicle activity (water well grading for the La Palma and Linda Vista sites, pipeline grading and installation for the Boysen Park and Energy Field sites), 12 daily worker vehicle trips are estimated, and 4 to 6 daily vendor truck trips are estimated. At the Linda Vista site, up to 4 daily haul truck trips are also estimated during the 5 days during which water well grading is expected to take place.

The existing traffic volumes (City of Anaheim 2008) near the project sites are much higher in comparison to these project-related trips. For example, La Palma Avenue in the vicinity of the La Palma site has an average daily traffic (ADT) volume of 23,800 and West Street has an ADT of 6,500. Tustin Avenue, the access route to the Linda Vista site, has an ADT of 247,000, and State College (access to the Boysen Park site) has an ADT of 254,000. South 9th Street, the access route to Energy Field Park, has an ADT of 7,600. Thus, the very small incremental increase associated with project-related construction would amount to a small fraction of a percentage point along the project roadways. Based upon the fundamentals of acoustics, a doubling (a 100% increase) would be needed to result in a 3 dB increase in traffic noise levels, which is the level corresponding to an audible change to the typical human listener (Caltrans 2013). Therefore, given that construction trips would represent only a small fraction of the existing ADTs on the surrounding roadways, there would be no audible change in the ambient noise environment, and off-site construction noise would be less than significant.

## 7.3 Operational Noise

**Ion Exchange Water Treatment System.** As described in Section 1 (Project Description), the project would install ion exchange water treatment equipment at the four project sites. Based upon information from the City, the ion exchange systems are passive and produce a negligible amount of noise, aside from a water pump (which except for the La Palma site, already exist). At the La Palma site, one additional water pump would be added to the three existing pumps. This additional pump could result in an overall noise increase of approximately 1 dBA at the La Palma site. However, an 8-foot-high solid-masonry wall would be constructed around the project site, which would substantially reduce noise levels from any and all stationary equipment on site. Depending upon the specific equipment and the eventual site design, noise levels from the 8-foot-high wall would reduce noise levels by approximately 7 to 13 dB.

At the other project sites (Linda Vista, Boysen Park, and Energy Field), the noise from the ion exchange system would be negligible because the water pump (which is the only major noise source associated with these systems) already operates on site and is only used periodically to charge (or “boost”) the system.

**Upgraded Electrical Transformer.** At all four project sites, an upgraded electrical transformer would be added to the site to reliably power the pumping equipment. It is anticipated that the transformer would be a relatively small, 12-

kilovolt unit. Such a unit would produce very low noise levels (approximately 45 dBA at a distance of 1 foot, per NEMA Standard ST-20) and would be negligible at nearby noise-sensitive land uses.

**Backup Generator.** In the event of a power outage at the La Palma, Boysen Park, and Energy Field sites, a portable emergency backup generator would be used to provide power. Because such portable units would only be operated on site in the event of emergency, the noise levels from such generators would be exempt from applicable standards.

At the Linda Vista site, a 350-kilowatt backup generator would be permanently installed in the event of a power outage. Such a unit would be required to undergo periodic testing (typically once per month) to ensure proper operation. Details on the emergency generator were not available at this stage of the project design. Because noise emission levels for backup generators can vary widely depending upon manufacturer, enclosure type, and silencer grade, the potential exists that the backup generator could exceed the City of Anaheim's 60 dBA noise standard. A mitigation measure (MM-NOI-3) is provided to ensure that this potentially significant noise impact is reduced to a less-than-significant level.

***Would the project result in the generation of excessive groundborne vibration or groundborne noise levels?***

Groundborne vibration from heavy equipment operations during the course of construction activities under the proposed project was evaluated using the methodology contained in Section 7.2 of the Transit Noise and Vibration Impact Assessment Manual (FTA 2018) and compared with relevant vibration impact criteria. Groundborne vibration information related to construction activities (including demolition) has been collected by the California Department of Transportation (Caltrans 2020). Information from the California Department of Transportation indicates that continuous vibrations with a ppv of approximately 0.1 inches per second begin to annoy people. The heavier pieces of construction equipment, such as bulldozers, would have ppvs of approximately 0.089 inches per second or less at a distance of 25 feet (FTA 2018). Groundborne vibration is typically attenuated over short distances.

As shown in Table 13, at the nearest vibration-sensitive receivers (residences at the La Palma site) to construction activities (approximately 30 feet away during pipeline installation and treatment plant construction), and with the anticipated construction equipment, the ppv would be approximately 0.068 inches/second. At the closest sensitive receptors, vibration levels would not exceed the vibration threshold of potential annoyance of 0.1 inches/second. Note that at Energy Field Park, vibration levels during pipeline construction activities would exceed 0.1 inches per second at the playground and picnic table areas; however, these land uses (i.e., public use outdoor recreation areas) are not classified as being vibration-sensitive for temporary activities such as pipeline construction.

The major concern with regards to construction vibration is related to building damage, which typically occurs at vibration levels of 0.5 inches per second or greater for buildings of reinforced-concrete, steel or timber construction. The anticipated vibration levels associated with project construction would range from approximately 0.000 to 0.124 inches per second, which is well below the threshold of 0.5 inches per second for building damage. Therefore, potential vibration impacts would be less than significant.

**Table 13. Vibration Summary of Results**

Receiver Location/ Description	Land Use	Peak Particle Velocity (inches per second)				
		Water Well Construction	Pipeline Construction	Treatment Construction	Applicable Standard (Annoyance / Damage)	Standard Exceeded?
La Palma Site						
Residences to the south	Residential	0.013	0.068	0.068	0.1 / 0.5	No
Residences to the west	Residential	0.004	0.004	0.004	0.1 / 0.5	No
Residences to the north	Residential	0.001	0.001	0.001	0.1 / 0.5	No
Linda Vista Site						
Residences to the north	Residential	0.001	0.001	0.000	0.1 / 0.5	No
Boysen Park Site						
Tennis courts to the south	Recreational	N/A <sup>1</sup>	0.017	0.054	N/A <sup>2</sup>	N/A <sup>2</sup>
Baseball field to the north	Recreational	N/A <sup>1</sup>	0.011	0.014	N/A <sup>2</sup>	N/A <sup>2</sup>
Residences to the south	Residential	N/A <sup>1</sup>	0.001	0.002	0.1 / 0.5	No
Energy Field Site						
Playground/picnic tables	Recreational	N/A <sup>1</sup>	0.124	0.054	N/A <sup>2</sup>	N/A <sup>2</sup>
Residences to the west	Recreational	N/A <sup>1</sup>	0.019	0.005	N/A <sup>2</sup>	N/A <sup>2</sup>
Residences to the south	Residential	N/A <sup>1</sup>	0.001	0.003	0.1 / 0.5	No

Source: FTA 2018.

Notes: N/A<sup>1</sup> – not applicable, the construction activity type would not take place at this site.N/A<sup>2</sup> – no standard for this land use type.

***For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in exposure of people residing or working in the project area to excessive noise levels?***

There are no private airstrips within the vicinity of the project (AirNav 2020). Fullerton Municipal Airport is the nearest airport to the project sites, the nearest being the La Palma site, located approximately 3 miles southeast of the airport. None of the proposed project sites are located within Fullerton Municipal Airport's Planning Area Boundary (i.e., the 60 dBA CNEL noise contour) or any other airport Planning Area Boundary (ALUC 2004). Further, the project would not result in construction of facilities or structures that would create permanent, long-term exposure of residents or workers to increased levels of airport-related noise. Thus, noise Impacts would be considered less than significant.

## 8 Mitigation Measures

The following mitigation measures would be implemented during project-related construction activities at all locations.

**MM-NOI-1. All Project Construction Activities.** The contractor, as well as any on-site subcontractor, shall use equipment, in compliance with City of Anaheim Municipal Code noise limitation requirements at all property boundaries, when operating in all modes. The contractor and subcontractors shall refer to the noise ordinance restrictions as described in the Anaheim Municipal Code Chapter 6.70 Sound Pressure Levels.

Equipment operated on shall include noise attenuation features, as available at time of construction. The contractor shall train all employees and subcontractors on applicable noise control requirements, including applicable noise limits, disallowed activities, use of portable noise barriers, and techniques for reducing construction noise.

The contractor and subcontractors shall follow City of Anaheim normal work hours per Anaheim Municipal Code Chapter 6.70 Sound Pressure Levels. For impact generating equipment, work hours shall be further restricted to start no earlier than 9:00 a.m. and finish no later than 4:00 p.m., Monday through Friday. Any work in street rights-of-way shall be further restricted from 8:30 a.m. to 3:30 p.m. Work shall not be permitted on City holidays.

**MM-NOI-2. Well Drilling Activities.** During the well drilling phase of construction, noise suppression shall be practiced at all times to minimize disturbance to persons living or working nearby, and to the general public. The measures to be used in effecting noise suppression shall include, but are not limited to, equipping all internal combustion engines with critical residential silencers (mufflers), shielding noise-producing equipment from nearest areas of human occupancy by locating the equipment in such positions as to direct the greatest noise emissions away from such areas, and conducting operations in the most effective manner to minimize noise generation, consistent with the execution of the project in a timely and economic manner.

Noise levels shall be controlled in such a manner that they do not exceed 60 decibels dB(A) at the property line of the nearest residences. If noise emanating from the site exceeds acceptable levels at the nearest property line, then the contractor shall not be allowed to proceed with operations until the condition(s) causing the excessive noise has been corrected.

To mitigate noise emanating from the drill sites and impact on local residences, noise attenuation barrier walls shall completely enclose the drilling rig. Noise barrier wall material shall consist of fiberglass-filled acoustical curtains or panels with a Sound Transmission Class (STC) rating of at least 22. Noise Control Corporation or an equivalent shall manufacture the noise attenuation barrier walls. All noise attenuation barrier walls shall be designed to preclude structural failure due to such factors as wind loads (up to 70 miles per hour), shear, shallow soil failure, earthquakes, and erosion. The length, height, and location of noise attenuation barrier walls shall be adequate to ensure proper acoustical performance and shall be subject to the approval of the City.

The contractor shall submit to the City for approval, a noise abatement plan (including designs and calculations) showing the equipment noise level measurements, noise abatement equipment and performance, drilling equipment locations and layout, and calculations of predicted noise levels to bring noise levels within the limit specified herein. The noise abatement plan shall be prepared and certified by a qualified acoustical specialist prior to constructing noise-control-barrier walls.

Prior to commencing the actual drilling operation, the contractor shall demonstrate on-site compliance with actual noise level measurements. Those noise level measurements shall be performed using a sound level meter, an instrument meeting ANSI Standard S1.4 – 1971 for Type 1 or Type 2 sound level meters or an instrument and the associated equivalent data. The location for measuring the noise levels shall be at any point at the City's discretion along the perimeter (City's property line). The contractor shall submit the name and qualifications of the firm proposed to conduct the actual noise level measurements prior to commencement of noise measurement activities. The contractor shall be required to demonstrate on-site compliance a minimum of three additional times during the 24-hour drilling period of the work. The City shall establish times for those field tests at the pre-construction meeting.

If, at any time prior to or during the drilling operation, the noise limits are exceeded, immediate corrective action shall be taken through the drilling equipment modifications, addition of noise abatement equipment, additional noise attenuation barrier walls (increase in height or thickness) or change in operating procedures. Once the corrective action has been taken, the contractor shall demonstrate through actual noise level measurements that they are in compliance.

In addition to the barrier walls, the contractor shall provide adequate equipment noise control. Diesel engine acoustical enclosure of steel framed, fiberglass-filled panels shall be required for all drill rigs, compressors, and pumps. Design noise reduction shall be 20 dB(A) measured at equipment height. Where these engines are not properly isolated to prevent noise in the supporting structure, this secondary noise shall be treated, such as the use of acoustic skirts for drill rig trailers. High performance mufflers shall be used on all diesel engines in regular use on the drill site. Truck engines are excluded from this requirement. The use of air impact wrenches or similar equipment used on drill pipe flange bolts shall not be allowed.

**MM-NOI-3. Backup Generator at Linda Vista Site.** Prior to installation of the proposed backup generator at the Linda Vista site, the contractor shall provide documentation to the City that the generator selected will comply with applicable City of Anaheim noise standards (i.e., 60 A-weighted decibels (dBA) at the residential property line).

## 9 Level of Significance After Mitigation

With the implementation of mitigation measures MM-NOI-1 through MM-NOI-3, substantial noise reduction would be achieved, and the applicable City of Anaheim noise standards would be complied with. Therefore, with implementation of these mitigation measures, construction activity noise levels would be less than significant.



## 10 References

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FHWA. 2008. Roadway Construction Noise Model (RCNM), Software Version 1.1. U.S. Department of Transportation, Research and Innovative Technology Administration.

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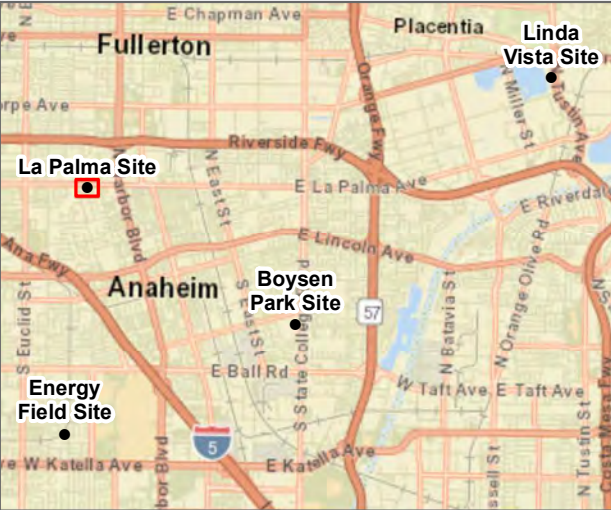
# Attachment A

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Figures 1–10







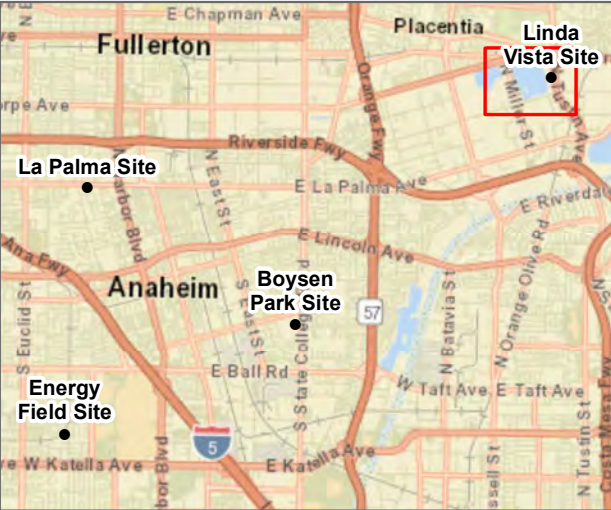
- Project Sites
- ▭ Project Boundary



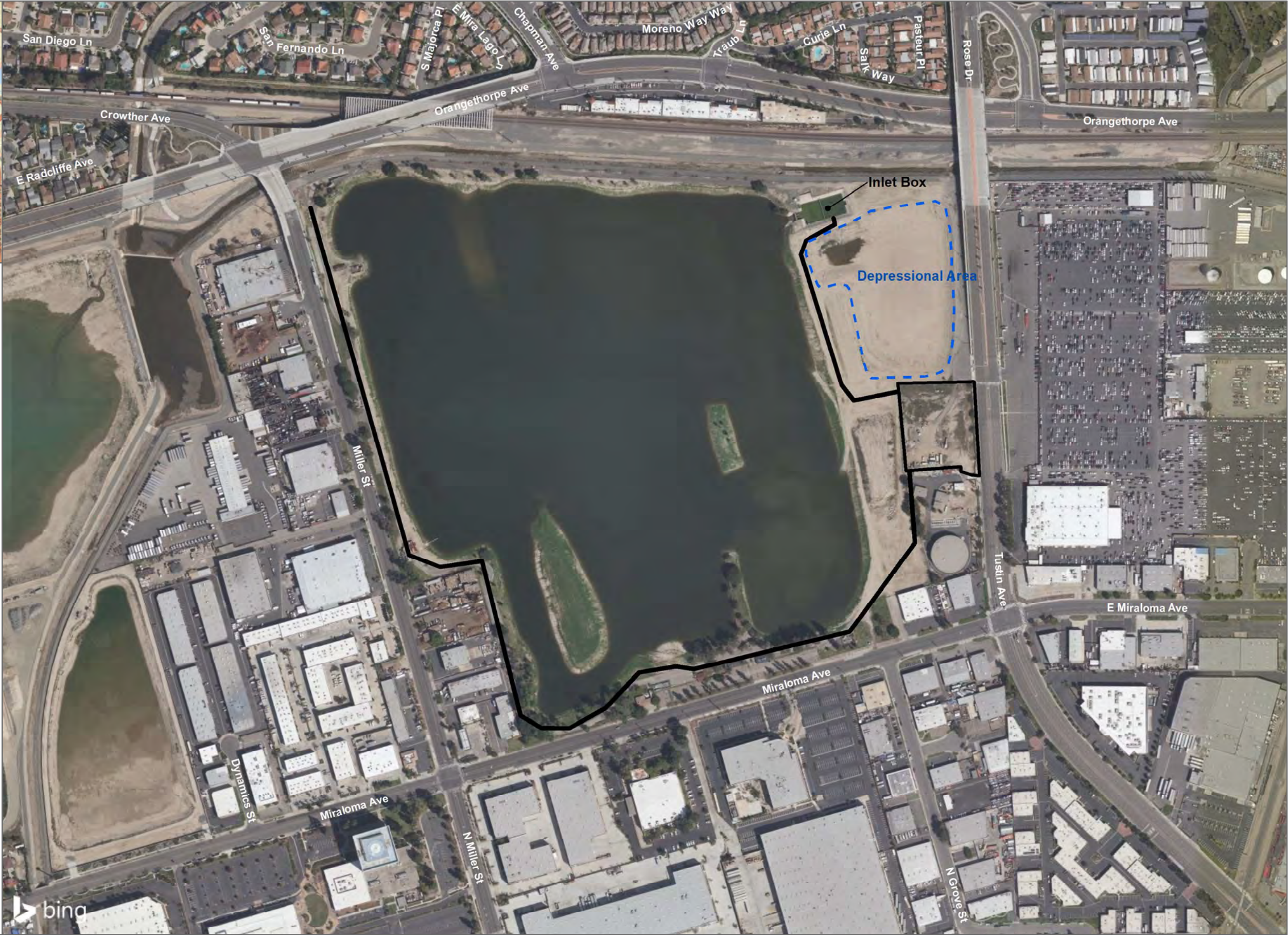
SOURCE: Bing Maps 2020

**FIGURE 2**  
**La Palma Site**  
Well and Water Treatment Facilities Project





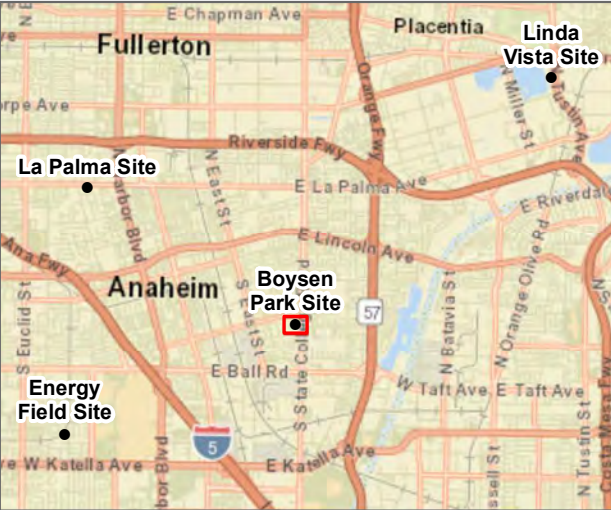
- Project Sites
- ◻ Project Boundary
- ▭ Depressional Area



SOURCE: Bing Maps 2020

**FIGURE 3**  
**Linda Vista Site**  
Well and Water Treatment Facilities Project





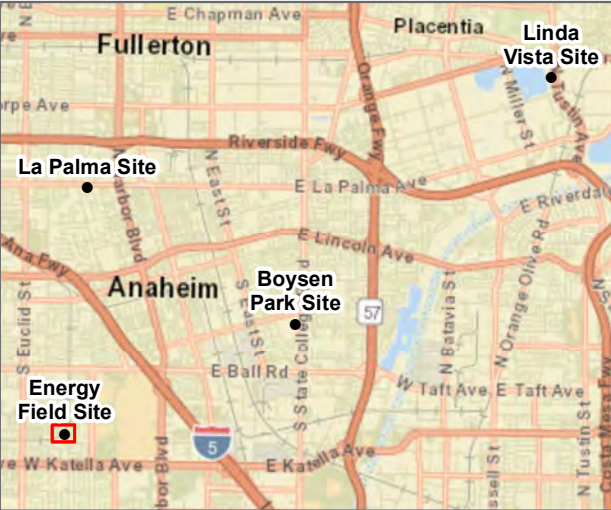
- Project Sites
- ▭ Project Boundary



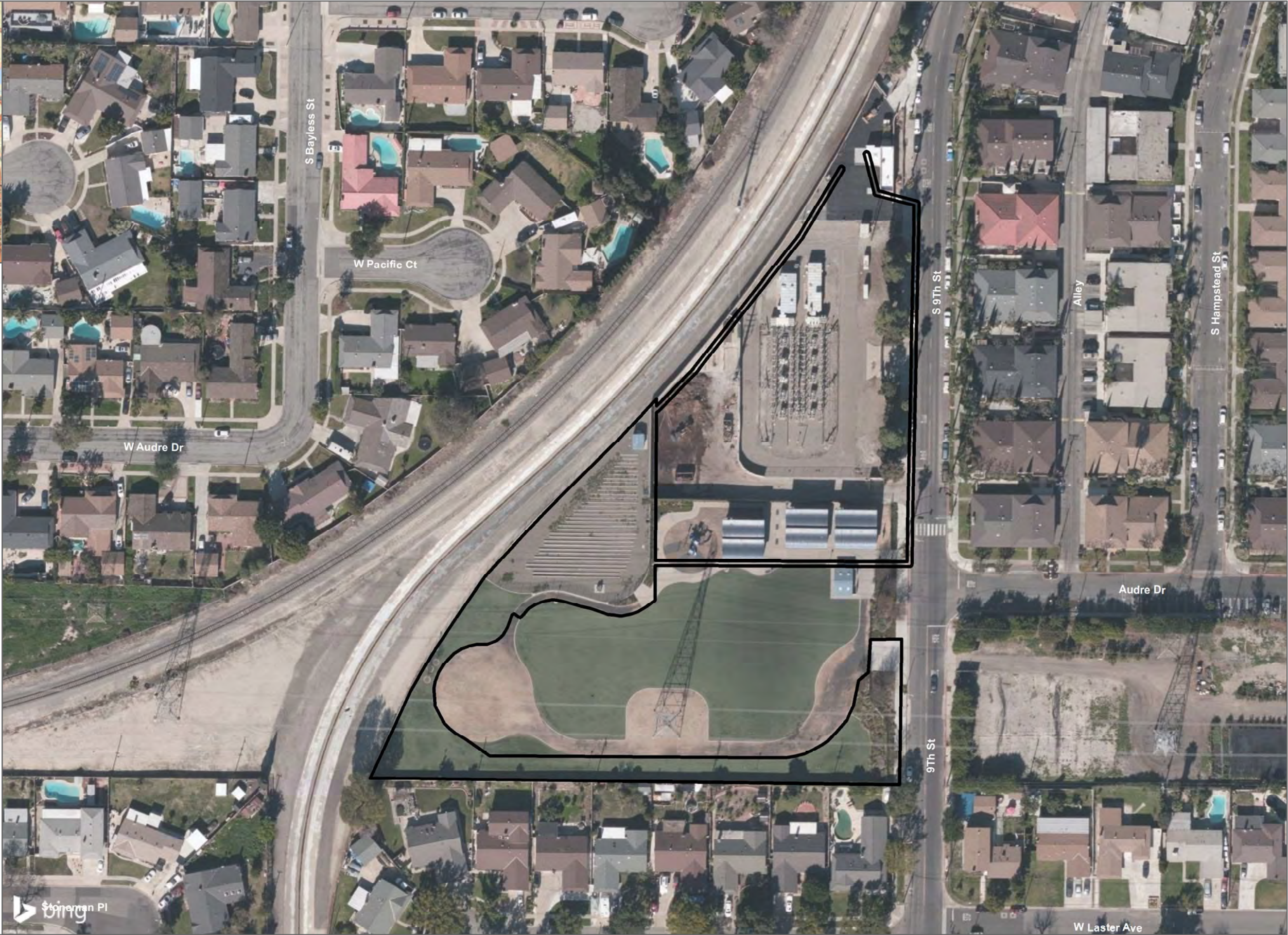
SOURCE: Bing Maps 2020

**FIGURE 4**  
**Boysen Park Site**  
Well and Water Treatment Facilities Project





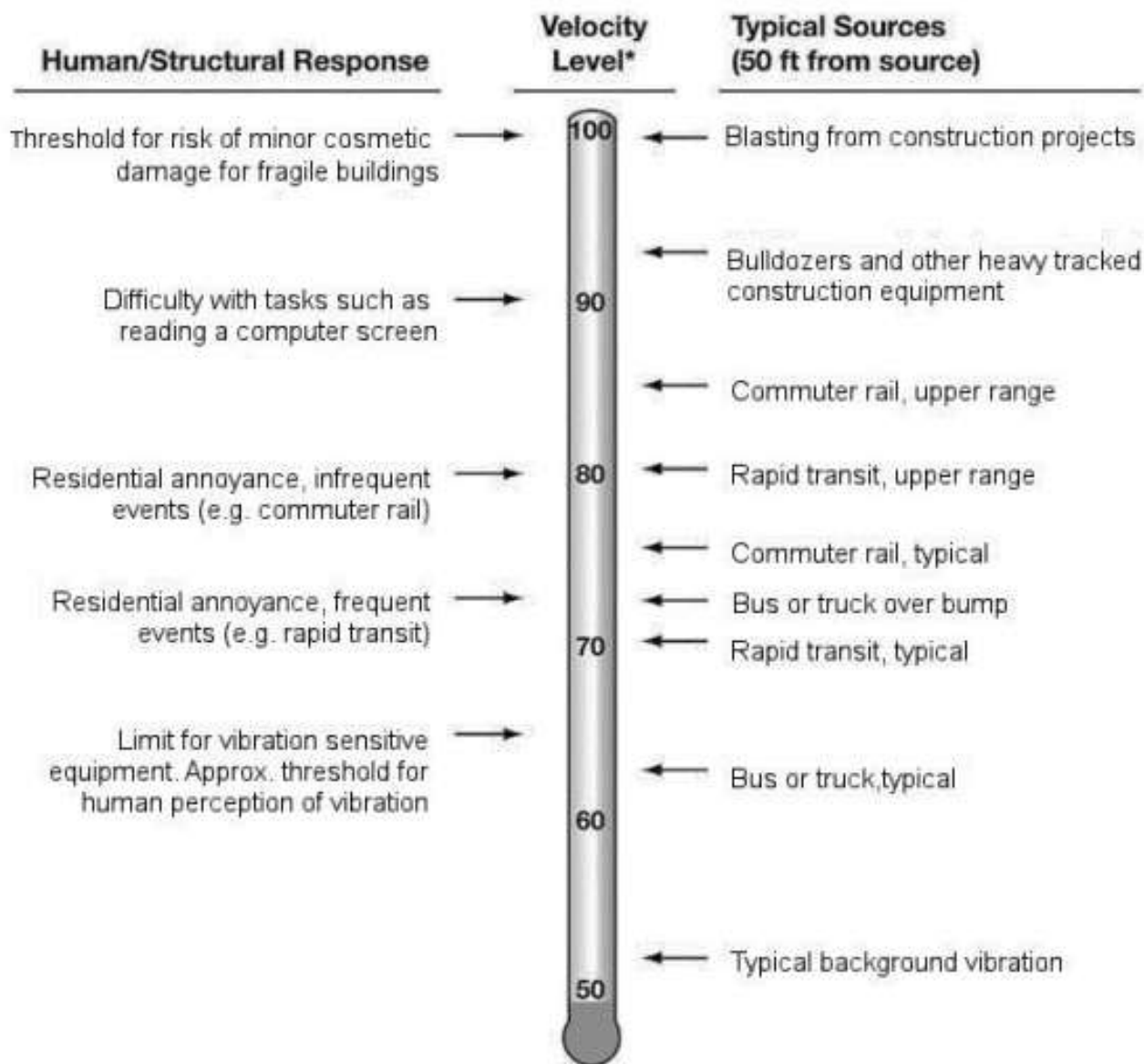
- Project Sites
- ◻ Project Boundary



SOURCE: Bing Maps 2020

**FIGURE 5**  
**Energy Field Site**  
Well and Water Treatment Facilities Project



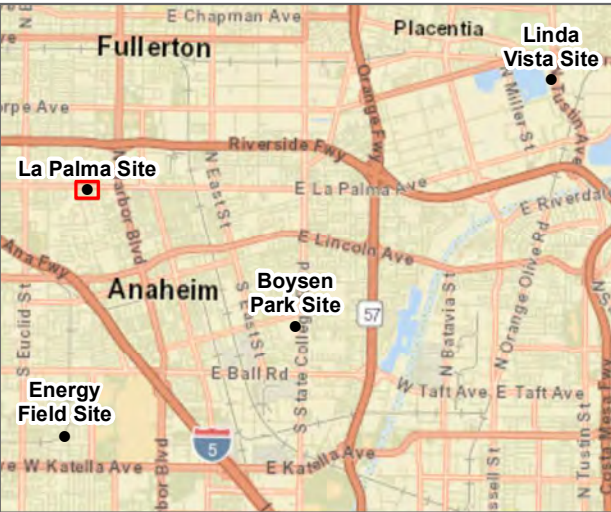


\* RMS Vibration Velocity Level in VdB relative to  $10^{-6}$  inches/second

SOURCE: Federal Transit Administration

**FIGURE 6**  
Common Groundborne Vibration Levels  
Well and Water Treatment Facilities Project





- Project Sites
- Noise Measurement Locations
- ▭ Project Boundary



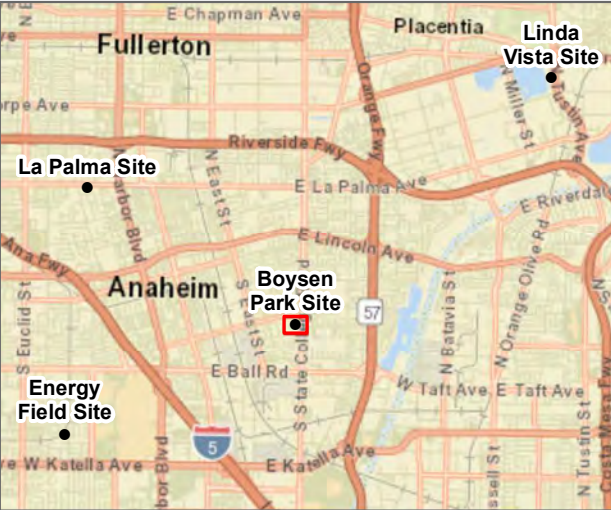
SOURCE: Bing Maps 2020

**FIGURE 7**  
Noise Measurement Locations - La Palma Site  
Well and Water Treatment Facilities Project









- Project Sites
- ⚡ Noise Measurement Locations
- ▭ Project Boundary



SOURCE: Bing Maps 2020

**FIGURE 9**  
Noise Measurement Locations - Boysen Park Site  
Well and Water Treatment Facilities Project







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# Attachment B

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Noise Input/Output Data

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# Attachment B-1

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Field Noise Data Sheets

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# FIELD NOISE MEASUREMENT DATA

DUDEK

PROJECT APU WELL & WATER TREATMENT PROJECT # 13139  
 SITE ID \_\_\_\_\_  
 SITE ADDRESS \_\_\_\_\_ OBSERVER(S) PETE VITON  
 START DATE 12/16/20 END DATE 12/17/20  
 START TIME \_\_\_\_\_ END TIME \_\_\_\_\_

METEOROLOGICAL CONDITIONS  
 TEMP ✓ F HUMIDITY — % R.H. WIND CALM LIGHT MODERATE  
 WINDSPD — MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY  
 SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS  
 MEAS. INSTRUMENT Piccolo II TYPE 1 2 SERIAL # P218691404  
 CALIBRATOR ISSA C-114 SERIAL # 990151  
 CALIBRATION CHECK PRE-TEST dBA SPL POST-TEST dBA SPL WINDSCREEN YES

SETTINGS A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER: \_\_\_\_\_

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
<u>LP-L-1</u> <u>1-101</u>									

COMMENTS WEST SIDE OF  
READING TAKEN KNOWINGLY ON PROPERTY OF APU SITE AT  
1016 N. WEST ST; PRIMARY NOISE SOURCE IS TRAFFIC ON N. WEST ST.

SOURCE INFO AND TRAFFIC COUNTS  
 PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER: \_\_\_\_\_  
 ROADWAY TYPE: ASPHALT DIST. TO RDWY C/L OR EOP: APU 115' TO C/L ON N. WEST ST


TRAFFIC COUNT DURATION: — MIN SPEED \_\_\_\_\_  
 DIRECTION NB/EB SB/WB NB/EB SB/WB IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE

COUNT 1 (OR RDWY 1)	DIRECTION		SPEED		COUNT 2 (OR RDWY 2)	DIRECTION		SPEED	
	NB/EB	SB/WB	NB/EB	SB/WB		NB/EB	SB/WB	NB/EB	SB/WB

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE  
 POSTED SPEED LIMIT SIGNS SAY: \_\_\_\_\_

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL  
 DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS / LANDSCAPING NOISE  
 OTHER: \_\_\_\_\_

DESCRIPTION / SKETCH  
 TERRAIN HARD SOFT MIXED FLAT OTHER: \_\_\_\_\_  
 PHOTOS 9633; 9634; 9635; 9636; 9637; 9638; 9639; 9640; 9641  
 OTHER COMMENTS / SKETCH \_\_\_\_\_



# FIELD NOISE MEASUREMENT DATA

DUDEK

PROJECT APU WELL & WATER TREATMENT PROJECT # 13139  
 SITE ID \_\_\_\_\_  
 SITE ADDRESS \_\_\_\_\_ OBSERVER(S) PEYE VITAR  
 START DATE 12/16/20 END DATE 12/16/20  
 START TIME \_\_\_\_\_ END TIME \_\_\_\_\_

## METEOROLOGICAL CONDITIONS

TEMP 60 F HUMIDITY 24 % R.H. WIND CALM LIGHT MODERATE  
 WINDSPD \_\_\_\_\_ MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY  
 SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

## ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT PICCOLO SCM-B3 TYPE 1 2 SERIAL # 130927046  
 CALIBRATOR BSWA CA 114 SERIAL # 490151  
 CALIBRATION CHECK \_\_\_\_\_ PRE-TEST \_\_\_\_\_ dBA SPL POST-TEST \_\_\_\_\_ dBA SPL WINDSCRN YES

## SETTINGS

A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER: \_\_\_\_\_

REC. # 1-2 BEGIN 9:27 END 9:43 Leq 63.4 Lmax 78.5 Lmin 50.8 L90 \_\_\_\_\_ L50 \_\_\_\_\_ L10 \_\_\_\_\_ OTHER (SPECIFY METRIC) \_\_\_\_\_

## COMMENTS

READING TAKEN IN FRONT OF 248 PASTEUR PL (RESIDENTIAL); PRIMARY NOISE SOURCE IS TRAFFIC ON E. ORANGE TUNNEL AVE TO THE SOUTH AND ON N. TUSTIN AVE TO THE EAST;

## SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER: \_\_\_\_\_  
 ROADWAY TYPE: ASPHALT DIST. TO RDWY C/V OR EOP: APX 12' TO C/L ON PASTEUR PL  
 TRAFFIC COUNT DURATION: \_\_\_\_\_ MIN SPEED \_\_\_\_\_ MIN SPEED \_\_\_\_\_  
 DIRECTION NB/EB SB/WB NB/EB SB/WB IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE  
 COUNT 1 (OR RDWY 1) AUTOS \_\_\_\_\_ MED TRKS \_\_\_\_\_ HVY TRKS \_\_\_\_\_ BUSES \_\_\_\_\_ MOTRCLS \_\_\_\_\_  
 COUNT 2 (OR RDWY 2) \_\_\_\_\_

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE  
 POSTED SPEED LIMIT SIGNS SAY: \_\_\_\_\_

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL  
 DIST. KIDS PLAYING DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DIST. GARDENERS / LANDSCAPING NOISE  
 OTHER: TRAIN PASSING TO THE SOUTH OF THE MEYER BETWEEN 9:27-9:29;

## DESCRIPTION / SKETCH

TERRAIN HARD SOFT MIXED FLAT OTHER: \_\_\_\_\_  
 PHOTOS 9568; 9569; 9570; 9571  
 OTHER COMMENTS / SKETCH \_\_\_\_\_



# FIELD NOISE MEASUREMENT DATA

DUDEK

PROJECT	APU WELL & WATER TREATMENT		PROJECT #	13139
SITE ID			OBSERVER(S)	PEYE VITAR
SITE ADDRESS				
START DATE	12/16/20	END DATE	12/16/20	
START TIME		END TIME		

## METEOROLOGICAL CONDITIONS

TEMP 60 F HUMIDITY 24 % R.H. WIND CALM LIGHT MODERATE  
WINDSPD MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY  
SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

## ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT PICCOLO SCM-B3 TYPE 1 2 SERIAL # 130927046  
CALIBRATOR BSWA CA 119 SERIAL # 990151  
CALIBRATION CHECK PRE-TEST dBA SPL POST-TEST dBA SPL WINDSCREEN YES

## SETTINGS

A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER:

REC. # 3-4 BEGIN 9:58 END 10:15 Leq 56.3 Lmax 70.5 Lmin 48.7 L90 L50 L10 OTHER (SPECIFY METRIC)

## COMMENTS

READING TAKEN IN FRONT OF 1030 SAN FERNANDO LANE; PRIMARY NOISE SOURCE IS DISTANT TRAFFIC FROM E. GAVAGHNE AVE & FROM E. CHAPMAN AVE;

## SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER:  
ROADWAY TYPE: ASPHALT DIST. TO RDWY C/L OR EOP: APX 20' TO E/L ON SAN FERNANDO LN.  
TRAFFIC COUNT DURATION: — MIN SPEED MIN SPEED  
COUNT 1 (OR RDWY 1) DIRECTION NB/EB SB/WB NB/EB SB/WB IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE COUNT 2 (OR RDWY 2) NB/EB SB/WB NB/EB SB/WB  
AUTOS /  
MED TRKS /  
HVV TRKS /  
BUSES /  
MOTCLS /

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE

POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL  
DIST. KIDS PLAYING DIST. CONVRTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DIST. GARDENERS / LANDSCAPING NOISE  
OTHER: OCCASIONAL PROPELLER PLANE FLTL IN DISTANCE;

## DESCRIPTION / SKETCH

TERRAIN HARD SOFT MIXED FLAT OTHER:

PHOTOS 9573; 9574; 9575; 9576

OTHER COMMENTS / SKETCH



# DUDEK

PROJECT	APU WELL & WATER TREATMENT		PROJECT #	13134
SITE ID				
SITE ADDRESS			OBSERVER(S)	PEYE VITAR
START DATE	12/16/20	END DATE	12/16/20	
START TIME		END TIME		

METEOROLOGICAL CONDITIONS

TEMP 68 F HUMIDITY 15 % R.H. WIND (CALM) LIGHT MODERATE  
WINDSPD \_\_\_\_\_ MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY  
SKY (SUNNY) (CLEAR) OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT PICCOLO SCM-B3 TYPE 1 2 SERIAL # 130927046  
CALIBRATOR BSWA CA 119 SERIAL # 490151  
CALIBRATION CHECK \_\_\_\_\_ PRE-TEST \_\_\_\_\_ dBA SPL POST-TEST \_\_\_\_\_ dBA SPL WINDSCRN YES

SETTINGS

(A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI OTHER: \_\_\_\_\_

REC #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
<u>ST-1</u> <u>S-6</u>	<u>10:54</u>	<u>11:10</u>	<u>68.7</u>	<u>82.7</u>	<u>49.9</u>				

COMMENTS

READING TAKE IN FRONT OF 1105 W. MISHKRELL PL (RESIDENTIAL);  
PRIMARY NOISE SOURCE IS TRAFFIC ON ~~UNIMARK~~ N. WEST ST;

**SOURCE INFO AND TRAFFIC COUNTS**

PRIMARY NOISE SOURCE: TRAFFIC ROADWAY TYPE: ASPHALT

INDUSTRIAL: APX 45' TO C/L ON N. WEST ST

OTHER: APX 45' TO C/L ON N. WEST ST

TRAFFIC COUNT DURATION: 5 MIN SPEED: 30 MPH

COUNT 1 (OR RDWY 1)

DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS				
MED TRKS				
HVY TRKS				
BUSES				
MOTRCLS				

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE ☐

COUNT 2 (OR RDWY 2)

DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS				
MED TRKS				
HVY TRKS				
BUSES				
MOTRCLS				

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE

POSTED SPEED LIMIT SIGNS SAY: 30

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL DIST. KIDS PLAYING DIST. CONVRSTRS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE

OTHER:

[illegible]




# FIELD NOISE MEASUREMENT DATA

DUDEK

PROJECT	APU WELL & WATER TREATMENT		PROJECT #	13139
SITE ID			OBSERVER(S)	PEYE VITAR
SITE ADDRESS				
START DATE	12/16/20	END DATE	12/16/20	
START TIME		END TIME		

METEOROLOGICAL CONDITIONS									
TEMP	68	F	HUMIDITY	15	% R.H.	WIND	CALM	LIGHT	MODERATE
WINDSPD		MPH	DIR.	N	NE	S	SE	S	SW
SKY	SUNNY	CLEAR	OVRCAST		PRTLY CLDY	FOG	RAIN	VARIABLE	STEADY
ACoustic MEASUREMENTS									
MEAS. INSTRUMENT	PICCOLO SCM-R3					TYPE	1	2	SERIAL #
CALIBRATOR	BSWA CA 119								SERIAL #
CALIBRATION CHECK	PRE-TEST					dBA SPL	POST-TEST	dBA SPL	WINDSCREEN
SETTINGS	A-WTD	SLOW	FAST	FRONTAL	RANDOM	ANSI	OTHER:		
REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
LP-572 7-8	11:16	11:32	61.0	78.1	48.7				
COMMENTS									
READING TAKEN AT SE CORNER OF HOME AT 1010 N. WEST ST, PLUMB AUTUMN DA									
PRIMATE NOISE SOURCE IS TRAFFIC ON N. WEST ST.									

SOURCE INFO AND TRAFFIC COUNTS									
PRIMARY NOISE SOURCE									
ROADWAY TYPE: ASPHALT									
TRAFFIC COUNT DURATION: MIN SPEED									
COUNT 1	DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB	IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE	COUNT 2	NB/EB	SB/WB
(OR RDWY 1)	AUTOS						(OR RDWY 2)		
	MED TRKS								
	HVY TRKS								
	BUSES								
	MOTRCLS								
SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE									
POSTED SPEED LIMIT SIGNS SAY:									
OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL									
DIST. KIDS PLAYING DIST. CONVRSTNS/YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE									
OTHER: DISTANT TRAIN WHISTLE AT 11:23 AM;									

DESCRIPTION / SKETCH										
TERRAIN	HARD	SOFT	MIXED	FLAT	OTHER:					
PHOTOS	9583	9584	9585	9586						
OTHER COMMENTS / SKETCH										
										

# FIELD NOISE MEASUREMENT DATA

DUDEK

PROJECT	APU WELL & WATER TREATMENT		PROJECT #	13139
SITE ID			OBSERVER(S)	PEYE VITAR
SITE ADDRESS				
START DATE	12/16/20	END DATE	12/16/20	
START TIME		END TIME		

## METEOROLOGICAL CONDITIONS

TEMP 68 F HUMIDITY 15 % R.H. WIND CALM LIGHT MODERATE  
 WINDSPD MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY  
 SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

## ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT PICCOLO SCM-B3 TYPE 1 2 SERIAL # 130927046  
 CALIBRATOR BSWA CA 119 SERIAL # 990151  
 CALIBRATION CHECK PRE-TEST dBA SPL POST-TEST dBA SPL WINDSCREEN YES

## SETTINGS

A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER:

REC. # BEGIN END Leq Lmax Lmin L90 L50 L10 OTHER (SPECIFY METRIC)

LP-573

4-10	11:37	11:52	53.4	68.7	47.1				

## COMMENTS

READING TAKEN IN FRONT OF 901 W. AUTUMN DR (RESIDENTIAL);  
 PRINCIPAL NOISE SOURCE IS DISTANT TRAFFIC ON W. LA PALMA AVE; VENT  
 LIGHT TRAFFIC ON W. AUTUMN DR;

## SOURCE INFO AND TRAFFIC COUNTS

### PRIMARY NOISE SOURCE

ROADWAY TYPE: ASPHALT

TRAFFIC

AIRCRAFT

RAIL

INDUSTRIAL

OTHER:

DIST. TO RDWY APX 4' TO EOP ON W. AUTUMN DR.

TRAFFIC COUNT DURATION: — MIN

SPEED

MIN

SPEED

COUNT 1  
(OR RDWY 1)

DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS				
MED TRKS				
HVY TRKS				
BUSES				
MOTRCLS				

IF COUNTING  
BOTH  
DIRECTIONS  
AS ONE,  
CHECK HERE

COUNT 2  
(OR RDWY 2)

DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE

POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL  
 DIST. KIDS PLAYING DIST. CONCRETE/PAVING DIST. TRAFFIC (LIST RDWYS BELOW) DIST. GARDENERS/LANDSCAPING NOISE  
 OTHER: W. LA PALMA AVE TO THE NORTH

## DESCRIPTION / SKETCH

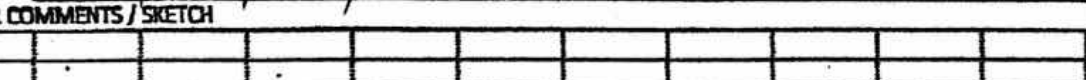
TERRAIN HARD SOFT MIXED FLAT OTHER:

PHOTOS 9588; 9589; 9590; 9591;

OTHER COMMENTS / SKETCH



**DUDEK**

DESCRIPTION / SKETCH											
TERRAIN		<input checked="" type="radio"/> HARD <input type="radio"/> SOFT <input type="radio"/> MIXED <input type="radio"/> FLAT <input type="radio"/> OTHER:									
PHOTOS		9593; 9594; 9595; 9596									
OTHER COMMENTS / SKETCH											
											


# FIELD NOISE MEASUREMENT DATA

DUDEK

PROJECT	APU WELL & WATER TREATMENT		PROJECT #	13139
SITE ID			OBSERVER(S)	PEYE VITAR
SITE ADDRESS				
START DATE	12/16/20	END DATE	12/16/20	
START TIME		END TIME		

METEOROLOGICAL CONDITIONS									
TEMP	73	F	HUMIDITY	15	% R.H.	WIND	CALM	<input checked="" type="radio"/> LIGHT	MODERATE
WINDSPD	5	MPH	DIR.	N	NE	S	SE	S	SW
SKY	<input checked="" type="radio"/> SUNNY	<input checked="" type="radio"/> CLEAR	OVRCAST		PRTLY CLDY	FOG	RAIN	VARIABLE	STEADY
ACoustic MEASUREMENTS									
MEAS. INSTRUMENT	PICCOLO SCM-B3					TYPE	1	2	SERIAL #
CALIBRATOR	ISSWA CA 119								SERIAL #
CALIBRATION CHECK	PRE-TEST					dba SPL	POST-TEST	dba SPL	WINDSCREEN
SETTINGS	<input checked="" type="radio"/> A-WTD	<input checked="" type="radio"/> SLOW	FAST	FRONTAL	RANDOM	ANSI	OTHER:		
REC. #	B-ST-13-M	BEGIN	13:35	END	13:50	Leq	60.9	Lmax	75.6
						Lmin	54.4	L90	
						L50		L10	
						OTHER (SPECIFY METRIC)			
COMMENTS									
READING TAKEN ON SOUTH END OF MAIN BASEBALL FIELD AT BOKSEN PARK (9155 STATE COLLEGE BL.)									
PRIMARY NOISE SOURCE IS TRAFFIC ON S. STATE COLLEGE RD TO THE EAST;									
SOME AVERAGE CONSTRUCTION NOISE FROM THE DONE ROUSEVELT ELEMENTARY SCHOOL TO THE NW (BACK-UP ALARMS/HEAVY EQUIPMENT MOVING)									

SOURCE INFO AND TRAFFIC COUNTS									
PRIMARY NOISE SOURCE					TRAFFIC				
ROADWAY TYPE: ASPHALT					AIRCRAFT				
DIST. TO RDWY					INDUSTRIAL				
OTHER: Apx 410' TO C/L OF SOUTH STATE COLLEGE					OTHER:				
TRAFFIC COUNT DURATION: MIN					SPEED				
DIRECTION NB/EB					SB/WB				
COUNT 1 (OR RDWY 1)					COUNT 2 (OR RDWY 2)				
ALUTOS					IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE				
MED TRKS									
HVY TRKS									
BUSES									
MOTRCLS									
SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE									
POSTED SPEED LIMIT SIGNS SAY:									
OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS <input checked="" type="radio"/> BIRDS DIST. INDUSTRIAL									
DIST. KIDS PLAYING <input checked="" type="radio"/> DIST. CONVRSTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE									
OTHER:									

DESCRIPTION / SKETCH										
TERRAIN	HARD	SOFT	<input checked="" type="radio"/> MIXED	FLAT	OTHER:					
PHOTOS	9598	9599	9600	9601						
OTHER COMMENTS / SKETCH										
										



**DUDEK**

PROJECT	APU WELL & WATER TREATMENT		PROJECT #	13139
SITE ID				
SITE ADDRESS			OBSERVER(S)	PEYE VITAR
START DATE	12/16/20	END DATE	12/16/20	
START TIME		END TIME		

**METEOROLOGICAL CONDITIONS**

TEMP 73 F HUMIDITY 15 % R.H. WIND CALM LIGHT MODERATE  
WINDSPD 5 MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY  
SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

**ACOUSTIC MEASUREMENTS**

MEAS. INSTRUMENT PICCOLO SCM-B3 TYPE 1 2 SERIAL # 130927046  
CALIBRATOR BSWA CA 119 SERIAL # 490151  
CALIBRATION CHECK PRE-TEST dba SPL POST-TEST dba SPL WINDSCRN YES

**SETTINGS** A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER: \_\_\_\_\_

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
<u>572</u> <u>15-16</u>	<u>14:01</u>	<u>14:16</u>	<u>54.5</u>	<u>67.6</u>	<u>51.9</u>				

**COMMENTS** READING TAKEN IN BOTSCH PARK TENNIS CENTER, NEAR SE PORTION OF  
PARK; PRIMARY NOISE SOURCE IS PEOPLE PLAYING TENNIS ON NEAREST COURTS;  
TRAFFIC ON S. STATE COLLEGE BLVD;

**SOURCE INFO AND TRAFFIC COUNTS**

PRIMARY NOISE SOURCE: TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER: TENNIS COURTS

ROADWAY TYPE: ASPHALT DIST. TO RDWY: 0 OR EOP: APX 300 TO CLK OF S. STATE COLLEGE BL

TRAFFIC COUNT DURATION: — MIN SPEED — MIN SPEED

**COUNT 1 (OR RDWY 1)**

DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS	—	—	—	—
MED TRKS	—	—	—	—
HVY TRKS	—	—	—	—
BUSES	—	—	—	—
MOTOCLS	—	—	—	—

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE —

**COUNT 2 (OR RDWY 2)**


DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS	—	—	—	—
MED TRKS	—	—	—	—
HVY TRKS	—	—	—	—
BUSES	—	—	—	—
MOTOCLS	—	—	—	—

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE

POSTED SPEED LIMIT SIGNS SAY: —

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT BUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL DIST. KIDS PLAYING DIST. CONVRTSNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE

OTHER: SOUND OF TENNIS BEING PLAYED ON NEARBY COURTS;

DESCRIPTION / SKETCH	
TERRAIN	(HARD) SOFT MIXED FLAT OTHER: _____
PHOTOS	9603, 9604; 9605; 9606 _____
OTHER COMMENTS / SKETCH	
	

# DUDEK

PROJECT APU WELL & WATER TREATMENT PROJECT # 13139  
SITE ID \_\_\_\_\_ OBSERVER(S) PEYE VITAR  
SITE ADDRESS \_\_\_\_\_  
START DATE 12/16/20 END DATE 12/16/20  
START TIME \_\_\_\_\_ END TIME \_\_\_\_\_

METEOROLOGICAL CONDITIONS

TEMP 73 F HUMIDITY 15 % R.H. WIND CALM (LIGHT) MODERATE  
WINDSPD 5 MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY  
SKY (SUNNY) (CLEAR) OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT PICCOLO SCM-B3 TYPE 1 2 SERIAL # 130927046  
CALIBRATOR BSWA CA 114 SERIAL # 490151  
CALIBRATION CHECK -PRE-TEST dBA SPL POST-TEST \_\_\_\_\_ dBA SPL WINDSCRN YES

SETTINGS

(A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI OTHER: \_\_\_\_\_

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
<u>17-18</u>	<u>14:22</u>	<u>14:37</u>	<u>58.2</u>	<u>83.3</u>	<u>50.3</u>	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____	_____	_____	_____

COMMENTS

READING TAKEN IN BOXER PARK, <sup>AT</sup> NORTH END OF RESIDENCE ON 1915 E. COURTNR  
PRIMARY NOISE SOURCE IS PEOPLE PLAYING TENNIS AT PARK COURTS TO THE NORTH,  
TRAFFIC ON S. STATE COLLEGE BL TO THE EAST;

**SOURCE INFO AND TRAFFIC COUNTS**

PRIMARY NOISE SOURCE: TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER: TENNIS COURTS

ROADWAY TYPE: ASPH/CON DIST. TO RDWY: CL OR EOP: APR 15 DC/L O.N.S. STATE COLLEGE BL

TRAFFIC COUNT DURATION: — MIN SPEED

COUNT 1 (OR RDWY 1)	DIRECTION	NB/EB		SB/WB		IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE	COUNT 2 (OR RDWY 2)	MIN		SPEED	
		NB/EB	SB/WB	NB/EB	SB/WB			NB/EB	SB/WB	NB/EB	SB/WB
AUTOS MED TRKS HVY TRKS BUSES MOTRCLS											

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE

POSTED SPEED LIMIT SIGNS SAY: —

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL —

DIST. KIDS PLAYING — DIST. CONVRSTNS / YELLING — DIST. TRAFFIC (LIST RDWYS BELOW) — DIST. GARDENERS / LANDSCAPING NOISE —

OTHER: SOUND OF TENNIS BEING PLAYED ON NEARBY COURTS

DESCRIPTION / SKETCH		HARD		SOFT		MIXED		FLAT		OTHER:	
TERRAIN											
PHOTOS	9608; 9609; 9610; 9611;										
OTHER COMMENTS / SKETCH											

# FIELD NOISE MEASUREMENT DATA

DUDEK

PROJECT APU WELL & WATER TREATMENT PROJECT # 13139  
 SITE ID \_\_\_\_\_  
 SITE ADDRESS \_\_\_\_\_ OBSERVER(S) PEYE VITAR  
 START DATE 12/16/20 END DATE 12/16/20  
 START TIME \_\_\_\_\_ END TIME \_\_\_\_\_

## METEOROLOGICAL CONDITIONS

TEMP 73 F HUMIDITY 15 % R.H. WIND CALM LIGHT MODERATE  
 WINDSPD 5 MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY  
 SKY SUNNY CLEAR OVRCAST PRTLY CLDY FOG RAIN

## ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT PICCOLO SCN-B3 TYPE 1 2 SERIAL # 130927046  
 CALIBRATOR BSWA CA 119 SERIAL # 490151  
 CALIBRATION CHECK PRE-TEST dBA SPL POST-TEST dBA SPL WINDSCREEN YES

## SETTINGS

A-WTD SLOW FAST FRONTAL RANDOM ANSI OTHER: \_\_\_\_\_

REC. # 19-20 BEGIN 14:43 END 14:58 Leq 57.8 Lmax 67.9 Lmin 52.4 L90 L50 L10 OTHER (SPECIFY METRIC)

## COMMENTS

READING TAKEN IN PARKER PARK AT SE CORNER OF THEODORE ROOSEVELT  
 ELEMENTARY SCHOOL; PRIMARY NOISE SOURCE IS CONSTRUCTION NOISE FROM THEODORE ROOSEVELT  
 ELEMENTARY SCHOOL SITE (VOICES/HEAVY EQUIPMENT MIXING/BACK-UP ALARMS). SOME AUDIBLE TRAFFIC  
 NOISE FROM S. STATE COLLEGE BLVD TO THE EAST AND FROM VERMONT AVE TO THE NORTH

## SOURCE INFO AND TRAFFIC COUNTS

PRIMARY NOISE SOURCE TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER: CONSTRUCTION  
 ROADWAY TYPE: ASPHALT DIST. TO RDWY 690' OR EOP APX 690' TO C/L ON S. STATE COLLEGE BLVD  
 TRAFFIC COUNT DURATION: — MIN SPEED — MIN SPEED —  
 DIRECTION NB/EB SB/WB NB/EB SB/WB IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE  
 COUNT 1 (OR RDWY 1) AUTOS MED TRKS HVY TRKS BUSES MOTRCLS  
 COUNT 2 (OR RDWY 2) \_\_\_\_\_

SPEEDS ESTIMATED BY: RADAR/DRIVING THE PACE

POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL  
 DIST. KIDS PLAYING DIST. CONVRSTNS/YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DIST. GARDENERS/LANDSCAPING NOISE  
 OTHER: \_\_\_\_\_

## DESCRIPTION / SKETCH

TERRAIN HARD SOFT MIXED FLAT OTHER: \_\_\_\_\_

PHOTOS 9613; 9614; 9615; 9616;

OTHER COMMENTS / SKETCH






# FIELD NOISE MEASUREMENT DATA

DUDEK

PROJECT	APU WELL & WATER TREATMENT		PROJECT #	13139
SITE ID			OBSERVER(S)	PEYE VITAR
SITE ADDRESS				
START DATE	12/16/20	END DATE	12/16/20	
START TIME		END TIME		

METEOROLOGICAL CONDITIONS									
TEMP	72	F	HUMIDITY	20	% R.H.	WIND	CALM	<u>LIGHT</u>	MODERATE
WINDSPD	7	MPH	DIR.	N	NE	S	SE	S	SW
SKY	<u>SUNNY</u>	<u>CLEAR</u>	OVRCAST		PRTLY CLDY	FOG	RAIN	VARIABLE	STEADY
ACOUSTIC MEASUREMENTS									
MEAS. INSTRUMENT	PICCOLO SCM-R3					TYPE	1	2	SERIAL #
CALIBRATOR	BSWA CA 119								SERIAL #
CALIBRATION CHECK	-PRE-TEST					dba SPL	POST-TEST	dba SPL	WINDSCREEN
SETTINGS	<u>A-WTD</u>	<u>SLOW</u>	FAST	FRONTAL	RANDOM	ANSI	OTHER:		
REC. #	21-22	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10
E-51		15:18	15:33	53.8	66.4	49.6			
COMMENTS									
READING TAKEN IN NORTH-CENTRAL AREA OF ENERGY FIELD PARK; PRIMARY NOISE SOURCE IS DISTANT TRAFFIC; MODERATE TRAFFIC ON S. 9TH ST;									

SOURCE INFO AND TRAFFIC COUNTS									
PRIMARY NOISE SOURCE					TRAFFIC				
ROADWAY TYPE: ASPHALT					AIRCRAFT				
TRAFFIC COUNT DURATION: MIN					SPEED				
DIRECTION					DIST. TO RDWY (C/L OR EOP):				
NB/EB					MIN				
SB/WB					SPEED				
NB/EB					NB/EB				
SB/WB					SB/WB				
IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE					COUNT 2 (OR RDWY 2)				
COUNT 1 (OR RDWY 1)					COUNT 2 (OR RDWY 2)				
AUTOS					AUTOS				
MED TRKS					MED TRKS				
HVT TRKS					HVT TRKS				
BUSES					BUSES				
MOTRCLS					MOTRCLS				
SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE									
POSTED SPEED LIMIT SIGNS SAY:									
OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS <u>BIRDS</u> DIST. INDUSTRIAL									
DIST. KIDS PLAYING DIST. CONVRTNS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DIST. GARDENERS / LANDSCAPING NOISE									
OTHER: SOME YELLING FROM NEARBY SOCCER GAME									

DESCRIPTION / SKETCH										
TERRAIN	HARD	SOFT	<u>MIXED</u>	FLAT	OTHER:					
PHOTOS	9618	9619	9620	9621						
OTHER COMMENTS / SKETCH										
										

**DUDEK**

[illegible]

## DUDEK

PROJECT APU WELL & WATER TREATMENT PROJECT # 13139  
SITE ID \_\_\_\_\_  
SITE ADDRESS \_\_\_\_\_ OBSERVER(S) PEYE VITAR  
START DATE 12/16/20 END DATE 12/16/20  
START TIME \_\_\_\_\_ END TIME \_\_\_\_\_

METEOROLOGICAL CONDITIONS

TEMP 69 ~~72~~ F HUMIDITY 32 % R.H. WIND CALM (LIGHT) MODERATE  
WINDSPD 7 MPH DIR. N NE S SE S SW W NW VARIABLE STEADY GUSTY  
SKY (SUNNY) (CLEAR) OVRCAST PRTLY CLDY FOG RAIN

ACOUSTIC MEASUREMENTS

MEAS. INSTRUMENT PICCOLO SCM-B3 TYPE 1 2 SERIAL # 130927046  
CALIBRATOR BSWA CA 119 SERIAL # 490151  
CALIBRATION CHECK PRE-TEST dBA SPL POST-TEST dBA SPL WINDSCRN YES

SETTINGS (A-WTD) (SLOW) FAST FRONTAL RANDOM ANSI OTHER:

REC. #	BEGIN	END	Leq	Lmax	Lmin	L90	L50	L10	OTHER (SPECIFY METRIC)
3 25-26	15:54	16:09	57.8	75.5	51.6				

COMMENTS

READING TAKEN IN SOUTH-CENTRAL AREA OF EMMETT FIELD PARK; AT  
NORTHERN EDGE OF RESIDENCE AT 1527 LASTER AVE; PRIMARY NOISE  
SOURCE IS DISTANT TRAFFIC; MINOR TRAFFIC ON S. 9TH ST.

**SOURCE INFO AND TRAFFIC COUNTS**

PRIMARY NOISE SOURCE: TRAFFIC AIRCRAFT RAIL INDUSTRIAL OTHER: SOCCER GAME

ROADWAY TYPE: ASPHALT DIST. TO RDWY/C/L OR EOP: APX 350' TO C/L ON S. 9TH ST

TRAFFIC COUNT DURATION: — MIN SPEED — MIN SPEED

COUNT 1 (OR RDWY 1)

DIRECTION	NB/EB	SB/WB	NB/EB	SB/WB
AUTOS	—	—	—	—
MED TRKS	—	—	—	—
HVY TRKS	—	—	—	—
BUSES	—	—	—	—
MOTOCLS	—	—	—	—

IF COUNTING BOTH DIRECTIONS AS ONE, CHECK HERE —

COUNT 2 (OR RDWY 2)

NB/EB	SB/WB	NB/EB	SB/WB
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—
—	—	—	—

SPEEDS ESTIMATED BY: RADAR / DRIVING THE PACE


POSTED SPEED LIMIT SIGNS SAY:

OTHER NOISE SOURCES (BACKGROUND): DIST. AIRCRAFT RUSTLING LEAVES DIST. BARKING DOGS BIRDS DIST. INDUSTRIAL

DIST. KIDS PLAYING DIST. CONVERSATIONS / YELLING DIST. TRAFFIC (LIST RDWYS BELOW) DISTD GARDENERS/LANDSCAPING NOISE

OTHER: SOME YELLING FROM NEARBY SOCCER GAME;

DESCRIPTION / SKETCH		TERRAIN	HARD	SOFT	MIXED	FLAT	OTHER:
		PHOTOS	9628;	9629;	9630;	9631	
		OTHER COMMENTS / SKETCH					





# Attachment B-2

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## Construction Noise Modeling Inputs and Outputs

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# Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/15/2021

Case Description: La Palma - Water Well Construction - Grading

## ---- Receptor #1 ----

Description	Land Use	Baselines (dBA)					
		Daytime	Evening	Night			
Residences to the south	Residential	65	60	55			
Description		Equipment					
		Impact		Spec	Actual	Receptor	Estimated
		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Concrete Mixer Truck		No	40		78.8	90	0
Excavator		No	40		80.7	110	0

## Results

Equipment		Calculated (dBA)		Noise Limits (dBA)			
		*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Concrete Mixer Truck		73.7	69.7	N/A	N/A	N/A	N/A
Excavator		73.9	69.9	N/A	N/A	N/A	N/A
Total		73.9	72.8	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

## ---- Receptor #2 ----

Description	Land Use	Baselines (dBA)					
		Daytime	Evening	Night			
Residences to the west	Residential	65	60	55			
Description		Impact Device	Usage(%)	Equipment			Estimated Shielding (dBA)
				Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	
Concrete Mixer Truck		No	40		78.8	190	0
Excavator		No	40		80.7	210	0

## Results

Equipment		Calculated (dBA)		Noise Limits (dBA)			
		*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Concrete Mixer Truck		67.2	63.2	N/A	N/A	N/A	N/A
Excavator		68.2	64.3	N/A	N/A	N/A	N/A
Total		68.2	66.8	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

## ---- Receptor #3 ----

Description	Land Use	Baselines (dBA)					
		Daytime	Evening	Night			
Residences to the north	Residential	65	60	55			

Description	Impact	Device	Usage(%)	Equipment			Receptor Distance (feet)	Estimated Shielding (dBA)
				Spec Lmax (dBA)	Actual Lmax (dBA)			
Concrete Mixer Truck	No		40		78.8		460	0
Excavator	No		40		80.7		480	0

Equipment	Results					
	Calculated (dBA)			Noise Limits (dBA)		
	*Lmax	Leq	Day	Leq	Evening	Leq
			Lmax		Lmax	
Concrete Mixer Truck	59.5	55.5	N/A	N/A	N/A	N/A
Excavator	61.1	57.1	N/A	N/A	N/A	N/A
Total	61.1	59.4	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.						

#### Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/15/2021  
Case Description: La Palma - Water Well Construction - Bldg Const Well Const

---- Receptor #1 ----					
Description	Land Use	Baselines (dBA)			
		Daytime	Evening	Night	
Residences to the south	Residential	65	60	55	

Description	Impact	Device	Usage(%)	Equipment			Receptor Distance (feet)	Estimated Shielding (dBA)
				Spec Lmax (dBA)	Actual Lmax (dBA)			
Excavator	No		40		80.7		100	0
Drill Rig	No		100		79.1		90	0

Equipment	Results					
	Calculated (dBA)			Noise Limits (dBA)		
	*Lmax	Leq	Day	Leq	Evening	Leq
			Lmax		Lmax	
Excavator	74.7	70.7	N/A	N/A	N/A	N/A
Drill Rig	74	74	N/A	N/A	N/A	N/A
Total	74.7	75.7	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.						

---- Receptor #2 ----					
Description	Land Use	Baselines (dBA)			
		Daytime	Evening	Night	
Residences to the west	Residential	65	60	55	

Description	Impact	Device	Usage(%)	Equipment			Receptor Distance (feet)	Estimated Shielding (dBA)
				Spec Lmax (dBA)	Actual Lmax (dBA)			
Excavator	No		40		80.7		190	0
Drill Rig	No		100		79.1		210	0

Equipment	Results					
	Calculated (dBA)			Noise Limits (dBA)		
			Day			Evening
	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	69.1	65.1	N/A	N/A	N/A	N/A
Drill Rig	66.6	66.6	N/A	N/A	N/A	N/A
Total	69.1	69	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.						

---- Receptor #3 ----					
Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night	
Residences to the north	Residential	65	60	55	

Description	Impact	Device	Usage(%)	Equipment			Receptor Distance (feet)	Estimated Shielding (dBA)
				Spec Lmax (dBA)	Actual Lmax (dBA)			
Excavator	No		40		80.7		460	0
Drill Rig	No		100		79.1		480	0

Equipment	Results					
	Calculated (dBA)			Noise Limits (dBA)		
			Day			Evening
	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Excavator	61.4	57.5	N/A	N/A	N/A	N/A
Drill Rig	59.5	59.5	N/A	N/A	N/A	N/A
Total	61.4	61.6	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.						

#### Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/15/2021  
Case Description: La Palma - Water Well Construction - Bldg Const Equip Inst

---- Receptor #1 ----					
Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night	
Residences to the south	Residential	65	60	55	

Description			Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
	Impact Device	Usage(%)	Spec	Actual		
			Lmax (dBA)	Lmax (dBA)		
Man Lift	No	20		74.7	90	0
Crane	No	16		80.6	110	0

Results						
Calculated (dBA)				Noise Limits (dBA)		
		Day		Evening		
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Man Lift	69.6	62.6	N/A	N/A	N/A	N/A
Crane	73.7	65.7	N/A	N/A	N/A	N/A
Total	73.7	67.5	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.						

---- Receptor #2 ----						
Baselines (dBA)						
Description	Land Use	Daytime	Evening	Night		
Residences to the west	Residential	65	60	55		

Description			Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
	Impact Device	Usage(%)	Spec	Actual		
			Lmax (dBA)	Lmax (dBA)		
Man Lift	No	20		74.7	190	0
Crane	No	16		80.6	210	0

Results						
Calculated (dBA)				Noise Limits (dBA)		
		Day		Evening		
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Man Lift	63.1	56.1	N/A	N/A	N/A	N/A
Crane	68.1	60.1	N/A	N/A	N/A	N/A
Total	68.1	61.6	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.						

---- Receptor #3 ----						
Baselines (dBA)						
Description	Land Use	Daytime	Evening	Night		
Residences to the north	Residential	65	60	55		

Description			Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
	Impact Device	Usage(%)	Spec	Actual		
			Lmax (dBA)	Lmax (dBA)		
Man Lift	No	20		74.7	460	0
Crane	No	16		80.6	480	0

Results

Equipment	Calculated (dBA)			Noise Limits (dBA)		
	*Lmax	Leq	Day	Leq	Evening	
			Lmax		Lmax	Leq
Man Lift	55.4	48.4	N/A	N/A	N/A	N/A
Crane	60.9	52.9	N/A	N/A	N/A	N/A
Total	60.9	54.3	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/4/2021  
Case Description: La Palma - Pipeline Const - Grading Instln

		---- Receptor #1 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the south	Residential	65	60	55

		Equipment				
		Impact	Spec	Actual	Receptor	Estimated
Description		Device	Usage(%)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Concrete Saw		No	20	89.6	30	0
Excavator		No	40	80.7	50	0
Backhoe		No	40	77.6	60	0

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw		94	87	N/A	N/A	N/A	N/A
Excavator		80.7	76.7	N/A	N/A	N/A	N/A
Backhoe		76	72	N/A	N/A	N/A	N/A
	Total	94	87.5	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

		---- Receptor #2 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the west	Residential	65	60	55

		Equipment				
		Impact	Spec	Actual	Receptor	Estimated
Description		Device	Usage(%)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Concrete Saw		No	20	89.6	200	0
Excavator		No	40	80.7	250	0

Backhoe	No	40	77.6	270	0
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		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw		77.5	70.5	N/A	N/A	N/A	N/A
Excavator		66.7	62.8	N/A	N/A	N/A	N/A
Backhoe		62.9	58.9	N/A	N/A	N/A	N/A
	Total	77.5	71.5	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

		---- Receptor #3 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the north	Residential	65	60	55

		Equipment				
		Spec	Actual	Receptor	Estimated	
Impact		Lmax	Lmax	Distance	Shielding	
Description	Device	Usage(%)	(dBA)	(feet)	(dBA)	
Concrete Saw	No	20	89.6	410	0	
Excavator	No	40	80.7	450	0	
Backhoe	No	40	77.6	470	0	

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw		71.3	64.3	N/A	N/A	N/A	N/A
Excavator		61.6	57.6	N/A	N/A	N/A	N/A
Backhoe		58.1	54.1	N/A	N/A	N/A	N/A
	Total	71.3	65.5	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

#### Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/4/2021  
Case Description: La Palma - Pipeline Const - Paving

		---- Receptor #1 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the south	Residential	65	60	55

		Equipment		
		Spec	Actual	Receptor
		Estimated		

Description	Impact Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver	No		50	77.2	30	0
Roller	No		20	80	50	0
Concrete Pump Truck	No		20	81.4	60	0

#### Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day		Evening	
			Lmax	Leq	Lmax	Leq
Paver	81.7		78.6 N/A	N/A	N/A	N/A
Roller	80		73 N/A	N/A	N/A	N/A
Concrete Pump Truck	79.8		72.8 N/A	N/A	N/A	N/A
Total	81.7		80.5 N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### ---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Residences to the west	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Paver	No	50		77.2	200	0
Roller	No	20		80	250	0
Concrete Pump Truck	No	20		81.4	270	0

#### Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day		Evening	
			Lmax	Leq	Lmax	Leq
Paver	65.2		62.2 N/A	N/A	N/A	N/A
Roller	66		59 N/A	N/A	N/A	N/A
Concrete Pump Truck	66.8		59.8 N/A	N/A	N/A	N/A
Total	66.8		65.3 N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### ---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Residences to the north	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Paver	No	50		77.2	410	0
Roller	No	20		80	450	0
Concrete Pump Truck	No	20		81.4	470	0

			Results			
			Calculated (dBA)		Noise Limits (dBA)	
					Day	Evening
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	58.9	55.9	N/A	N/A	N/A	N/A
Roller	60.9	53.9	N/A	N/A	N/A	N/A
Concrete Pump Truck	61.9	54.9	N/A	N/A	N/A	N/A
Total	61.9	59.8	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.						

## Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 1/4/2021  
Case Description: La Palma - Treatment Plant\_Grading

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Residences to the south	Residential	65	60	55

Description	Impact	Usage(%)	Equipment			
			Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Grader	No	40	85		30	0
Dozer	No	40		81.7	50	0
Backhoe	No	40		77.6	60	0
Tractor	No	40	84		50	0

## Results

Equipment	Calculated (dBA)			Noise Limits (dBA)		
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Grader	89.4	85.5	N/A	N/A	N/A	N/A
Dozer	81.7	77.7	N/A	N/A	N/A	N/A
Backhoe	76	72	N/A	N/A	N/A	N/A
Tractor	84	80	N/A	N/A	N/A	N/A
Total	89.4	87.2	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Residences to the west	Residential	65	60	55



Description	Impact	Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
				Spec Lmax (dBA)	Actual Lmax (dBA)		
Grader	No		40		85	200	0
Dozer	No		40			81.7	0
Backhoe	No		40			77.6	0
Tractor	No		40		84	250	0

Equipment	Results					
	Calculated (dBA)			Noise Limits (dBA)		
			Day			Evening
	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	68.5		60.6 N/A	N/A	N/A	N/A
Dozer	60.7		53.7 N/A	N/A	N/A	N/A
Backhoe	63		59 N/A	N/A	N/A	N/A
Tractor	70		66 N/A	N/A	N/A	N/A
Total	70		67.9 N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

		---- Receptor #3 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the north	Residential	65	60	55

Description	Impact	Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
				Spec Lmax (dBA)	Actual Lmax (dBA)		
Grader	No		40		85	410	0
Dozer	No		40			81.7	0
Backhoe	No		40			77.6	0
Tractor	No		40		84	450	0

Equipment	Results					
	Calculated (dBA)			Noise Limits (dBA)		
			Day			Evening
	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader	62.3		54.3 N/A	N/A	N/A	N/A
Dozer	55.6		48.6 N/A	N/A	N/A	N/A
Backhoe	58.2		54.2 N/A	N/A	N/A	N/A
Tractor	64.9		60.9 N/A	N/A	N/A	N/A
Total	64.9		62.7 N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

Report date: 1/4/2021  
Case Description: La Palma - Treatment Plant\_Bldg Const

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Residences to the south	Residential	65	60	55

Description	Impact Device	Land Use	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Crane	No		16	80.6	30	0
Man Lift	No		20	74.7	50	0
Compressor (air)	No		40	77.7	60	0
Tractor	No		40	84	50	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day		Evening	
			Lmax	Leq	Lmax	Leq
Crane	85		77	N/A	N/A	N/A
Man Lift	74.7		67.7	N/A	N/A	N/A
Compressor (air)	76.1		72.1	N/A	N/A	N/A
Tractor	84		80	N/A	N/A	N/A
Total	85	82.4	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Residences to the west	Residential	65	60	55

Description	Impact Device	Land Use	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Crane	No		16	80.6	200	0
Man Lift	No		20	74.7	250	0
Compressor (air)	No		40	77.7	270	0
Tractor	No		40	84	250	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day		Evening	
			Lmax	Leq	Lmax	Leq
Crane	68.5		60.6	N/A	N/A	N/A
Man Lift	60.7		53.7	N/A	N/A	N/A
Compressor (air)	63		59	N/A	N/A	N/A
Tractor	70		66	N/A	N/A	N/A
Total	70	67.9	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

		---- Receptor #3 ----				
		Baselines (dBA)				
Description	Land Use	Daytime	Evening	Night		
Residences to the north	Residential	65	60	55		
		Equipment				
		Impact	Spec	Actual	Receptor	Estimated
Description	Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Crane	No	16		80.6	410	0
Man Lift	No	20		74.7	450	0
Compressor (air)	No	40		77.7	470	0
Tractor	No	40	84		450	0

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		62.3	54.3	N/A	N/A	N/A	N/A
Man Lift		55.6	48.6	N/A	N/A	N/A	N/A
Compressor (air)		58.2	54.2	N/A	N/A	N/A	N/A
Tractor		64.9	60.9	N/A	N/A	N/A	N/A
	Total	64.9	62.7	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/5/2021  
Case Description: La Palma - Treatment Plant\_Landscaping

		---- Receptor #1 ----				
		Baselines (dBA)				
Description	Land Use	Daytime	Evening	Night		
Residences to the south	Residential	65	60	55		
		Equipment				
		Impact	Spec	Actual	Receptor	Estimated
Description	Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Front End Loader	No	40		79.1	30	0
Concrete Mixer Truck	No	40		78.8	50	0
		Results				
		Calculated (dBA)		Noise Limits (dBA)		

Equipment		Day		Evening	
		*Lmax	Leq	Lmax	Leq
Front End Loader		83.5	79.6	N/A	N/A
Concrete Mixer Truck		78.8	74.8	N/A	N/A
	Total	83.5	80.8	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Baselines (dBA)				
Description	Land Use	Daytime	Evening	Night
Residences to the west	Residential	65	60	55

Description	Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Front End Loader	No	40		79.1	200	0
Concrete Mixer Truck	No	40		78.8	250	0

Results					
Calculated (dBA)		Noise Limits (dBA)			
Equipment		Day		Evening	
		*Lmax	Leq	Lmax	Leq
Front End Loader		68.5	60.6	N/A	N/A
Concrete Mixer Truck		60.7	53.7	N/A	N/A
	Total	70	67.9	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Baselines (dBA)				
Description	Land Use	Daytime	Evening	Night
Residences to the north	Residential	65	60	55

Description	Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Front End Loader	No	40		79.1	410	0
Concrete Mixer Truck	No	40		78.8	450	0

Results					
Calculated (dBA)		Noise Limits (dBA)			
Equipment		Day		Evening	
		*Lmax	Leq	Lmax	Leq
Front End Loader		62.3	54.3	N/A	N/A
Concrete Mixer Truck		55.6	48.6	N/A	N/A
	Total	64.9	62.7	N/A	N/A

\*Calculated Lmax is the Loudest value.

# Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/5/2021

Case Description: La Palma - Treatment Plant\_Architectural Coating

		---- Receptor #1 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the south	Residential	65	60	55

		Equipment				
		Spec		Actual	Receptor	Estimated
		Impact	Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)	No	40		77.7	30	0

		Results					
		Calculated (dBA)			Noise Limits (dBA)		
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		82.1	78.1	N/A	N/A	N/A	N/A
	Total	82.1	78.1	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

		---- Receptor #2 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the west	Residential	65	60	55

		Equipment				
		Spec		Actual	Receptor	Estimated
		Impact	Lmax	Lmax	Distance	Shielding
Description	Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)	No	40		77.7	200	0

		Results					
		Calculated (dBA)			Noise Limits (dBA)		
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		68.5	60.6	N/A	N/A	N/A	N/A
	Total	70	67.9	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

		---- Receptor #3 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the north	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Compressor (air)	No	40		77.7	410	0

Results						
Calculated (dBA)			Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)	62.3	54.3	N/A	N/A	N/A	N/A
Total	64.9	62.7	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/5/2021  
Case Description: La Palma - Treatment Plant\_Paving

---- Receptor #1 ----				
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the south	Residential	65	60	55

Equipment						
Description	Impact Device	Usage(%)	Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)	Estimated Shielding (dBA)
Paver	No	50		77.2	30	0
Roller	No	20		80	50	0

Results						
Calculated (dBA)			Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	81.7	78.6	N/A	N/A	N/A	N/A
Roller	80	73	N/A	N/A	N/A	N/A
Total	81.7	79.7	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----				
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the west	Residential	65	60	55

Equipment			
Spec	Actual	Receptor	Estimated

Description	Impact Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver	No	50		77.2	200	0
Roller	No	20		80	250	0

#### Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	65.2	62.2	N/A	N/A	N/A	N/A
Roller	66	59	N/A	N/A	N/A	N/A
Total	66	63.9	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### ---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the north	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment			
			Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver	No	50		77.2	410	0
Roller	No	20		80	450	0

#### Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
			Day		Evening	
	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	66.7	62.7	N/A	N/A	N/A	N/A
Roller	62.6	58.6	N/A	N/A	N/A	N/A
Total	66.7	66.1	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 1/5/2021  
Case Description: Linda Vista - Pipeline Const - Grading Instln

#### ---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the north	Residential	65	60	55

#### Equipment

Description	Impact	Spec	Actual	Receptor	Estimated
	Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet) Shielding (dBA)
Concrete Saw	No	20		89.6	580 0
Excavator	No	40		80.7	600 0
Backhoe	No	40		77.6	650 0

			Results				
			Calculated (dBA)		Noise Limits (dBA)		
					Day	Evening	
			Equipment	*Lmax	Leq	Lmax	Leq
Concrete Saw	68.3	61.3	N/A	N/A	N/A	N/A	
Excavator	59.1	55.1	N/A	N/A	N/A	N/A	
Backhoe	55.3	51.3	N/A	N/A	N/A	N/A	
Total	68.3	62.6	N/A	N/A	N/A	N/A	
*Calculated Lmax is the Loudest value.							

## Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 1/5/2021  
Case Description: Linda Vista- Pipeline Const - Paving

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Residences to the north	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment			
			Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver	No	50		77.2	580	0
Roller	No	20		80	600	0
Concrete Pump Truck	No	20		81.4	650	0

			Results			
			Calculated (dBA)		Noise Limits (dBA)	
					Day	Evening
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	55.9	52.9	N/A	N/A	N/A	N/A
Roller	58.4	51.4	N/A	N/A	N/A	N/A
Concrete Pump Truck	59.1	52.1	N/A	N/A	N/A	N/A
Total	59.1	57	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.



# Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/6/2021  
Case Description: Linda Vista - Treatment Plant\_Demo

		---- Receptor #1 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Residences to the north	Residential	65	60	55			
		Equipment					
		Impact	Spec	Actual	Receptor	Estimated	
Description		Device	Usage(%)	Lmax (dBA)	Distance (feet)	Shielding (dBA)	
Concrete Saw		No	20		89.6	1200	0
Backhoe		No	40		77.6	1250	0
		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day	Evening		
		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw		62		55	N/A	N/A	N/A
Backhoe		49.6		45.6	N/A	N/A	N/A
Total		62		55.5	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

# Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/6/2021  
Case Description: Linda Vista - Treatment Plant\_Grading

		---- Receptor #1 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Residences to the north	Residential	65	60	55			
		Equipment					
		Impact	Spec	Actual	Receptor	Estimated	
Description		Device	Usage(%)	Lmax (dBA)	Distance (feet)	Shielding (dBA)	
Grader		No	40	85	1200		0
Dozer		No	40		81.7	1250	0
Backhoe		No	40		77.6	1300	0
Tractor		No	40	84	1300		0

		Results					
		Calculated (dBA)			Noise Limits (dBA)		
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Grader		57.4	53.4	N/A	N/A	N/A	N/A
Dozer		53.7	49.7	N/A	N/A	N/A	N/A
Backhoe		49.3	45.3	N/A	N/A	N/A	N/A
Tractor		55.7	51.7	N/A	N/A	N/A	N/A
	Total	57.4	57	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/6/2021  
Case Description: Linda Vista - Treatment Plant\_Bldg Const

		Baselines (dBA)				
		Daytime	Evening	Night		
Description	Land Use					
Residences to the north	Residential	65	60	55		

		Equipment				
		Spec	Actual	Receptor	Estimated	
		Lmax	Lmax	Distance	Shielding	
Description	Impact	Usage(%)	(dBA)	(feet)	(dBA)	
Crane	No	16	80.6	1200	0	
Man Lift	No	20	74.7	1250	0	
Tractor	No	40	84	1300	0	

		Results					
		Calculated (dBA)			Noise Limits (dBA)		
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Crane		52.9	45	N/A	N/A	N/A	N/A
Man Lift		46.7	39.8	N/A	N/A	N/A	N/A
Tractor		55.7	51.7	N/A	N/A	N/A	N/A
	Total	55.7	52.8	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/6/2021  
Case Description: Linda Vista - Treatment Plant\_Landscaping

		Baselines (dBA)			Receptor #1		
Description	Land Use	Daytime	Evening	Night			
Residences to the north	Residential	65	60	55			
		Equipment					
				Spec	Actual	Receptor	Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Front End Loader		No	40		79.1	1200	0
Concrete Mixer Truck		No	40		78.8	1250	0
		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader		51.5	47.5	N/A	N/A	N/A	N/A
Concrete Mixer Truck		50.8	46.9	N/A	N/A	N/A	N/A
	Total	51.5	50.2	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

## Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 1/6/2021  
Case Description: Linda Vista - Treatment Plant Architectural Coating

		---- Receptor #1 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Residences to the north	Residential	65	60	55			
		Equipment					
		Impact		Spec	Actual	Receptor	Estimated
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Compressor (air)		No	40		77.7	1200	0
		Results					
		Calculated (dBA)			Noise Limits (dBA)		
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		50.1	46.1	N/A	N/A	N/A	N/A
	Total	50.1	46.1	N/A	N/A	N/A	N/A
		*Calculated Lmax is the Loudest value.					

# Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/6/2021  
Case Description: Linda Vista - Treatment Plant\_Paving

		---- Receptor #1 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Residences to the north	Residential	65	60	55			
		Equipment					
		Impact		Spec	Actual	Receptor	Estimated
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver		No	50		77.2	1200	0
Roller		No	20		80	1250	0
		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		49.6	46.6	N/A	N/A	N/A	N/A
Roller		52	45.1	N/A	N/A	N/A	N/A
	Total	52	48.9	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

\*Calculated Lmax is the Loudest value.

# Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/8/2021  
Case Description: Boysen Park - Pipeline Const - Grading Instln

		---- Receptor #1 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Tennis Courts to the south	Residential	65	60	55			
		Equipment					
		Impact	Spec	Actual	Receptor	Estimated	
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Concrete Saw		No	20		89.6	75	0
Excavator		No	40		80.7	95	0

Backhoe	No	40	77.6	105	0
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		Results					
		Calculated (dBA)			Noise Limits (dBA)		
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw		86.1	79.1	N/A	N/A	N/A	N/A
Excavator		75.1	71.2	N/A	N/A	N/A	N/A
Backhoe		71.1	67.1	N/A	N/A	N/A	N/A
	Total	86.1	80	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

		---- Receptor #2 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Baseball Field to the north	Residential	65	60	55

		Equipment				
		Spec	Actual	Receptor	Estimated	
Impact		Lmax	Lmax	Distance	Shielding	
Description	Device	Usage(%)	(dBA)	(feet)	(dBA)	
Concrete Saw	No	20	89.6	100	0	
Excavator	No	40	80.7	120	0	
Backhoe	No	40	77.6	140	0	

		Results					
		Calculated (dBA)			Noise Limits (dBA)		
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw		83.6	76.6	N/A	N/A	N/A	N/A
Excavator		73.1	69.1	N/A	N/A	N/A	N/A
Backhoe		68.6	64.6	N/A	N/A	N/A	N/A
	Total	83.6	77.5	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

		---- Receptor #3 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the south	Residential	65	60	55

		Equipment				
		Spec	Actual	Receptor	Estimated	
Impact		Lmax	Lmax	Distance	Shielding	
Description	Device	Usage(%)	(dBA)	(feet)	(dBA)	
Concrete Saw	No	20	89.6	400	0	
Excavator	No	40	80.7	420	0	
Backhoe	No	40	77.6	440	0	

		Results	
		Calculated (dBA)	Noise Limits (dBA)
		Day	Evening

Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	71.5	64.5	N/A	N/A	N/A	N/A
Excavator	62.2	58.2	N/A	N/A	N/A	N/A
Backhoe	58.7	54.7	N/A	N/A	N/A	N/A
Total	71.5	65.8	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/8/2021  
Case Description: Boysen Park - Pipeline Const - Paving

		---- Receptor #1 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Tennis Courts to the south	Residential	65	60	55

		Equipment				
		Spec	Actual	Receptor	Estimated	
		Lmax	Lmax	Distance	Shielding	
Description	Device	Usage(%)	(dBA)	(feet)	(dBA)	
Paver	No	50	77.2	75	0	
Roller	No	20	80	95	0	
Concrete Pump Truck	No	20	81.4	105	0	

		Results					
		Calculated (dBA)			Noise Limits (dBA)		
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		73.7	70.7	N/A	N/A	N/A	N/A
Roller		74.4	67.4	N/A	N/A	N/A	N/A
Concrete Pump Truck		75	68	N/A	N/A	N/A	N/A
Total		75	73.7	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

		---- Receptor #2 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Baseball Field to the north	Residential	65	60	55

		Equipment				
		Spec	Actual	Receptor	Estimated	
		Lmax	Lmax	Distance	Shielding	
Description	Device	Usage(%)	(dBA)	(feet)	(dBA)	
Paver	No	50	77.2	100	0	
Roller	No	20	80	120	0	
Concrete Pump Truck	No	20	81.4	140	0	

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		71.2	68.2	N/A	N/A	N/A	N/A
Roller		72.4	65.4	N/A	N/A	N/A	N/A
Concrete Pump Truck		72.5	65.5	N/A	N/A	N/A	N/A
	Total	72.5	71.3	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

		---- Receptor #3 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the south	Residential	65	60	55

		Equipment				
		Impact	Spec	Actual	Receptor	Estimated
Description		Device	Usage(%)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver		No	50	77.2	400	0
Roller		No	20	80	420	0
Concrete Pump Truck		No	20	81.4	440	0

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		59.2	56.1	N/A	N/A	N/A	N/A
Roller		61.5	54.5	N/A	N/A	N/A	N/A
Concrete Pump Truck		62.5	55.5	N/A	N/A	N/A	N/A
	Total	62.5	60.2	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

#### Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/8/2021  
Case Description: Boysen Park - Trtmnt Plant Const - Demo

		---- Receptor #1 ----		
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Tennis Courts to the south	Residential	65	60	55
		Equipment		
		Spec	Actual	Receptor
		Estimated		

Description	Impact Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Backhoe	No	40		77.6	35	0

#### Results

Calculated (dBA)		Noise Limits (dBA)				
		Day		Evening		
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	80.7	76.7	N/A	N/A	N/A	N/A
Total	80.7	76.7	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### ---- Receptor #2 ----

Baselines (dBA)			
Description	Land Use	Daytime	Evening
Baseball Field to the north	Residential	65	60
			55

		Equipment				
		Spec	Actual	Receptor	Estimated	
Description	Impact Device	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)	
Backhoe	No	40	77.6	85	0	

#### Results

Calculated (dBA)		Noise Limits (dBA)				
		Day		Evening		
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	73	69	N/A	N/A	N/A	N/A
Total	73	69	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### ---- Receptor #3 ----

Baselines (dBA)			
Description	Land Use	Daytime	Evening
Residences to the south	Residential	65	60
			55

		Equipment				
		Spec	Actual	Receptor	Estimated	
Description	Impact Device	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)	
Backhoe	No	40	77.6	350	0	

#### Results

Calculated (dBA)		Noise Limits (dBA)				
		Day		Evening		
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Backhoe	60.7	56.7	N/A	N/A	N/A	N/A
Total	60.7	56.7	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.



# Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/8/2021  
Case Description: Boysen Park - Trtmnt Plant Const - Site Prep

## ---- Receptor #1 ----

		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Tennis Courts to the south	Residential	65	60	55			
		Equipment					
		Impact		Spec	Actual	Receptor	Estimated
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Front End Loader		No	40		79.1	35	0

## Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader		82.2	78.2	N/A	N/A	N/A	N/A
	Total	82.2	78.2	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

## ---- Receptor #2 ----

		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Baseball Field to the north	Residential	65	60	55			
		Equipment					
		Impact		Spec	Actual	Receptor	Estimated
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Front End Loader		No	40		79.1	85	0

## Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader		74.5	70.5	N/A	N/A	N/A	N/A
	Total	74.5	70.5	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

## ---- Receptor #3 ----

		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Residences to the south	Residential	65	60	55			

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Front End Loader	No	40		79.1	350	0

Equipment	Results					
	Calculated (dBA)			Noise Limits (dBA)		
			Day	Evening		
	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	62.2	58.2	N/A	N/A	N/A	N/A
Total	62.2	58.2	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/8/2021

Case Description: Boysen Park - Trtmnt Plant Bldg Const - Equip Instl

		---- Receptor #1 ----		
Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Tennis Courts to the south	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Man Lift	No	20		74.7	35	0
Front End Loader	No	40		79.1	55	0

Equipment	Results					
	Calculated (dBA)			Noise Limits (dBA)		
			Day	Evening		
	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Man Lift	77.8	70.8	N/A	N/A	N/A	N/A
Front End Loader	78.3	74.3	N/A	N/A	N/A	N/A
Total	78.3	75.9	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

		---- Receptor #2 ----		
Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Baseball Field to the north	Residential	65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Man Lift	No	20		74.7	85	0
Front End Loader	No	40		79.1	105	0

Results						
Calculated (dBA)			Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Man Lift	70.1	63.1	N/A	N/A	N/A	N/A
Front End Loader	72.7	68.7	N/A	N/A	N/A	N/A
Total	72.7	69.7	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #3 ----				
Baselines (dBA)				
Description	Land Use	Daytime	Evening	Night
Residences to the south	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment	Actual	Receptor	Estimated
			Spec Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Man Lift	No	20		74.7	350	0
Front End Loader	No	40		79.1	370	0

Results						
Calculated (dBA)			Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Man Lift	57.8	50.8	N/A	N/A	N/A	N/A
Front End Loader	61.7	57.7	N/A	N/A	N/A	N/A
Total	61.7	58.5	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/8/2021  
Case Description: Boysen Park - Trtmnt Plant\_Landscaping

---- Receptor #1 ----				
Baselines (dBA)				
Description	Land Use	Daytime	Evening	Night
Tennis Courts to the south	Residential	65	60	55

Description	Impact	Device	Usage(%)	Equipment		
				Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)
Front End Loader	No		40		79.1	35
Concrete Mixer Truck	No		40		78.8	55

Equipment	Results					
	Calculated (dBA)			Noise Limits (dBA)		
			Day			Evening
	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	77.8	70.8	N/A	N/A	N/A	N/A
Concrete Mixer Truck	78.3	74.3	N/A	N/A	N/A	N/A
Total	78.3	75.9	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Baseball Field to the north	Residential	65	60	55

Description	Impact	Device	Usage(%)	Equipment		
				Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)
Front End Loader	No		40		79.1	85
Concrete Mixer Truck	No		40		78.8	105

Equipment	Results					
	Calculated (dBA)			Noise Limits (dBA)		
			Day			Evening
	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	74.5	70.5	N/A	N/A	N/A	N/A
Concrete Mixer Truck	72.4	68.4	N/A	N/A	N/A	N/A
Total	74.5	72.6	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Residences to the south	Residential	65	60	55

Description	Impact	Device	Usage(%)	Equipment		
				Spec Lmax (dBA)	Actual Lmax (dBA)	Receptor Distance (feet)
Front End Loader	No		40		79.1	350
Concrete Mixer Truck	No		40		78.8	370

Results

		Calculated (dBA)		Noise Limits (dBA)			
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader		62.2	58.2	N/A	N/A	N/A	N/A
Concrete Mixer Truck		61.4	57.4	N/A	N/A	N/A	N/A
	Total	62.2	60.9	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 1/8/2021

Case Description: Boysen Park - Trtmnt Plant\_Architectural Coating

		---- Receptor #1 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Tennis Courts to the south	Residential	65	60	55			
		Equipment					
		Impact		Spec	Actual	Receptor	Estimated
Description		Device	Usage(%)	(dBA)	(dBA)	Distance	Shielding
Compressor (air)		No	40		77.7	35	0
		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		80.8	76.8	N/A	N/A	N/A	N/A
	Total	80.8	76.8	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

\*Calculated Lmax is the Loudest value.

		---- Receptor #2 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Baseball Field to the north	Residential	65	60	55			
		Equipment					
				Spec	Actual	Receptor	Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Compressor (air)		No	40		77.7	85	0
		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day	Evening		
Equipment		*Lmax	Leg	Lmax	Leg	Lmax	Leg

Compressor (air)		73.1	69.1	N/A	N/A	N/A	N/A
	Total	73.1	69.1	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Residences to the south	Residential	65	60	55

		Equipment				
		Spec	Actual	Receptor	Estimated	
		Lmax	Lmax	Distance	Shielding	
Description	Impact	Device	Usage(%)	(dBA)	(dBA)	(feet)
Compressor (air)	No		40		77.7	350

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		60.8	56.8	N/A	N/A	N/A	N/A
	Total	60.8	56.8	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/8/2021  
Case Description: Boysen Park - Trtmnt Plant\_Paving

---- Receptor #1 ----

		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Tennis Courts to the south	Residential	65	60	55

		Equipment				
		Spec	Actual	Receptor	Estimated	
		Lmax	Lmax	Distance	Shielding	
Description	Impact	Device	Usage(%)	(dBA)	(dBA)	(feet)
Paver	No		50		77.2	35
Roller	No		20		80	55

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		80.3	77.3	N/A	N/A	N/A	N/A
Roller		79.2	72.2	N/A	N/A	N/A	N/A
	Total	80.3	78.5	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

		---- Receptor #2 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Baseball Field to the north	Residential	65	60	55			
		Equipment					
		Impact	Spec	Actual	Receptor	Estimated	
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver		No	50		77.2	85	0
Roller		No	20		80	105	0

		Results				
		Calculated (dBA)		Noise Limits (dBA)		
				Day	Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Leq
Paver		72.6	69.6	N/A	N/A	N/A
Roller		73.6	66.6	N/A	N/A	N/A
	Total	73.6	71.4	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

		---- Receptor #3 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Residences to the south	Residential	65	60	55			
		Equipment					
		Impact		Spec	Actual	Receptor	Estimated
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver		No	50		77.2	350	0
Roller		No	20		80	370	0
		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		60.3	57.3	N/A	N/A	N/A	N/A
Roller		62.6	55.6	N/A	N/A	N/A	N/A
	Total	62.6	59.6	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/8/2021

Case Description: Energy Park - Pipeline Const - Grading Instln

		---- Receptor #1 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Playground_Picnic Benche	Residential	65	60	55			
		Equipment					
		Impact	Spec	Actual	Receptor	Estimated	
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Concrete Saw		No	20		89.6	20	0
Excavator		No	40		80.7	40	0
Backhoe		No	40		77.6	60	0
		Results					
		Calculated (dBA)			Noise Limits (dBA)		
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw		97.5	90.5	N/A	N/A	N/A	N/A
Excavator		82.6	78.7	N/A	N/A	N/A	N/A
Backhoe		76	72	N/A	N/A	N/A	N/A
	Total	97.5	90.9	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

		---- Receptor #2 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Residences to the west	Residential	65	60	55			
		Equipment					
		Impact	Spec	Actual	Receptor	Estimated	
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Concrete Saw		No	20		89.6	70	0
Excavator		No	40		80.7	90	0
Backhoe		No	40		77.6	110	0
		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw		86.7	79.7	N/A	N/A	N/A	N/A
Excavator		75.6	71.6	N/A	N/A	N/A	N/A
Backhoe		70.7	66.7	N/A	N/A	N/A	N/A
	Total	86.7	80.5	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

		---- Receptor #3 ----				
		Baselines (dBA)				
Description	Land Use	Daytime	Evening	Night		



Residences to the south Residential

65 60 55

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Concrete Saw	No	20		89.6	400	0
Excavator	No	40		80.7	420	0
Backhoe	No	40		77.6	440	0

Equipment	Results					
	Calculated (dBA)			Noise Limits (dBA)		
			Day	Evening		
	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw	71.5	64.5	N/A	N/A	N/A	N/A
Excavator	62.2	58.2	N/A	N/A	N/A	N/A
Backhoe	58.7	54.7	N/A	N/A	N/A	N/A
Total	71.5	65.8	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/8/2021

Case Description: Energy Park - Pipeline Const - Paving

---- Receptor #1 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Playground_Picnic Benche	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Paver	No	50		77.2	20	0
Roller	No	20		80	40	0
Concrete Pump Truck	No	20		81.4	60	0

Equipment	Results					
	Calculated (dBA)			Noise Limits (dBA)		
			Day	Evening		
	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	85.2	82.2	N/A	N/A	N/A	N/A
Roller	81.9	74.9	N/A	N/A	N/A	N/A
Concrete Pump Truck	79.8	72.8	N/A	N/A	N/A	N/A
Total	85.2	83.3	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

		---- Receptor #2 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Residences to the west	Residential	65	60	55			
		Equipment					
		Impact	Spec	Actual	Receptor	Estimated	
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver		No	50		77.2	70	0
Roller		No	20		80	90	0
Concrete Pump Truck		No	20		81.4	110	0

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		74.3	71.3	N/A	N/A	N/A	N/A
Roller		74.9	67.9	N/A	N/A	N/A	N/A
Concrete Pump Truck		74.6	67.6	N/A	N/A	N/A	N/A
	Total	74.9	74	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

		---- Receptor #3 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Residences to the south	Residential	65	60	55			
		Equipment					
		Impact	Spec	Actual	Receptor	Estimated	
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver		No	50		77.2	400	0
Roller		No	20		80	420	0
Concrete Pump Truck		No	20		81.4	440	0

		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day		Evening	
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver		59.2	56.1	N/A	N/A	N/A	N/A
Roller		61.5	54.5	N/A	N/A	N/A	N/A
Concrete Pump Truck		62.5	55.5	N/A	N/A	N/A	N/A
	Total	62.5	60.2	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

# Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/8/2021  
Case Description: Energy Park - Trtmnt Plant Const - Demo

		---- Receptor #1 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Playground_Picnic Benche	Residential	65	60	55			
		Equipment					
				Spec	Actual	Receptor	Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Saw		No	20		89.6	20	0
Excavator		No	40		80.7	40	0
Backhoe		No	40		77.6	60	0
		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day	Evening		
		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw		97.5	90.5	N/A	N/A	N/A	N/A
Excavator		82.6	78.7	N/A	N/A	N/A	N/A
Backhoe		76	72	N/A	N/A	N/A	N/A
	Total	97.5	90.9	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

\*Calculated Lmax is the Loudest value.

		---- Receptor #2 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Residences to the west	Residential	65	60	55			
		Equipment					
				Spec	Actual	Receptor	Estimated
		Impact		Lmax	Lmax	Distance	Shielding
Description		Device	Usage(%)	(dBA)	(dBA)	(feet)	(dBA)
Concrete Saw		No	20		89.6	70	0
Excavator		No	40		80.7	90	0
Backhoe		No	40		77.6	110	0
		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day	Evening		
		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Concrete Saw		74.3	71.3	N/A	N/A	N/A	N/A
Excavator		74.9	67.9	N/A	N/A	N/A	N/A
Backhoe		74.6	67.6	N/A	N/A	N/A	N/A
	Total	74.9	74	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

\*Calculated Lmax is the Loudest value.

		---- Receptor #3 ----				
Description	Land Use	Baselines (dBA)				
		Daytime	Evening	Night		
Residences to the south	Residential	65	60	55		
		Equipment				
Description	Impact Device	Usage(%)	Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Concrete Saw	No	20		89.6	400	0
Excavator	No	40		80.7	420	0
Backhoe	No	40		77.6	440	0
		Results				
		Calculated (dBA)		Noise Limits (dBA)		
Equipment	*Lmax	Leq	Day	Leq	Evening	Leq
			Lmax		Lmax	
Concrete Saw	71.5	64.5	N/A	N/A	N/A	N/A
Excavator	62.2	58.2	N/A	N/A	N/A	N/A
Backhoe	58.7	54.7	N/A	N/A	N/A	N/A
Total	71.5	65.8	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.						

#### Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/8/2021  
Case Description: Energy Park - Trtmnt Plant Bldg Const - Equip Instl

		---- Receptor #1 ----					
Description	Land Use	Baselines (dBA)					
		Daytime	Evening	Night			
Playground to the east	Residential	65	60	55			
		Equipment					
Description	Impact	Device	Usage(%)	Spec	Actual	Receptor	Estimated
				Lmax	Lmax	Distance	Shielding
				(dBA)	(dBA)	(feet)	(dBA)
Crane	No		16		80.6	35	0
Man Lift	No		20		74.7	55	0
Backhoe	No		40		77.6	75	0
		Results					
		Calculated (dBA)		Noise Limits (dBA)			
Equipment		*Lmax	Leq	Day	Evening		
				Lmax	Leq	Lmax	Leq

Crane		92.7	85.7	N/A	N/A	N/A	N/A
Man Lift		79.9	75.9	N/A	N/A	N/A	N/A
Backhoe		74	70.1	N/A	N/A	N/A	N/A
	Total	92.7	86.2	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Picnic Benches to the east	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Crane	No	16		80.6	170	0
Man Lift	No	20		74.7	190	0
Backhoe	No	40		77.6	210	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Crane	79	72	N/A	N/A	N/A	N/A
Man Lift	69.1	65.1	N/A	N/A	N/A	N/A
Backhoe	65.1	61.1	N/A	N/A	N/A	N/A
	Total	79	73.1	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Residences to the west	Residential	65	60	55

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Crane	No	16		80.6	160	0
Man Lift	No	20		74.7	180	0
Backhoe	No	40		77.6	200	0

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day Lmax	Leq	Evening Lmax	Leq
Crane	79.5	72.5	N/A	N/A	N/A	N/A
Man Lift	69.6	65.6	N/A	N/A	N/A	N/A
Backhoe	65.5	61.5	N/A	N/A	N/A	N/A
	Total	79.5	73.6	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

		---- Receptor #4 ----					
Description	Land Use	Baselines (dBA)					
		Daytime	Evening	Night			
Residences to the south	Residential	65	60	55			
		Equipment					
Description	Impact	Device	Usage(%)	Spec	Actual	Receptor	Estimated
				Lmax	Lmax	Distance	Shielding
				(dBA)	(dBA)	(feet)	(dBA)
Crane	No		16		80.6	220	0
Man Lift	No		20		74.7	240	0
Backhoe	No		40		77.6	260	0
		Results					
		Calculated (dBA)		Noise Limits (dBA)			
Equipment		*Lmax	Leq	Day	Evening		
				Lmax	Leq	Lmax	Leq
Crane		67.7	59.7	N/A	N/A	N/A	N/A
Man Lift		61.1	54.1	N/A	N/A	N/A	N/A
Backhoe		63.2	59.3	N/A	N/A	N/A	N/A
	Total	67.7	63.1	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

#### Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/8/2021  
Case Description: Energy Park - Trtmnt Plant Const - Bldg Cnst\_Equipmt Instl

		---- Receptor #1 ----				
Description	Land Use	Baselines (dBA)				
		Daytime	Evening	Night		
Playground to the east	Residential	65	60	55		
		Equipment				
Description	Impact Device	Usage(%)	Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Man Lift	No	20		74.7	55	0
Backhoe	No	40		77.6	75	0
		Results				
Equipment		Calculated (dBA)		Noise Limits (dBA)		
		*Lmax	Leq	Day	Evening	
Man Lift		73.9	66.9	N/A	N/A	N/A
Backhoe		74	70.1	N/A	N/A	N/A

Total	83.6	77.2	N/A	N/A	N/A	N/A
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\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Baselines (dBA)

Description	Land Use
Picnic Benches to the east	Residential

Daytime	Evening	Night
65	60	55

Equipment

Description	Device	Usage(%)	Impact	Spec	Actual	Receptor	Estimated
				Lmax	Lmax	Distance	Shielding
Man Lift	No	20		(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40					

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day	Evening		
			Lmax	Leq	Lmax	Leq
Man Lift	63.1	56.1	N/A	N/A	N/A	N/A
Backhoe	65.1	61.1	N/A	N/A	N/A	N/A
Total	69.9	65.1	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Baselines (dBA)

Description	Land Use
Residences to the west	Residential

Daytime	Evening	Night
65	60	55

Equipment

Description	Device	Usage(%)	Impact	Spec	Actual	Receptor	Estimated
				Lmax	Lmax	Distance	Shielding
Man Lift	No	20		(dBA)	(dBA)	(feet)	(dBA)
Backhoe	No	40					

Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day	Evening		
			Lmax	Leq	Lmax	Leq
Man Lift	63.6	56.6	N/A	N/A	N/A	N/A
Backhoe	65.5	61.5	N/A	N/A	N/A	N/A
Total	65.5	62.7	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #4 ----

Baselines (dBA)

Description	Land Use
Residences to the south	Residential

Daytime	Evening	Night
65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Man Lift	No	20		74.7	240	0
Backhoe	No	40		77.6	260	0

Results						
Calculated (dBA)			Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Man Lift	61.1	54.1	N/A	N/A	N/A	N/A
Backhoe	63.2	59.3	N/A	N/A	N/A	N/A
Total	67.7	63.1	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/8/2021

Case Description: Energy Park - Trtmnt Plant\_Landscaping\_Park Restoration

---- Receptor #1 ----				
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Playground to the east	Residential	65	60	55

Equipment						
Description	Impact Device	Usage(%)	Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Front End Loader	No	40		79.1	35	0
Concrete Mixer Truck	No	40		78.8	55	0

Results						
Calculated (dBA)			Noise Limits (dBA)			
			Day		Evening	
Equipment	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader	92.7	85.7	N/A	N/A	N/A	N/A
Concrete Mixer Truck	79.9	75.9	N/A	N/A	N/A	N/A
Total	92.7	86.2	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----				
		Baselines (dBA)		
Description	Land Use	Daytime	Evening	Night
Picnic Benches to the east	Residential	65	60	55

#### Equipment



Description	Impact	Usage(%)	Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Front End Loader	No	40		79.1	170	0
Concrete Mixer Truck	No	40		78.8	190	0

#### Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day	Evening		
			Lmax	Leq	Lmax	Leq
Front End Loader	79		N/A	N/A	N/A	N/A
Concrete Mixer Truck	69.1		N/A	N/A	N/A	N/A
Total	79		N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### ---- Receptor #3 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Residences to the west	Residential	65	60	55

Description	Impact	Usage(%)	Equipment	Actual	Receptor	Estimated
			Spec			
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Front End Loader	No	40		79.1	160	0
Concrete Mixer Truck	No	40		78.8	180	0

#### Results

Equipment	Calculated (dBA)		Noise Limits (dBA)			
	*Lmax	Leq	Day	Evening		
			Lmax	Leq	Lmax	Leq
Front End Loader	79.5		N/A	N/A	N/A	N/A
Concrete Mixer Truck	69.6		N/A	N/A	N/A	N/A
Total	79.5		N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### ---- Receptor #4 ----

Description	Land Use	Baselines (dBA)		
		Daytime	Evening	Night
Residences to the south	Residential	65	60	55

Description	Impact	Usage(%)	Equipment	Actual	Receptor	Estimated
			Spec			
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Front End Loader	No	40		79.1	220	0
Concrete Mixer Truck	No	40		78.8	240	0

#### Results

Calculated (dBA)	Noise Limits (dBA)	
	Day	Evening

Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Front End Loader		66.2	62.3	N/A	N/A	N/A	N/A
Concrete Mixer Truck		65.2	61.2	N/A	N/A	N/A	N/A
Total		66.2	64.8	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

#### Roadway Construction Noise Model (RCNM), Version 1.1

Report date: 1/8/2021

Case Description: Energy Park - Trtmnt Plant\_Architectural Coating

		---- Receptor #1 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Playground to the east	Residential	65	60	55			
					Equipment		
					Spec	Actual	Receptor
					Lmax	Lmax	Distance
					(dBA)	(dBA)	(feet)
					Impact	Usage(%)	Estimated
					Device		Shielding
					No	40	(dBA)
Compressor (air)						77.7	35
							0
					Results		
		Calculated (dBA)			Noise Limits (dBA)		
					Day	Evening	
					Lmax	Leq	Lmax
					*Lmax	Leq	Leq
Compressor (air)					80.8	76.8	N/A
					N/A	N/A	N/A
Total					80.8	76.8	N/A
					N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

		---- Receptor #2 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Picnic Benches to the east	Residential	65	60	55			
					Equipment		
					Spec	Actual	Receptor
					Lmax	Lmax	Distance
					(dBA)	(dBA)	(feet)
					Impact	Usage(%)	Estimated
					Device		Shielding
					No	40	(dBA)
Compressor (air)						77.7	170
							0
					Results		
		Calculated (dBA)			Noise Limits (dBA)		
					Day	Evening	
					Lmax	Leq	Lmax
					*Lmax	Leq	Leq
Compressor (air)					79	72	N/A
					N/A	N/A	N/A
Total					79	73.1	N/A
					N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

		---- Receptor #3 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Residences to the west	Residential	65	60	55			
		Equipment					
		Impact	Spec	Actual	Receptor	Estimated	
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Compressor (air)		No	40		77.7	160	0
		Results					
		Calculated (dBA)		Noise Limits (dBA)			
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		79.5	72.5	N/A	N/A	N/A	N/A
	Total	79.5	73.6	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

		---- Receptor #4 ----					
		Baselines (dBA)					
Description	Land Use	Daytime	Evening	Night			
Residences to the south	Residential	65	60	55			
		Equipment					
		Impact		Spec	Actual	Receptor	Estimated
Description		Device	Usage(%)	Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Compressor (air)		No	40		77.7	220	0
		Results					
		Calculated (dBA)			Noise Limits (dBA)		
				Day	Evening		
Equipment		*Lmax	Leq	Lmax	Leq	Lmax	Leq
Compressor (air)		64.8	60.8	N/A	N/A	N/A	N/A
	Total	64.8	60.8	N/A	N/A	N/A	N/A
*Calculated Lmax is the Loudest value.							

Roadway Construction Noise Model (RCNM),Version 1.1

Report date: 1/8/2021  
Case Description: Energy Park - Pipeline Const - Paving

---- Receptor #1 ----

Description	Land Use
Playground_Picnic Benche	Residential

Baselines (dBA)		
Daytime	Evening	Night
65	60	55

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Paver	No	50		77.2	20	0
Roller	No	20		80	40	0
Concrete Pump Truck	No	20		81.4	60	0

Equipment	Results					
	Calculated (dBA)			Noise Limits (dBA)		
			Day		Evening	
	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	85.2	82.2	N/A	N/A	N/A	N/A
Roller	81.9	74.9	N/A	N/A	N/A	N/A
Concrete Pump Truck	79.8	72.8	N/A	N/A	N/A	N/A
Total	85.2	83.3	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #2 ----

Description	Land Use
Residences to the west	Residential

Baselines (dBA)		
Daytime	Evening	Night
65	60	55

Description	Impact Device	Usage(%)	Equipment		Receptor Distance (feet)	Estimated Shielding (dBA)
			Spec Lmax (dBA)	Actual Lmax (dBA)		
Paver	No	50		77.2	70	0
Roller	No	20		80	90	0
Concrete Pump Truck	No	20		81.4	110	0

Equipment	Results					
	Calculated (dBA)			Noise Limits (dBA)		
			Day		Evening	
	*Lmax	Leq	Lmax	Leq	Lmax	Leq
Paver	74.3	71.3	N/A	N/A	N/A	N/A
Roller	74.9	67.9	N/A	N/A	N/A	N/A
Concrete Pump Truck	74.6	67.6	N/A	N/A	N/A	N/A
Total	74.9	74	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.

---- Receptor #3 ----

Description	Land Use
Residences to the south	Residential

Baselines (dBA)		
Daytime	Evening	Night
65	60	55

Equipment

Description	Impact Device	Usage(%)	Spec	Actual	Receptor	Estimated
			Lmax (dBA)	Lmax (dBA)	Distance (feet)	Shielding (dBA)
Paver	No	50		77.2	400	0
Roller	No	20		80	420	0
Concrete Pump Truck	No	20		81.4	440	0

Results						
Calculated (dBA)			Noise Limits (dBA)			
Equipment	*Lmax	Leq	Day	Evening		
			Lmax	Leq	Lmax	Leq
Paver	59.2	56.1	N/A	N/A	N/A	N/A
Roller	61.5	54.5	N/A	N/A	N/A	N/A
Concrete Pump Truck	62.5	55.5	N/A	N/A	N/A	N/A
Total	62.5	60.2	N/A	N/A	N/A	N/A

\*Calculated Lmax is the Loudest value.