# APPENDIX C

***Air Quality Technical Report***
***for the JVR Energy Park Project***
***Part 1***

# Air Quality Technical Report
# for the
# JVR Energy Park Project

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# ACRONYMS AND ABBREVIATIONS

| Acronym/Abbreviation | Definition |
|---|---|
| °F | degrees Fahrenheit |
| µg/m$^3$ | micrograms per cubic meter |
| AB | Assembly Bill |
| AERMOD | American Meteorological Society/Environmental Protection Agency Regulatory Model |
| ATCM | Airborne Toxic Control Measure |
| BACT | Best Available Control Technology |
| CAA | federal Clean Air Act |
| CAAQS | California Ambient Air Quality Standards |
| CalEEMod | California Emissions Estimator Model |
| Caltrans | California Department of Transportation |
| CAPCOA | California Air Pollution Control Officers Association |
| CARB | California Air Resources Board |
| CDPH | California Department of Public Health |
| CEQA | California Environmental Quality Act |
| CO | carbon monoxide |
| County | County of San Diego |
| DPM | diesel particulate matter |
| EPA | U.S. Environmental Protection Agency |
| g/L | grams per liter |
| GVWR | gross vehicle weight rating |
| HARP 2 | Hotspots Analysis and Reporting Program Version 2 |
| I | Interstate |
| LOS | level of service |
| MAWA | Maximum Applied Water Allowance |
| NAAQS | National Ambient Air Quality Standards |
| NIEHS | National Institute of Environmental Health Sciences |
| $NO_x$ | oxides of nitrogen |
| $NO_2$ | nitrogen dioxide |
| $O_3$ | Ozone |
| OEHHA | Office of Environmental Health Hazard Assessment |
| PDF | project design feature |
| $PM_{2.5}$ | particulate matter with an aerodynamic diameter less than or equal to 2.5 microns |
| $PM_{10}$ | particulate matter with an aerodynamic diameter less than or equal to 10 microns |
| ppb | parts per billion |
| ppm | parts per million |
| Proposed Project | JVR Energy Park Project |
| PSI | pounds per square inch |
| RAQS | Regional Air Quality Strategy |
| REA | Risk Assessment Exposure |
| SANDAG | San Diego Association of Governments |
| SCAQMD | South Coast Air Quality Management District |

| Acronym/Abbreviation | Definition |
|---|---|
| SDAB | San Diego Air Basin |
| SDAPCD | San Diego Air Pollution Control District |
| SIP | State Implementation Plan |
| $SO_x$ | sulfur oxides |
| $SO_2$ | sulfur dioxide |
| SR | State Route |
| TAC | toxic air contaminant |
| T-BACT | toxics best available control technology |
| VMT | vehicle miles traveled |
| VOC | volatile organic compound |
| WRCC | Western Regional Climate Center |

# EXECUTIVE SUMMARY

## Project Overview

The proposed JVR Energy Park Project (Proposed Project) would be located on a privately owned 1,356-acre site in southeastern San Diego County. The Project site is located south of Interstate 8, east of the unincorporated community of Jacumba Hot Springs, and immediately north of the U.S./Mexico border. The proposed solar facilities would be located within an approximately 643-acre development footprint

The solar facility would use approximately 300,000 photovoltaic (PV) single-axis solar trackers to produce a rated capacity of up to 90 megawatt (MW) of alternating current (AC) generating capacity. Additionally, the Proposed Project would include an on-site substation and switchyard, and an up to 90 MW battery energy storage system. Eventual decommissioning of all components, except the switchyard, would occur at the end of the Proposed Project's useful life cycle.

## Impact Analysis Summary

This air quality impact analysis evaluates the potential for significant adverse impacts to air quality due to construction and operational emissions resulting from the Proposed Project. Impacts were evaluated for their significance, in part, based on the County's mass daily criteria air pollutant thresholds of significance (County of San Diego 2007). 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 include ozone ($O_3$), nitrogen dioxide ($NO_2$), carbon monoxide (CO), sulfur dioxide ($SO_2$), particulate matter with an aerodynamic diameter less than or equal to 10 microns ($PM_{10}$), particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$), and lead. Pollutants that are evaluated include volatile organic compounds (VOCs), oxides of nitrogen ($NO_x$), CO, sulfur oxides ($SO_x$), $PM_{10}$, and $PM_{2.5}$. VOCs and $NO_x$ are important because they are precursors to $O_3$.

Estimated maximum daily operational emissions generated by the Proposed Project at full build-out from energy and mobile emission sources were calculated using California Emissions Estimator Model (CalEEMod) Version 2016.3.2 (CAPCOA 2017).[1] Operational year 2022 was assumed upon construction completion.

[1] CalEEMod is a statewide land use emissions computer model designed to provide a uniform platform to calculate construction and operational emissions from land use development projects.

***Air Quality Plan Consistency***

In the County of San Diego's General Plan, the zoning for most of the Project site is Specific Plan (S-88). One parcel in the easternmost portion of the site is zoned General Rural (S-92). Parcels in the vicinity of the Jacumba airport are zoned Open Space (S-80) and one very small parcel within the village area is zoned Rural Residential (RR) (County of San Diego 2011a).

The Proposed Project's proposed development would result in substantially fewer operational emissions compared to the buildout of the existing zoning. Therefore, the Proposed Project would not be in exceedance of those assumed in the State Implementation Plan (SIP) and Regional Air Quality Strategy (RAQS). The Proposed Project would not result in regional growth that is not accounted for within the RAQS; thus, at a regional level, it is consistent with the underlying growth forecasts in the SIP and RAQS. The Proposed Project would be considered consistent with the RAQS and impacts would result in a **less than significant** impact.

***Cumulative Impacts***

Maximum daily Proposed Project construction emissions would exceed the construction thresholds for $NO_x$, $PM_{10}$, and $PM_{2.5}$. Mitigation measure (M) AQ-1 and M-AQ-2 would be implemented to reduce emissions of $NO_x$, $PM_{10}$, and $PM_{2.5}$. With mitigation, the Proposed Project would not exceed daily significance thresholds for any criteria air pollutant. Cumulative construction and operational emissions were found to be less than significant when considering the Proposed Project in combination with other existing and foreseeable future projects in the Proposed Project vicinity. Following implementation of M-AQ-1 and M-AQ-2, cumulative construction emissions would be **less than significant**.

Maximum daily operational emissions of VOC, $NO_x$, CO, $SO_X$, $PM_{10}$, and $PM_{2.5}$ generated by the Proposed Project would not exceed significance thresholds. Thus, impacts would be **less than significant.**

***Exposure of Sensitive Receptors***

<u>Carbon Monoxide Hotspots</u>

Construction traffic in 2021, which represents the highest level of construction-related traffic, would not result in traffic volumes that would cause a CO hotspot; therefore, impacts related to CO near sensitive receptors during construction would be **less than significant**. Similarly, operation of the Proposed Project would not expose sensitive receptors to localized high concentrations of CO or contribute traffic volumes to intersections that would cause a CO hotspot. The traffic volumes and levels of service during operation would not exceed County thresholds; therefore, potential operational CO hotspot impacts would be **less than significant**.

Toxic Air Contaminants

Impacts related to cancer risk and chronic hazard index from diesel particulate matter emissions, which is a toxic air contaminant (TAC), would be above the County of San Diego's thresholds for cancer risk during construction activities; therefore, impacts would be potentially significant. With implementation of M-AQ-1, impacts related to cancer risk and chronic hazard index would be below the County's thresholds during construction activities; therefore, impacts would be **less than significant**.

The Proposed Project does not propose any major operational sources of TAC emissions. Additionally, the Proposed Project would not be located next to a major source of TAC or high-volume roadway. As such, the Proposed Project would not result in substantial TAC emissions that may affect nearby receptors, nor would the Proposed Project be exposed to nearby sources of TACs. Impacts would be **less than significant**.

***Other Emissions***

Potential odors produced during construction would be attributable to concentrations of unburned hydrocarbons from tailpipes of construction equipment and from excavated sediment. These 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**.

Also, the Proposed Project would not include any land uses that are known to generate odors, such as wastewater treatment plants, landfills, or other industrial sources. Although odor impacts are unlikely, the Proposed Project would be required to comply with the County of San Diego's odor policies enforced by the San Diego Air Pollution Control District, including Rule 51, in the event a nuisance complaint occurs, and County of San Diego Zoning Code Section 6318, which prohibits nuisance odors and identifies enforcement measures to reduce odor impacts to nearby receptors. Therefore, impacts associated with objectionable odors would be **less than significant**.

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# 1 INTRODUCTION

## 1.1 Report Purpose and Scope

The purpose of this report is to evaluate potential air quality impacts associated with construction and operation of the proposed JVR Energy Park Project (Proposed Project) located within San Diego County. Potential air quality impacts are evaluated for their significance based on the criteria provided in the County of San Diego's Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality (County of San Diego 2007).

This introductory section provides a description of the Proposed Project. Section 2, Existing Conditions, presents the relevant existing setting in the context of air quality, climate and meteorology, regulatory setting, and background air quality. Section 3, Significance Criteria and Analysis Methodologies, outlines the thresholds of significance applied in the analysis, and methodology and assumptions used in the construction and operational emissions analysis. Section 4, Project Impact Analysis, evaluates the Proposed Project's potential to result in a significance air quality impact per the thresholds identified in Section 3. A summary of the impacts and mitigation measures is presented in Section 5. Section 6, References, includes a list of the references cited, and Section 7, List of Preparers, includes a list of those who prepared this technical report.

Comments received in response to the Notice of Preparation (NOP) included concerns regarding greenhouse gas emissions form construction-related diesel equipment use, increased particulate matter with an aerodynamic diameter less than or equal to 10 microns ($PM_{10}$) and particulate matter with an aerodynamic diameter less than or equal to 2.5 microns ($PM_{2.5}$) as a result of soil disturbance during construction-related activities, and adverse effects to the community's health as a result of increased particulate matter and emissions. A copy of the NOP and comment letters received in response to the NOP is included in Appendix A of the JVR Energy Park Environmental Impact Report (EIR).

## 1.2 Project Description

### 1.2.1 Overview and Background

The Project site totals approximately 1,356 acres in southeastern San Diego County, within San Diego County's Mountain Empire Subregional Plan area (see Figure 1, Project Location). The Proposed Project would be located to the south of Interstate (I) 8, immediately east of the community of Jacumba Hot Springs, and immediately north of the U.S./Mexico international border. The Project site is located entirely on private land and consists of 24 parcels. The Project site includes right-of-way (ROW) easements for Old Highway 80, San Diego Gas & Electric (SDG&E) easements, and an easement for the San Diego and Arizona Eastern Railway. The proposed solar facility and access roads would cover approximately 643 acres within the 1,356-

acre Project site and would be set back an additional 90 feet from the 60-foot-wide strip of federal land along the U.S./Mexico border. There are five access driveways to the Project site, including access from Old Highway 80 and from Carrizo Gorge Road.

The Proposed Project is a solar energy generation and storage facility that would produce a rated capacity of up to 90 megawatts (MW) of alternating current (AC) generating capacity. The power produced by the proposed solar facility would be delivered to an existing SDG&E 138-kilovolt (KV) transmission line that transects the Project site. The Proposed Project components are listed below.

The Proposed Project would include the following primary components:

- Approximately 300,000 photovoltaic (PV) modules mounted on support structures (single-axis solar trackers)
- A 1,000- to 1,500-volt direct current (DC) underground collection system linking the modules to the inverters
- 25 inverter/transformer platforms, located throughout the solar facility, to convert the power generated by the modules into a compatible form for use with the transmission network
- Approximately 5,000 feet of 34.5 kV underground AC collection system and 50 feet of overhead AC feeders, approximately 30 feet tall linking the inverters to the on-site collector substation
- An on-site collector substation located within an approximately 27,360-square-foot area (152 feet by 180 feet)
- A 138 kV switchyard adjacent to the on-site collector substation to transfer power from the on-site collector substation to the existing SDG&E 138 kV transmission line
- A 138 kV, 220-foot-long 65-foot-high overhead slack span transmission line to connect the on-site collector substation to the switchyard
- Two 138 kV, 1,860 feet total, 70- to 115-foot-high overhead generation transmission (gen-tie) lines to loop the switchyard into the existing SDG&E Boulevard – East County 138 kV transmission line
- A battery energy storage system of up to 90 MW (or 180 MWh) composed of battery storage containers located adjacent to the inverter/transformer pads (up to 3 containers at each location for a total of 75 containers on site)
- Fiber-optic line
- Control system
- Five meteorological weather stations

- Site access driveways
- Internal access
- Improvements within SDG&E Transmission Corridor, including two easement crossings and one easement encroachment.
- Security fencing and signage
- Lighting
- Water tanks (fire protection)
- Fuel modification zones (FMZs)
- Landscaping

The Proposed Project's collector substation and the switchyard would be sized to accommodate the full 90 MW (AC) solar facility and the proposed 90 MW energy storage system. The Proposed Project would be located entirely on private lands within unincorporated San Diego County. Upon completion, the Proposed Project would be monitored and operated from an off-site supervisory control and data acquisition system.

### 1.2.2 Existing and Surrounding Land Uses

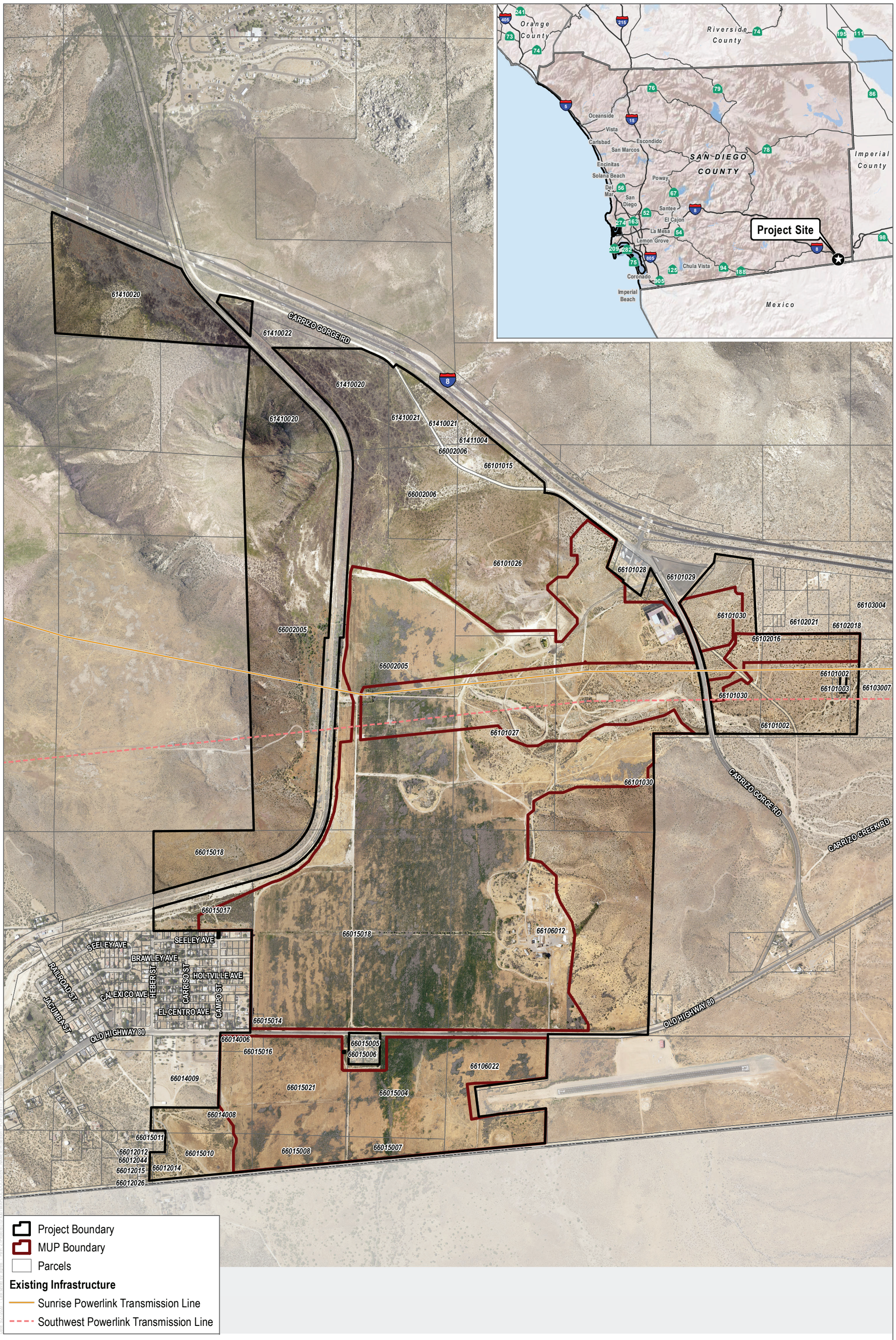
The arid high desert environment supports a range of habitats, including sensitive vegetation communities, as described below. Historically dairy and farming operations occurred on a portion the Project site. There are currently no agricultural operations on the Project site; however, unutilized dairy and agricultural related structures remain on a portion of the site.

The general topography of the development footprint is relatively level, with gently rolling hills and steeper slopes to the west within the Project site. The elevation range within the study area is from 2,720 feet to 3,360 feet above mean sea level.

Regional access to the Project site is provided by I-8, located to the north, and by Old Highway 80 which traverses the southern portion of the Project site. Both I-8 and Old Highway 80 are designated as County of San Diego (County) Scenic Highways within this area. The Jacumba airport is located immediately to the east of the southern portion of the Project site. The southern boundary of the Project site is located along the U.S./Mexico border. Public land in the surrounding area includes Anza-Borrego Desert State Park and federal Bureau of Land Management lands.

The Project site is located within the Jacumba Subregional Group Area of the County's Mountain Empire Subregional Plan Area. The unincorporated community of Jacumba Hot Springs is located adjacent to the southwestern portion of the Project site, Jacumba Hot Springs is designated as a Rural Village by the County; the 2010 census population was 561. The community includes

residential and commercial uses, including a hot springs resort. Jacumba Hot Springs and the surrounding area are totally dependent on groundwater for supply. The Jacumba Community Services District provides groundwater to the village area. The Sunrise Powerlink and Southwest Powerlink, each of which consists of a 500 kV electric transmission line supported by 150-foot-tall steel lattice structures, transect the Project site.




SOURCE: Kimley-Horn 2020; SANGIS 2017, 2020

DUDEK

0 500 1,000 Feet

**FIGURE 1**

Project Location

JVR Energy Park Project

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# 2 EXISTING CONDITIONS

## 2.1 Existing Setting

The Project site is located within the San Diego Air Basin (SDAB) and is subject to San Diego Air Pollution Control District (SDAPCD) guidelines and regulations. The SDAB is one of 15 air basins that geographically divide California. The SDAB lies in the southwest corner of California. The SDAB comprises the entire San Diego region and covers approximately 4,260 square miles.

## 2.2 Climate and Meteorology

The primary factors that determine air quality are the locations of air pollutant sources and the amount of pollutants emitted. Meteorological and topographical conditions, however, are also important. Factors such as wind speed and direction, air temperature gradients and sunlight, and precipitation and humidity interact with physical landscape features to determine the movement and dispersal of air pollutants. Meteorological and topographical factors that affect air quality in the SDAB are described below.[2]

**Regional Climate and Meteorological Conditions**

The climate of the San Diego region, as in most of Southern California, is influenced by the strength and position of the semi-permanent high-pressure system over the Pacific Ocean, known as the Pacific High. This high-pressure ridge over the West Coast often creates a pattern of late-night and early-morning low clouds, hazy afternoon sunshine, daytime onshore breezes, and little temperature variation year-round. The SDAB is characterized as a Mediterranean climate with dry, warm summers and mild, occasionally wet winters. Average temperature ranges (in degrees Fahrenheit [°F]) from the mid-40s to the high 90s, with an average of 201 days warmer than 70°F. The SDAB experiences 9 to 13 inches of rainfall annually, with most of the region's precipitation falling from November through March, with infrequent (approximately 10%) precipitation during the summer. El Niño and La Niña patterns have large effects on the annual rainfall received in San Diego, where San Diego receives less than normal rainfall during La Niña years.

The interaction of ocean, land, and the Pacific High maintains clear skies for much of the year and influences the direction of prevailing winds (westerly to northwesterly). The winds tend to blow onshore in the day and offshore at night. Local terrain is often the dominant factor in terms of

[2] The discussion of meteorological and topographical conditions of the SDAB is based on information provided in the SDAPCD 2016 Monitoring Plan (SDAPCD 2017a), the County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality (County of San Diego 2007), the County of San Diego General Plan Update EIR (County of San Diego 2011b), and the CARB Recommended Area Designation for the 2010 Federal Sulfur Dioxide Standard (CARB 2011).

influencing wind patterns inland, as winds in inland mountainous areas tend to blow through the valleys during the day and down the hills and valleys at night.

The favorable climate of San Diego also works to create air pollution problems. Sinking, or subsiding air from the Pacific High, creates a temperature inversion known as a subsidence inversion, which acts as a "lid" to vertical dispersion of pollutants. Weak summertime pressure gradients further limit horizontal dispersion of pollutants in the mixed layer below the subsidence inversion. Poorly dispersed anthropogenic emissions combined with strong sunshine leads to photochemical reactions that result in the creation of ozone ($O_3$) at this surface layer. In addition, light winds during the summer further limit ventilation.

In the fall months, the SDAB is often impacted by Santa Ana winds, which are the result of a high-pressure system over the Nevada and Utah regions that overcomes the westerly wind pattern and forces hot, dry winds from the east to the Pacific Ocean. The Santa Ana winds are powerful and can blow the SDAB's pollutants out to sea. However, a weak Santa Ana can transport air pollution from the South Coast Air Basin and greatly increase $O_3$ concentrations in the San Diego area.

Under certain conditions (weak Santa Ana winds), atmospheric oscillation results in the offshore transport of air from the Los Angeles region to San Diego County. This often produces high $O_3$ concentrations, as measured at air pollutant monitoring stations within San Diego County. The transport of air pollutants from the Los Angeles region to San Diego County can also occur within the stable layer of the elevated subsidence inversion, where high levels of $O_3$ are transported.

**Site-Specific Meteorological Conditions**

The local climate in southeastern San Diego County is characterized as semi-arid with consistently mild, warmer temperatures throughout the year. The average summertime high temperature in the region is approximately 81°F, and record highs approaching 104°F in August. The average wintertime low temperature is approximately 43.7°F, although record lows have approached 32°F in January. Average precipitation in the local area is approximately 14.8 inches per year, with the bulk of precipitation falling between November and April (WRCC 2017).

The Project site is largely undeveloped. Structures associated with prior dairy and ranching operations are located within a portion of the site. A portion of Project site was also previously used for farming. Most of the development footprint is relatively level, with steeper slopes to the west which would not be disturbed. The on-site elevation ranges from approximately 2,745 feet above mean sea level in the lower, northern portion of the site to 3,365 feet above mean sea level at the top of Round Mountain in the northwestern portion of the Project site.

**Topographical Conditions**

Topography in the San Diego region varies greatly, from beaches in the west to mountains and desert in the east; much of the topography in between consists of mesa tops intersected by canyon areas. Along with local meteorology, topography influences the dispersal and movement of pollutants in the SDAB. Mountains to the east prohibit dispersal of pollutants in that direction and help trap pollutants in inversion layers.

The topography of the SDAB also drives pollutant levels, and the SDAB is classified as a "transport recipient," whereby pollutants are transported from the South Coast Air Basin to the north and, when the wind shifts direction, from Tijuana, Mexico, to the south.

## 2.3 Regulatory Setting

### 2.3.1 Federal

**Criteria Air Pollutants**

The federal Clean Air Act (CAA), passed in 1970 and last amended in 1990, forms the basis for the national air pollution control effort. The U.S. Environmental Protection Agency (EPA) is responsible for implementing most aspects of the CAA, including setting the National ambient air quality standards (NAAQS) for major air pollutants, setting hazardous air pollutant standards, approving state attainment plans, setting motor vehicle emissions standards, setting stationary source emissions standards and approving permits, providing acid rain control measures, implementing stratospheric $O_3$ protection, and providing enforcement provisions.

NAAQS are established by the EPA for "criteria pollutants" under the CAA, which are $O_3$, CO, $NO_2$, $SO_2$, $PM_{10}$, and $PM_{2.5}$, and lead. The NAAQS describe acceptable air quality conditions designed to protect the health and welfare of the citizens of the nation. The CAA requires EPA to reassess the NAAQS at least every 5 years to determine whether adopted standards are adequate to protect public health, based on current scientific evidence. The EPA sets the NAAQS based on a lengthy process that involves science policy workshops, a risk/exposure assessment (REA) that draws on the information and conclusions of the science policy workshops to development quantitative characterizations of exposures and associated risks to human health or the environment, and a policy assessment by EPA staff that bridges the gap between agency scientific assessments and the judgments required of the EPA administrator, who then takes the proposed standards through the federal rulemaking process (EPA 2017a). States with areas that exceed the NAAQS must prepare a SIP that demonstrates how those areas will attain the standards within mandated timeframes.

### Hazardous Air Pollutants

The 1977 federal CAA amendments required the EPA to identify National Emission Standards for Hazardous Air Pollutants to protect public health and welfare. Hazardous air pollutants include certain volatile organic chemicals, pesticides, herbicides, and radionuclides that present a tangible hazard, based on scientific studies of exposure to humans and other mammals. Under the 1990 CAA amendments, which expanded the control program for hazardous air pollutants, 187 substances and chemical families were identified as hazardous air pollutants.

### Safer Affordable Fuel-Efficient Vehicle Rule

In August 2019, the U.S. EPA and National Highway Traffic Safety Administration (NHTSA) jointly published a notice of proposed rulemaking for Part One of the Safer Affordable Fuel-Efficient Vehicle Rule (SAFE Rule). The SAFE Rule proposed new and amended $CO_2$, Corporate Average Fuel Economy, and GHG emissions standards for passenger cars and light trucks. Further, Part One of this rule proposed to withdraw the State of California's waiver, afforded under the CAA to set GHG and zero-emission vehicle standards separate from the federal government. Part One of the SAFE Rule became effective in November 2019. CARB has provided adjustment factors for pollutants, including $NO_2$, $PM_{10}$, $PM_{2.5}$, and CO, from light-duty vehicle exhaust to account for Part One of the SAFE Rule.

In March 2020, EPA and NHTSA announced Part Two of the SAFE Rule, which would set amended fuel economy and CO2 standards for passenger cars and light trucks for model years 2021–2026. Part Two would become effective 60 days after publication in the Federal Register. The Proposed Project's operational emissions associated with passenger cars and light-duty trucks would be relatively minimal and the anticipated changes associated with the implementation of this rule would not result in significant changes to the estimated operational emissions for the Proposed Project.

Furthermore, although off-model adjustments are available from CARB, the vehicle miles travelled (VMT) split between vehicle fuels is not publicly available and thus adjustments to the CalEEMod EMFAC data are not possible at this time (Sardar, pers. comm. 2019). Based on the CARB adjustment factors, implementation of the SAFE Rule would slightly increase the anticipated emissions factors for passenger vehicles and light-duty trucks starting in 2021. The project's assumed operational year is 2022, at which time adjustments to account for SAFE Rule would be minimal (i.e., less than one percent increase).

### 2.3.2 State

**Criteria Air Pollutants**

The federal CAA delegates the regulation of air pollution control and the enforcement of the NAAQS to the states. In California, the task of air quality management and regulation has been legislatively granted to the California Air Resources Board (CARB), with subsidiary responsibilities assigned to air quality management districts and air pollution control districts at the regional and county levels. CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for ensuring implementation of the California Clean Air Act of 1988, responding to the federal CAA, and regulating emissions from motor vehicles and consumer products.

President Trump and the EPA have stated their intent to halt various federal regulatory activities to reduce greenhouse gas (GHG) emissions. California and other states have stated their intent to challenge federal actions that would delay or eliminate GHG reduction measures and have committed to cooperating with other countries to implement global climate change initiatives. While these efforts are primarily focused on GHG emissions, they may have impacts to mobile source air quality standards. The timing and consequences of these types of federal decisions and potential responses from California and other states are speculative at this time.

CARB established the California ambient air quality standards (CAAQS), which are generally more restrictive than the NAAQS. The CAAQS describe adverse conditions; that is, pollution levels must be below these standards before a basin can attain the standard. Air quality is considered "in attainment" if pollutant levels are continuously below the CAAQS and violate the standards no more than once each year. The CAAQS for $O_3$, CO, $SO_2$ (1-hour and 24-hour), $NO_2$, $PM_{10}$, $PM_{2.5}$, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded.

Similar to the federal process, the standards for the CAAQS are adopted after review by CARB staff of the scientific literature produced by agencies such as the OEHHA; the Air Quality Advisory Committee, which is comprised of experts in health sciences, exposure assessment, monitoring methods, and atmospheric sciences appointed by the Office of the President of the University of California; and public review and comment (CARB 2009).

The NAAQS and CAAQS are presented in Table 1.

## Table 1
## Ambient Air Quality Standards

| Pollutant | Averaging Time | California Standards[a] | National Standards[b] | |
|---|---|---|---|---|
| | | *Concentration*[c] | *Primary*[c,d] | *Secondary*[c,e] |
| $O_3$ | 1 hour | 0.09 ppm (180 µg/m³) | — | Same as Primary Standard[f] |
| | 8 hours | 0.070 ppm (137 µg/m³) | 0.070 ppm (137 µg/m³)[f] | |
| $NO_2$[g] | 1 hour | 0.18 ppm (339 µg/m³) | 0.100 ppm (188 µg/m³) | Same as Primary Standard |
| | Annual Arithmetic Mean | 0.030 ppm (57 µg/m³) | 0.053 ppm (100 µg/m³) | |
| CO | 1 hour | 20 ppm (23 mg/m³) | 35 ppm (40 mg/m³) | None |
| | 8 hours | 9.0 ppm (10 mg/m³) | 9 ppm (10 mg/m³) | |
| $SO_2$[h] | 1 hour | 0.25 ppm (655 µg/m³) | 0.075 ppm (196 µg/m³) | — |
| | 3 hours | — | — | 0.5 ppm (1,300 µg/m³) |
| | 24 hours | 0.04 ppm (105 µg/m³) | 0.14 ppm (for certain areas)[g] | — |
| | Annual | — | 0.030 ppm (for certain areas)[g] | — |
| $PM_{10}$[i] | 24 hours | 50 µg/m³ | 150 µg/m³ | Same as Primary Standard |
| | Annual Arithmetic Mean | 20 µg/m³ | — | |
| $PM_{2.5}$[i] | 24 hours | — | 35 µg/m³ | Same as Primary Standard |
| | Annual Arithmetic Mean | 12 µg/m³ | 12.0 µg/m³ | 15.0 µg/m³ |
| Lead[j,k] | 30-day Average | 1.5 µg/m³ | — | — |
| | Calendar Quarter | — | 1.5 µg/m³ (for certain areas)[k] | Same as Primary Standard |
| | Rolling 3-Month Average | — | 0.15 µg/m³ | |
| Hydrogen sulfide | 1 hour | 0.03 ppm (42 µg/m³) | — | — |
| Vinyl chloride[j] | 24 hours | 0.01 ppm (26 µg/m³) | — | — |
| Sulfates | 24- hours | 25 µg/m³ | — | — |
| Visibility reducing particles | 8 hour (10:00 a.m. to 6:00 p.m. PST) | Insufficient amount to produce an extinction coefficient of 0.23 per kilometer due to the number of particles when the relative humidity is less than 70% | — | — |

**Source:** CARB 2016a.

**Notes:** µg/m³ = micrograms per cubic meter; mg/m³= milligrams per cubic meter; ppm = parts per million by volume; $O_3$ = ozone; $NO_2$ = nitrogen dioxide; CO = carbon monoxide; $SO_2$ = sulfur dioxide; $PM_{10}$ = particulate matter with an aerodynamic diameter less than or equal to 10 microns; $PM_{2.5}$ = particulate matter with an aerodynamic diameter less than or equal to 2.5 microns.

[a] California standards for $O_3$, CO, $SO_2$ (1-hour and 24-hour), $NO_2$, suspended particulate matter ($PM_{10}$, $PM_{2.5}$), and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[b] National standards (other than $O_3$, $NO_2$, $SO_2$, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once per year. The $O_3$ standard is attained when the fourth highest 8-hour concentration measured at each site in a year, averaged over 3 years, is equal to or less than the standard. For $PM_{10}$, the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m$^3$ is equal to or less than 1. For $PM_{2.5}$, the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

[c] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[d] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[e] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[f] On October 1, 2015, the national 8-hour $O_3$ primary and secondary standards were lowered from 0.075 to 0.070 ppm.

[g] To attain the national 1-hour standard, the 3-year average of the annual 98th percentile of the 1-hour daily maximum concentrations at each site must not exceed 100 parts per billion (ppb). Note that the national 1-hour standard is in units of ppb. California standards are in units of ppm. To directly compare the national 1-hour standard to the California standards, the units can be converted from ppb to ppm. In this case, the national standard of 100 ppb is identical to 0.100 ppm.

[h] On June 2, 2010, a new 1-hour $SO_2$ standard was established, and the existing 24-hour and annual primary standards were revoked. To attain the national 1-hour standard, the 3-year average of the annual 99th percentile of the 1-hour daily maximum concentrations at each site must not exceed 75 ppb. The 1971 $SO_2$ national standards (24-hour and annual) remain in effect until 1 year after an area is designated for the 2010 standard, except that in areas designated nonattainment of the 1971 standards, the 1971 standards remain in effect until implementation plans to attain or maintain the 2010 standards are approved.

[i] On December 14, 2012, the national annual $PM_{2.5}$ primary standard was lowered from 15 µg/m$^3$ to 12.0 µg/m$^3$. The existing national 24-hour $PM_{2.5}$ standards (primary and secondary) were retained at 35 µg/m$^3$, as was the annual secondary standard of 15 µg/m$^3$. The existing 24-hour $PM_{10}$ standards (primary and secondary) of 150 µg/m$^3$ were also retained. The form of the annual primary and secondary standards is the annual mean averaged over 3 years.

[j] CARB has identified lead and vinyl chloride as TACs with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

[k] The national standard for lead was revised on October 15, 2008, to a rolling 3-month average. The 1978 lead standard (1.5 µg/m$^3$ as a quarterly average) remains in effect until 1 year after an area is designated for the 2008 standard, except that in areas designated nonattainment for the 1978 standard, the 1978 standard remains in effect until implementation plans to attain or maintain the 2008 standard are approved.

### Toxic Air Contaminants

A TAC is defined by California law as an air pollutant that may cause or contribute to an increase in mortality or an increase in serious illness, or that may pose a present or potential hazard to human health. Federal laws use "hazardous air pollutants" to refer to the same types of compounds that are referred to as TACs under State law. California regulates TACs primarily through the Tanner Air Toxics Act (Assembly Bill [AB] 1807) and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588).

AB 1807 sets forth a formal procedure for CARB to designate substances as TACs. This includes research, public participation, and scientific peer review before CARB can designate a substance as a TAC. Pursuant to AB 2588, existing facilities that emit air pollutants above specified level were required to prepare a TAC Emissions Inventory Plan and Report; prepare a risk assessment if TAC emissions were significant; notify the public of significant risk levels; and, if health impacts were above specified levels, prepare and implement risk reduction measures.

The following regulatory measures pertain to the reduction of diesel particulate matter and criteria pollutant emissions from off-road equipment and diesel-fueled vehicles.

***Idling of Commercial Heavy-Duty Trucks***

In July 2004, CARB adopted an Airborne Toxic Control Measure (ATCM) to control emissions from idling trucks (13 CCR 2485). The ATCM prohibits idling for more than 5 minutes for all commercial trucks with a gross vehicle weight rating (GVWR) over 10,000 pounds. The ATCM contains an exception that allows trucks to idle while queuing or involved in operational activities.

***In-Use Off-Road Diesel-Fueled Fleets***

In July 2007, CARB adopted an ATCM for in-use off-road diesel vehicles (13 CCR 2449 et seq.). This regulation requires that specific fleet average requirements are met for $NO_x$ emissions and for particulate matter emissions. Where average requirements cannot be met, best available control technology (BACT) requirements apply. The regulation also includes several recordkeeping and reporting requirements.

In response to AB 8 2X, the regulations were revised in July 2009 (effective December 3, 2009) to allow a partial postponement of the compliance schedule in 2011 and 2012 for existing fleets. On December 17, 2010, CARB adopted additional revisions to further delay the deadlines reflecting reductions in diesel emissions due to the poor economy and overestimates of diesel emissions in California. The revisions delayed the first compliance date until no earlier than January 1, 2014, for large fleets, with final compliance by January 1, 2023. The compliance dates for medium fleets were delayed until an initial date of January 1, 2017, and final compliance date of January 1, 2023. The compliance dates for small fleets were delayed until an initial date of January 1, 2019, and final compliance date of January 1, 2028. Correspondingly, the fleet average targets were made more stringent in future compliance years. The revisions also accelerated the phase-out of equipment with older equipment added to existing large and medium fleets over time, requiring the addition of Tier 2 or higher engines starting on March 1, 2011, with some exceptions: Tier 2 or higher engines on January 1, 2013, without exception; and Tier 3 or higher engines on January 1, 2018 (January 1, 2023, for small fleets).

On October 28, 2011 (effective December 14, 2011), the Executive Officer of CARB approved amendments to the regulation. The amendments included revisions to the applicability section and additions and revisions to the definition. The initial date for requiring the addition of Tier 2 or higher engines for large and medium fleets, with some exceptions, was revised to January 1, 2012. New provisions also allow for the removal of emissions control devices for safety or visibility purposes. The regulation also was amended to combine the particulate matter and $NO_x$ fleet average targets under one, instead of two, sections. The amended fleet average targets are based

on the fleet's $NO_x$ fleet average, and the previous section regarding particulate matter performance requirements was deleted completely. The BACT requirements, if a fleet cannot comply with the fleet average requirements, were restructured and clarified. Other amendments to the regulations included minor administrative changes to the regulatory text.

***In-Use On-Road Diesel-Fueled Vehicles***

On December 12, 2008, CARB adopted an ATCM to reduce $NO_x$ and particulate matter emissions from most in-use on-road diesel trucks and buses with a GVWR greater than 14,000 pounds (13 CCR 2025). The original ATCM regulation required fleets of on-road trucks to limit their $NO_x$ and particulate matter emissions through a combination of exhaust retrofit equipment and new vehicles. The regulation limited particulate matter emissions for most fleets by 2011, and limited $NO_x$ emissions for most fleets by 2013. The regulation did not require any vehicle to be replaced before 2012, and never required all vehicles in a fleet be replaced.

In December 2009, the CARB Governing Board directed staff to evaluate amendments that would provide additional flexibility for fleets adversely affected by the poor California economy. On December 17, 2010, CARB revised this ATCM to delay its implementation, along with limited relaxation of its requirements. Starting on January 1, 2015, lighter trucks with a GVWR of 14,001 to 26,000 pounds with 20-year-old or older engines needed to be replaced with newer trucks (2010 model year emissions equivalent as defined in the regulation). Trucks with a GVWR greater than 26,000 pounds with 1995 model year or older engines needed to be replaced by January 1, 2015. Trucks with 1996–2006 model year engines had to install a Level 3 (85% control) diesel particulate filter starting on January 1, 2012, to January 1, 2014, depending on the model year, and then be replaced after 8 years. Trucks with 2007–2009 model year engines have no requirements until 2023, at which time they must be replaced with 2010 model year emissions-equivalent engines as defined in the regulation. Trucks with 2010 model year engines would meet the final compliance requirements. The ATCM provides a phase-in option under which a fleet operator would equip a percentage of trucks in the fleet with diesel particulate filters, starting at 30% by January 1, 2012, with 100% by January 1, 2016.

On September 19, 2011 (effective December 14, 2011), the Executive Officer of CARB approved amendments to the regulations, including revisions to the compliance schedule for vehicles with a GVWR of 26,000 pounds or less to clarify that all vehicles must be equipped with 2010 model year emissions-equivalent engines by 2023. The amendments included revised and additional credits for fleets that have downsized; that implement early particulate matter retrofits; that incorporate hybrid vehicles, alternative-fueled vehicles, and/or vehicles with heavy-duty pilot ignition engines; and/or that implement early addition of newer vehicles. The amendments included provisions for additional flexibility, such as for low-usage construction trucks, and revisions to previous exemptions, delays, and extensions. Other amendments to the regulations

included minor administrative changes to the regulatory text, including recordkeeping and reporting requirements related to other revisions.

**California Health and Safety Code Section 41700**

Section 41700 of the California Health and Safety Code states that a person cannot discharge from any source whatsoever quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or that endanger the comfort, repose, health, or safety of any of those persons or the public, or that cause, or have a natural tendency to cause, injury or damage to business or property. This section also applies to sources of objectionable odors.

### 2.3.3 Local

**San Diego Air Pollution Control District**

Although CARB is responsible for the regulation of mobile emissions sources within the State, local air quality management districts and air pollution control districts are responsible for enforcing standards and regulating stationary sources. The Project site is located within the SDAB and is subject to the guidelines and regulations of the SDAPCD.

In the County, $O_3$ and particulate matter are the pollutants of main concern, since exceedances of State ambient air quality standards for those pollutants are experienced in the County in most years. For this reason, the SDAB has been designated as a nonattainment area for the State $PM_{10}$, $PM_{2.5}$, and $O_3$ standards. The SDAB is also a federal $O_3$ attainment (maintenance) area for 1997 8-hour $O_3$ standard, an $O_3$ nonattainment area for the 2008 8-hour $O_3$ standard, and a CO maintenance area (western and central part of the SDAB only).

***Federal Attainment Plans***

In December 2016, the SDAPCD adopted an update to the Eight-Hour Ozone Attainment Plan for San Diego County (2008 $O_3$ NAAQS). The 2016 Eight-Hour Ozone Attainment Plan for San Diego County indicates that local controls and State programs would allow the region to reach attainment of the federal 8-hour $O_3$ standard (1997 $O_3$ NAAQS) by 2018 (SDAPCD 2016a). In the Eight-Hour Ozone Attainment Plan, SDAPCD relies on the Regional Air Quality Strategy (RAQS) to demonstrate how the region will comply with the federal $O_3$ standard. The RAQS details how the region will manage and reduce $O_3$ precursors ($NO_x$ and VOCs) by identifying measures and regulations intended to reduce these pollutants. The control measures identified in the RAQS generally focus on stationary sources; however, the emissions inventories and projections in the RAQS address all potential sources, including those under the authority of CARB and EPA.

Incentive programs for reduction of emissions from heavy-duty diesel vehicles, off-road equipment, and school buses are also established in the RAQS.

Currently, the County is designated as moderate nonattainment for the 2008 NAAQS and maintenance for the 1997 NAAQS. As documented in the 2016 8-Hour Ozone Attainment Plan for San Diego County, the County has a likely chance of obtaining attainment due to the transition to low emissions cars, stricter new source review rules, and continuing the requirement of general conformity for military growth and the San Diego International Airport. The County will also continue emissions control measures, including ongoing implementation of existing regulations in ozone precursor reduction to stationary and area-wide sources, subsequent inspections of facilities and sources, and adoption of laws requiring Best Available Retrofit Control Technology for control of emissions (SDAPCD 2016a).

***State Attainment Plans***

SDAPCD and the San Diego Association of Governments (SANDAG) are responsible for developing and implementing a clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The RAQS for the SDAB was initially adopted in 1991 and is updated on a triennial basis, most recently in 2016 (SDAPCD 2016b). The RAQS outlines SDAPCD's plans and control measures designed to attain the state air quality standards for $O_3$. The RAQS relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the County and the cities in the County, to forecast future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. CARB mobile source emission projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by the County and the cities in the County as part of development of their general plans (SANDAG 2017a, 2017b).

In December 2016, the SDAPCD adopted the revised RAQS for the County. Since 2007, the San Diego region reduced daily VOC emissions and $NO_x$ emissions by 3.9% and 7.0% respectively; the SDAPCD expects to continue reductions through 2035 (SDAPCD 2016b). These reductions were achieved through implementation of six VOC control measures and three $NO_x$ control measures adopted in the SDAPCD's 2009 RAQS (SDAPCD 2009a); in addition, the SDAPCD is considering additional measures, including three VOC measures and four control measures to reduce 0.3 daily tons of VOC and 1.2 daily tons of $NO_x$, provided the control measures are found to be feasible region-wide. In addition, SDAPCD has implemented nine incentive-based programs, has worked with SANDAG to implement regional transportation control measures, and has reaffirmed the state emissions offset repeal.

In regards to particulate matter emissions reduction efforts, in December 2005, the SDAPCD prepared a report titled "Measures to Reduce Particulate Matter in San Diego County" to address implementation of Senate Bill 656 in San Diego County (Senate Bill 656 required additional controls to reduce ambient concentrations of $PM_{10}$ and $PM_{2.5}$) (SDAPCD 2005). In the report, SDAPCD evaluated implementation of source-control measures that would reduce particulate matter emissions associated with residential wood combustion; various construction activities including earthmoving, demolition, and grading; bulk material storage and handling; carryout and trackout removal and cleanup methods; inactive disturbed land; disturbed open areas; unpaved parking lots/staging areas; unpaved roads; and windblown dust (SDAPCD 2005).

***SDAPCD Rules and Regulations***

SDAPCD is responsible for planning, implementing, and enforcing federal and state ambient standards in the SDAB. The following rules and regulations apply to all sources in the jurisdiction of SDAPCD, and would apply to the Proposed Project:

**SDAPCD Regulation II: Permits; Rule 20.2: New Source Review Non-Major Stationary Sources**. Requires new or modified stationary source units (that are not major stationary sources) with the potential to emit 10 pounds per day or more of VOC, $NO_x$, $SO_x$, or $PM_{10}$ to be equipped with BACT. For those units with a potential to emit above Air Quality Impact Assessments Trigger Levels, the units must demonstrate that such emissions would not violate or interfere with the attainment of any national air quality standard (SDAPCD 2016b).

The Proposed Project would include one diesel emergency generator, a 1.5 MW generator at the substation, which would be subject to Rule 20.2 and would require appropriate operating permits from the SDAPCD. Because the SDAPCD has not adopted specific criteria air pollutant thresholds for analyses under CEQA, the thresholds identified in Rule 20.2 are used in this analysis as screening-level thresholds to evaluate project-level impacts, as discussed in Section 3.1, Thresholds of Significance.

**SDAPCD Regulation IV: Prohibitions; Rule 50: Visible Emissions.** Prohibits discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than 3 minutes in any period of 60 consecutive minutes that is darker in shade than that designated as Number 1 on the Ringelmann Chart, as published by the United States Bureau of Mines, or of such opacity as to obscure an observer's view to a degree greater than does smoke of a shade designated as Number 1 on the Ringelmann Chart (SDAPCD 1997).

Construction of the Proposed Project may result in visible emissions, primarily during earth-disturbing activities, which would be subject to SDAPCD Rule 50. Although visible emissions are

less likely to occur during operation of the Proposed Project, compliance with SDAPCD Rule 50 would be required during both construction and operational phases.

**SDAPCD Regulation IV: Prohibitions; Rule 51: Nuisance.** Prohibits the discharge, from any source, of such quantities of air contaminants or other materials that cause or have a tendency to cause injury, detriment, nuisance, annoyance to people and/or the public, or damage to any business or property (SDAPCD 1969).

Any criteria air pollutant emissions, TAC emissions, or odors that would be generated during construction or operation of the Proposed Project would be subject to SDAPCD Rule 51. Violations can be reported to the SDAPCD in the form of an air quality compliant by telephone, email, or online form. Complaints are investigated by SDAPCD as soon as possible.

**SDAPCD Regulation IV: Prohibitions; Rule 55: Fugitive Dust.** Regulates fugitive dust emissions from any commercial construction or demolition activity capable of generating fugitive dust emissions, including active operations, open storage piles, and inactive disturbed areas, as well as track-out and carry-out onto paved roads beyond a Project site (SDAPCD 2009b).

Construction of the Proposed Project, primarily during earth-disturbing activities, may result in fugitive dust emissions that would be subject to SDAPCD Rule 55.

**SDAPCD Regulation IV: Prohibitions; Rule 67.0.1: Architectural Coatings.** Requires manufacturers, distributors, and end users of architectural and industrial maintenance coatings to reduce VOC emissions from the use of these coatings, primarily by placing limits on the VOC content of various coating categories (SDAPCD 2015a). Construction and operation of the Proposed Project would include application of architectural coatings (e.g., paint and other finishes) that are subject to SDAPCD Rule 67.0.1. Architectural coatings used in the reapplication of coatings during operation of the Proposed Project would be subject to the VOC content limits identified in SDAPCD Rule 67.0.1, which applies to coatings manufactured, sold, or distributed within San Diego County.[3]

**SDAPCD Regulation XII: Toxic Air Contaminates; Rule 1200: Toxic Air Contaminants – New Source Review**. Requires new or modified stationary source units with the potential to emit TACs above rule threshold levels to either demonstrate that they will not increase the maximum incremental cancer risk above 1 in 1 million at every receptor location, or demonstrate that toxics best available control technology (T-BACT) will be employed if maximum incremental cancer risk is equal to or less than 10 in 1 million, or demonstrate compliance with SDAPCD's protocol

[3] Specific assumptions included in CalEEMod in compliance with Rule 67.0.1 are included in Appendix A.

for those sources with an increase in maximum incremental cancer risk at any receptor location of greater than 10 in 1 million but less than 100 in 1 million (SDAPCD 2017b).

The Proposed Project's emergency generators would be subject to SDAPCD Rule 1200, and would be subject to New Source Review requirements.

**SDAPCD Regulation XII: Toxic Air Contaminates; Rule 1210: Toxic Air Contaminant Public Health Risks – Public Notification and Risk Reduction**. Requires each stationary source that is required to prepare a public risk assessment to provide written public notice of risks at or above the following levels: maximum incremental cancer risks equal to or greater than 10 in 1 million, or cancer burden equal to or greater than 1.0, or total acute noncancer health hazard index equal to or greater than 1.0, or total chronic noncancer health hazard index equal to or greater than 1.0 (SDAPCD 2017c).

The Proposed Project's emergency generators would be subject to SDAPCD Rule 1210, and would be subject to public notification and risk reduction requirements. The thresholds identified in Rule 1210 were used in this analysis as thresholds for the Health Risk Assessment, which is consistent with the SDAPCD Health Risk Assessment guidelines (SDAPCD 2015b).

**San Diego Association of Governments**

SANDAG is the regional planning agency for the County and serves as a forum for regional issues relating to transportation, the economy, community development, and the environment. SANDAG serves as the federally designated metropolitan planning organization for the County. With respect to air quality planning and other regional issues, SANDAG prepared its San Diego Forward: The Regional Plan (Regional Plan) for the San Diego region (SANDAG 2015). The Regional Plan combines the big-picture vision for how the region will grow over the next 35 years with an implementation program to help make that vision a reality. The Regional Plan, including its Sustainable Communities Strategy, is built on an integrated set of public policies, strategies, and investments to maintain, manage, and improve the transportation system so that it meets the diverse needs of the San Diego region through 2050 (SANDAG 2015).

The Regional Plan sets the policy context for how SANDAG participates in and responds to the SDAPCD's air quality plans, and builds off the SDAPCD's air quality plan processes that are designed to meet health-based criteria pollutant standards (SANDAG 2015). The Regional Plan complements air quality plans by providing guidance and incentives for public agencies to consider best practices that support technology-based control measures in air quality plans. The Regional Plan also emphasizes the need for better coordination of land use and transportation planning, which heavily influences the emissions inventory from the transportation sectors of the economy.

This also minimizes land use conflicts, such as residential development near freeways, industrial areas, or other sources of air pollution (SANDAG 2015).

On September 23, 2016, SANDAG's Board of Directors adopted the final 2016 Regional Transportation Improvement Program (RTIP). The 2016 RTIP is a multi-billion dollar, multi-year program of proposed major transportation projects in the San Diego region. Transportation projects funded with federal, state, and TransNet (the San Diego transportation sales tax program) must be included in an approved RTIP. The programming of locally funded projects also may be programmed at the discretion of SANDAG. The 2016 RTIP covers 5 fiscal years and incrementally implements the Regional Plan (SANDAG 2016).

**San Diego County**

**County Code Section 87.428, Dust Control Measures.** As part of the San Diego County Grading, Clearing, and Watercourses Ordinance, County Code Section 87.428 requires all clearing and grading to be carried out with dust control measures adequate to prevent creation of a nuisance to people or public or private property. Clearing, grading, or improvement plans must require that measures be undertaken to achieve this result, including watering, application of surfactants,[4] shrouding, control of vehicle speeds, paving access areas, or implementing other operational or technological measures to reduce dispersion of dust. These design measures are to be incorporated into all earth-disturbing activities to minimize the amount of particulate matter emissions from construction (County of San Diego 2004).

**County Zoning Ordinance Section 6318.** Section 6318 of the San Diego County Zoning Ordinance requires that all commercial and industrial uses be operated so as not to emit matter causing unpleasant odors that are perceptible by the average person at or beyond any lot line of the lot containing said uses. Section 6318 goes on to further provide specific dilution standards that must be met "at or beyond any lot line of the lot containing the uses" (County of San Diego 1979).

## 2.4 Background Air Quality

### 2.4.1 Pollutants and Effects

**Criteria Air Pollutants**

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. The federal and state standards have been set, with an adequate margin of safety, at levels

[4] Surfactants are compounds that lower surface tension between liquids or between a solid and a liquid, such as a detergent.

above which concentrations could be harmful to human health and welfare. These standards are designed to protect the most sensitive persons from illness or discomfort. Pollutants of concern include $O_3$, $NO_2$, CO, $SO_2$, $PM_{10}$, $PM_{2.5}$, and lead. These pollutants are discussed below.[5] In California, sulfates, vinyl chloride, hydrogen sulfide, and visibility-reducing particles are also regulated as criteria air pollutants.

**Ozone ($O_3$).** $O_3$ is a strong-smelling, pale blue, reactive, toxic chemical gas consisting of three oxygen atoms. It is a secondary pollutant formed in the atmosphere by a photochemical process involving the sun's energy and $O_3$ precursors. These precursors are mainly $NO_x$ and VOCs. The maximum effects of precursor emissions on $O_3$ concentrations usually occur several hours after they are emitted and many miles from the source. Meteorology and terrain play major roles in $O_3$ formation, and ideal conditions occur during summer and early autumn on days with low wind speeds or stagnant air, warm temperatures, and cloudless skies. $O_3$ exists in the upper atmosphere $O_3$ layer (stratospheric ozone) and at the Earth's surface in the troposphere (ozone).[6] The $O_3$ that EPA and CARB regulate as a criteria air pollutant is produced close to the ground, where people live, exercise, and breathe. Ground-level $O_3$ is a harmful air pollutant that causes numerous adverse health effects and is thus considered "bad" $O_3$. Stratospheric, or "good," $O_3$ occurs naturally in the upper atmosphere, where it reduces the amount of ultraviolet light (i.e., solar radiation) entering the Earth's atmosphere. Without the protection of the beneficial stratospheric $O_3$ layer, plant and animal life would be seriously harmed.

$O_3$ in the troposphere causes numerous adverse health effects; short-term exposures (lasting for a few hours) to $O_3$ at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes (EPA 2013). These health problems are particularly acute in sensitive receptors such as the sick, older adults, and young children.

**Nitrogen Dioxide ($NO_2$).** $NO_2$ is a brownish, highly reactive gas that is present in all urban atmospheres. The major mechanism for the formation of $NO_2$ in the atmosphere is the oxidation of the primary air pollutant nitric oxide, which is a colorless, odorless gas. $NO_x$ plays a major role, together with VOCs, in the atmospheric reactions that produce $O_3$. $NO_x$ is formed from fuel combustion under high temperature or pressure. In addition, $NO_x$ is an important precursor to acid rain and may affect both terrestrial and aquatic ecosystems. The two major emissions sources are transportation and stationary fuel combustion sources such as electric utility and industrial boilers.

[5] The descriptions of health effects herein for each of the criteria air pollutants associated with Proposed Project construction and operation are based on EPA's Six Common Air Pollutants (EPA 2017b) and CARB's Glossary of Air Pollutant Terms (CARB 2017).

[6] The troposphere is the layer of the Earth's atmosphere nearest to the surface of the Earth. The troposphere extends outward approximately 5 miles at the poles and approximately 10 miles at the equator.

$NO_2$ can irritate the lungs, cause bronchitis and pneumonia, and lower resistance to respiratory infections (EPA 2016a).

**Carbon Monoxide (CO).** CO is a colorless, odorless gas formed by the incomplete combustion of hydrocarbon, or fossil fuels. CO is emitted almost exclusively from motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains. In urban areas, automobile exhaust accounts for the majority of CO emissions. CO is a non-reactive air pollutant that dissipates relatively quickly; therefore, ambient CO concentrations generally follow the spatial and temporal distributions of vehicular traffic. CO concentrations are influenced by local meteorological conditions—primarily wind speed, topography, and atmospheric stability. CO from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions are combined with calm atmospheric conditions, which is a typical situation at dusk in urban areas November through February. The highest levels of CO typically occur during the colder months of the year, when inversion conditions are more frequent.

When inhaled, CO replaces oxygen that is normally carried in the red blood cells, reducing the blood's ability to transport oxygen to vital organs. The results of excess CO exposure can include dizziness, fatigue, and impairment of central nervous system functions.

**Sulfur Dioxide ($SO_2$).** $SO_2$ is a colorless, pungent gas formed primarily from incomplete combustion of sulfur-containing fossil fuels. The main sources of $SO_2$ are coal and oil used in power plants and industries; as such, the highest levels of $SO_2$ are generally found near large industrial complexes. In recent years, $SO_2$ concentrations have been reduced by the increasingly stringent controls placed on stationary-source emissions of $SO_2$ and limits on the sulfur content of fuels.

$SO_2$ is an irritant gas that attacks the throat and lungs and can cause acute respiratory symptoms and diminished ventilator function in children. When combined with particulate matter, $SO_2$ can exacerbate lung tissue damage and reduce visibility and the level of sunlight. $SO_2$ can also yellow plant leaves and erode iron and steel.

**Particulate Matter (PM).** Particulate matter pollution consists of very small liquid and solid particles floating in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter can form when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. Coarse particulate matter ($PM_{10}$) consists of particulate matter that is 10 microns or less in diameter and is about 1/7 the thickness of a human hair. Major sources of $PM_{10}$ include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. Fine particulate matter ($PM_{2.5}$) consists of particulate matter that is 2.5 microns or less in diameter and is roughly 1/28 the diameter of a human hair.

$PM_{2.5}$ results from fuel combustion (e.g., from motor vehicles and power generation and industrial facilities), residential fireplaces, and woodstoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as $SO_x$, $NO_x$, and VOCs.

$PM_{10}$ and $PM_{2.5}$ pose a greater health risk than larger-size particles. When inhaled, these tiny particles can penetrate the human respiratory system's natural defenses and damage the respiratory tract. $PM_{10}$ and $PM_{2.5}$ can increase the number and severity of asthma attacks, cause or aggravate bronchitis and other lung diseases, and reduce the body's ability to fight infections. Very small particles of substances such as lead, sulfates, and nitrates can cause lung damage directly or be absorbed into the blood stream, causing damage elsewhere in the body. Additionally, these substances can transport adsorbed gases such as chlorides or ammonium into the lungs, also causing injury. Whereas $PM_{10}$ tends to collect in the upper portion of the respiratory system, $PM_{2.5}$ is so tiny that it can penetrate deeper into the lungs and damage lung tissue. Suspended particulates also damage and discolor surfaces where they settle, and produce haze and reduce regional visibility.

People with influenza, people with chronic respiratory and cardiovascular diseases, and older adults may suffer worsening illness and premature death as a result of breathing particulate matter. People with bronchitis can expect aggravated symptoms from breathing particulate matter. Children may experience a decline in lung function due to breathing in $PM_{10}$ and $PM_{2.5}$ (EPA 2009).

**Lead.** Lead in the atmosphere occurs as particulate matter. Sources of lead include leaded gasoline; the manufacturing of batteries, paints, ink, ceramics, and ammunition; and secondary lead smelters. Prior to 1978, mobile emissions were the primary source of atmospheric lead. Between 1978 and 1987, the phaseout of leaded gasoline reduced the overall inventory of airborne lead by nearly 95%. With the phaseout of leaded gasoline, secondary lead smelters, battery recycling, and manufacturing facilities are becoming lead-emissions sources of greater concern.

Prolonged exposure to atmospheric lead poses a serious threat to human health. Health effects associated with exposure to lead include gastrointestinal disturbances, anemia, kidney disease, and in severe cases, neuromuscular and neurological dysfunction. Of particular concern are low-level lead exposures during infancy and childhood. Such exposures are associated with decrements in neurobehavioral performance, including intelligence quotient performance, psychomotor performance, reaction time, and growth. Children are highly susceptible to the effects of lead.

**Volatile Organic Compounds (VOCs).** Hydrocarbons are organic gases that are formed from hydrogen and carbon and sometimes other elements. Hydrocarbons that contribute to formation of $O_3$ are referred to and regulated as VOCs (also referred to as reactive organic gases). Combustion engine exhaust, oil refineries, and fossil-fueled power plants are the main sources of hydrocarbons. Other sources of hydrocarbons include evaporation from petroleum fuels, solvents, dry cleaning solutions, and paint.

The primary health effects of VOCs result from the formation of $O_3$ and its related health effects. High levels of VOCs in the atmosphere can interfere with oxygen intake by reducing the amount of available oxygen through displacement. Carcinogenic forms of hydrocarbons, such as benzene, are considered TACs. There are no separate health standards for VOCs as a group.

**Non-Criteria Pollutants**

**Toxic Air Contaminants (TACs).** A substance is considered toxic if it has the potential to cause adverse health effects in humans, including increasing the risk of cancer upon exposure, or acute and/or chronic noncancer health effects. A toxic substance released into the air is considered a TAC. TACs are identified by federal and state agencies based on a review of available scientific evidence. In California, TACs are identified through a two-step process that was established in 1983 under the Toxic Air Contaminant Identification and Control Act. This two-step process of risk identification and risk management and reduction was designed to protect residents from the health effects of toxic substances in the air. In addition, the California Air Toxics "Hot Spots" Information and Assessment Act, AB 2588, was enacted by the legislature in 1987 to address public concern over the release of TACs into the atmosphere. The law requires facilities emitting toxic substances to provide local air pollution control districts with information that will allow an assessment of the air toxics problem, identification of air toxics emissions sources, location of resulting hotspots, notification of the public exposed to significant risk, and development of effective strategies to reduce potential risks to the public over 5 years.

Examples of TACs include certain aromatic and chlorinated hydrocarbons, certain metals, and asbestos. TACs are generated by a number of sources, including stationary sources, such as dry cleaners, gas stations, combustion sources, and laboratories; mobile sources, such as automobiles; and area sources, such as landfills. Adverse health effects associated with exposure to TACs may include carcinogenic (i.e., cancer-causing) and noncarcinogenic effects. Noncarcinogenic effects typically affect one or more target organ systems and may be experienced on either short-term (acute) or long-term (chronic) exposure to a given TAC.

**Diesel Particulate Matter (DPM).** DPM is part of a complex mixture that makes up diesel exhaust. Diesel exhaust is composed of two phases, gas and particle, both of which contribute to health risks. More than 90% of DPM is less than 1 micrometer in diameter (approximately 1/70th the diameter of a human hair), and is a subset of $PM_{2.5}$ (CARB 2016a). DPM is typically composed of carbon particles ("soot," also called black carbon) and numerous organic compounds, including more than 40 known cancer-causing organic substances. Examples of these chemicals include polycyclic aromatic hydrocarbons, benzene, formaldehyde, acetaldehyde, acrolein, and 1,3-butadiene (CARB 2016a). CARB classified "particulate emissions from diesel-fueled engines" (i.e., DPM) as a TAC in August 1998 (17 CCR 93000). DPM is emitted from a broad range of diesel engines: on-road diesel engines of trucks, buses, and cars, and off-road diesel engines

including locomotives, marine vessels, and heavy-duty construction equipment, among others. Approximately 70% of all airborne cancer risk in California is associated with DPM (CARB 2000). To reduce the cancer risk associated with DPM, CARB adopted a Diesel Risk Reduction Plan in 2000 (CARB 2000). Because it is part of $PM_{2.5}$, DPM also contributes to the same non-cancer health effects as $PM_{2.5}$ exposure. These effects include premature death; hospitalizations and emergency department visits for exacerbated chronic heart and lung disease, including asthma; increased respiratory symptoms; and decreased lung function in children. Several studies suggest that exposure to DPM may also facilitate development of new allergies (CARB 2016a). Those most vulnerable to non-cancer health effects are children whose lungs are still developing and older adults who have chronic health problems.

**Odorous Compounds.** Odors are generally regarded as an annoyance rather than a health hazard. Manifestations of a person's reaction to odors can range from psychological (e.g., irritation, anger, or anxiety) to physiological (e.g., circulatory and respiratory effects, nausea, vomiting, and headache). The ability to detect odors varies considerably among the population and is quite subjective, since people may have different reactions to the same odor. An odor that is offensive to one person may be perfectly acceptable to another (e.g., coffee roaster). An unfamiliar odor is more easily detected and is more likely to cause complaints than a familiar one. Known as odor fatigue, a person can become desensitized to almost any odor, and recognition may only occur with an alteration in the intensity. The occurrence and severity of odor impacts depend on the nature, frequency, and intensity of the source; wind speed and direction; and the sensitivity of receptors.

**Valley Fever.** Coccidioidomycosis, more commonly known as "Valley Fever," is an infection caused by inhalation of the spores of the *Coccidioides immitis* fungus, which grows in the soils of the southwestern United States. When fungal spores are present, any activity that disturbs the soil, such as digging, grading, or other earth-moving operations, can cause the spores to become airborne and thereby increase the risk of exposure. The ecologic factors that appear to be most conducive to survival and replication of the spores are high summer temperatures, mild winters, sparse rainfall, and alkaline sandy soils.

Valley Fever is not considered highly endemic to San Diego. Per the San Diego County Health and Human Services Agency, the 10-year average (2008–2017) for Coccidioidomycosis cases in San Diego County is 4.5 cases per 100,000 people per year. The Project site is wholly contained within the 91934 zip code. For the 91934 zip code, there were no cases of Coccidioidomycosis between 2008 and 2017 (Nelson 2018). Statewide incidences in 2016 were 13.7 per 100,000 people (CDPH 2016).

Even if present at a site, earth-moving activities may not result in increased incidence of Valley Fever. Propagation of *Coccidioides immitis* is dependent on climatic conditions, with the potential for growth and surface exposure highest following early seasonal rains and long dry spells.

*Coccidioides immitis* spores can be released when filaments are disturbed by earth-moving activities, although receptors must be exposed to and inhale the spores to be at increased risk of developing Valley Fever. Moreover, exposure to *Coccidioides immitis* does not guarantee that an individual will become ill—approximately 60% of people exposed to the fungal spores are asymptomatic and show no signs of an infection (USGS 2000).

### 2.4.2 San Diego Air Basin Attainment Designation

Pursuant to the 1990 CAA amendments, the EPA classifies air basins (or portions thereof) as "attainment" or "nonattainment" for each criteria air pollutant, based on whether the NAAQS have been achieved. Generally, if the recorded concentrations of a pollutant are lower than the standard, the area is classified as "attainment" for that pollutant. If an area exceeds the standard, the area is classified as "nonattainment" for that pollutant. As previously discussed, these standards are set by EPA or CARB for the maximum level of a given air pollutant that can exist in the outdoor air without unacceptable effects on human health or the public welfare. If there is not enough data available to determine whether the standard is exceeded in an area, the area is designated as "unclassified" or "unclassifiable." The designation of "unclassifiable/attainment" means that the area meets the standard or is expected to be meet the standard despite a lack of monitoring data. Areas that achieve the standards after a nonattainment designation are redesignated as maintenance areas and must have approved maintenance plans to ensure continued attainment of the standards. The California Clean Air Act, like its federal counterpart, called for the designation of areas as "attainment" or "nonattainment," but based on CAAQS rather than NAAQS. The attainment classifications for the criteria pollutants are listed in Table 2.

**Table 2**
**San Diego Air Basin Attainment Classification**

| Pollutant | Federal Designation | State Designation |
|---|---|---|
| $O_3$ (1-hour) | Attainment[a] | **Nonattainment** |
| $O_3$ (8-hour – 1997)<br>(8-hour – 2008) | Attainment (Maintenance)<br>**Nonattainment (Moderate)** | **Nonattainment** |
| $NO_2$ | Unclassifiable/Attainment | Attainment |
| CO | Attainment (Maintenance) | Attainment |
| $SO_2$ | Unclassifiable/Attainment | Attainment |
| $PM_{10}$ | Unclassifiable/Attainment | **Nonattainment** |
| $PM_{2.5}$ | Unclassifiable/Attainment | **Nonattainment** |
| Lead | Unclassifiable/Attainment | Attainment |
| Sulfates | No federal standard | Attainment |
| Hydrogen sulfide | No federal standard | Unclassified |
| Visibility-reducing particles | No federal standard | Unclassified |
| Vinyl chloride | No federal standard | No designation |

**Sources:** EPA 2016b (federal); CARB 2016b (state).

**Notes:**
Bold text = not in attainment; Attainment = meets the standards; Attainment (Maintenance) = achieve the standards after a nonattainment designation; Nonattainment = does not meet the standards; Unclassified or Unclassifiable = insufficient data to classify; Unclassifiable/Attainment = meets the standard or is expected to be meet the standard despite a lack of monitoring data.

[a] The federal 1-hour standard of 0.12 parts per million was in effect from 1979 through June 15, 2005. The revoked standard is referenced here because it was employed for such a long period and because this benchmark is addressed in SIPs.

The SDAB is designated as an attainment area for the 1997 8-hour $O_3$ NAAQS and as a nonattainment area for the 2008 8-hour $O_3$ NAAQS. The SDAB is designated as a nonattainment area for $O_3$, $PM_{10}$, and $PM_{2.5}$ CAAQS. The portion of the SDAB where the Project site is located is designated as attainment or unclassifiable/unclassified for all other criteria pollutants under the NAAQS and CAAQS.

### 2.4.3 Air Quality Monitoring Data

The SDAPCD operates a network of 11 ambient air monitoring stations throughout the County that measure ambient concentrations of pollutants and determine whether the ambient air quality meets the CAAQS and NAAQS. Due to its proximity to the Project site, similar geographic and climactic characteristics, and available measured ambient concentrations of pollutants, the Otay Mesa-Donovan monitoring station, located approximately 44 miles from the Project site, monitors concentrations for pollutants, and is considered most representative of the Project site. Pollutant concentrations of CO, $SO_2$, and $PM_{2.5}$ are not measured at the Otay Mesa-Donovan station, therefore, those measurements from the nearest monitoring station which includes those pollutants, the El Cajon Floyd Smith Drive monitoring station located approximately 48 miles from the Project site (CO and $SO_2$) and the Chula Vista monitoring station located approximately 50 miles west of the Project site, is presented below. Ambient concentrations of pollutants from 2016 through 2018 are presented in Table 3, Local Ambient Air Quality Data. The number of days exceeding the NAAQS and CAAQS is also shown in Table 3.

**Table 3**
**Local Ambient Air Quality Data**

| Monitoring Station | Unit | Averaging Time | Agency/ Method | Ambient Air Quality Standard | Measured Concentration by Year | | | Exceedances by Year | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | *2016* | *2017* | *2018* | *2016* | *2017* | *2018* |
| *Ozone ($O_3$)* | | | | | | | | | | |
| Otay Mesa-Donovan | ppm | Maximum 1-hour concentration | State | 0.09 | 0.092 | 0.097 | 0.092 | 0 | 1 | 0 |
| | ppm | Maximum 8-hour concentration | State | 0.070 | 0.075 | 0.082 | 0.079 | 4 | 6 | 1 |
| | | | Federal | 0.070 | 0.075 | 0.082 | 0.078 | 4 | 6 | 1 |
| *Nitrogen Dioxide ($NO_2$)* | | | | | | | | | | |
| | ppm | | State | 0.18 | 0.067 | 0.074 | 0.054 | 0 | 0 | 0 |

## Table 3
## Local Ambient Air Quality Data

| Monitoring Station | Unit | Averaging Time | Agency/ Method | Ambient Air Quality Standard | Measured Concentration by Year | | | Exceedances by Year | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | *2016* | *2017* | *2018* | *2016* | *2017* | *2018* |
| Otay Mesa-Donovan | | Maximum 1-hour concentration | Federal | 0.100 | 0.067 | 0.074 | 0.054 | 0 | 0 | 0 |
| | ppm | Annual concentration | State | 0.030 | 0.008 | 0.008 | 0.006 | 0 | 0 | 0 |
| | | | Federal | 0.053 | 0.008 | 0.008 | 0.006 | 0 | 0 | 0 |
| *Carbon Monoxide (CO)* | | | | | | | | | | |
| El Cajon-First Street | ppm | Maximum 1-hour concentration | State | 20 | 1.6 | 1.5 | 1.4 | 0 | 0 | 0 |
| | | | Federal | 35 | 1.6 | 1.5 | 1.4 | 0 | 0 | 0 |
| | ppm | Maximum 8-hour concentration | State | 9.0 | 1.3 | 1.4 | 1.1 | 0 | 0 | 0 |
| | | | Federal | 9 | 1.3 | 1.4 | 1.1 | 0 | 0 | 0 |
| *Sulfur Dioxide ($SO_2$)* | | | | | | | | | | |
| El Cajon-First Street | ppm | Maximum 1-hour concentration | Federal | 0.075 | 0.0006 | 0.001 | 0.004 | 0 | 0 | 0 |
| | ppm | Maximum 24-hour concentration | Federal | 0.140 | 0.0002 | 0.0004 | 0.0004 | 0 | 0 | 0 |
| | ppm | Annual concentration | Federal | 0.030 | 0.0001 | 0.0011 | 0.0001 | 0 | 0 | 0 |
| *Coarse Particulate Matter ($PM_{10}$)[a]* | | | | | | | | | | |
| Otay Mesa-Donovan | µg/m³ | Maximum 24-hour concentration | State | 50 | 79 | 69 | 55 | 54.1 (9) | 24.4 (4) | 18.3 (3) |
| | | | Federal | 150 | 79 | 68 | 55 | 0 | 0 | 0 |
| | µg/m³ | Annual concentration | State | 20 | 31.3 | 26.9 | 26.3 | — | — | — |
| *Fine Particulate Matter ($PM_{2.5}$)[a]* | | | | | | | | | | |
| Chula Vista-80 E J. St. | µg/m³ | Maximum 24-hour concentration | Federal | 35 | 23.9 | 42.7 | 41.9 | 0.0 (0) | — (1) | 2.7 (1) |
| | µg/m³ | Annual concentration | State | 12 | 8.7 | — | 10.0 | — | — | — |
| | | | Federal | 12.0 | 8.7 | — | 10.0 | — | — | — |

**Sources:** CARB 2020; EPA 2020.

**Notes:** — = not available or applicable; µg/m³ = micrograms per cubic meter; ppm = parts per million

Data taken from CARB iADAM (http://www.arb.ca.gov/adam) and EPA AirData (http://www.epa.gov/airdata/) represent the highest concentrations experienced over a given year.

Exceedances of federal and state standards are only shown for $O_3$. All other criteria pollutants did not exceed federal or State standards during the years shown. There is no federal standard for 1-hour $O_3$, annual $PM_{10}$, or 24-hour $SO_2$, nor is there a state 24-hour standard for $PM_{2.5}$.

Otay Mesa – Donovan Correctional Facility monitoring station is located at 480 Alta Road, San Diego, California.

El Cajon-First Street monitoring station is located at 533 First Street, El Cajon, California.

Chula Vista monitoring station located at 80 E. J. Street Chula Vista, California.

[a] Measurements of $PM_{10}$ and $PM_{2.5}$ are usually collected every 6 days and every 1 to 3 days, respectively. Number of days exceeding the standards is a mathematical estimate of the number of days concentrations would have been greater than the level of the standard had each day been monitored. The numbers in parentheses are the measured number of samples that exceeded the standard.

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# 3 SIGNIFICANCE CRITERIA AND ANALYSIS METHODOLOGIES

## 3.1 Thresholds of Significance

California has developed guidelines to address the significance of air quality impacts that are contained in Appendix G of the CEQA Guidelines. Based on those guidelines, a project would have a significant environmental impact if it would:

1. Conflict with or obstruct the implementation of the applicable air quality plan;
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in nonattainment under an applicable federal or state ambient air quality standard;
3. Expose sensitive receptors to substantial pollutant concentrations; or
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The Proposed Project is a solar energy generation and storage facility, which includes a switchyard that would be transferred to San Diego Gas & Electric (SDG&E) after construction. For the purposes of this analysis, the switchyard (as described in Chapter 1 of this EIR) is a component of the Proposed Project and has been analyzed as part of the whole of the action. However, the EIR highlights the specific analysis of the switchyard under each threshold of significance in the event that responsible agencies have CEQA obligations related to the switchyard. Direct, indirect, and cumulative impacts pertaining to air quality are evaluated based on specified thresholds identified in the CEQA Guidelines, Appendix G, the County of San Diego's Guidelines for Determining Significance, and SDAPCD thresholds.

The County's Guidelines for Determining Significance are generally intended to address the questions posed in Appendix G of the CEQA Guidelines. In 2018, the CEQA Guidelines were updated and several of the questions listed in Appendix G were revised, deleted or modified. The County's Guidelines for Determining Significance have yet to be updated to address these amendments. Accordingly, this EIR analyzes the impacts from the Proposed Project using the County's Guidelines for Determining Significance and the questions posed in Appendix G. Where the questions in Appendix G have not been revised, only the County's Guidelines for Determining Significance are identified and analyzed. Where the questions in Appendix G have been significantly altered or additional questions have been posed, the Proposed Project's impacts are analyzed as against the questions in Appendix G and, to the extent they remain consistent with Appendix G, the County's Guidelines for Determining Significance.

The following significance thresholds for air quality are based on criteria provided in the County's Guidelines for Determining Significance and Report Format and Content Requirements – Air

Quality (County of San Diego 2007). The County's guidelines were adapted from Appendix G of the CEQA Guidelines listed above.

A significant impact would result if any of the following would occur:

- The project would conflict with or obstruct the implementation of the SDAPCD's RAQS and/or applicable portions of the SIP.
- The project would result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation:
    - The project would result in emissions that exceed 250 pounds per day of $NO_x$ or 75 pounds per day of VOCs;
    - The project would result in emissions of CO that, when totaled with the ambient concentration, would exceed a 1-hour concentration of 20 parts per million (ppm) or an 8-hour average of 9 ppm;
    - The project would result in emissions of $PM_{2.5}$ that exceed 55 pounds per day;
    - The project would result in emissions of $PM_{10}$ that exceed 100 pounds per day and increase the ambient $PM_{10}$ concentrations by 5 micrograms per cubic meter ($\mu g/m^3$) or greater at the maximum exposed individual.
- The project would result in a cumulatively considerable net increase of any criteria pollutant for which the SDAB is in nonattainment under an applicable federal or state Ambient Air Quality Standard.
    - The following guidelines for determining significance must be used for determining whether the net increase during the construction phase is cumulatively considerable:
        - A project that has a significant direct impact on air quality with regard to construction-related emissions of $PM_{10}$, $PM_{2.5}$, $NO_x$, and/or VOCs would also have a significant cumulatively considerable net increase;
        - In the event direct impacts from a proposed project are less than significant, a project may still have a cumulatively considerable impact on air quality if the construction-related emissions of concern from a proposed project, in combination with the emissions of concern from other proposed projects or reasonably foreseeable future projects within a proximity relevant to the pollutants of concern, are in excess of the guidelines, including the SDAPCD's screening-level thresholds.
    - The following guidelines for determining significance must be used for determining whether the net increase during the operational phase is cumulatively considerable:

  - A project that does not conform to the SDPACD's RAQS and/or has a significant direct impact on air quality with regard to operational-related emissions of $PM_{10}$, $PM_{2.5}$, $NO_x$, and/or VOCs would also have a significant cumulatively considerable net increase;
  - Projects that cause road intersections to operate at or below level of service (LOS) E (analysis required only when the addition of peak-hour trips from a proposed project and the surrounding projects exceeds 2,000) and create a CO hotspot create a cumulatively considerable net increase of CO.
  - In the event direct impacts from a proposed project are less than significant, a project may still have a cumulatively considerable impact on air quality if the operational-related emissions of concern from a proposed project, in combination with the emissions of concern from other proposed projects or reasonably foreseeable future projects within a proximity relevant to the pollutants of concern, are in excess of the guidelines, including the SDAPCD's screening-level thresholds.
- The project would expose sensitive receptors to substantial pollutant concentrations.
- The project places sensitive receptors near CO hotspots or creates CO hotspots near sensitive receptors;
- Project implementation would result in exposure to TACs resulting in a:
  - Maximum incremental cancer risk equal to or greater than 1 in one million without application of Toxics-Best Available Control Technology (T-BACT), or
  - Maximum incremental cancer risk equal to or greater than 10 in one million with application of T-BACT, or
  - Cancer burden equal to or greater than 1.0, or
  - Total acute non-cancer health hazard index equal to or greater than 1.0, or
  - Total chronic non-cancer health hazard index equal to or greater than 1.0.
- The project, which is not an agricultural, commercial, or an industrial activity subject to SDAPCD standards, as a result of implementation, would either generate objectionable odors or place sensitive receptors next to existing objectionable odors, which would affect a considerable number of persons or the public.

As noted previously, the 2018 update to the CEQA Guidelines resulted in the consolidation of Appendix G questions related to air quality analyses. For the purposes of this analysis, and consistent with these updated CEQA Guidelines, the "Conformance to Federal and State Ambient Air Quality Standards" and "Cumulatively Considerable Net Increase of Criteria Pollutants" questions provided above are addressed as a single air quality subject issue.

As part of its air quality permitting process, the SDAPCD has established thresholds in Rule 20.2 requiring the preparation of an Air Quality Impact Assessment for permitted stationary sources. The SDAPCD sets forth quantitative emissions thresholds below which a stationary source would not have a significant impact on ambient air quality. Proposed Project air quality impacts estimated in this environmental analysis would be considered significant if any of the applicable significance thresholds presented in Table 4, SDAPCD Air Quality Significance Thresholds, are exceeded.

**Table 4**
**SDAPCD Air Quality Significance Thresholds**

| **Construction Emissions** | | | |
|---|---|---|---|
| *Pollutant* | *Total Emissions (Pounds per Day)* | | |
| Respirable Particulate Matter ($PM_{10}$) | 100 | | |
| Fine Particulate Matter ($PM_{2.5}$) | 55 | | |
| Oxides of Nitrogen ($NO_x$) | 250 | | |
| Oxides of Sulfur ($SO_x$) | 250 | | |
| Carbon Monoxide (CO) | 550 | | |
| Volatile Organic Compounds (VOC) | 75 [a] | | |
| **Operational Emissions** | | | |
| *Pollutant* | *Total Emissions* | | |
| | *Pounds per Hour* | *Pounds per Day* | *Tons per Year* |
| Respirable Particulate Matter ($PM_{10}$) | — | 100 | 15 |
| Fine Particulate Matter ($PM_{2.5}$) | — | 55 | 10 |
| Oxides of Nitrogen ($NO_x$) | 25 | 250 | 40 |
| Sulfur Oxides ($SO_x$) | 25 | 250 | 40 |
| Carbon Monoxide (CO) | 100 | 550 | 100 |
| Lead and Lead Compounds | — | 3.2 | 0.6 |
| Volatile Organic Compounds (VOCs) | — | 75[a] | 13.7 |

**Sources:** SDAPCD Rules 1501 (SDAPCD 1995) and 20.2(d)(2) (SDAPCD 2016c).

[a] VOC threshold based on the threshold of significance for VOC from the South Coast Air Quality Management District for the Coachella Valley as stated in the San Diego County Guidelines for Determining Significance.

The thresholds listed in Table 4 represent screening-level thresholds that can be used to evaluate whether Proposed Project emissions could cause a significant impact on air quality. Emissions below the screening-level thresholds would not cause a significant impact. The emissions-based thresholds for $O_3$ precursors are intended to serve as a surrogate for an "$O_3$ significance threshold" (i.e., the potential for adverse $O_3$ impacts to occur). This approach is used because $O_3$ is not emitted directly, and the effects of an individual project's emissions of $O_3$ precursors (VOC and $NO_x$) on $O_3$ levels in ambient air cannot be determined through air quality models or other quantitative methods. For nonattainment pollutants, if emissions exceed the thresholds shown in Table 4, the Proposed Project could have the potential to result in a cumulatively considerable net increase in these pollutants, and, thus, could have a significant impact on ambient air quality.

With respect to odors, SDAPCD Rule 51 (Public Nuisance) prohibits emission of any material that causes nuisance to a considerable number of people or endangers the comfort, health, or safety of any person. A project that proposes a use that would produce objectionable odors would be deemed to have a significant odor impact if it would affect a considerable number of off-site receptors.

## 3.2 Construction Emissions Methodology

The Proposed Project would include construction of access roads and installation of 300,000 PV modules, a DC underground collection system, on-site collector substation, overhead and underground transmission line, switchyard, and a battery energy storage system. The total site would include approximately 643 acres of graded area.

For purposes of estimating Proposed Project emissions, and based on information provided by the applicant, it is assumed that construction of the Proposed Project would commence in December 2020[7] and would last approximately 13 months. The analysis contained herein is based on the following subset area schedule assumptions (duration of phases is approximate). The majority of the phases listed below would occur concurrently and would not occur sequentially in isolation. Detailed construction equipment modeling assumptions are provided in Appendix A, CalEEMod Outputs.

- Site Mobilization: 2 weeks
- Demolition of dairy and ranch structures: 1 month
- Site Prep, Grading, and Stormwater Protections: 3 months
- Fence Installation: 3 months
- Landscaping Installation: 4 months
- Pile Driving: 2 months
- Tracker and Module Installation: 6 months
- DC Electrical: 6 months
- Underground Medium AC Voltage Electrical: 5 months
- Inverter Installation: 2 months
- Battery Energy Storage System Installation: 2 months
- Commissioning: 1 month

[7] The analysis assumes a construction start date of December 2020, which represents the earliest date construction would initiate. Assuming the earliest start date for construction represents the worst-case scenario for criteria air pollutant emissions because equipment and vehicle emission factors for later years would be slightly 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.

Emissions from the construction phase of the Proposed Project were estimated using CalEEMod. Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on information provided by the applicant, CalEEMod defaults, and best engineering judgement.

General construction equipment modeling assumptions are provided in Table 5, Construction Workers, Vendor Trips, and Equipment Use per Day. Default values for equipment mix, horsepower, and load factor provided in CalEEMod were used for all construction equipment. For the analysis, it was generally assumed that heavy-duty construction equipment would be operating at the site 5 days per week. For the purposes of estimating emissions, it was assumed that worker trips and truck trips would be made to the site independently; however, it is likely that workers would drive trucks to and from the site for deliveries rather than driving in a separate vehicle. Therefore, the estimates provides in Table 5 are conservative. Detailed construction equipment modeling assumptions are provided in Appendix A, CalEEMod Outputs.

**Table 5**
**Construction Workers, Vendor Trips, and Equipment Use per Day**

| | One-Way Vehicle Trips | | | Equipment | | |
|---|---|---|---|---|---|---|
| **Construction Phase** | *Average Daily Worker Trips* | *Average Daily Vendor Truck Trips* | *Total Haul Truck Trips* | *Equipment Type* | *Quantity* | *Usage Hours* |
| Site Mobilization | 10 | 20 | 0 | NA | NA | NA |
| Demolition of dairy and ranching structures | 40 | 2 | 40 | Excavators | 1 | 8 |
| | | | | Tractors/Loaders/Backhoes | 1 | 8 |
| Site Prep, Grading, Stormwater Protection | 20 | 90 | 33,000 | Graders | 2 | 8 |
| | | | | Rubber Tired Loaders | 1 | 8 |
| | | | | Scrapers | 4 | 8 |
| | | | | Tractors/Loaders/Backhoes | 1 | 8 |
| Fence Installation | 40 | 2 | 0 | Cement and Mortar Mixers | 1 | 8 |
| | | | | Skid Steer Loaders | 1 | 8 |
| Landscape Installation | 124 | 2 | 0 | Skid Steer Loaders | 1 | 8 |
| | | | | Tractors/Loaders/Backhoes | 2 | 8 |
| Pile Driving | 200 | 0 | 0 | Aerial Lifts | 2 | 8 |
| | | | | Other Construction Equipment | 6 | 8 |
| Tracker and Module Installation | 200 | 70 | 0 | Aerial Lifts | 6 | 8 |
| | | | | Off-Highway Trucks | 5 | 8 |
| DC Electrical | 400 | 0 | 0 | Aerial Lifts | 2 | 8 |
| | | | | Off-Highway Trucks | 10 | 8 |
| Underground Medium AC Voltage Electrical | 100 | 0 | 0 | Excavators | 2 | 8 |
| | | | | Rollers | 1 | 8 |
| | | | | Rubber Tired Loaders | 1 | 8 |

**Table 5**
**Construction Workers, Vendor Trips, and Equipment Use per Day**

| Construction Phase | One-Way Vehicle Trips | | | Equipment | | |
|---|---|---|---|---|---|---|
| | *Average Daily Worker Trips* | *Average Daily Vendor Truck Trips* | *Total Haul Truck Trips* | *Equipment Type* | *Quantity* | *Usage Hours* |
| Inverter Installation | 40 | 2 | 0 | Cranes | 1 | 8 |
| | | | | Forklifts | 1 | 8 |
| Battery Energy Storage Installation | 40 | 2 | 0 | Cranes | 1 | 8 |
| | | | | Forklifts | 1 | 8 |
| Commissioning | 40 | 0 | 0 | NA | NA | NA |

**Note:** See Appendix A for additional details.

The estimated number of workers (maximum 500), vendor trucks (26,200 total one-way trips), and haul trucks (30,314 total one-way trips) were provided by the applicant. Changes to any standard default values or assumptions are reported in the CalEEMod output (see Appendix A). Based on data from similar projects in the general vicinity of the Project site, the worker mix was assumed to include 50% coming from San Diego (72 miles from the Project site) and 50% from El Centro (44 miles from the Project site). Because the Proposed Project's grading would be balanced on site, the haul truck trips are only assumed to be driven within the site. The water trucks are assumed to come from the Jacumba Community Services District and the vendor trucks delivering materials to the site come from the Port of San Diego. This is a conservative assumption as the water will primarily come from on-site groundwater wells, which is a less intensive use with respect to air emissions. Earthwork would be balanced on site, however, 264,000 cubic yards of cut would be redistributed around the site. A trip length of 1/4 miles was conservatively assumed for these haul trips, which represents half the driving distance across the Project site from south to north.

### Decommissioning

As discussed in Section 1.2.1, Overview and Background, the Proposed Project would be decommissioned after the end of its expected 35-year lifetime. All above-ground and underground structures will be removed to be reused or recycled. The switchyard would not be decommissioned.

For purposes of estimating Proposed Project decommissioning emissions, and based on information provided by the applicant, it is assumed that decommissioning of the Proposed Project would commence in January 2057[8] and would last approximately 10 months. However, because

[8] The analysis assumes a construction start date of January 2057, which represents the earliest date construction would initiate. Assuming the earliest start date for construction represents the worst-case scenario for criteria air

CalEEMod relies on the CARB EMFAC 2014 it is only able to estimate mobile source emissions through 2050. Therefore, the emissions for decommissioning were estimated in year 2050. This is conservative as the emissions are likely less in 2057 as vehicles and construction equipment become more efficient. The analysis contained herein is based on the following subset area schedule assumptions (duration of phases is approximate. Detailed construction equipment modeling assumptions are provided in Appendix A, CalEEMod Outputs.

- Perimeter Fence Removal: 1.5 months
- System Disassembly and Removal: 5 months
- Energy Storage System: 2 months
- Site Cleanup and Restoration: 1 month

Emissions from the decommissioning phase of the Proposed Project were estimated using CalEEMod. Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on information provided by the applicant, CalEEMod defaults, and best engineering judgement.

General decommissioning equipment modeling assumptions are provided in Table 6, Decommissioning Workers, Vendor Trips, and Equipment Use per Day. Default values for equipment mix, horsepower, and load factor provided in CalEEMod were used for all construction equipment. For the analysis, it was generally assumed that heavy-duty equipment would be operating at the site 5 days per week. For the purposes of estimating emissions, it was assumed that worker trips and truck trips would be made to the site independently; however, it is likely that workers would drive trucks to and from the site for deliveries rather than driving in a separate vehicle. Therefore, the estimates provides in Table 6 are conservative. Detailed construction equipment modeling assumptions are provided in Appendix A.

**Table 6**
**Decommissioning Workers, Vendor Trips, and Equipment Use per Day**

| | One-Way Vehicle Trips | | | Equipment | | |
|---|---|---|---|---|---|---|
| **Construction Phase** | *Average Daily Worker Trips* | *Average Daily Vendor Truck Trips* | *Total Haul Truck Trips* | *Equipment Type* | *Quantity* | *Usage Hours* |
| Perimeter Fence Removal | 40 | 0 | 0 | Skid Steer Loaders | 1 | 8 |

pollutant emissions because equipment and vehicle emission factors for later years would be slightly 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.

**Table 6**
**Decommissioning Workers, Vendor Trips, and Equipment Use per Day**

| Construction Phase | One-Way Vehicle Trips | | | Equipment | | |
|---|---|---|---|---|---|---|
| | *Average Daily Worker Trips* | *Average Daily Vendor Truck Trips* | *Total Haul Truck Trips* | *Equipment Type* | *Quantity* | *Usage Hours* |
| System Disassembly and Removal | 700 | 70 | 0 | Cranes | 1 | 8 |
| | | | | Generator Sets | 2 | 8 |
| | | | | Off-Highway Trucks | 20 | 8 |
| | | | | Other Construction Equipment | 4 | 8 |
| | | | | Rough Terrain Forklifts | 8 | 8 |
| Energy Storage System | 300 | 70 | 0 | Cranes | 1 | 8 |
| | | | | Graders | 1 | 8 |
| | | | | Rough Terrain Forklifts | 1 | 8 |
| Site Cleanup and Restoration | 40 | 0 | 0 | Graders | 1 | 8 |
| | | | | Skid Steer Loaders | 1 | 8 |
| | | | | Scrapers | 2 | 8 |

**Note:** See Appendix A for additional details.

The estimated number of workers and vendor trucks were provided by the applicant. Changes to any standard default values or assumptions are reported in the CalEEMod output (see Appendix A). Based on data from similar projects in the general vicinity of the Project site, the worker mix was assumed to include 50% coming from San Diego and 50% from El Centro. The water trucks are assumed to come from the Jacumba Community Services District and the vendor trucks delivering materials to the site come from the Port of San Diego.

***Switchyard***

For the purposes of this analysis, the switchyard (as described in Section 1.2, Project Description) is a component of the Proposed Project and has been analyzed as part of the whole of the action. However, this analysis highlights the specific analysis of the switchyard under each threshold of significance in the event responsible agencies have CEQA obligations related to the switchyard. The switchyard includes two primary components:

- Construction of a new 138 kV electric switchyard
- Construction of two 138 kV, 1,860 feet long) on 70 to 115-foot-high overhead transmission lines (gen-tie) would loop the Proposed Project to an existing SDG&E 138 kV transmission line that transects the Project site.

The switchyard would be located adjacent to the Proposed Project's collector substation. The switchyard will be connected to both the Proposed Project's collector substation and the existing SDG&E 138 KV transmission line via a short overhead transmission line, approximately 224 feet in length. The size of the switchyard is approximately 141,050 square feet. The switchyard may include circuit breakers, overhead electrical bus work, switches and controls, and a control building, and the entire switchyard area will be enclosed inside a security fence. The switchyard includes a 30-feet wide, asphalt paved access road for switchyard operations that will provide an interconnection to Carrizo Gorge Road.

For purposes of estimating switchyard emissions, and based on information provided by the applicant, it is assumed that construction of the switchyard would commence in March 2021[9] and would last approximately 9 months. The analysis contained herein is based on the following subset area schedule assumptions (duration of phases is approximate). The majority of the phases listed below would occur concurrently and would not occur sequentially in isolation. Detailed construction equipment modeling assumptions are provided in Appendix A, CalEEMod Outputs.

- Site Preparation 1 – Switchyard: 1 month
- Conductor Installation 1: 1 month
- Site Preparation 2 – Switchyard: 1 month
- Trenching – Switchyard: 1 month
- Paving – Switchyard: 2 weeks
- Site Preparation – Transmission Line: 2 weeks
- Operate Air Tools: 4 months
- Structure Installation: 1.5 months
- Conductor Installation 2: 1 month
- Erect Structures: 1 month

Emissions from the construction phase of the switchyard were estimated using CalEEMod. Construction scenario assumptions, including phasing, equipment mix, and vehicle trips, were based on information provided by the applicant, CalEEMod defaults, and best engineering judgement.

[9] The analysis assumes a construction start date of March 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 emissions because equipment and vehicle emission factors for later years would be slightly 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.

General construction equipment modeling assumptions are provided in Table 7, Construction Workers, Vendor Trips, and Equipment Use per Day - Switchyard. Default values for equipment mix, horsepower, and load factor provided in CalEEMod were used for all construction equipment. For the analysis, it was generally assumed that heavy-duty construction equipment would be operating at the site 5 days per week. For the purposes of estimating emissions, it was assumed that worker trips and truck trips would be made to the site independently; however, it is likely that workers would drive trucks to and from the site for deliveries rather than driving in a separate vehicle. Therefore, the estimates provides in Table 7 are conservative. Detailed construction equipment modeling assumptions are provided in Appendix A, CalEEMod Outputs.

**Table 7**
**Construction Workers, Vendor Trips, and Equipment Use per Day – Switchyard**

| | One-Way Vehicle Trips | | | Equipment | | |
|---|---|---|---|---|---|---|
| **Construction Phase** | *Average Daily Worker Trips* | *Average Daily Vendor Truck Trips* | *Total Haul Truck Trips* | *Equipment Type* | *Quantity* | *Usage Hours* |
| Site Preparation 1 – Switchyard | 34 | 10 | 0 | Graders | 2 | 8 |
| | | | | Plate Compactors | 2 | 8 |
| | | | | Rubber Tired Dozers | 3 | 8 |
| | | | | Rubber Tired Loaders | 3 | 8 |
| | | | | Scrapers | 2 | 8 |
| | | | | Tractors/Loaders/Backhoes | 1 | 8 |
| Conductor Installation 1 | 24 | 16 | 0 | Aerial Lifts | 1 | 8 |
| Site Preparation 2 – Switchyard | 8 | 8 | 30 | Bore/Drill Rigs | 2 | 8 |
| | | | | Crushing/Proc. Equipment | 1 | 8 |
| Trenching – Switchyard | 4 | 0 | 0 | Trenchers | 1 | 8 |
| Paving – Switchyard | 18 | 0 | 0 | Pavers | 2 | 8 |
| | | | | Paving Equipment | 2 | 8 |
| | | | | Rollers | 3 | 8 |
| Site Preparation – Transmission Line | 10 | 2 | 0 | Trenchers | 1 | 8 |
| | | | | Graders | 1 | 8 |
| | | | | Plate Compactors | 1 | 8 |
| | | | | Rubber Tired Dozers | 1 | 8 |
| | | | | Rubber Tired Loaders | 1 | 8 |
| Operate Air Tools | 8 | 0 | 0 | Air Compressors | 1 | 8 |
| Structure Installation | 4 | 12 | 0 | Plate Compactors | 1 | 8 |
| Conductor Installation 2 | 4 | 0 | 0 | Bore/Drill Rigs | 1 | 8 |
| Erect Structures | 4 | 0 | 0 | Cranes | 1 | 4 |

**Note:** See Appendix A for additional details.

The estimated number of workers, vendor trucks, and haul trucks were provided by the applicant. Changes to any standard default values or assumptions are reported in the CalEEMod output (see Appendix A). Based on data from similar projects in the general vicinity of the Project site, the worker mix was assumed to include 50% coming from San Diego and 50% from El Centro. Because the Proposed Project's grading would be balanced onsite, the haul truck trips are only assumed to be driven within the site. The water trucks are assumed to come from the Jacumba Community Services District and the vendor trucks delivering materials to the site come from the Port of San Diego.

**Regulatory Compliance Measures that Reduce Construction Criteria Air Pollutant Emissions**

Construction activities would be subject to several control measures per the requirements of the County, SDAPCD rules, and CARB ATCMs. Table 8 outlines the required regulatory control measures that would apply to the Proposed Project, and what measures have been quantitatively incorporated into the construction emissions estimates.

**Table 8**
**Regulatory Compliance Measures that Reduce**
**Construction Criteria Air Pollutant Emissions**

| Regulation Number | Regulatory Compliance Measure | Description | Quantification Details |
|---|---|---|---|
| *Particulate Matter/Fugitive Dust Control* | | | |
| REG-AQ-1 | County Grading Dust Control (County Ordinance 87.428) | Per County Ordinance 87.428, all clearing and grading shall be carried out with dust control measures adequate to prevent creation of a nuisance to persons or public or private property. County Ordinance 87.428 identifies the following measures that could be employed to control dust:<br>• Watering<br>• Application of surfactants<br>• Shrouding<br>• Control of vehicle speeds<br>• Paving of access areas<br>• Other operational or technological measures to reduce dispersion of dust | County Ordinance 87.428 does not require specific measures; rather, it requires that adequate dust control measures be employed. Watering three times daily was quantified. |
| REG-AQ-2 | Fugitive Dust Control (SDAPCD Rule 55) | SDAPCD Rule 55 identifies two main standards relating to airborne dust beyond the property line, and dust control track-out/carry-out.<br>Regarding airborne dust beyond the property line, Rule 55 requires that no person engage in construction or demolition activity in a manner that | Watering three times daily was quantified. |

**Table 8**
**Regulatory Compliance Measures that Reduce**
**Construction Criteria Air Pollutant Emissions**

| Regulation Number | Regulatory Compliance Measure | Description | Quantification Details |
|---|---|---|---|
| | | discharges visible dust emissions into the atmosphere beyond the property line for a period or periods aggregating more than 3 minutes in any 60-minute period.<br><br>Regarding track-out/carry-out[a] Rule 55 requires that visible roadway dust as a result of active operations, spillage from transport trucks, erosion, or track-out/carry-out be minimized, and provides the following potential control measures:<br><br>• Track-out grates or gravel beds at each egress point<br>• Wheel-washing at each egress during muddy conditions<br>• Use of soil binders, chemical soil stabilizers, geotextiles, mulching, or seeding<br>• Water or treat transported material in outbound transport trucks<br><br>Rule 55 also requires that track-out/carry-out be removed at the conclusion of each work day when active operations cease, or every 24 hours for continuous operations. | |
| *Oxides of Nitrogen ($NO_x$), Carbon Monoxide (CO)* | | | |
| REG-AQ-3 | Reduce Idling Time (CARB's ATCM) | Per CARB's ATCM 13 (CCR Chapter 10 Section 2485), the applicant shall not allow idling time to exceed 5 minutes unless more time is required per engine manufacturers' specifications or for safety reasons. | Not quantified. |

[a] "Track-out/carry-out" means any bulk materials that adhere to and agglomerate on the exterior surfaces of motor vehicles and/or equipment (including tires), or are inadvertently carried out, and that fall onto a paved road, creating visible roadway dust. (SDAPCD Rule 55, SDAPCD 2009b).

## 3.3 Operational Emissions Methodology

Emissions from the operational phase of the Proposed Project were estimated using CalEEMod Version 2016.3.2. Operational year 2022 was assumed as the first full year upon construction completion.

### Energy Sources

As represented in CalEEMod, energy sources include emissions associated with building electricity and natural gas usage. 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 site of the power plant, which is typically off site. There would be no natural gas service to the site. Therefore, no energy-related criteria air pollutant emissions were quantified for the Proposed Project.

### Mobile Sources

Mobile sources for the Proposed Project would primarily be motor vehicles (automobiles and light-duty trucks) traveling to and from the Project site. Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. Based on applicant provided data and the traffic impact study for the Proposed Project (Kimley Horn 2020), the Proposed Project is anticipated to generate 8 one-way trips per day by worker vehicles and 4 one-way trips per day by vendor trucks traveling to and from San Diego (72 miles one-way). This is unlikely as the worker and vendor trips would occur only when maintenance is needed and not on a regular basis. The emissions included within this source category are conservative. CalEEMod default data, including trip characteristics, variable start information, and emissions factors were conservatively used for the model inputs to estimate daily emissions from proposed vehicular sources.

Proposed-Project-related traffic was assumed to include a mixture of vehicles in accordance with the model outputs for traffic. CalEEMod default emissions factors and vehicle fleet mix were conservatively used for the model inputs to estimate daily emissions from proposed vehicular sources.[10] Emission factors representing the vehicle mix and emissions for 2022 were used to estimate emissions associated with full build-out of the Proposed Project.

### Stationary Sources

The Proposed Project would include a 1.5 MW diesel emergency generator at the substation. The generator was assumed to operate for testing and maintenance approximately 30 minutes each month for a total of up to 52 hours per year, in accordance with SDAPCD Rule 69.4.1. The CalEEMod default emission factors for emergency generators were used to estimate emissions from this source. See Appendix A for additional information.

[10] Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. The default vehicle mix (vehicle class distribution including automobiles, trucks, buses, motorcycles) provided in CalEEMod 2016.3.2, which is based on CARB's Mobile Source Emissions Inventory model, EMFAC Version 2014, was applied.

### Switchyard

Operation of the switchyard would generate VOC, $NO_x$, CO, $SO_x$, $PM_{10}$, and $PM_{2.5}$ emissions from mobile sources, including vehicle trips from workers. As discussed in Section 3.3, Operational Emissions Methodology, criteria air pollutant emissions associated with long-term operations were quantified using CalEEMod.

CalEEMod was used to estimate potential switchyard-generated operational GHG emissions from mobile sources and off-road equipment. Emissions from each category are discussed in the following text. Operational year 2022 was assumed as the first full year of operation upon construction completion.

#### *Energy Sources*

There would be no natural gas service to the site. Therefore, no energy-related criteria air pollutant emissions were quantified for the switchyard.

#### *Mobile Sources*

Based on applicant provided data, the switchyard would not have regular vehicle trips but would require vehicle trips during scheduled and un-scheduled maintenance. CalEEMod default emissions factors and vehicle fleet mix were conservatively used for the model inputs to estimate daily emissions from proposed vehicular sources.[11] Emission factors representing the vehicle mix and emissions for 2022 were used to estimate emissions associated with full build-out of the switchyard.

#### *Off-Road Equipment*

The use of various pieces of off-road equipment is necessary for the different maintenance activities occurring for the switchyard, transmission line tie-in, right-of-way repair, pole brushing, and repair or replacement of equipment. The different types of equipment and daily use estimates were provided by the applicant and include an aerial lift and off-highway truck to operate 8 hours per day. The CalEEMod defaults were assumed for the off-road equipment horsepower, emission factors, and load factors.

[11] Motor vehicles may be fueled with gasoline, diesel, or alternative fuels. The default vehicle mix (vehicle class distribution including automobiles, trucks, buses, motorcycles) provided in CalEEMod 2016.3.2, which is based on CARB's Mobile Source Emissions Inventory model, EMFAC Version 2014, was applied.

**Regulatory Compliance Measures and Project Design Features that Reduce Operational Criteria Air Pollutant Emissions**

Table 9 outlines the required regulatory control measures that would apply to the Proposed Project and what measures have been quantitatively incorporated into the operational emissions estimates.

**Table 9**
**Regulatory Compliance Measures that**
**Reduce Operational Criteria Air Pollutant Emissions**

| Regulation Number | Regulatory Compliance Measure | Description | Quantification Details |
|---|---|---|---|
| *Mobile* | | | |
| REG-AQ-4 | State and Federal Mobile Source Reduction Strategies | • Advanced Clean Cars (for model years 2016 and beyond)<br>• Truck and Bus Rule (2014 Amendment)<br>• Heavy-Duty Greenhouse Gas Phase 1 (2013), which includes the 2013 Tractor-Trailer Greenhouse Gas Regulation Amendments and Federal Fuel Efficiency Standards for Medium- and Heavy-Duty Engines and Vehicles<br>• Pavley I federal standard for model years 2012 through 2016<br>• SAFE Rule | Accounted for in EMFAC2014 vehicle emission factors as part of CalEEMod version 2016.3.2 (except the SAFE rule). |

## 3.4 Carbon Monoxide Hotspots

Mobile source impacts occur on two scales of motion: regionally and locally. Regionally, travel related to the Proposed Project would add to regional trip generation and increase vehicle miles traveled (VMT) within the local airshed and the SDAB. Locally, traffic generated by the Proposed Project would be added to the County's roadway system near the Project site. If such traffic occurs during periods of poor atmospheric ventilation, is composed of a large number of vehicles "cold-starting" and operating at pollution-inefficient speeds, and is operating on roadways already congested with non-Proposed-Project traffic, there is a potential for the formation of microscale CO hotspots in the area immediately around points of congested traffic.

In addition to the numerous factors that would need to be present for a CO hotspot to occur, the potential for CO hotspots in the SDAB is steadily decreasing because of the continued improvement in vehicular emissions at a rate faster than the rate of vehicle growth and/or congestion, and the already very low ambient CO concentrations. Furthermore, CO transport is extremely limited, and 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 such as residents, children, hospital patients, and older adults. Typically, high CO concentrations are associated with roadways or intersections operating at an unacceptable LOS. Projects contributing to adverse traffic impacts may result in the formation of CO hotspots.

As indicated in the County of San Diego Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality (County of San Diego 2007), a site-specific CO hotspot analysis should be performed if a proposed development would cause road intersections to operate at or below a LOS E with intersection peak-hour trips exceeding 3,000.

## 3.5 Health Risk Assessment

As a precautionary measure, a health risk assessment (HRA) was performed to assess the impact of construction on sensitive receptors proximate to the Project site. This report includes an HRA associated with emissions from construction of the Proposed Project based on the methodologies prescribed in the Office of Environmental Health Hazard Assessment (OEHHA) Air Toxics Hot Spots Program Risk Assessment Guidelines – Guidance Manual for Preparation of Health Risk Assessments (OEHHA 2015). To implement the OEHHA Guidelines based on Proposed Project information, the SDAPCD has developed a three-tiered approach where each successive tier is progressively more refined, with fewer conservative assumptions. The SDAPCD Supplemental Guidelines for Submission of Air Toxics "Hot Spots" Program Health Risk Assessments provides guidance with which to perform HRAs within the SDAB (SDAPCD 2015b).

Health effects from carcinogenic air toxics are usually described in terms of cancer risk. The SDAPCD recommends a carcinogenic (cancer) risk threshold of 10 in 1 million. However, the County implements a threshold of 1 in 1 million without the use of T-BACT and 10 in 1 million with the use of T-BACT. Additionally, some TACs increase non-cancer health risk due to long-term (chronic) exposures. The Chronic Hazard Index is the sum of the individual substance chronic hazard indices for all TACs affecting the same target organ system. The SDAPCD and County recommend a Chronic Hazard Index significance threshold of 1.0 (project increment). The exhaust from diesel engines is a complex mixture of gases, vapors, and particles, many of which are known human carcinogens. DPM has established cancer risk factors and relative exposure values for long-term chronic health hazard impacts. No short-term, acute relative exposure level has been established for DPM. In addition to TAC emissions from exhaust, there are TACs found within the fugitive dust emissions created on site (on-site vehicle traffic). This HRA evaluated the risk to existing residents from diesel emissions from exhaust from on-site construction equipment and diesel haul and vendor trucks as well as fugitive dust emissions.

The dispersion modeling of DPM was performed using the American Meteorological Society/EPA Regulatory Model (AERMOD), which is the model SDAPCD requires for atmospheric dispersion of emissions. AERMOD is a steady-state Gaussian plume model that incorporates air dispersion based on planetary boundary layer turbulence structure and scaling concepts, including treatment of surface and elevated sources, building downwash, and simple and complex terrain (EPA 2018). For the Proposed Project, AERMOD was run with all sources emitting unit emissions (1 gram per second) to obtain the "X/Q" values. X/Q is a dispersion factor that is the average effluent concentration normalized by source strength and is used as a way to simplify the representation of emissions from many sources. The X/Q values of ground-level concentrations were determined for construction emissions using AERMOD and the maximum concentrations determined for the 1-hour and Period averaging periods. Principal parameters of this modeling are presented in Table 10.

**Table 10**
**AERMOD Principal Parameters**

| Parameter | Details |
|---|---|
| Meteorological Data | The latest 3-year meteorological data (2013–2015) for the Campo Station from SDAPCD were downloaded and then input to AERMOD. For cancer or chronic noncancer risk assessments, the average cancer risk of all years modeled was used. |
| Urban versus Rural Option | Urban areas typically have more surface roughness, as well as structures and low-albedo surfaces that absorb more sunlight—and thus more heat—relative to rural areas. However, based on the SDAPCD guidelines and the Proposed Project location, the rural dispersion option was selected. |
| Terrain Characteristics | The terrain in the vicinity of the modeled Project site is generally mountainous. The elevation of the modeled site is between 2,749 and 2,822 feet above sea level. Digital elevation model files were imported into AERMOD so that complex terrain features were evaluated as appropriate. |
| Elevation Data | Digital elevation data were imported into AERMOD, and elevations were assigned to the emission sources and receptors. Digital elevation data were obtained through AERMOD View in the United States Geological Survey's National Elevation Dataset format with a 10-meter resolution. |
| Emission Sources and Release Parameters | Air dispersion modeling of DPM from construction equipment and diesel vehicles was conducted using emissions estimated using the CalEEMod, assuming emissions would occur up to 8 hours per day, 5 days per week. The Project site was modeled as a series of volume sources. |
| Source Release Characterizations | The source release height was assumed to be 5 meters. The length of the volume sources was assumed to be 25 meters on each side with an initial lateral and vertical dimension of 5.81 meters. |
| Discrete Receptors | The receptors in proximity to the site are very infrequent and sporadic. Discrete receptors were placed at identified existing residential structures. |

**Note**: See Appendix B.

Dispersion model plotfiles from AERMOD were then imported into CARB's Hotspots Analysis and Reporting Program Version 2 to determine health risk, which requires peak 1-hour emission rates and annual-averaged emission rates for all pollutants for each modeling source. For the residential health risk, the HRA assumes exposure would start in the third trimester of pregnancy and last 13 months. Based on the HRA included in Appendix B, the maximally exposed individual resident (i.e., the closest resident to the Project site) would be located at the southwest corner

outside of the Project site. The results of the HRA are provided in Section 4.2.1, Construction Impacts, and detailed results and methodology are provided in Appendix B.

In addition to the cancer and non-cancer HRA prepared for the Proposed Project, a lead exposure screening assessment was performed in accordance with the CARB's Risk Management Guidelines for Lead (CARB 2001). This screening used the same AERMOD setup as described above in the HRA but used lead as the pollutant and modeled the actual emissions of lead for the Proposed Project, as opposed to the unit emissions rate of 1 gram per second.

# 4 PROJECT IMPACT ANALYSIS

The significance criteria described in Section 3 were used to evaluate impacts associated with construction and operation of the Proposed Project.

## 4.1 Conformance to the Regional Air Quality Strategy

### 4.1.1 Guideline for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, and the County's Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality (County of San Diego 2007), the Proposed Project would have a significant impact if it would:

- Conflict with or obstruct the implementation of the RAQS and/or applicable portions of the SIP.

### 4.1.2 Significance of Impacts Prior to Mitigation

As previously discussed, the SDAPCD and SANDAG are responsible for developing and implementing the clean air plans for attainment and maintenance of the ambient air quality standards in the SDAB, specifically the SIP and RAQS.[12] The federal $O_3$ attainment plan, which is part of the SIP, was adopted in 2016. The SIP includes a demonstration that current strategies and tactics will maintain acceptable air quality in the SDAB based on the NAAQS. The RAQS was initially adopted in 1991 and is typically updated on a triennial basis (most recently in 2016). The RAQS outlines SDAPCD's plans and control measures designed to attain the state air quality standards for $O_3$. The SIP and RAQS rely on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the County and the cities in the County, to project future emissions and then determine from that the strategies necessary for the reduction of emissions through regulatory controls. CARB's mobile source emissions projections and SANDAG growth projections are based on population, vehicle trends, and land use plans developed by the County and the cities in the County as part of the development of their general plans.

As mentioned above, the SIP and RAQS rely on SANDAG growth projections based on population, vehicle trends, and land use plans developed by the cities and by the County as part of development of their general plans. As such, projects that involve development that is consistent with the growth anticipated by local plans would be consistent with the SIP and RAQS. However, if a project involves development that is greater than that anticipated in the local plan and/or

[12] For the purpose of this discussion, the relevant federal air quality plan is the Ozone Attainment Plan (SDAPCD 2016a). The RAQS is the applicable plan for purposes of State air quality planning. Both plans reflect growth projections in the SDAB.

SANDAG's growth projections, that project might be in conflict with the SIP and RAQS, and may contribute to a potentially significant cumulative impact on air quality.

The Proposed Project is located on a site zoned Specific Planning Area (S88) that has not adopted a Specific Plan. A Major User Permit is required from the County to develop a solar facility on the Project site. The Proposed Project would be consistent with the underlying zoning for the site parcels which would mean that the Proposed Project was currently included within the SIP and RAQS. Furthermore, to demonstrate that the Proposed Project is a less-intensive use and would result in fewer emissions than the zoning for the Project site parcels, the zoning was modeled using the California Emissions Estimator Model (CalEEMod) Version 2016.3.2 and compared to the emissions generated by the most intensive allowable on-site use. As identified within the County's zoning regulations and General Plan, the most intensive use allowed on the Project site with respect to emissions of criteria pollutants would be residential. The allowed unit density for each parcel was evaluated against its respective zoning. The majority of the parcels were modeled as single family residences. Two of the parcels were modeled as multi-family apartments as they were zoned to allow up to 14.5 dwelling units per acre. The total buildout of allowable residential uses on the Project site is 224 single-family residences and 2,475 multi-family residential units. Table 11 shows the assumed buildout of the existing zoning for the Project site.

**Table 11**
**Zoning for Proposed Project Parcels**

| Assessor's Parcel Number | Acres | Existing Zoning | Zoning Description | Density (units/ acre) | Units Built | CalEEMod Land Use |
|---|---|---|---|---|---|---|
| 614-100-20 | 90.22 | S88 | MULTIPLE RURAL USE 1 DU/4,8,20 ACRES | 0.25 | 23 | Single Family Residential |
| 614-100-21 | 27.27 | S88 | MULTIPLE RURAL USE 1 DU/4,8,20 ACRES | 0.25 | 7 | Single Family Residential |
| 614-110-04 | 2.74 | S88 | SPECIFIC PLAN AREA | 0.05 | 0 | Single Family Residential |
| 660-020-05 | 267.56 | S88 | SPECIFIC PLAN AREA | 0.05 | 13 | Single Family Residential |
| 660-020-06 | 39.93 | S88 | SPECIFIC PLAN AREA | 0.05 | 2 | Single Family Residential |
| 660-150-04 | 34.96 | S80 | RESIDENTIAL 1 DU/1,2,4 ACRES | 1 | 35 | Single Family Residential |
| 660-150-07 | 19.19 | S80 | SPECIFIC PLAN AREA | 0.05 | 1 | Single Family Residential |
| 660-150-08 | 23.2 | S80 | SPECIFIC PLAN AREA | 0.05 | 1 | Single Family Residential |
| 660-150-10 | 25.71 | S80 | SPECIFIC PLAN AREA | 0.05 | 1 | Single Family Residential |
| 660-150-14 | 0.92 | S88 | RESIDENTIAL 14.5 DU/ACRE | 14.5 | 13 | Residential Mid-Rise Apartments |
| 660-150-17 | 15.18 | S88 | RESIDENTIAL 1 DU/1,2,4 ACRES | 1 | 15 | Single Family Residential |
| 660-150-18 | 169.74 | S88 | RESIDENTIAL 14.5 DU/ACRE | 14.5 | 2,461 | Residential Mid-Rise Apartments |
| 660-170-09 | 0.06 | RR | RESIDENTIAL 1 DU/1,2,4 ACRES | 1 | 0 | Single Family Residential |

**Table 11**
**Zoning for Proposed Project Parcels**

| Assessor's Parcel Number | Acres | Existing Zoning | Zoning Description | Density (units/ acre) | Units Built | CalEEMod Land Use |
|---|---|---|---|---|---|---|
| 661-010-02 | 9.11 | S92 | MULTIPLE RURAL USE 1 DU/4,8,20 ACRES | 0.25 | 2 | Single Family Residential |
| 661-010-15 | 61.13 | S88 | SPECIFIC PLAN AREA | 0.05 | 3 | Single Family Residential |
| 661-010-26 | 80.58 | S88 | SPECIFIC PLAN AREA | 0.05 | 4 | Single Family Residential |
| 661-010-27 | 180.7 | S88 | SPECIFIC PLAN AREA | 0.05 | 9 | Single Family Residential |
| 661-010-30 | 166.38 | S88 | MULTIPLE RURAL USE 1 DU/4,8,20 ACRES | 0.25 | 42 | Single Family Residential |
| 661-060-12 | 36.27 | S88 | MULTIPLE RURAL USE 1 DU/4,8,20 ACRES | 0.25 | 9 | Single Family Residential |
| 661-060-22 | 37.88 | S80 | SPECIFIC PLAN AREA | 0.05 | 2 | Single Family Residential |
| 660-140-06 | 1.79 | S88 | SPECIFIC PLAN AREA | 0.05 | 0 | Single Family Residential |
| 660-140-08 | 16.91 | S88 | RESIDENTIAL 1 DU/1,2,4 ACRES | 1 | 17 | Single Family Residential |
| 660-150-21 | 37.5 | S88 | RESIDENTIAL 1 DU/1,2,4 ACRES | 1 | 38 | Single Family Residential |
| 660-150-16 | 0.92 | S88 | SPECIFIC PLAN AREA | 0.05 | 0 | Single Family Residential |
| | | | | **Single Family Residential** | **224** | |
| | | | | **Residential Mid-Rise Apartments** | **2475** | |

The largest contributor to emissions of criteria pollutants for both the allowable use and the Proposed Project is mobile sources (i.e., emissions from vehicles driven by residents or workers). For the purposes of comparison between the two uses, the daily trips and annual VMT were used as a surrogate in the absence of comparable land use types. Detailed modeling files are included in Appendix A of this report. The existing zoning would result in an average daily trip rate of 18,443 and result in 68,255,312 VMT annually. In comparison, the Proposed Project would result in a maximum daily trip rate of 12 and result in 315,360 VMT annually. As such, the Proposed Project would result in a less emissions-intensive development compared to the maximum buildout of the Project site's zoning which is included within the RAQS and SIP. Therefore, the emissions from the Proposed Project would be considered consistent with the underlying land use assumptions included within the RAQS and SIP.

The Proposed Project would also support the goals of the RAQS to reduce concentrations of $O_3$ through measures to reduce emissions of $NO_x$ and VOCs. The Proposed Project would not reduce emissions itself, but it would potentially replace fossil-fueled power generation and thus would avoid generation of those emissions. Furthermore, the RAQS has measures to reduce $NO_x$ and VOC emissions from mobile sources. As the vehicle fleet becomes more electrified, the emissions will be transitioned from

vehicles to grid-sources power plants. The Proposed Project would support reducing emissions associated with power produced in the County and thus support the RAQS.

Moreover, the Proposed Project does not propose residential, commercial, or growth-inducing development. During operation, staff would visit various on-site Proposed Project components periodically for maintenance. Maintenance trucks would be used to perform routine maintenance, including equipment testing, monitoring, repair, routine procedures to ensure service continuity, and standard preventive maintenance. Operation of the Proposed Project would result in a negligible increase in local employment and associated trips.

Since the Proposed Project would not contribute to local population growth or substantial employment growth and the growth-related emissions during operations, the Proposed Project is considered accounted for in the SIP and RAQS, and the Proposed Project would not conflict with or obstruct the implementation with local air quality plans. Impacts would be considered **less than significant**.

**Switchyard**

Construction of the switchyard and associated connection in and out legs would not result in residential, commercial, or growth-inducing development that would result in a substantial increase in growth-related emissions. During operation, it is assumed that an occasional maintenance truck would be used to perform routine maintenance, including equipment testing, monitoring, repair, routine procedures to ensure service continuity, and standard preventive maintenance of the facility on an as-needed basis. Operation of the switchyard would result in a negligible increase in associated operational trips. As shown in Table 11, the switchyard would comprise 5.14 acres of parcel 661-010-30. As such, based on the existing zoning of S88 and density of 0.25 units per acre, the maximum buildout would be 1.3 single-family residential units. Assuming 1 single-family unit was built would result in an average daily trip rate of 10 and 34,961 VMT annually. In comparison, routine maintenance was assumed to generate up to 4 worker vehicle trips and 4 vendor truck trips per month, or 6,912 VMT annually. Therefore, emissions from the switchyard mobile emissions would be less than that of the residential use.

Since the switchyard would not contribute to local population growth or employment growth, the switchyard is considered accounted for in the SIP and RAQS and would not conflict with or obstruct implementation of local air quality plans. Therefore, impacts would be **less than significant**.

### 4.1.3 Mitigation

No mitigation is required.

### 4.1.4 Conclusion

Impacts would remain **less than significant** without mitigation.

**Switchyard**

Impacts would remain **less than significant** without mitigation.

## 4.2 Cumulatively Considerable Net Increase of Criteria Pollutants

The EPA and CARB set the federal and state Ambient Air Quality Standards to be protective of human health. Table 12 presents a list of the criteria pollutants and other related pollutants of concern and associated emission sources, health effects, and current SDAB attainment status.

**Table 12**
**Pollutants, Sources, Health Effects, and Attainment Status**

| Pollutant | Sources | Health Effects | Attainment Status | |
|---|---|---|---|---|
| | | | *NAAQS* | *CAAQS* |
| Ozone ($O_3$) | Formed when volatile organic compounds (VOCs) and oxides of nitrogen ($NO_x$) react in the presence of sunlight. VOC sources include any source that burns fuels (e.g., gasoline, natural gas, wood, and oil), solvents, coatings, consumer products, and petroleum processing and storage. | Breathing difficulties, lung tissue damage, and vegetation damage. | Nonattainment | Nonattainment |
| Nitrogen Dioxide ($NO_2$) | See carbon monoxide. | Lung irritation and damage. Reacts in the atmosphere to form ozone and acid rain. | Unclassifiable/ Attainment | Attainment |
| Carbon Monoxide (CO) | Any source that burns fuel such as automobiles, trucks, heavy construction and farming equipment, and residential and industrial heating. | Chest pain in heart patients, headaches, reduced mental alertness. | Attainment | Attainment |
| Sulfur Dioxide ($SO_2$) | Coal- or oil-burning power plants and industries, refineries, diesel engines. | Increases lung disease and breathing problems for asthmatics. Reacts in the atmosphere to form acid rain. | Unclassifiable/ Attainment | Attainment |
| Respirable Particulate Matter ($PM_{10}$) | Road dust, windblown dust, agriculture and construction, fireplaces. Also formed from other pollutants ($NO_x$, $SO_x$, organics). Incomplete combustion. | Increased respiratory disease, lung damage, cancer, premature death. | Unclassifiable/ Attainment | Nonattainment |

**Table 12**
**Pollutants, Sources, Health Effects, and Attainment Status**

| Pollutant | Sources | Health Effects | Attainment Status | |
|---|---|---|---|---|
| | | | *NAAQS* | *CAAQS* |
| Fine Particulate Matter ($PM_{2.5}$) | Fuel combustion in motor vehicles, equipment, and industrial sources; residential and agricultural burning. Also formed from reaction of other pollutants ($NO_x$, $SO_X$, VOCs, and ammonia). | Increases respiratory disease, lung damage, cancer, and premature death. Particles can aggravate heart diseases such as congestive heart failure and coronary artery disease. | Unclassifiable/ Attainment | Nonattainment |
| Lead | Metal smelters, resource recovery, leaded gasoline, deterioration of lead paint. | Learning disabilities, brain and kidney damage. | Unclassifiable/ Attainment | Attainment |
| Sulfates | Produced by reaction in the air of $SO_2$, (see $SO_2$ sources), a component of acid rain. | Breathing difficulties, aggravates asthma. | No federal standard | Attainment |
| Hydrogen Sulfide | Geothermal power plants, petroleum production and refining, sewer gas. | Headache and breathing difficulties (higher concentrations). | No federal standard | Unclassified |
| Vinyl Chloride | Exhaust gases from factories that manufacture or process vinyl chloride (construction, packaging, and transportation industries). | Central nervous system effects (e.g., dizziness, drowsiness, headaches), kidney irritation, liver damage, liver cancer. | No federal standard | No designation |

**Source:** County of San Diego 2007.
Attainment = meets the standards; Nonattainment = does not meet the standards; Unclassified or Unclassifiable = insufficient data to classify; Unclassifiable/Attainment = meets the standard or is expected to be meet the standard despite a lack of monitoring data.

In analyzing cumulative impacts from a project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SDAB is listed as nonattainment for the state and federal ambient air quality standards. As discussed in Section 2.4.2, San Diego Air Basin Attainment Designation, the SDAB has been designated as a federal nonattainment area for $O_3$ and a State nonattainment area for $O_3$, $PM_{10}$, and $PM_{2.5}$. The nonattainment status is the result of cumulative emissions from all sources of these air pollutants and their precursors within the SDAB. A project would have a cumulatively considerable impact if emissions generated by that project would exceed thresholds for VOC or $NO_x$ ($O_3$ precursors), $PM_{10}$, and/or $PM_{2.5}$. If that project does not exceed thresholds and is determined to have less-than-significant impacts, it may still have a cumulatively considerable impact on air quality if emissions from that project, in combination with emissions from other proposed or reasonably foreseeable future projects, are in excess of established thresholds. However, the project would have a cumulative impact only if the project's contribution accounts for a significant proportion of the cumulative total emissions.

Background ambient air quality, as measured at the monitoring stations maintained and operated by SDAPCD, is the concentration of pollutants from existing sources; therefore, past and present impacts are included in the background ambient air quality data.

**Geographic Extent**

The geographic extent for the analysis of cumulative impacts related to air quality is the south-central portion of the SDAB (San Diego County). Due to the nonattainment status of the SDAB, the primary air pollutants of concern are VOC and $NO_x$, which are $O_3$ precursors, and $PM_{10}$ and $PM_{2.5}$. Because of the nature of $O_3$ as a regional air pollutant, emissions from the entire geographic area for this cumulative impact analysis would tend to be important. $PM_{10}$ and $PM_{2.5}$ impacts, on the other hand, tend to occur locally; thus, projects occurring in the same general area and in the same time period tend to create cumulative air quality impacts.

**Existing Cumulative Conditions**

Air quality management in the geographic area for the cumulative impact assessment is the responsibility of the SDAPCD. Existing levels of development in the County have led to the nonattainment status for $O_3$ with respect to the CAAQS and NAAQS, and for $PM_{10}$ and $PM_{2.5}$ with respect to the CAAQS. The nonattainment status is based on ambient air quality monitoring generally conducted in the urban portions of the County. Due to its proximity to the Project site, similar geographic and climactic characteristics, and available measured ambient concentrations of pollutants, the Otay Mesa-Donavan facility monitoring station monitors $O_3$, $NO_2$, $PM_{10}$, and $PM_{2.5}$. The El Cajon-Floyd Smith Drive monitoring station monitors concentrations for CO and $SO_2$ pollutants, and is considered most representative of the Project site for those pollutants. The air quality plans prepared by the SDAPCD reflect future growth under local development plans, but they are intended to reduce emissions Countywide to levels that would comply with the NAAQS and CAAQS through implementation of new regulations at the local, State, and federal levels.

The separate guidelines of significance discussed below were developed to respond to the following question from the CEQA Guidelines Appendix G:

- Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the SDAB is nonattainment under an applicable federal or State ambient air quality standard?

### 4.2.1 Construction Impacts

#### *4.2.1.1 Guidelines for the Determination of Significance*

Cumulatively considerable net increases during the construction phase would typically occur if two or more projects near each other are simultaneously under construction. The following guidelines for determining significance must be used for determining the cumulatively considerable net increases during the construction phase:

- A project that has a significant direct impact on air quality with regard to emissions of $PM_{10}$, $PM_{2.5}$, $NO_x$, and/or VOCs would also have a significant cumulatively considerable net increase.
- In the event direct impacts from a project are less than significant, a project may still have a cumulatively considerable impact on air quality if the emissions of concern from that project, in combination with the emissions of concern from other projects or reasonably foreseeable future projects within a proximity relevant to the pollutants of concern, are in excess of guidelines.

#### *4.2.1.2 Significance of Impacts Prior to Mitigation*

In analyzing cumulative impacts from a project, the analysis must specifically evaluate a project's contribution to the cumulative increase in pollutants for which the SDAB is designated as nonattainment for the CAAQS and NAAQS. If that project's emissions do not exceed thresholds and is determined to have less-than-significant project-specific impacts, it may still contribute to a significant cumulative impact on air quality if the emissions from that project, in combination with the emissions from other proposed or reasonably foreseeable future projects, are in excess of established thresholds.

Construction of the Proposed Project would result in the temporary addition of pollutants to the local airshed caused by on-site sources (e.g., off-road construction equipment, soil disturbance, and internal haul trucks) and off-site sources (e.g., vendor trucks and worker vehicle trips). Specifically, entrained dust results from the exposure of earth surfaces to wind from the direct disturbance and movement of soil, resulting in $PM_{10}$ and $PM_{2.5}$ emissions. Internal combustion engines used by construction equipment, internal haul trucks, vendor trucks (i.e., delivery trucks), and worker vehicles would result in emissions of VOCs, $NO_x$, CO, $PM_{10}$, and $PM_{2.5}$. 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.

The Proposed Project would require the import of water for dust control. Approximately, 112 acre-feet of water would be used during construction. Water would be transported to the site using 4,000 gallon

water trucks, which are categorized as heavy duty vendor trucks in CalEEMod. Water imported during construction activities would come from the Jacumba Community Services District, located approximately 0.8 miles from the Project site. Back-up water supply would be provided by on-site water wells. This is a conservative as most of the water is anticipated to be supplied by the wells. The soil would be balanced on site, however, 264,000 cubic yards of cut would be redistributed around the site. A trip length of 1/4 miles was conservatively assumed for these haul trips, which represents half the driving distance across the Project site from south to north.

Section 3.2, Construction Emissions Methodology, presents the methodology and assumptions used to estimate emissions from construction of the Proposed Project. Appendix A presents construction scenario details, including phasing and phase duration, off-road-equipment use (equipment type, quantity, horsepower, load factor, and hours of operation), and vehicle trips (internal haul trucks, vendor truck, and workers vehicle trips).

Table 13, Estimated Maximum Daily Construction Criteria Air Pollutant Emissions – Unmitigated, shows the estimated maximum daily construction emissions associated with the construction phase of the Proposed Project.

**Table 13**
**Estimated Maximum Daily Construction Criteria Air Pollutant Emissions – Unmitigated**

| Year | VOC | $NO_x$ | CO | $SO_x$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| | *Pounds per Day* | | | | | |
| 2020 | 11.26 | 179.60 | 80.93 | 0.40 | 1,001.28 | 104.61 |
| 2021 | 28.42 | 252.29 | 199.61 | 0.88 | 368.68 | 49.81 |
| *Maximum* | *28.42* | *252.29* | *199.61* | *0.88* | *1,001.28* | *104.61* |
| *Pollutant Threshold* | *75* | *250* | *550* | *250* | *100* | *55* |
| **Threshold Exceeded?** | **No** | **Yes** | **No** | **No** | **Yes** | **Yes** |

**Source**: See Appendix A.
**Notes:**
VOC = volatile organic compound; $NO_x$ = oxides of nitrogen; CO = carbon monoxide; $SO_x$ = sulfur oxides; $PM_{10}$ = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
Emissions represent maximum daily construction activities from sequential construction phases at any one point for a given year.
Estimated emissions include compliance with all regulations and SDAPCD Rule 55.

As shown in Table 13, maximum daily construction emissions would not exceed the thresholds for VOC, $NO_x$, CO, and $SO_x$. Emissions of $NO_x$, $PM_{10}$, and $PM_{2.5}$would exceed the daily emissions threshold of significance which may result in a **potentially significant** impact. Therefore, mitigation is required.

Construction of cumulative projects simultaneously with the Proposed Project would result in a temporary addition of pollutants to the local airshed caused by off-road construction equipment, soil disturbance, architectural coating and asphalt pavement VOC off-gassing, on-road haul trucks,

vendor trucks, and worker vehicle trips. Maximum unmitigated daily construction emissions of $PM_{10}$ and $PM_{2.5}$ generated by the Proposed Project would exceed significance thresholds. The Proposed Project would be required to comply with SDAPCD Rule 55, which regulates construction activity capable of generating fugitive dust emissions, including active operations, open storage piles, and inactive disturbed areas, as well as trackout and carryout onto paved roads beyond the Project site. Additionally, construction would be short term and temporary, lasting approximately 13 months. Once construction is completed, construction-related emissions would cease. However, it is possible that other land development and infrastructure projects could be constructed in the general vicinity and during the same time frame as the Proposed Project.

Cumulative localized impacts would potentially occur if a construction project were to occur concurrently with another off-site project. Table 1-5 in Chapter 1 of the JVR Energy Park EIR provides a list of 15 reasonably foreseeable, approved, and pending projects within 18 miles of the Project site. Of those projects, eight have been completed, three are approved but not constructed, and four are under review. The three approved projects would have relatively minimal air quality impacts as they would include an expansion of an existing alcohol and drug treatment facility, the creation of a new well, and 12 antennas. As it is unknown whether the projects under review will be approved or not, and if approved when actual construction would begin, it would be purely speculative to estimate any potential overlap of the Proposed Project. Construction schedules for potential future projects near the project site are currently unknown; therefore, potential construction impacts associated with two or more simultaneous projects would be speculative.[13] However, future projects would be subject to CEQA and would require an air quality analysis and, where necessary, mitigation if the project would exceed SDAPCD's significance thresholds. Criteria air pollutant emissions associated with construction activity of future projects would be reduced through implementation of control measures required by SDAPCD. Cumulative $PM_{10}$ and $PM_{2.5}$ emissions would be reduced because all future projects would be subject to SDAPCD Rule 55 (Fugitive Dust), which sets forth general and specific requirements for all construction sites in the SDAPCD.

Based on the previous considerations, the Proposed Project would result in a cumulatively considerable increase in emissions of nonattainment pollutants, and cumulative impacts would be **potentially significant**.

**Decommissioning**

Section 3.2, Construction Emissions Methodology, presents the methodology and assumptions used to estimate emissions from decommissioning of the Proposed Project. Appendix A presents

[13] 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). This discussion is nonetheless provided in an effort to show good-faith analysis and to comply with CEQA's information disclosure requirements.

construction scenario details, including phasing and phase duration, off-road-equipment use (equipment type, quantity, horsepower, load factor, and hours of operation), and vehicle trips (internal haul trucks, vendor truck, and workers vehicle trips).

Table 14, Estimated Maximum Daily Decommissioning Criteria Air Pollutant Emissions – Unmitigated, shows the estimated maximum daily decommissioning emissions associated with the construction phase of the Proposed Project.

**Table 14**
**Estimated Maximum Daily Decommissioning Criteria Air Pollutant Emissions – Unmitigated**

| Year | VOC | $NO_x$ | CO | $SO_x$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| | *Pounds per Day* | | | | | |
| 2057 | 7.63 | 32.29 | 87.54 | 0.41 | 200.74 | 26.24 |
| *Pollutant Threshold* | *75* | *250* | *550* | *250* | *100* | *55* |
| **Threshold Exceeded?** | **No** | **No** | **No** | **No** | **Yes** | **No** |

**Source**: See Appendix A.
**Notes:**
VOC = volatile organic compound; $NO_x$ = oxides of nitrogen; CO = carbon monoxide; $SO_x$ = sulfur oxides; $PM_{10}$ = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
Emissions represent maximum daily construction activities from sequential construction phases at any one point for a given year.
Estimated emissions include compliance with all regulations and SDAPCD Rule 55.

As shown in Table 14, maximum daily decommissioning emissions would not exceed the thresholds for VOC, $NO_x$, CO, $SO_x$, and $PM_{2.5}$. Emissions of $PM_{10}$ would exceed the daily emissions threshold of significance which may result in a **potentially significant** impact. Therefore, mitigation is required.

### *Switchyard*

Construction of the switchyard and associated in and out connection in and out legs would result in minimal construction-related emissions. General construction equipment modeling assumptions for construction of the switchyard are provided in Table 7. Construction of the switchyard would result in a minimal, temporary addition of pollutants to the local airshed caused by on-site sources (e.g., off-road construction equipment, soil disturbance, VOC off-gassing from asphalt pavement application, and internal haul trucks) and off-site sources (e.g., vendor trucks and worker vehicle trips).

Estimated emissions associated with construction of the switchyard are provided in Table 15.

**Table 15**
**Estimated Maximum Daily Construction Criteria Air Pollutant Emissions**
**Switchyard – Unmitigated**

| Year | VOC | $NO_x$ | CO | $SO_x$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| | *Pounds per Day* | | | | | |
| 2021 | 8.42 | 89.06 | 45.93 | 0.13 | 42.63 | 10.84 |
| *Pollutant Threshold* | *75* | *250* | *550* | *250* | *100* | *55* |
| **Threshold Exceeded?** | **No** | **No** | **No** | **No** | **No** | **No** |

See Appendix A for complete results.
**Notes:**
VOC = volatile organic compound; NOx = oxides of nitrogen; CO = carbon monoxide; SOx = sulfur oxides; PM10 = coarse particulate matter; PM2.5 = fine particulate matter.
Emissions represent maximum daily activities.

As shown in Table 15, construction criteria pollutant emission impacts associated with the switchyard would be **less than significant**.

#### *4.2.1.3 Mitigation*

M-AQ-1 and M-AQ-2 is provided to reduce $NO_x$, $PM_{10}$, and $PM_{2.5}$ emissions to the extent feasible.

**M-AQ-1** Prior to the County of San Diego's (County's) approval of any construction or decommissioning-related permits, the Project applicant or its designee shall place the following requirements on all plans, which shall be implemented during each construction phase to minimize $PM_{10}$ emissions:

a. Heavy-duty diesel-powered construction equipment shall be equipped with Tier 4 Final or better diesel engines for engines 75 horsepower or greater. The County shall verify and approve all pieces within the construction fleet that would not meet Tier 4 Final standards.

b. Vehicles in loading and unloading queues shall not idle for more than 5 minutes and shall turn their engines off when not in use to reduce vehicle emissions.

c. All construction equipment shall be properly tuned and maintained in accordance with manufacturer's specifications.

d. When construction equipment units that are less than 50 horsepower would be employed, that equipment shall be electrical or natural gas-powered, where available.

**M-AQ-2** Prior to the County of San Diego's (County's) approval of any grading permits and during Project construction, a Fugitive Dust Control Plan shall be prepared demonstrating compliance with San Diego Air Pollution Control District (SDAPCD) Rule 55 and County Code Section 87.428 (Grading Ordinance), to the

satisfaction of the County. The Project applicant or its designee shall require implementation of the following fugitive dust measures to minimize $PM_{10}$ emissions as part of the Fugitive Dust Control Plan. All measures shall be designated on Grading and Improvement Plans.

a. Prior to construction activities, the Project applicant shall employ a construction relations officer who shall address community concerns regarding on-site construction activity. The applicant shall provide public notification in the form of a visible sign containing the contact information of the construction relations officer who shall document complaints and concerns regarding on-site construction activity. The sign shall be placed in easily accessible locations and noted on Grading and Improvement Plans.

b. Grading areas shall be watered, or another SDAPCD-approved dust control non-toxic agent shall be used, at least three times daily to minimize fugitive dust only where chemical stabilizers are not used.

c. All permanent roads and the paved access roadway improvements shall be constructed and paved as early as possible in the construction process to reduce construction vehicle travel on unpaved roads. Foundations shall be finalized as soon as possible following site preparation and grading activities to reduce fugitive dust from earth-moving operations.

d. Grading areas shall be stabilized as quickly as possible to minimize fugitive dust.

e. Chemical stabilizer shall be applied, a gravel pad shall be installed, or the last 100 feet of internal travel path within the construction site shall be paved prior to public road entry.

f. Wheel washers, grates, rock, or road washers shall be installed adjacent to the site access points for tire inspection and washing prior to vehicle entry on public roads.

g. Visible track-out into traveled public streets shall be removed with the use of sweepers, water trucks, or similar method within 30 minutes of occurrence.

h. Perimeter erosion control shall be provided to prevent washout of silty material onto public roads. Unpaved construction site egress points shall be graveled to prevent track-out.

i. The construction access point shall be wet-washed at the end of the workday if any vehicle travel on unpaved surfaces has occurred.

j. Haul trucks shall be covered or at least 2 feet of freeboard shall be maintained to reduce blow-off during hauling.

k. On-site stockpiles of excavated material shall be covered.

l. A 15-mile-per-hour speed limit on unpaved surfaces shall be enforced.

m. Haul truck staging areas shall be provided for loading and unloading of soil and materials and shall be located away from sensitive receptors at the farthest feasible distance.

Table 16 shows maximum daily construction emissions following implementation of M-AQ-1 and M-AQ-2. Not all mitigation measures are quantifiable; therefore, Table 16 only reflects the emissions reductions attributable to the following mitigation elements: site watering three times per day (M-AQ-2), use of a chemical stabilizer (M-AQ-2), reduction of vehicle speeds on unpaved roads to 15 miles per hour (M-AQ-2), and use of Tier 4 Final equipment (M-AQ-1).

**Table 16**
**Estimated Maximum Daily Construction Criteria Air Pollutant Emissions – Mitigated**

| Year | VOC | $NO_x$ | CO | $SO_x$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| | *Pounds per Day* | | | | | |
| 2020 | 6.33 | 113.51 | 82.60 | 0.40 | 64.60 | 8.93 |
| 2021 | 19.85 | 118.23 | 206.29 | 0.88 | 72.46 | 19.51 |
| *Maximum* | *19.85* | *118.23* | *206.29* | *0.88* | *72.46* | *19.51* |
| *Pollutant Threshold* | *75* | *250* | *550* | *250* | *100* | *55* |
| **Threshold Exceeded?** | **No** | **No** | **No** | **No** | **No** | **No** |

**Source:** See Appendix A.
**Notes:**
VOC = volatile organic compound; NOx = oxides of nitrogen; CO = carbon monoxide; SOx = sulfur oxides; $PM_{10}$ = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
Emissions represent maximum daily construction activities from sequential construction phases at any one point for a given year.
Estimated emissions include compliance with all regulations, M-AQ-1, and M-AQ-2.

As shown in Table 16, daily construction emissions would not exceed the thresholds for any criteria air pollutant following implementation of M-AQ-1 and M-AQ-2. Impacts would be **less than significant**.

Table 17 shows maximum daily decommissioning emissions following implementation of M-AQ-1 and M-AQ-2. Not all mitigation measures are quantifiable; therefore, Table 17 only reflects the emissions reductions attributable to the following mitigation elements: site watering three times per day (M-AQ-2), use of a chemical stabilizer (M-AQ-2), reduction of vehicle speeds on unpaved roads to 15 miles per hour (M-AQ-2), and use of Tier 4 Final equipment (M-AQ-1).

**Table 17**
**Estimated Maximum Daily Decommissioning Criteria Air Pollutant Emissions – Mitigated**

| Year | VOC | $NO_x$ | CO | $SO_x$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| | *Pounds per Day* | | | | | |
| 2057 | 5.71 | 22.63 | 92.44 | 0.41 | 62.07 | 12.35 |
| *Pollutant Threshold* | *75* | *250* | *550* | *250* | *100* | *55* |
| **Threshold Exceeded?** | **No** | **No** | **No** | **No** | **No** | **No** |

**Source**: See Appendix A.
**Notes:**
VOC = volatile organic compound; $NO_x$ = oxides of nitrogen; CO = carbon monoxide; $SO_x$ = sulfur oxides; $PM_{10}$ = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
Emissions represent maximum daily construction activities from sequential construction phases at any one point for a given year.
Estimated emissions include compliance with all regulations and SDAPCD Rule 55.

As shown in Table 17, daily decommissioning emissions would not exceed the thresholds for any criteria air pollutant following implementation of M-AQ-1 and M-AQ-2. Impacts would be **less than significant**.

#### *4.2.1.4 Conclusions*

The emissions associated with construction would be temporary, lasting approximately 13 months. As shown in Table 13, unmitigated daily construction emissions would exceed the thresholds for $NO_x$, $PM_{10}$, and $PM_{2.5}$. Daily construction emissions would not exceed the threshold for VOC, CO, and $SO_X$. As shown in Table 16, emissions would not exceed the thresholds for any pollutant following implementation of M-AQ-1 and M-AQ-2. As shown in Table 17, unmitigated daily emissions for decommissioning would exceed the daily threshold for $PM_{10}$. With implementation of M-AQ-1 and M-AQ-2, decommissioning emissions of the Proposed Project would not exceed significance thresholds. Therefore, emissions during construction and decommissioning **would not contribute to a cumulatively considerable impact** and would be **less than significant** with mitigation.

**Switchyard**

As shown in Table 15, the unmitigated construction emissions from the switchyard would not exceed any significance threshold for criteria air pollutant emissions. Therefore, emissions during construction **would not contribute to a cumulatively considerable impact** and would be **less than significant** with mitigation.

### 4.2.2 Operational Impacts

#### *4.2.2.1 Guidelines for the Determination of Significance*

The guidelines for operational cumulatively considerable net increases are treated differently due to the mobile nature of the emissions. The SDAB's RAQS, based on growth projections derived

from the allowed General Plan densities, is typically updated every 3 years by SDAPCD and lays out the programs for attaining the CAAQS for $O_3$ precursors. It is assumed that if a project conforms to the County General Plan and does not have emissions exceeding the screening-level thresholds, it will not create a cumulatively considerable net increase for $O_3$ since the emissions of $O_3$ precursors were accounted for in the RAQS.

The following guidelines for determining significance are used for determining the cumulatively considerable net increases during the operational phase:

- A project that does not conform to the RAQS and/or has a significant direct impact on air quality with regard to operational emissions of $PM_{10}$, $PM_{2.5}$, $NO_x$, and/or VOCs would also have a significant cumulatively considerable net increase.
- Projects that cause road intersections to operate at or below LOS E (analysis only required when the addition of peak-hour trips from a project and surrounding projects exceeds 2,000) and create a CO hotspot create a cumulatively considerable net increase of CO.

#### *4.2.2.2 Significance of Impacts Prior to Mitigation*

With regard to cumulative impacts associated with $O_3$ precursors, in general, if a project is consistent with community and general plans, it has been accounted for in the $O_3$ attainment demonstration contained within the RAQS. As such, it would not cause a cumulatively significant impact on the ambient air quality for $O_3$.

As previously described, the Project site is designated RL-80 and is zoned S92. Per the County Zoning Ordinance, the Proposed Project can only be developed with approval of a major use permit. The densities provided by the RL designations are the lowest in the unincorporated County, and are intended to reflect and preserve the rural agricultural, environmentally constrained, and natural "backcountry" areas of the County (County of San Diego 2011a).

Permitted land uses in the S92 zones are family residential; civic uses limited to essential services, fire protection services, and law enforcement services; and agricultural uses. The County Zoning Ordinance categorizes the Proposed Project as a civic use type, and more specifically as a major impact services and utilities land use; therefore, operational cumulative emissions would be accounted for in the RAQS and the impact would be less than cumulative considerable.

Operation of the Proposed Project would generate VOC, $NO_x$, CO, $SO_x$, $PM_{10}$, and $PM_{2.5}$ emissions from mobile sources, including vehicle trips from workers and stationary sources, including one emergency generator. As discussed in Section 3.3, Operational Emissions Methodology, criteria air pollutant emissions associated with long-term operations were quantified using CalEEMod.

CalEEMod Version 2016.3.2 uses vehicle emission factors from EMFAC2014, which take into account various Statewide and Federal mobile source strategies and regulations. No mobile source regulatory measures were quantitatively assumed in addition to regulations included in EMFAC2014 as incorporated into CalEEMod.

Table 18, Estimated Maximum Daily Operational Emissions – Proposed Project, presents the maximum daily emissions associated with operation of the Proposed Project after all phases of construction have been completed in 2022.

**Table 18**
**Estimated Maximum Daily Operational Emissions – Proposed Project**

| Emission Source | VOC | $NO_x$ | CO | $SO_x$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| | *Pounds per Day* | | | | | |
| Mobile | 12.30 | 26.66 | 18.80 | 2.82 | 6.69 | 1.56 |
| Stationary | 1.65 | 7.38 | 4.21 | 0.01 | 0.24 | 0.24 |
| Offroad | 0.56 | 4.57 | 4.45 | 0.01 | 0.16 | 0.14 |
| **Total Maximum Daily Emissions** | **14.51** | **38.61** | **27.46** | **2.84** | **7.09** | **1.94** |
| *Pollutant Threshold* | 75 | 250 | 550 | 250 | 100 | 55 |
| Threshold Exceeded? | No | No | No | No | No | No |

**Notes**:
VOC = volatile organic compound; $NO_x$ = oxides of nitrogen; CO = carbon monoxide; $SO_x$ = sulfur oxides; $PM_{10}$ = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
Emissions reflect operational year 2022.
See Appendix A for complete results.

As shown, daily operational emissions generated by the Proposed Project would not exceed the County's threshold for VOCs, $NO_x$, CO, $SO_x$, $PM_{10}$, or $PM_{2.5}$. Thus, the Proposed Project operational air quality impacts would be **less than significant**.

### Switchyard

Operation of the switchyard would generate VOC, $NO_x$, CO, $SO_x$, $PM_{10}$, and $PM_{2.5}$ emissions from mobile sources, including vehicle trips from workers. As discussed in Section 3.3, Operational Emissions Methodology, criteria air pollutant emissions associated with long-term operations were quantified using CalEEMod.

CalEEMod Version 2016.3.2 uses vehicle emission factors from EMFAC2014, which take into account various Statewide and Federal mobile source strategies and regulations. No mobile source regulatory measures were quantitatively assumed in addition to regulations included in EMFAC2014 as incorporated into CalEEMod.

Table 19, Estimated Maximum Daily Operational Emissions – Switchyard, presents the maximum daily emissions associated with operation of the Proposed Project after all phases of construction have been completed in 2022.

**Table 19**
**Estimated Maximum Daily Operational Emissions – Switchyard**

| Emission Source | VOC | $NO_x$ | CO | $SO_X$ | $PM_{10}$ | $PM_{2.5}$ |
|---|---|---|---|---|---|---|
| | *Pounds per Day* | | | | | |
| Mobile | 12.10 | 24.83 | 17.10 | 2.81 | 4.42 | 1.20 |
| Offroad | 0.56 | 4.57 | 4.45 | 0.01 | 0.16 | 0.14 |
| Total | 12.66 | 29.40 | 21.55 | 2.82 | 4.58 | 1.34 |
| *Pollutant Threshold* | 75 | 250 | 550 | 250 | 100 | 55 |
| Threshold Exceeded? | No | No | No | No | No | No |

**Notes**:
VOC = volatile organic compound; $NO_x$ = oxides of nitrogen; CO = carbon monoxide; $SO_x$ = sulfur oxides; $PM_{10}$ = coarse particulate matter; $PM_{2.5}$ = fine particulate matter.
Emissions reflect operational year 2022.
See Appendix A for complete results.

As shown, daily operational emissions generated by the switchyard would not exceed the County's threshold for VOCs, $NO_x$, CO, $SO_x$, $PM_{10}$, or $PM_{2.5}$. Thus, the Proposed Project operational air quality impacts would be **less than significant**.

#### *4.2.2.3 Mitigation*

No mitigation measures would be required.

#### *4.2.2.4 Conclusions*

The Proposed Project operational emissions would not result in a cumulatively considerable net increase of any of any criteria pollutant for which the SDAB is nonattainment. Impacts would be **not be cumulatively considerable**.

**Switchyard**

The switchyard operational emissions would not result in a cumulatively considerable net increase of any of any criteria pollutant for which the SDAB is nonattainment. Impacts would be **not be cumulatively considerable**.

## 4.3 Impacts to Sensitive Receptors

Air quality varies as a direct function of the amount of pollutants emitted into the atmosphere, the size and topography of the air basin, and the prevailing meteorological conditions. Reduced

visibility, eye irritation, and adverse health impacts upon sensitive receptors are the most serious hazards of existing air quality conditions in the area. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. Air quality regulators typically define sensitive receptors as schools (preschool–12th grade), hospitals, resident care facilities, daycare centers, and other facilities that may house individuals with health conditions that would be adversely impacted by changes in air quality. However, for the purposes of CEQA analysis in the County, the definition of a sensitive receptor also includes residents.

The two primary emissions of concern regarding health effects for land development projects are DPM during construction and CO hotspots related to traffic congestion, as discussed in Section 4.3.1.2, Significance of Impacts Prior to Mitigation.

## 4.3.1 Construction Impacts

### *4.3.1.1 Guidelines for the Determination of Significance*

A significant impact would result if:

- The project would result in CO emissions that when totaled with the ambient concentrations will exceed a 1-hour concentration of 20 ppm or an 8-hour average of 9 ppm. Projects that cause road intersections to operate at or below LOS E and the addition of peak-hour trips from a project and surrounding projects exceeds 3,000 have the potential to create CO concentrations exceeding the CAAQS.
- Project implementation would result in exposure to TACs resulting in a maximum incremental cancer risks equal to or greater than 10 in 1 million, or cancer burden equal to or greater than 1.0, or total acute non-cancer health hazard index equal to or greater than 1.0, or total chronic non-cancer health hazard index equal to or greater than 1.0 would be deemed as having a potentially significant impact.

### *4.3.1.2 Significance of Impacts Prior to Mitigation*

**Carbon Monoxide Hotspots**

A CO hot spot is a localized concentration of CO that is above the state or national 1-hour or 8-hour CO ambient air standards. Localized high levels of CO are associated with traffic congestion and idling or slow-moving vehicles. Projects that cause road intersections to operate at or below a level of service (LOS) E and the addition of peak-hour trips from the project and the surrounding projects exceeds 3,000 have the potential to create CO concentrations exceeding the CAAQS. The Proposed Project's Transportation Impact Study (Kimley Horn 2020) evaluated the impacts from

construction traffic on the local area. The TIS showed that all studied intersections would operate at an acceptable level of service (LOS D or better) during construction. The TIS showed the Proposed Project would result in 320 peak-hour trips and 838 trips during non-peak hours. Further, Proposed Project construction would not significantly contribute to peak hour trips.

Trip generation and distribution for workers and delivery trucks would vary; however, based on daily construction worker, vendor trip, and haul truck estimates, maximum daily trips resulting from construction activities would be approximately 500 vehicles, which would be below the screening threshold of a peak-hour volume of 3,000 vehicles. Construction trips would occur throughout the day and would not all occur during the peak hour. Due to the phased and short-term nature of construction activities for the Proposed Project, the fact that construction trips would not all occur during the peak hour, and considering cumulative projects listed in Table 1-5 of Chapter 1 of the JVR Energy Park EIR, it is reasonable to assume that no intersections in the vicinity of the Project site would exceed a peak-hour volume of 3,000 vehicles as a result of the Proposed Project's construction trips. According to the TIS, the planned projects are far from the Project site and that these projects generate very low traffic volumes, the cumulative projects are expected to generate a less than significant amount of project trips along the TIS study roadways and intersections (Kimley Horn 2020). Additionally, SANDAG Series 13 traffic forecast data shows a general increase of just 300 daily vehicles along the study roadways between years 2020 and 2035, indicating a very nominal population increase. Therefore, the nominal increase in traffic from planned projects in the vicinity and population increases would not cause significant impacts to the study area intersections and roadways that would require improvements. Similarly, decommissioning of the Proposed Project would have less vehicle traffic than construction and would not exceed the County's screening threshold. As such, impacts related to CO hotspots from Proposed Project construction and decommissioning would be **less than significant**.

***Switchyard***

Due to the limited construction activity, equipment required for construction of the switchyard, and associated construction trips associated with the facility's construction, minimal emissions would be generated during construction of the facility. As such, construction of the switchyard would not substantially contribute to a CO hotspot impact. Impacts associated with the construction of the switchyard would be **less than significant**.

**Toxic Air Contaminants**

"Incremental cancer risk" is the net increased likelihood that a person continuously exposed to concentrations of TACs resulting from a project over a 9-, 30-, and 70-year exposure period would contract cancer based on the use of standard OEHHA risk-assessment methodology (OEHHA 2015). In addition, some TACs have non-carcinogenic effects. TACs that would potentially be

emitted during construction activities would be DPM, emitted from heavy-duty construction equipment and heavy-duty trucks. Heavy-duty construction equipment and diesel trucks are subject to CARB ATCMs to reduce DPM emissions. According to the OEHHA, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period for the maximally exposed individual resident; however, such assessments should be limited to the period/duration of activities associated with the Proposed Project (OEHHA 2015). Therefore, for the Proposed Project, the exposure period was 13 months, consistent with the duration of construction activities.

During Proposed Project construction, DPM emissions would be emitted from heavy-duty construction equipment and heavy-duty trucks as well as TAC emissions within the fugitive dust generated by vehicle traffic. Heavy-duty construction equipment and diesel trucks are subject to CARB ATCMs (described in Section 2.3, Regulatory Setting) to reduce DPM emissions. According to the OEHHA, health risk assessments, which determine the exposure of sensitive receptors to toxic emissions, should be based on a 30-year exposure period for the maximally exposed individual resident; however, such assessments should be limited to the period/duration of activities associated with the Proposed Project. Because the Proposed Project would involve construction activities in several areas across the site, the Proposed Project would not require the extensive use of heavy-duty construction equipment or diesel trucks in any one location over the duration of development, which would limit the exposure of any proximate individual sensitive receptor to TACs.

A HRA was performed to evaluate the cancer and non-cancer risk from TAC emissions on existing sensitive receptors from construction activities. The HRA methodology is further described in Section 3.5, Health Risk Assessment, and the detailed assessment is provided in Appendix B. The results of the HRA for Proposed Project construction are summarized in Table 20.

**Table 20**
**Construction Activity Health Risk Assessment Results – Unmitigated**

| Impact Parameter | Units | Proposed Project Impact | CEQA Threshold | Level of Significance |
|---|---|---|---|---|
| Cancer risk | Per Million | 2.93 | 1.0 | **Potentially Significant** |
| Chronic non-cancer health hazard index | Not Applicable | 0.14 | 1.0 | Less than Significant |
| Acute non-cancer health hazard index | Not Applicable | 0.03 | 1.0 | Less than Significant |
| Lead exposure | µg/m$^3$ | 0.0005 | 0.12 | Less than Significant |

**Source:** Appendix B
CEQA = California Environmental Quality Act; µg/m$^3$ = microgram per cubic meter.

The results of the HRA demonstrate that the TAC exposure from construction diesel exhaust emissions would result in cancer risk on site above the 1 in 1 million threshold without application of T-BACT,

chronic and acute non-cancer health hazard indexes of less than 1, and lead exposure less than 0.12 µg/$m^3$. Therefore, TAC emissions from construction of the Proposed Project may expose sensitive receptors to substantial pollutant concentrations. Impacts would be **potentially significant**.

For decommissioning, the DPM emissions would comprise only 4% of those emitted during the construction period. As such, the risk to sensitive receptors from decommissioning of the Proposed Project would be less than the County's significance threshold. Impacts associated with the decommissioning of the Proposed Project would be **less than significant**.

***Switchyard***

Construction of the switchyard would result in a minimal, temporary addition of pollutants to the local airshed caused by on-site sources (e.g., off-road construction equipment, soil disturbance, VOC off-gassing from asphalt pavement application, and internal haul trucks) and off-site sources (e.g., vendor trucks and worker vehicle trips). Due to the limited construction activity, equipment required for construction of the switchyard, and associated construction trips associated with the facility's construction, minimal emissions would be generated during construction of the facility. As shown in Table 15, criteria air pollutant emissions would be well below established thresholds. The construction of the switchyard would represent approximately 24% of the total DPM emissions during construction. As such, the risk to sensitive receptors from construction of the switchyard would be less than the County's significance threshold. Impacts associated with the construction of the switchyard would be **less than significant**.

**Valley Fever Exposure**

As discussed in Section 2.4.1, Pollutants and Effects, Valley Fever is not highly endemic to San Diego County, and within San Diego County, the incidence rate in the Project area is below the County average and the statewide average. Construction and decommissioning of the Proposed Project would comply with SDAPCD Rule 55, which limits the amount of fugitive dust generated during construction. Strategies the Proposed Project would implement to comply with SDAPCD Rule 55 and control dust include watering three times per day, using magnesium chloride for dust suppression on unpaved roads, and limiting speed on unpaved roads to 15 miles per hour. The nearest sensitive-receptor land use (existing residence) is located on the northern end of the southernmost section of the Project site.

Based on the low incidence rate of Coccidioidomycosis in the Proposed Project region and in greater San Diego County, and the Proposed Project's implementation of dust control strategies, it is not anticipated that earth-moving activities during Proposed Project construction and decommissioning would result in exposure of nearby sensitive receptors to Valley Fever.

Therefore, the Proposed Project would have a **less than significant** impact with respect to Valley Fever exposure for sensitive receptors.

***Switchyard***

Similar to the Proposed Project, construction of the switchyard would comply with SDAPCD Rule 55, which limits the amount of fugitive dust generated during construction. Strategies the Proposed Project would implement to comply with SDAPCD Rule 55 and control dust include watering three times per day, using magnesium chloride for dust suppression on unpaved roads, and limiting speed on unpaved roads to 15 miles per hour.

Based on the low incidence rate of Coccidioidomycosis in the region and in greater San Diego County, and implementation of dust control strategies, it is not anticipated that earth-moving activities during switchyard construction would result in exposure of nearby sensitive receptors to Valley Fever. Therefore, the switchyard would have a **less than significant** impact with respect to Valley Fever exposure for sensitive receptors.

**Health Impacts of Criteria Air Pollutants**

See Section 4.2.1 for a discussion related to health effects of criteria air pollutants.

#### *4.3.1.3 Mitigation*

**Carbon Monoxide Hotspots**

No mitigation measures would be required to address potential CO hotspots impacts.

**Toxic Air Contaminants**

M-AQ-1 would be implemented to reduce emissions of TAC from construction related exhaust. With implementation of M-AQ-1, the Proposed Project would require the use of Tier 4 Final construction equipment. The results of the HRA for Proposed Project construction including M-AQ-1 are summarized in Table 21. Use of Tier 4 Final construction equipment would be considered T-BACT and the County's significance threshold would be 10 in 1 million, instead of the 1.0 in 1 million without implementation of T-BACT.

**Table 21**
**Construction Activity Health Risk Assessment Results – Mitigated**

| Impact Parameter | Units | Proposed Project Impact | CEQA Threshold | Level of Significance |
|---|---|---|---|---|
| Cancer Risk | Per Million | 0.2 | 10.0 | Less than Significant |

| | | | | |
|---|---|---|---|---|
| Chronic Non-Cancer Health Hazard Index | Not Applicable | 0.01 | 1.0 | Less than Significant |
| Acute Non-Cancer Health Hazard Index | Not Applicable | 0.002 | 1.0 | Less than Significant |
| Lead Exposure | µg/m$^3$ | 0.0002 | 0.12 | Less than Significant |

**Source:** Appendix B
**Notes:** CEQA = California Environmental Quality Act; µg/m$^3$ = microgram per cubic meter.

The results of the HRA demonstrate that the TAC exposure from construction diesel exhaust emissions and fugitive dust sources would result in cancer risk on site below the 10 in 1 million threshold with application of T-BACT, chronic and acute non-cancer health hazard indices of less than 1, and lead exposure less than 0.12 µg/m$^3$. It should be noted that the cancer risk would also be below the County's threshold of 1 in 1 million without application of T-BACT.

#### *4.3.1.4 Conclusions*

**Carbon Monoxide Hotspots**

Construction- and decommissioning-related traffic on local roads would not be anticipated to contribute traffic volumes to intersections that would cause a CO hotspot. Thus, potential impacts associated with exposure of sensitive receptors to localized CO concentrations would be **less than significant**.

***Switchyard***

Due to the limited construction activity, equipment required for construction of the switchyard, and associated construction trips associated with the facility's construction, minimal emissions would be generated during construction of the facility. As such, construction of the switchyard would not substantially contribute to a CO hotspot impact. Impacts associated with the construction of the switchyard would be **less than significant**.

**Toxic Air Contaminants**

The Proposed Project's residential cancer risk, acute and chronic non-caner health hazard indices, and lead exposure off-site would be below County's thresholds with implementation of M-AQ-1; therefore, impacts would be **less than significant** after mitigation.

***Switchyard***

The construction of the switchyard would represent approximately 24% of the total DPM emissions during construction. As such, the risk to sensitive receptors from construction of the

switchyard would be less than the County's significance threshold. Impacts associated with the construction of the switchyard would be **less than significant**.

### 4.3.2 Operational Impacts

#### *4.3.2.1 Guidelines for the Determination of Significance*

A significant impact would result if:

- The project places sensitive receptors near CO hotspots or creates CO hotspots near sensitive receptors.
- Project implementation would result in exposure to TACs resulting in a maximum incremental cancer risks equal to or greater than 10 in 1 million, or cancer burden equal to or greater than 1.0, or total acute non-cancer health hazard index equal to or greater than 1.0, or total chronic non-cancer health hazard index equal to or greater than 1.0 would be deemed as having a potentially significant impact.

#### *4.3.2.2 Significance of Impacts Prior to Mitigation*

**Carbon Monoxide Hotspots**

To verify that the Proposed Project would not cause or contribute to a violation of the CO standards, a screening evaluation of the potential for CO hotspots was conducted using the California Department of Transportation (Caltrans) and the U.C. Davis Institute of Transportation Studies Transportation Project-Level Carbon Monoxide Protocol (Caltrans 2010). The County recommends that a local CO hotspot analysis be conducted if the intersection is at LOS E or worse and where a project operates at peak-hour trips exceeding 3,000 trips, or the intersection operates at LOS E or worse and under cumulative conditions exceeds 2,000 peak trips per hour. If the screening criteria are exceeded, additional site-specific analyses are performed to determine whether a project would result in a significant impact.

A Transportation Impact Study (Kimley Horn 2020) was prepared for the Proposed Project and evaluated whether there would be a decrease in the LOS (e.g., congestion) at the intersections affected by the Proposed Project. The Proposed Project's traffic analysis evaluated two intersections and four street segments based on existing traffic volumes and current street geometry. With the addition of Proposed Project traffic, the study intersections are calculated to continue to operate acceptably at LOS C or better during AM and PM peak hours. Therefore, the Proposed Project would not exceed the County's screening threshold and would not result in a CO hotspot. The impact would be **less than significant**.

***Switchyard***

During operation, it is assumed that an occasional maintenance truck would be used to perform routine maintenance, including equipment testing, monitoring, repair, routine procedures to ensure service continuity, and standard preventive maintenance of the facility on an as-needed basis. As such, operation of the switchyard would result in a negligible increase in operational trips and associated emissions. Therefore, operation of the switchyard would not substantially contribute to a CO hotspot impact. Impacts would be **less than significant**.

**Toxic Air Contaminants**

The Proposed Project would include one standby emergency diesel generator at the substation. The generator would be operated very infrequently for maintenance and testing and would only operate for 30 minutes at a time and 52 hours per year. Further, the generator at the substation is approximately 3,484 feet from the closest sensitive receptor. The Proposed Project would include monthly maintenance visits of diesel vendor trucks. No other sources of TAC emissions would be present during operation of the Proposed Project. As such, the Proposed Project would not result in substantial TAC emissions that may affect nearby receptors, nor would the Project be exposed to nearby sources of TAC emissions. Impact would be **less than significant**.

The VOC and $NO_x$ emissions, as described previously, would minimally contribute to regional $O_3$ concentrations and the associated health effects. In addition to $O_3$, $NO_x$ emissions would not contribute to potential exceedances of the NAAQS and CAAQS for $NO_2$. As shown in Table 3, the existing $NO_2$ concentrations in the area are well below the NAAQS and CAAQS standards. Thus, it is not expected the Proposed Project's operational $NO_x$ emissions would result in exceedances of the $NO_2$ standards or contribute to the associated health effects. CO tends to be a localized impact associated with congested intersections. The associated CO "hotspots" were discussed previously as a less-than-significant impact. Thus, the Proposed Project's CO emissions would not contribute to significant health effects associated with this pollutant. $PM_{10}$ and $PM_{2.5}$ would not contribute to potential exceedances of the NAAQS and CAAQS for particulate matter, obstruct the SDAB from coming into attainment for these pollutants, or contribute to significant health effects associated with particulates. Therefore, the Proposed Project would have a **less than significant** impact with respect to criteria air pollutant exposure for sensitive receptors.

***Switchyard***

During operation, it is assumed that an occasional maintenance truck would be used to perform routine maintenance, including equipment testing, monitoring, repair, routine procedures to ensure service continuity, and standard preventive maintenance of the facility on an as-needed basis. As such, operation of the switchyard would result in a negligible increase in operational trips and associated

emissions. Therefore, operation of the switchyard would not result in substantial DPM or TAC emissions that may significantly affect nearby receptors. Impacts would be **less than significant**.

#### *4.3.2.3 Mitigation*

**Carbon Monoxide**

No mitigation measures would be required to address potential CO hotspots impacts.

**Toxic Air Contaminants**

No mitigation measures would be required to address potential TAC impacts.

#### *4.3.2.4 Conclusions*

**Carbon Monoxide**

Operation of the Proposed Project would not expose sensitive receptors to localized high concentrations of CO or contribute traffic volumes to intersections that would cause a CO hotspot. Therefore, the Proposed Project's impact with respect to localized CO would be **less than significant**.

***Switchyard***

Construction and operation of the switchyard would not contribute to a CO hotspot impact. Thus, impacts related to sensitive receptors would be **less than significant**.

**Toxic Air Contaminants**

The Proposed Project does not propose any major operational sources of TAC emissions. As such, the Proposed Project would not result in substantial TAC emissions that may affect nearby receptors, nor would the Proposed Project be exposed to nearby sources of TAC emissions. Impact would be **less than significant**.

***Switchyard***

Construction and operation of the switchyard would not expose sensitive receptors to substantial sources of DPM or TACs. Thus, impacts related to sensitive receptors would be **less than significant**.

## 4.4 Other Emissions

Odors are a form of air pollution that can present significant problems for both the source and surrounding community. Although offensive odors seldom cause physical harm, they can be annoying and cause concern.

### 4.4.1 Guidelines for the Determination of Significance

Based on Appendix G of the CEQA Guidelines, and the County's Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality (County of San Diego 2007), the Proposed Project would have a significant impact if:

- The project, which is not an agricultural, commercial, or an industrial activity subject to SDAPCD standards, as a result of implementation, would either generate objectionable odors or place sensitive receptors next to existing objectionable odors, which would affect a considerable number of persons.

California Health and Safety Code, Division 26, Part 4, Chapter 3, Section 41700, and SDAPCD Rule 51, commonly referred to as the public nuisance law, prohibit emissions from any source whatsoever in such quantities of air contaminants or other material that cause injury, detriment, nuisance, or annoyance to the public health or damage to property. The potential for an operation to result in odor complaints from a "considerable" number of persons in the area would be considered to be a significant, adverse odor impact.

Projects required to obtain permits from SDAPCD are evaluated by SDAPCD staff for potential odor nuisance, and conditions may be applied (or control equipment required) where necessary to prevent occurrence of public nuisance.

Odor issues are subjective because of the nature of odors themselves and because their measurements are difficult to quantify. As a result, this guideline is qualitative, and each project is reviewed on an individual basis, focusing on the existing and potential surrounding uses and location of sensitive receptors.

### 4.4.2 Significance of Impacts Prior to Mitigation

#### *4.4.2.1 Construction and Decommissioning*

Section 6318 of the San Diego County Zoning Ordinance requires that all commercial and industrial uses be operated so as not to emit matter causing unpleasant odors that are perceptible by the average person at or beyond any lot line of the lot containing said uses. Section 6318 goes on to further provide specific dilution standards that must be met "at or beyond any lot line of the lot containing the uses" (County of San Diego 1979). SDAPCD Rule 51 (Public Nuisance) also prohibits emission of any material that causes nuisance to a considerable number of people or endangers the comfort, health, or safety of any person. A project that involves a use that would produce objectionable odors would be deemed to have a significant odor impact if it would affect a considerable number of off-site receptors.

The nearest off-site residential receptor to the Proposed Project include single-family residences, adjacent to the northern end of the southern section of the Project site.

Construction and decommissioning of Proposed Project components would result in the emission of diesel fumes and other odors typically associated with construction activities. These compounds would be emitted in varying amounts on the Project site depending on where construction and decommissioning activities are occurring. Sensitive receptors located within and in the vicinity of the construction site may be affected; however, odors are highest near the source and would quickly dissipate. Any odors associated with construction and decommissioning activities would be temporary and would cease upon Proposed Project completion; therefore, odor impacts would be **less than significant**.

**Switchyard**

Any odors associated with construction of the switchyard would be minimal, temporary, would dissipate before reaching off-site sensitive receptors, and would cease upon completion of construction activities. Impacts related to odors would be **less than significant**.

#### *4.4.2.2 Operation*

Land uses and industrial operations that are associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting, refineries, landfills, dairies, and fiberglass molding. The Proposed Project would not include land uses that would generate objectionable odors, and Proposed Project land uses would not attract people to an area where there would be a potential for exposure to objectionable odors.

Although odor impacts are unlikely, the Proposed Project would be required to comply with the County odor policies enforced by SDAPCD, including SDAPCD Rule 51 and County Zoning Code Section 6318, in the event a nuisance complaint occurs, which prohibit nuisance odors and identify enforcement measures to reduce odor impacts to nearby receptors. As such, the Proposed Project would not generate objectionable odors; therefore, potential Proposed Project impacts associated with odors would be **less than significant**.

**Switchyard**

During operation, it is assumed that an occasional maintenance truck would be used to perform routine maintenance activities on the switchyard, which would not be considered a substantial source of odor. Impacts related to odors would be **less than significant**.

### 4.4.3 Mitigation

No mitigation measures would be required to address potential odor impacts.

### 4.4.4 Conclusion

The Proposed Project would not include land uses commonly associated with odor complaints, and the Proposed Project would be required to comply with the County's odor policies enforced by SDAPCD, including Rule 51, in the event a nuisance complaint occurs. Therefore, impacts associated with objectionable odors would be **less than significant**.

**Switchyard**

The switchyard would not include land uses commonly associated with odor complaints, and the switchyard would be required to comply with the County's odor policies enforced by SDAPCD, including Rule 51, in the event a nuisance complaint occurs. Therefore, impacts associated with objectionable odors would be **less than significant**.

# 5 SUMMARY OF RECOMMENDED PROJECT DESIGN FEATURES, IMPACTS, AND MITIGATION MEASURES

## 5.1 Project Design Features

No project design features are included as part of the Proposed Project.

**Switchyard**

No project design features are included as part of the switchyard.

## 5.2 Impacts

**Conformance with the Regional Air Quality Strategy**

The emissions from the buildout of the currently zoned uses on the Project site were shown to be greater than that of the Proposed Project. Therefore, the potential criteria emissions from the site would not be in exceedance of those assumed in the SIP and RAQS. Therefore, the Proposed Project would not result in a cumulatively considerable contribution to regional $O_3$ concentrations or other criteria pollutant emissions. Impacts would be **less than significant**.

***Switchyard***

The switchyard is considered accounted for in the RAQS. As such, implementation of this component would not conflict with or obstruct implementation of local air quality plans. Impacts would be **less than significant**.

**Cumulatively Considerable Net Increase of Criteria Pollutants**

Construction and decommissioning of the Proposed Project would result in a temporary addition of pollutants to the local airshed caused by soil disturbance, fugitive dust emissions, and combustion pollutants from on-site construction equipment, as well as from off-site trucks hauling construction materials. The analysis concludes that the daily construction emissions would exceed the County's daily significance thresholds for $PM_{10}$ and $PM_{2.5}$. Daily construction emissions would not exceed the County's daily thresholds for VOCs, $NO_x$, CO, or $SO_X$. Air quality impacts resulting from construction, therefore, would be potentially significant. Decommissioning of the Proposed Project would exceed the County's daily significance thresholds for $PM_{10}$ emissions. Cumulative construction and operational emissions were found to be less than significant when considering the Proposed Project in combination with other existing and foreseeable future projects in the Proposed Project vicinity. Following implementation of M-AQ-1 and M-AQ-2, cumulative construction and decommissioning emissions would be **less than significant**.

Maximum daily operational emissions of VOC, $NO_x$, CO, $SO_X$, $PM_{10}$, and $PM_{2.5}$ generated by the Proposed Project would not exceed significance thresholds. Thus, impacts would be **less than significant**.

***Switchyard***

Maximum daily construction emissions of VOC, $NO_x$, CO, $SO_x$, $PM_{10}$, and $PM_{2.5}$ generated by the switchyard would not exceed significance thresholds. As such, construction of the switchyard **would not** contribute to a cumulatively considerable impact. Maximum daily operational emissions of VOC, $NO_x$, CO, $SO_x$, $PM_{10}$, and $PM_{2.5}$ generated by the switchyard would not exceed significance thresholds. As such, operation of the switchyard **would not contribute to a cumulatively considerable impact**.

**Impacts to Sensitive Receptors**

***Carbon Monoxide Hotspots***

Construction traffic in 2021, which represents the highest level of construction-related traffic, would not result in traffic volumes that would cause a CO hotspot; therefore, impacts related to CO near sensitive receptors during construction would be **less than significant**. Decommissioning would result in less traffic than construction and would not exceed the County's screening thresholds. Similarly, operation of the Proposed Project would not expose sensitive receptors to localized high concentrations of CO or contribute traffic volumes to intersections that would cause a CO hotspot. The traffic volumes and levels of service during operation would not exceed County thresholds; therefore, potential operational CO hotspot impacts would be **less than significant**.

Switchyard

Construction-related traffic on local roads would not be anticipated to contribute traffic volumes to intersections that would cause a CO hotspot. Thus, potential impacts associated with exposure of sensitive receptors to localized CO concentrations would be **less than significant**. Operation of the switchyard would not expose sensitive receptors to localized high concentrations of CO or contribute traffic volumes to intersections that would cause a CO hotspot. Therefore, the Proposed Project's impact with respect to localized CO would be **less than significant**.

***Toxic Air Contaminants***

Impacts related to exposure to TACs would be above the County's thresholds for cancer risk during construction activities; therefore, impacts would be potentially significant. The acute and chronic non-cancer health hazard indices and lead exposure were below the County's thresholds. With

implementation of M-AQ-1, impacts related to cancer risk would be below the County's thresholds during construction activities; therefore, impacts would be **less than significant**.

The Proposed Project does not propose any major operational sources of TAC emissions. As such, the Proposed Project would not result in substantial TAC emissions that may affect nearby receptors, nor would the Proposed Project be exposed to nearby sources of TACs. Impacts would be **less than significant**.

Switchyard

The construction of the switchyard would represent 24% of the total DPM emissions during construction. As such, the risk to sensitive receptors from construction of the switchyard would be less than the County's significance threshold. Therefore, construction of the switchyard would not result in substantial DPM or TAC emissions that may significantly affect nearby receptors. Impacts would be **less than significant**. The switchyard would not include any major operational sources of TAC emissions. As such, the switchyard would not result in substantial TAC emissions that may affect nearby receptors. Impact would be **less than significant**.

**Other Emissions**

The Proposed Project's construction and operational activities are not anticipated to expose a substantial number of people to objectionable odors. Potential odor impacts would be **less than significant**.

***Switchyard***

Construction and operational odor impacts associated with the switchyard would be **less than significant**.

## 5.3 Mitigation

**M-AQ-1** and **M-AQ-2** are provided to reduce $NO_x$ $PM_{10}$ and $PM_{2.5}$ emissions to the extent feasible. The Proposed Project's residential cancer risk, acute and chronic non-cancer health hazard indices, and lead exposure off-site would be below County's thresholds with implementation of M-AQ-1. Emissions of $PM_{10}$ and $PM_{2.5}$ would be reduced to below the County's thresholds with implementation of M-AQ-2.

**M-AQ-1** Prior to the County of San Diego's (County's) approval of any construction or decommissioning-related permits, the Project applicant or its designee shall place the following requirements on all plans, which shall be implemented during each construction phase to minimize diesel particulate matter emissions:

a. Heavy-duty diesel-powered construction equipment shall be equipped with Tier 4 Final or better diesel engines for equipment greater than 75 horsepower. The

County shall verify and approve all pieces within the construction fleet that would not meet Tier 4 Final standards.

b. Vehicles in loading and unloading queues shall not idle for more than 5 minutes and shall turn their engines off when not in use to reduce vehicle emissions.

c. All construction equipment shall be properly tuned and maintained in accordance with manufacturer's specifications.

d. When construction equipment units that are less than 50 horsepower would be employed, that equipment shall be electrical or natural gas-powered, where available.

With implementation of M-AQ-1, the Proposed Project would require the use of Tier 4 Final construction equipment. It should be noted that the use of Tier 4 Final construction equipment would be considered T-BACT and the County's significance would be 10 in 1 million, instead of the 1.0 in 1 million without implementation of T-BACT.

**M-AQ-2** Prior to the County of San Diego's (County) approval of any grading permits and during Project construction, a Fugitive Dust Control Plan shall be prepared demonstrating compliance with San Diego Air Pollution Control District (SDAPCD) Rule 55 and County Code Section 87.428 (Grading Ordinance), to the satisfaction of the County. The Project applicant or its designee shall require implementation of the following fugitive dust measures to minimize $PM_{10}$ emissions as part of the Fugitive Dust Control Plan. All measures shall be designated on Grading and Improvement Plans.

a. Prior to construction activities, the Project applicant shall employ a construction relations officer who shall address community concerns regarding on-site construction activity. The applicant shall provide public notification in the form of a visible sign containing the contact information of the construction relations officer who shall document complaints and concerns regarding on-site construction activity. The sign shall be placed in easily accessible locations and noted on Grading and Improvement Plans.

b. Grading areas shall be watered, or another SDAPCD-approved dust control non-toxic agent shall be used, at least three times daily to minimize fugitive dust only where chemical stabilizers are not used.

c. All permanent roads and the paved access roadway improvements shall be constructed and paved as early as possible in the construction process to reduce construction vehicle travel on unpaved roads. Foundations shall be finalized as soon as possible following site preparation and grading activities to reduce fugitive dust from earth-moving operations.

d. Grading areas shall be stabilized as quickly as possible to minimize fugitive dust.

e. Wheel washers, grates, rock, or road washers shall be installed adjacent to the site access points for tire inspection and washing prior to vehicle entry on public roads.

f. Visible track-out into traveled public streets shall be removed with the use of sweepers, water trucks, or similar method within 30 minutes of occurrence.

g. Haul trucks shall be covered or at least 2 feet of freeboard shall be maintained to reduce blow-off during hauling.

h. A 15-mile-per-hour speed limit on unpaved surfaces shall be enforced.

i. Haul truck staging areas shall be provided for loading and unloading of soil and materials and shall be located away from sensitive receptors at the farthest feasible distance.

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# 6 REFERENCES

Caltrans (California Department of Transportation). 2010. *Transportation Project-Level Carbon Monoxide Protocol (CO Protocol).* UCD-ITS-RR-97-21. Revised December 1997. File updated October 13, 2010. Accessed April 11, 2019. http://www.dot.ca.gov/env/air/docs/co-protocol-searchable.pdf.

CAPCOA (California Air Pollution Control Officers Association). 2017. *California Emissions Estimator Model (CalEEMod) User's Guide Version 2016.3.2.* Prepared by BREEZE Software, A Division of Trinity Consultants in collaboration with South Coast Air Quality Management District and the California Air Districts. Accessed May 2018. http://caleemod.com/.

CARB (California Air Resources Board). 2000. *Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles*. October 2000. http://www.arb.ca.gov/diesel/documents/rrpfinal.pdf.

CARB. 2001. *Risk Management Guidelines for New, Modified, and Existing Sources of Lead.* March. Accessed January 2019. https://www.arb.ca.gov/toxics/lead/mainandappend.pdf.

CARB. 2009. "California Ambient Air Quality Standards." https://ww2.arb.ca.gov/resources/california-ambient-air-quality-standards.

CARB. 2011. *Recommended Area Designation for the 2010 Federal Sulfur Dioxide Standard – Appendix 1 Five Factor Analyses for California Air Basins*. June 2011. https://www.arb.ca.gov/desig/so2a1.pdf.

CARB. 2016a. "Ambient Air Quality Standards." May 4, 2016. Accessed August 2016. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf.

CARB. 2016b. "Area Designation Maps/State and National." Last updated May 5, 2016. http://www.arb.ca.gov/desig/adm/adm.htm.

CARB. 2017. "Glossary of Air Pollutant Terms." Accessed June 2017. http://www.arb.ca.gov/html/gloss.htm.

CARB. 2020. "iADAM: Air Quality Data Statistics." Accessed June 2020. https://www.arb.ca.gov/adam/topfour/topfourdisplay.php.

CDPH (California Department of Public Health). 2016. *Epidemiologic Summary of Coccidioidomycosis in California, 2016.* https://www.cdph.ca.gov/Programs/CID/DCDC/CDPH%20Document%20Library/CocciEpiSummary2016.pdf.

County of San Diego. 1979. San Diego County Zoning Ordinance, Part Six: General Regulations, Section 6318, Odors. May 16, 1979. http://www.sdcounty.ca.gov/pds/zoning/index.html.

County of San Diego. 2004. San Diego County Grading, Clearing and Watercourses Ordinance. San Diego County Code, Title 8, Division 7, Section 87.428, Dust Control Measures. April 23, 2004. http://www.sdcounty.ca.gov/dpw/docs/propgradord.pdf.

County of San Diego. 2007. *Guidelines for Determining Significance and Report Format and Content Requirements – Air Quality*. Department of Planning and Land Use, Department of Public Works. March 19, 2007.

County of San Diego. 2011a. *San Diego County General Plan: A Plan for Growth, Conservation, and Sustainability*. August 2011. http://www.sandiegocounty.gov/pds/gpupdate/ docs/GP/Cover_Intro_Vision.pdf.

County of San Diego. 2011b. *San Diego County General Plan Update Environmental Impact Report*. Section 2.3, Air Quality. August 2011. https://www.sandiegocounty.gov/content/dam/sdc/pds/gpupdate/docs/BOS_Aug2011/EIR/FEIR_2.03_-_Air_Quality_2011.pdf.

EPA (U.S. Environmental Protection Agency). 2009. "Integrated Science Assessment for Particulate Matter." EPA/600/R-08/139F.

EPA. 2013. "Integrated Science Assessment of Ozone and Related Photochemical Oxidants." EPA/600R-10/076F.

EPA. 2016a. "Integrated Science Assessment for Oxides of Nitrogen-Health Criteria (2016 Final Report)." U.S. EPA, EPA/600/R-15/068, 2016.

EPA. 2016b. "EPA Region 9 Air Quality Maps and Geographic Information." Last updated April 27, 2016. Accessed August 2016. http://www.epa.gov/region9/air/maps/.

EPA. 2017a. "Process of Reviewing the National Ambient Air Quality Standards." https://www.epa.gov/criteria-air-pollutants/process-reviewing-national-ambient-air-quality-standards.

EPA. 2017b. "Six Common Air Pollutants." Last updated April 3, 2017. http://www.epa.gov/air/urbanair/.

EPA. 2018. AERMOD Version 18081 Implementation Guide. April 17. Accessed October 2018. https://www3.epa.gov/ttn/scram/models/aermod/aermod_implementation_guide.pdf.

EPA. 2020. "Outdoor Air Quality Data." Last Updated December 5, 2017. Accessed June 2020. https://www.epa.gov/outdoor-air-quality-data/monitor-values-report.

Kimley Horn. 2020. *Transportation Impact Study for the JVR Energy Park*. March.

Nelson, J. 2018. Coccidioidomycosis Data Requests. Email from J. Nelson (County of San Diego Health & Human Services Agency, Epidemiologist II) to R. Kelly (Dudek). June 19, 2018.

OEHHA (Office of Environmental Health Hazard Assessment). 2015. *Air Toxics Hot Spots Program, Risk Assessment Guidelines Guidance Manual for Preparation of Health Risk Assessments*. Accessed October 2018. https://oehha.ca.gov/media/downloads/crnr/2015guidancemanual.pdf.

SANDAG (San Diego Association of Governments). 2015. *San Diego Forward: The Regional Plan*. October 2015. Accessed April 2017. http://www.sdforward.com/pdfs/Final_PDFs/The_Plan_combined.pdf.

SANDAG. 2016. *2016 Regional Transportation Improvement Program*. Accessed November 2016. http://www.sandag.org/uploads/publicationid/publicationid_2071_21174.pdf.

SANDAG. 2017a. *Series 13: 2050 Regional Growth Forecast.* Accessed June 2017. http://www.sandag.org/index.asp?classid=12&subclassid=84&projectid=503&fuseaction=projects.detail.

SANDAG. 2017b. *2050 Regional Transportation Plan.* Accessed June 2017. http://www.sandag.org/index.asp?projectid=349&fuseaction=projects.detail.

Sardar, S. 2019. "SAFE Rule emission factor adjustments in CalEEMod." Telephone conversation between S. Sardar (CARB) and J. Reed (Dudek). December 13, 2019.

SDAPCD (San Diego Air Pollution Control District). 1969. Rules and Regulations. Regulation IV. Prohibitions. Rule 51. Nuisance. Effective January 1, 1969.

SDAPCD. 1995. Rules and Regulations. Regulation XV. Federal Conformity. Rule 1501. Conformity with General Federal Actions. Adopted March 7, 1995.

SDAPCD. 1997. Rules and Regulations. Regulation IV. Prohibitions. Rule 50. Visible Emissions. Effective August 13, 1997. Accessed June 2017. http://www.sandiegocounty.gov/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Prohibitions/APCD_R50.pdf.

SDAPCD. 2005. *Measures to Reduce Particulate Matter in San Diego County*. December 2005. http://www.sdapcd.org/planning/plan.html.

SDAPCD. 2009a. *2009 Regional Air Quality Strategy Revision.* April 2009. http://www.sdapcd.org/content/dam/sdc/apcd/PDF/Air%20Quality%20Planning/2009-RAQS.pdf.

SDAPCD. 2009b. SDAPCD Regulation IV: Prohibitions; Rule 55: Fugitive Dust. June 24, 2009. http://www.sandiegocounty.gov/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Prohibitions/APCD_R55.pdf.

SDAPCD. 2015a. SDAPCD Regulation IV: Prohibitions; Rule 67.0.1: Architectural Coatings. June 24. Accessed May 2017. http://www.sdapcd.org/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Prohibitions/APCD_R67-0-1.pdf.

SDAPCD. 2015b. *Supplemental Guidelines for Submission of Air Toxics "Hot Spots" Program Health Risk Assessments (HRAs).* June 2015. Accessed May 2017. http://www.sdapcd.org/content/dam/sdc/apcd/PDF/Misc/APCD_HRA_Guidelines.pdf.

SDAPCD. 2016a. *2008 Eight-Hour Ozone Attainment Plan for San Diego County*. Updated December 2016. http://www.sdapcd.org/content/dam/sdc/apcd/PDF/Air%20Quality%20Planning/8-Hr-O3%20Attain%20Plan-08%20Std.pdf.

SDAPCD. 2016b. *2016 Revision of the Regional Qir Quality Strategy for San Diego County*. December 2016. Accessed June 2017. http://www.sdapcd.org/content/dam/sdc/apcd/PDF/Air%20Quality%20Planning/2016%20RAQS.pdf.

SDAPCD. 2016c. SDAPCD Regulation II: Permits; Rule 20.2: New Source Review—Non-Major Sources. January 29, 2016. http://www.sdapcd.org/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Permits/APCD_R20-2.pdf.

SDAPCD. 2017a. *Annual Air Quality Monitoring Network Plan 2016*. April 2017. https://www.sdapcd.org/content/dam/sdc/apcd/monitoring/2016_Network_Plan.pdf.

SDAPCD. 2017b. Regulation XII. Toxic Air Contaminates; Rule 1200: Toxic Air Contaminates – New Source Review. http://www.sdapcd.org/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Toxic_Air_Cotaminants/zACPD_R1200.pdf.

SDAPCD. 2017c. Regulation XII. Toxic Air Contaminates; Rule 1210: Toxic Air Contaminates – Public Notification and Risk Reduction. http://www.sdapcd.org/content/dam/sdc/apcd/PDF/Rules_and_Regulations/Toxic_Air_Cotaminants/APCD_R1210.pdf.

USGS (United States Geological Survey). 2000. *Operational Guidelines (version 1.0) for Geological Fieldwork in Areas 1 Endemic for Coccidioidomycosis (Valley Fever).*

WRCC (Western Regional Climate Center). 2017. *CAMPO, California (041424)*. Accessed June 2018. https://wrcc.dri.edu/cgi-bin/cliMAIN.pl?ca1424.

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