CHAPTER 3.0 – ENVIRONMENTAL EFFECTS FOUND NOT TO BE SIGNIFICANT

3.1 Effects Found Not Significant as Part of the EIR Process

3.1.1 Air Quality

This section of the EIR summarizes an Air Quality Technical Report (HELIX 2021d), contained in Appendix I, which was prepared in conformance with the County Report Format and Content Requirements – Air Quality (County 2007c). The Valley Fever Report (EnviroMINE 2021b) prepared to evaluate coccidioidomycosis (Valley Fever) exposure associated with the Project also is summarized herein.

3.1.1.1 *Existing Conditions*

Climate/Meteorology/Temperature Inversions

The Project site is located within the San Diego Air Basin (SDAB). The climate in southern California, including the SDAB, is controlled largely by the strength and position of the subtropical high-pressure cell over the Pacific Ocean. Areas within 30 miles of the coast experience moderate temperatures and comfortable humidity.

The annual average maximum temperature in the Project area is approximately 75 degrees Fahrenheit (°F), and the average minimum temperature is approximately 53°F. Total precipitation in the Project area averaged approximately 12.9 inches between 1899 and 2006. Precipitation occurs mostly during the winter and relatively infrequently during the summer (Western Regional Climate Center [WRCC] 2019). The predominant wind direction in the Project vicinity is from the west. The average wind speed in the vicinity is 5.4 mph (Iowa Environmental Mesonet 2019).

Due to its climate, the SDAB experiences frequent temperature inversions (temperature increases as altitude increases, which is the opposite of general patterns). Temperature inversions prevent air close to the ground from mixing with the air above it. As a result, air pollutants are trapped near the ground. During the summer, air quality problems are created due to the interaction between the ocean surface and the lower layer of the atmosphere, creating a moist marine layer. An upper layer of warm air mass forms over the cool marine layer, preventing air pollutants from dispersing upward. Additionally, hydrocarbons and nitrogen dioxide (NO_2) react under strong sunlight, creating smog. Light, daytime winds, predominantly from the west, further aggravate the condition by driving the air pollutants inland, toward the foothills. During the fall and winter, air quality problems are created due to carbon monoxide (CO) and NO_2 emissions. High NO_2 levels usually occur during autumn or winter, on days with summer-like conditions.

Air Pollutants of Concern

Criteria Air Pollutants

Six air pollutants have been identified by the USEPA and California Air Resources Board (CARB) as being of concern both on a nationwide and statewide level: ground-level ozone (O_3), CO, NO_2, sulfur dioxide (SO_2), lead, and particulate matter (PM), which is subdivided into two classes based

on particle size: coarse PM equal to or less than 10 micrometers in diameter (PM_{10}) and fine PM equal to or less than 2.5 micrometers in diameter ($PM_{2.5}$). These air pollutants are commonly referred to as "criteria air pollutants" because air quality standards are regulated using human health and environmentally based criteria. Criteria pollutants can be emitted directly from sources (primary pollutants; e.g., CO, SO_2, PM_{10}, $PM_{2.5}$, and lead), or they may be formed through chemical and photochemical reactions of precursor pollutants (secondary pollutants; e.g., ozone and NO_2) in the atmosphere. The principal precursor pollutants of concern are reactive organic gasses ([ROGs] also known as volatile organic compounds [VOCs])* and nitrogen oxides (NO_X).

The descriptions of sources and general health effects for each of the criteria air pollutants are shown in Table 3.1.1-1, *Summary of Common Sources and Human Health Effects of Criteria Air Pollutants,* based on information provided by the California Air Pollution Control Officers Association (CAPCOA; 2018). Specific adverse health effects to individuals or population groups induced by criteria pollutant emissions are highly dependent on a multitude of interconnected variables (e.g., cumulative concentrations, local meteorology and atmospheric conditions, and the number and character of exposed individuals [e.g., age, gender]). Criteria pollutant precursors (ROG and NO_X) affect air quality on a regional scale, typically after significant delay and distance from the pollutant source emissions. Health effects related to ozone and NO_2 are, therefore, the product of emissions generated by numerous sources throughout a region. As such, specific health effects from these criteria pollutant emissions cannot be directly correlated to the incremental contribution from a single project.

Toxic Air Contaminants

Toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or in serious illness or that may pose a present or potential hazard to human health. TACs can cause long-term health effects such as cancer, birth defects, neurological damage, asthma, bronchitis, or genetic damage, or short-term acute effects such as eye watering, respiratory irritation (a cough), runny nose, throat pain, and headaches. TACs are considered either carcinogenic or noncarcinogenic based on the nature of the health effects associated with exposure to the pollutant. For carcinogenic TACs, there is no level of exposure that is considered safe and impacts are evaluated in terms of overall relative risk expressed as excess cancer cases per one million exposed individuals. Noncarcinogenic TACs differ in that there is generally assumed to be a safe level of exposure below which no negative health impact is believed to occur. These levels are determined on a pollutant-by-pollutant basis.

The Health and Safety Code (§39655, subdivision (a)) defines a TAC as "an air pollutant which may cause or contribute to an increase in mortality or in serious illness, or which may pose a present or potential hazard to human health." A substance that is listed as a hazardous air pollutant pursuant to subsection (b) of Section 112 of the Federal Clean Air Act (CAA) (42 U.S. Code Section 7412[b]) is a TAC. Under State law, the California Environmental Protection Agency (CalEPA), acting through CARB, is authorized to identify a substance as a TAC if it determines

* CARB defines and uses the term ROGs while the USEPA defines and uses the term VOCs. The compounds included in the lists of ROGs and VOCs and the methods of calculation are slightly different. However, for the purposes of estimating criteria pollutant precursor emissions, the two terms are often used interchangeably.

the substance is 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.

Diesel engines emit a complex mixture of air pollutants, including both gaseous and solid material. The solid material in diesel exhaust is known as diesel particulate matter (DPM). Almost all DPM is 10 microns or less in diameter, and 90 percent of DPM is less than 2.5 microns in diameter. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lung. In 1998, the CARB identified DPM as a toxic air contaminant based on published evidence of a relationship between diesel exhaust exposure and lung cancer and other adverse health effects. DPM has a significant impact on California's population—it is estimated that about 70 percent of total known cancer risk related to air toxics in California is attributable to DPM (CARB 2018).

Crystalline silica is a common mineral found in the earth's crust. Materials like sand, stone, concrete, and mortar contain crystalline silica. Respirable crystalline silica—very small particles at least 100 times smaller than ordinary sand—is created when cutting, sawing, grinding, drilling, and crushing stone, rock, concrete, brick, and mortar. Potential health risks resulting from inhalation of respirable crystalline silica include silicosis, an incurable lung disease; lung cancer; chronic obstructive pulmonary disease; and kidney disease (U.S. Occupational Safety and Health Administration [USOSHA] 2018). In addition to respirable crystalline silica, the dust from mining operations and processing plants can contain very small amounts of toxic metals and elements including arsenic, beryllium, cadmium, copper, chromium, manganese, mercury, nickel, and selenium. Significant exposure to these toxic metals and elements can result in a wide range of health effects including cancer, long-term chronic conditions, and short-term acute effects. The Project would primarily mine, classify, and wash sand. Because dust from native sand can contain these toxic metals and elements, it assumed they are present in all fugitive dust particulate matter emitted during mining and processing operations.

Ambient Air Quality

The San Diego County Air Pollution Control District (SDAPCD) operates a network of ambient air monitoring stations throughout the County. The purpose of the monitoring stations is to measure ambient concentrations of the pollutants and determine whether the ambient air quality meets the California Ambient Air Quality Standards (CAAQS) and the National Ambient Air Quality Standards (NAAQS), described below. The nearest ambient monitoring station to the Project site is the El Cajon-Lexington Elementary School Monitoring Station located at 533 First Street in El Cajon, approximately 3.4 miles northwest of the Project site. The El Cajon-Lexington Elementary School Monitoring Station is located in an inland valley and is representative of the climatological and topographical conditions at the Project site. Air quality data for the years 2018 through 2020 are shown on Table 3.1.1-2, *Air Quality Monitoring Data.*

Monitoring data at El Cajon-Lexington Elementary School Monitoring Station show no exceedances of the state 1-hour standard for ozone from 2018 to 2020. Exceedance of the state and federal 8-hour standards for ozone occurred on two days in 2018, on two days 2019, and on 14 days in 2020. Exceedance of the federal standard for $PM_{2.5}$ occurred once in 2018. Data from the monitoring station showed no days in exceedance of the maximum daily standards for PM_{10}. The annual average for state PM_{10} was exceeded in 2018.

Sensitive Receptors

CARB and the Office of Environmental Health Hazard Assessment (OEHHA) have identified the following groups of individuals as the most likely to be affected by air pollution: the elderly over 65, children under 14, infants (including in utero in the third trimester of pregnancy), and persons with cardiovascular and chronic respiratory diseases such as asthma, emphysema, and bronchitis (CARB 2005, OEHHA 2015). Some land uses are considered more sensitive to air pollution than others due to the types of population groups or activities involved and are referred to as sensitive receptors. Examples of these sensitive receptors are residences, schools, hospitals, and daycare centers.

The closest existing sensitive receptors to the Project site are single-family homes adjacent to the existing and former golf courses on the south and east sides of the Project site. In addition, there are single- and multi-family homes along the primary routes for aggregate delivery trucks entering and exiting the Project site, including along Willow Glen Drive and Jamacha Road. The closest school is the Jamacha Elementary School approximately 1,280 feet (0.24 mile) south of the Project Phase 2 mining area (refer to Figure 1-3).

Other Concerns Related to Air Emissions

Valley Fever: Several comments received during the Notice of Preparation period were concerned with the issue of Valley Fever.

Coccidioidomycosis, more commonly known as Valley Fever, is an infection (usually of the lungs) caused by inhalation of the spores of the *Coccidioides immitis* fungus (typically in California) (Centers for Disease Control and Prevention [CDC] 2020), which grows in the soils of the southwestern United States. Soil characteristics that are more likely to support Coccidioides include soils that are undisturbed, alkaline, silty, well aerated with a relatively high-water holding capacity, sparsely vegetated and have a high salinity level. Areas that are less likely to support Coccidioides include cultivated soils, heavily vegetated areas, higher elevations (above 7,000 feet), areas where commercial fertilizers have been applied, areas that are continually wet, paved, or oiled, soils containing abundant microorganisms and heavily urbanized areas where soil has been previously disturbed (Evans, V & Armstrong, S., 2018). Endemic areas for the fungus are usually arid to semiarid with mild winters and extended hot seasons (USGS 2000). 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. Areas endemic for *Coccidioides* include portions of the southwestern United States and northern Mexico. San Diego County is a suspected endemic area for *Coccidioides* (CDC 2014). When present, the fungal spores are generally found in the upper 30 centimeters (12 inches) of the soil horizon, especially in undisturbed soils. Currently there are no commercially available tests to detect *Coccidioides* in soil. Testing that is done for limited scientific purposes does not always detect the spores even if they are present (CDC 2020).

It is estimated that 60 percent of those infected with Valley Fever have no symptoms. For the remaining cases, symptoms of Valley Fever can initially include fatigue, cough, fever, shortness

of breath, headache, night sweats, muscle pain, and rashes. In approximately five to ten percent of cases, people exposed to *Coccidioides* can develop complications or chronic pulmonary diseases. In rare cases, disseminated disease (which can be fatal) can occur and affect the skin, bones, soft tissues, and central nervous system. It is important to note that these symptoms are not unique to Valley Fever and can be caused by other illnesses. Identifying and confirming this disease require specific laboratory tests such as: (1) microscopic identification of the fungal spherules in infected tissue, sputum or body fluid sample; (2) growing a culture of *Coccidioides* from a tissue specimen, sputum, or body fluid; (3) detection of antibodies (serological tests specifically for Valley Fever) against the fungus in blood serum or other body fluids; and (4) administering the Valley Fever Skin Test (called coccidioidin or spherulin), which can indicate prior exposure to the fungus (Valley Fever Center for Excellence 2021). People working in occupations such as construction, agriculture, and archaeology have an increased risk of exposure and disease because these jobs result in disturbance of soils where fungal spores may be found (California Department of Public Health [CDPH] 2013). There is currently no vaccine available to prevent one from contracting Valley Fever despite scientist's efforts to develop one since the 1960s (CDC 2020).

Valley Fever has been reported in most counties in California, with approximately 70 percent of the cases occurring within six counties including Kern, Kings, San Luis Obispo, Fresno, Tulare, and Madera Counties. These counties are considered highly endemic for the Coccidioides fungus with incidence rates of over 20 cases of Valley Fever per 100,000 population (California Labor Code, Section 6709). The reported number of cases in California was 9,004 cases in 2019, with an incidence rate of 23 per 100,000 population in 2019 (CDPH 2020). The San Diego County Health and Human Services Agency, for the 10-year period 2010 to 2019 reported a total of 2,052 cases of Coccidioidomycosis cases in San Diego County and an incidence rate of 6.3 cases per 100,000 population. Figures for the case counts and the incidence rate for the five zip codes near the Project site are presented in Table 3.1.1-3, San Diego County Valley Fever Incidence Rates 2010-2019. The Project site is located along the southern boundary of zip code 92019. The Project site in relation to zip code 92019 and four surrounding zip codes is shown in Figure 3.1.1-1, Valley Fever Evaluation Zip Codes.

Due to their very small size and buoyancy, *Coccidioides* spores can remain aloft for great distances and thus may be present in air that appears quite clear. Control of fugitive dust emissions is considered a primary tool to reduce potential exposure to the spores although dust in the air may not contain the spores if the airborne soil material has not originated from a location where the fungus and spores are present (CDPH 2020 and USGS 2000). As shown in Figure 3.0.1 of the Valley Fever Report (Appendix J of this EIR), San Diego County is in a region considered suspected endemic for *Coccidioides* spores.

Regulatory Setting

Federal and State

Air quality is defined by ambient air concentrations of specific pollutants identified by the USEPA to be of concern with respect to health and welfare of the general public. The USEPA is responsible for enforcing the Federal CAA of 1970 and its 1977 and 1990 Amendments. The CAA required the USEPA to establish NAAQS, which identify concentrations of pollutants in the ambient air below which no adverse effects on the public health and welfare are anticipated. In response, the

USEPA established both primary and secondary standards for criteria pollutants. Primary standards are designed to protect human health with an adequate margin of safety. Secondary standards are designed to protect property and the public welfare from air pollutants in the atmosphere.

The CAA allows states to adopt ambient air quality standards and other regulations provided they are at least as stringent as federal standards. CARB has established the more stringent CAAQS for the six criteria pollutants through the California Clean Air Act of 1988 (CCAA), and has established CAAQS for additional pollutants, including sulfates, hydrogen sulfide (H_2S), vinyl chloride and visibility-reducing particles. Table 3.1.1-4, *California and National Ambient Air Quality Standards,* shows the federal and state ambient air quality standards.

Areas that do not meet the NAAQS or the CAAQS for a particular pollutant are considered to be "nonattainment areas" for that pollutant. CARB is the state regulatory agency with authority to enforce regulations to both achieve and maintain the NAAQS and CAAQS.

The USEPA and the National Highway Traffic Safety Administration (NHTSA) worked together on developing a national program of regulations to reduce greenhouse gas (GHG) emissions and to improve fuel economy of light-duty vehicles. The USEPA established the first-ever national GHG emissions standards under the CAA, and the NHTSA established Corporate Average Fuel Economy (CAFE) standards under the Energy Policy and Conservation Act. On April 1, 2010, the USEPA and NHTSA announced a joint Final Rulemaking that established standards for 2012 through 2016 model year vehicles. This was followed up on October 15, 2012, when the agencies issued a Final Rulemaking with standards for model years 2017 through 2025. On August 2, 2018, the agencies released a notice of proposed rulemaking—the Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021-2026 Passenger Cars and Light Trucks (SAFE Vehicles Rule). The purpose of the SAFE Vehicles Rule is "to correct the national automobile fuel economy and greenhouse gas emissions standards to give the American people greater access to safer, more affordable vehicles that are cleaner for the environment." The direct effect of the rule is to eliminate the standards that were put in place to gradually raise average fuel economy for passenger cars and light trucks under test conditions from 37 miles per gallon (mpg) in 2020 to 50 mpg in 2025. The new SAFE Vehicles Rule freezes the average fuel economy level standards indefinitely at the 2020 levels. The new SAFE Vehicles Rule also results in the withdraw of the waiver previously provided to California for that State's GHG and zero emissions vehicle (ZEV) programs under Section 209 of the CAA. The combined USEPA GHG standards and NHTSA CAFE standards resolve previously conflicting requirements under both federal programs and the standards of the State of California and other states that have adopted the California standards. While the SAFE Vehicle Rule primarily affects GHG emissions, the resulting decreases in anticipated future fuel economy also results in slightly higher emissions of ROG, NO_X and exhaust PM from gasoline-powered cars and light trucks.

Local

The local air district has the primary responsibility for the development and implementation of rules and regulations designed to attain the NAAQS and CAAQS, as well as the permitting of new or modified sources, development of air quality management plans, and adoption and enforcement

of air pollution regulations. The SDAPCD is the local agency responsible for the administration and enforcement of air quality regulations for the County.

The SDAPCD and SANDAG are responsible for developing and implementing the clean air plan for attainment and maintenance of the ambient air quality standards in the SDAB. The regional air quality plan for San Diego County is SDAPCD's 2020 Plan for Attaining the National Ambient Air Quality Standards for Ozone in San Diego County (Attainment Plan; SDAPCD 2020). The Attainment Plan, which would be a revision to the state implementation plan (SIP), outlines SDAPCD's plans and control measures designed to attain the NAAQS for ozone. These plans accommodate emissions from all sources, including natural sources, through implementation of control measures, where feasible, on stationary sources to attain the standards. Mobile sources are regulated by the USEPA and CARB, and the emissions and reduction strategies related to mobile sources are considered in the Attainment Plan and SIP.

The Attainment Plan relies on information from CARB and SANDAG, including mobile and area source emissions, as well as information regarding projected growth in the County, to project 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 and vehicle trends and land use plans developed by the cities and by the County as part of the development of the County's General Plan. Projects which are consistent with the growth assumptions used in the Attainment Plan and do not conflict with the control measures in the Attainment Plan, and which do not result in criteria pollutant and precursor emissions in excess of the thresholds adopted by the County, would not hinder the goal of the Attainment Plan to bring the SDAB into compliance with the NAAQS and CAAQS for the protection of public health.

In addition, SDAPCD Rule 51 (Public Nuisance) also prohibits emission of any material causing nuisance to a considerable number of persons or endangers the comfort, health, or safety of any person. Rule 55 prohibits construction activity that would discharge fugitive dust emissions into the atmosphere beyond the property line.

Air Basin Attainment Status

On April 30, 2012, the SDAB was classified as a marginal nonattainment area for the 8-hour NAAQS for ozone. The SDAB is currently classified as a nonattainment area under the CAAQS for ozone (severe nonattainment), PM_{10}, and $PM_{2.5}$. The SDAB is an attainment area for the NAAQS and CAAQS for all other criteria pollutants (SDAPCD 2017).

The current federal and state attainment status for San Diego County is shown in Table 3.1.1-5, *Federal and State Air Quality Designation.*

3.1.1.2 *Analysis of Project Effects and Determination as to Significance*

Conformance to the Attainment Plan

Guideline for the Determination of Significance

The Proposed Project would have a potentially significant environmental impact if it would:

1. Conflict with or obstruct the implementation of the SDAPCD's Attainment Plan and/or applicable portions of the SIP.

Guideline Source

This guideline is taken from the County Guidelines for Determining Significance – Air Quality (2007c).

Analysis

The Attainment Plan outlines SDAPCD's plans and control measures designed to attain the CAAQS for ozone. In addition, the SDAPCD relies on the SIP, which includes the SDAPCD's plans and control measures for attaining the ozone NAAQS. These plans accommodate emissions from all sources, including natural sources, through the implementation of control measures, where feasible, on stationary sources to attain the standards. Mobile sources are regulated by the USEPA and the CARB, and the emissions and reduction strategies related to mobile sources are considered in the Attainment Plan and SIP.

The Attainment Plan relies on information from the CARB and SANDAG, including projected growth in the County, mobile, area, and all other source emissions in order to project future emissions and determine from that the strategies necessary for the reduction of stationary source emissions through regulatory controls. The CARB mobile source emission projections and SANDAG growth projections are based on population and vehicle trends and land use plans developed by the cities and the County. As such, projects that propose development that is consistent with the growth anticipated by the local jurisdictions' general plans would be consistent with the Attainment Plan. In the event that a project proposes development that is less dense than anticipated within the General Plan, the project would likewise be consistent with the Attainment Plan. If a project proposes development that is greater than that anticipated in the County General Plan and SANDAG's growth projections upon which the Attainment Plan is based, the project would be in conflict with the Attainment Plan and SIP and might have a potentially significant impact on air quality. This situation would warrant further analysis to determine whether the project and the surrounding projects exceed the growth projections used in the Attainment Plan for the specific subregional area.

The Project site is currently zoned as Open Space (S80), Specific Planning Area (S88), and Holding Area (S90). The S80 designation is used to provide appropriate controls for areas considered generally unsuitable for intensive development, including hazard or resource areas, public lands, recreation sites, or lands subject to open space easement or similar restrictions. The S90 zone is intended to prevent premature urban or non-urban development until more precise zoning regulations are prepared. Mineral extraction use is allowed within the S80 and S90

classifications with the issuance of a Major Use Permit. S88 zoning restricts extractive uses to site preparation, which allows the off-site removal of materials when it is secondary to the future use of the site. The two Project parcels zoned S88 would not be actively mined and the end use for both parcels would be open space, consistent with the Rancho San Diego Specific Plan. The entire Project site is identified in the General Plan Land Use Element Open Space-Recreation (OS-R) land use designation, which applies to large, existing recreational areas and allows for active and passive recreational uses. The Project does not have a residential component and would not result in direct or indirect population growth in the County. The Project is anticipated to employ approximately nine persons, less than the employment from the Project site's use as golf courses. Therefore, the Project would be consistent with the General Plan, the Valle De Oro Community Plan, and the Rancho San Diego Specific Plan and consistent with the growth projections from those plans used in development of the Attainment Plan and the SIP.

The County of San Diego has developed a number of strategies and plans aimed at improving air quality. The aggregate produced by the Project must be transported to the project sites where it would be used. SANDAG released their *San Diego Region Aggregate Supply Study* in January 2011, which presented information related to the average miles traveled, and associated air quality emissions produced, by vehicles delivering aggregate to project sites (SANDAG 2011). The document explains that if the aggregate is transported by truck from current local mines to local project sites, the average distance between existing mines and construction sites in the region is 26 miles, which is used for vehicle miles traveled (VMT) projections in SANDAG's 2050 RTP for San Diego County, which in turn is used to develop mobile source emissions projections and control strategies for the Attainment Plan and SIP. Other options for aggregate transportation include truck, rail, and barge transportation from regions outside of the San Diego region (should the aggregate originate from a different region). The project VMT analysis concluded that the average one-way sand hauling distance for the project would be 16 miles based on the midpoint location of existing ready-mix concrete batch plants (the primary market for the project's sand) located within San Diego County (LLG 2021b). Although the Project would generate VMT, it would result in lower aggregate hauling VMT than assumed in the development of mobile source emissions projections and control strategies for the Attainment Plan and SIP.

The 570,000 tons of sand produced annually at the Project site is anticipated to be supplied entirely to local markets within the County. A VMT comparison of existing and near-term future sand transport in the region (sand procured within the county and imported into the county), and the Project sand transportation was completed in the TIA. The VMT analysis concluded that the Project's production and local distribution of 570,000 tons annually, which would reduce the import of this amount of sand from out-of-county suppliers, would result in a 79.2-percent reduction in region-wide VMT for sand transportation in the existing plus Project scenario and a 75.8-percent reduction in region-wide VMT for sand transportation in the near-term plus Project scenario (LLG 2021b). Consequently, the regional mobile-source air quality impacts produced by the Project aggregate transportation would be offset by the reduction of aggregate import transportation impacts and the Project would not result in an increase in the emissions from aggregate hauling over that assumed in development of the Attainment Plan.

The Conservation and Open Space Elements of the County General Plan present goals and policies designed to balance the regional need for construction materials with the community need for freedom from any disturbing effects of mining and aggregate processing activities while protecting

public health (County 2011b). The goal of the long-term production of mineral materials is to meet the local County average annual demand, while maintaining permitted reserves equivalent to a 50-year supply, using operational techniques and site reclamation methods consistent with California standards so that adverse effects on surrounding land uses, public health, and the environment are minimized. Implementation of these policies supports the controls for mobile source emissions in the Attainment Plan and SIP:

COS-10.5 Reclamation Plans. Require all mining projects to be conducted in accordance with a reclamation plan that meets the minimum reclamation standards required by the California Surface Mining and Reclamation Act and the associated State Mining and Geology Board regulations. Require the reclamation plan to include a phasing plan that provides for the completion of the surface mining on each segment of the mined lands so that the reclamation can be initiated at the earliest possible time on those portions of the mined lands that will not be subject to further disturbance by the surface mining operation.

COS-10.6 Conservation of Construction Aggregate. Encourage the continued operation of existing mining facilities and streamline the permitting of new mining facilities consistent with the goal to establish permitted aggregate resources that are sufficient to satisfy 50 years of County demand.

COS-10.8 New Mining Facilities. Develop specific permit types and procedures for the authorization of new mining facilities that recognize the inherent physical effects of mining operations and the public necessity for available mineral resources adequate to meet local demand, in accordance with PRC Section 2762.

In addition to the policies in the General Plan, the Project would be required to comply with the SDAPCD Rules and Regulations. The Attainment Plan control measures include the assumptions that new facilities with the required air permits would be consistent with the goals of the SIP. The Project, when constructed and operated using the Best Available Control Technology (BACT) and Best Management Practices (BMPs) described in section 1.3.2 of Appendix I, would comply with all of the standards of the SDAPCD Rules and Regulations. The Attainment Plan also assess the impact of all emission sources and all control measures, including those under the jurisdiction of the CARB (e.g., on-road motor vehicles, off-road vehicles and equipment, and consumer products).

The Project would be consistent with and support the General Plan goals of long-term production of mineral materials to meet the local County average annual demand and establishment of permitted aggregate resources that are sufficient to satisfy 50 years of County demand. The Project would be consistent with the land use designation and resulting growth projections in the General Plan, the Valle De Oro Community Plan, and the Rancho San Diego Specific Plan used in development of the Attainment Plan and SIP. In addition, the Project would result in a reduction of sand transport VMT in the region and therefore a reduction in the related aggregate hauling emissions. Therefore, the Project would not conflict with or obstruct the implementation of the San Diego Attainment Plan or applicable portions of the SIP and the impact would be **less than significant**.

Conformance to Federal and State Ambient Air Quality Standards

Guidelines for the Determination of Significance

The Proposed Project would have a potentially significant environmental impact if it would:

2. Result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation.

Guideline Source

This guideline is taken from the County Guidelines for Determining Significance – Air Quality (2007c). To determine whether a project would result in emissions that would violate any air quality standard or contribute substantially to an existing or projected air quality violation, project emissions may be evaluated based on the quantitative emission thresholds established by the SDAPCD, as discussed below.

Analysis

The County recognizes the SDAPCD's established screening level thresholds for air quality emissions (Rules 20.1 et seq.) as screening-level thresholds for land development projects. As part of its air quality permitting process, the SDAPCD has established thresholds in Rules 20.2 and 20.3 (SDAPCD 2019a; 2019b) for the preparation of Air Quality Impact Assessments (AQIAs). The County has also adopted the SCAQMD's screening threshold of 55 pounds per day or 10 tons per year as a screening level threshold for $PM_{2.5}$, and the SCAQMD's Coachella Valley screening threshold of 75 lbs per day or 13.7 tons per year significance threshold for VOCs (SCAQMD 2015). The screening thresholds used in the following analysis are included in Table 3.1.1-6, *Screening-level Thresholds for Air Quality Impact Analysis.*

Construction

Project construction activities would have the potential to adversely affect air quality through the generation of criteria pollutants (which includes fugitive dust emissions) and TAC emissions. Criteria pollutant emissions for Project construction were calculated using the California Emissions Estimator Model (CalEEMod), Version 2020.4.0.

Construction activities including site access, improvements to Willow Glen Drive, site preparation, demolition, and grading would be required prior to the start of mining (prior to Phase 1) to prepare the processing pad area and improve site access. Demolition activities would also be required prior to commencement of mining phases 2 and 3. The construction analysis included modeling of the projected construction equipment that would be used during each construction activity and quantities of earth and debris to be moved. Heavy equipment would be required during site preparation, demolition, and grading. Because all equipment and structures would be mobile and/or prefabricated, the Project would not require building construction or architectural coatings (e.g., painting). Construction equipment estimates are based on default values in CalEEMod and input from the Project applicant.

Table 3.1.1-7, *Estimated Daily Construction Emissions,* provides a summary of the worst-case daily construction emission estimates by activity. As a project design feature, the Project would implement a Fugitive Dust Control Plan (refer to Appendix I of this EIR) during construction (as well as during operations and reclamation activities) that would include fugitive dust control measures to minimize dust emissions and meet applicable dust control requirements. The Fugitive Dust Control Plan would be submitted to SDAPCD for review and approval. Measures included in the Fugitive Dust Control Plan include but are not limited to: designating a Fugitive Dust Control Site Coordinator to respond to dust-related concerns of neighboring property owners and monitor the effectiveness of the dust control measures; implementing control measures related to vehicle travel on unpaved roads, such as limiting vehicle speeds, watering roadways, and applying soil stabilizers; implementing control measures related to vehicle travel on paved roads, such as limiting vehicle speeds, sweeping roadways, and/or utilizing rumble grates and wheel washers; and conducting employee and contractor awareness training (refer to Appendix I of this EIR for a complete discussion of the dust control measures the Project would implement as part of the Fugitive Dust Control Plan). While the numerous measures in the Fugitive Dust Control Plan would be implemented during construction, for modeling purposes it was conservatively assumed that only the dust control measures of watering a minimum of two times daily and a 15-mph speed limit on unpaved surfaces would be employed to reduce emissions of fugitive dust during construction. As shown in Table 3.1.1-7, without mitigation, emissions of all criteria pollutants would be below the daily thresholds during construction. The Phase 2 and Phase 3 demolition activities would overlap with the Phase 1 and Phase 2 mining operations, respectively, and are included in the Operational Impact analysis, below. The Project's construction activities would not result in a violation of the NAAQS or CAAQS and the impact would be **less than significant**.

Operation

Project operational activities would have the potential to adversely affect air quality through the generation of criteria pollutants (which includes fugitive dust emissions) and TAC emissions. Operation of the Project through the three mining phases would result in emissions of criteria pollutants and TAC from: exhaust emissions from the operation of off-road diesel-powered equipment; fugitive dust emissions from off-road equipment moving on unpaved surfaces; fugitive dust emissions from off-road equipment digging, moving, or transferring material; fugitive dust emissions from sand conveyance and processing equipment; and exhaust and fugitive dust emissions from on-road vehicle travel.

On-Road Vehicle Emissions: Operational emissions were modeled for each mining phase. Criteria air pollutant emissions from on-road vehicle trips (including sand delivery trucks, employee vehicles, and vendor vehicles) associated with each mining phase of the Project were modeled using CalEEMod version 2020.4.0, described above. The trip rates used in the model were provided in the Local Mobility Analysis (LMA) prepared for the Project (LLG 2021a). Emissions were modeled for the first full year of operation for each mining phase: assumed to be 2023 for Phase 1; 2025 for Phase 2; and 2028 for Phase 3. CalEEMod's default motor vehicle emission rates and fleet mix for San Diego County are based on CARB's EMFAC2017 database. The CalEEMod option to account for the SAFE Vehicles Rule in accordance with CARB off-model EMFAC2017 adjustments factors was selected. Sand delivery trip distance used in the model were provided in the Transportation Impact Analysis (TIA) prepared for the Project (LLG 2021b). The

San Diego County default CalEEMod values for vehicle speeds, worker and vendor trip lengths, and trip purpose were used.

Off-Road Vehicle Exhaust Emissions: Criteria air pollutant emissions from vehicle exhaust due to all vehicle and equipment movement on unpaved surfaces within the Project site were calculated using emissions and equipment data for San Diego County from the CARB Off-road Diesel Analysis & Inventory, OFFROAD2017 Database (CARB 2021). To be conservative, it was assumed that the mining equipment used would be a mixture of new and used equipment. The age of off-road equipment analyzed corresponds to the average ages of equipment for the year 2022 in San Diego. All equipment was assumed to comply with the minimum fleet average exhaust emissions for off-road diesel equipment per CARB regulations. Typical load factors for off-road equipment are provided in the CARB Off-road Diesel Emission Factors: Load Factor Look Up Table (CARB 2017).

Off-road Operational Fugitive Dust Emissions: Fugitive dust emissions from vehicle and equipment movement on unpaved surfaces were calculated using emissions factors from the USEPA Publication AP-42, *Compilation of Air Pollutant Emission Factors Vol. I: Stationary, Point, and Area Sources*. Fugitive dust emissions from open storage stockpiles, loading, transferring, and processing sand were calculated using emission factors from the SDAPCD Air Toxics "Hot Spots" and Emission Inventory Program (SDAPCD 1999).

As mentioned above, the Project would implement a Fugitive Dust Control Plan (refer to Appendix I of this EIR) as a project design feature during operations and reclamation activities that would include fugitive dust control measures to minimize dust emissions and meet applicable dust control requirements. The Fugitive Dust Control Plan would be submitted to SDAPCD for review and approval. In addition to the types of measures discussed above, the Fugitive Dust Control Plan would include operation-specific measures such as: containing exposed stockpiles within perimeter fencing, treating stockpiles with water or soil stabilizers, or covering stockpiles; limiting drop heights from excavators and loaders to a distance no more than five feet; and suspending mining activities when sustained wind speed instantaneously exceeds 25 mph or when the wind speed average for 15 minutes is greater than 15 mph. Although the numerous dust control measures included in the Fugitive Dust Control Plan would be implemented, to model the most conservative operational dust estimates, only application of water twice per day and limiting vehicle speed to 15 mph on unpaved surfaces were taken into consideration.

Reclamation Activities: Reclamation and establishment of final landforms would be implemented concurrently with mining using the same equipment used for clearing and sand extraction activities, including a grader and the fines off-road hauling truck, as well as a seeding truck. Accordingly, the maximum daily and annual average emissions estimates account for grading, replacing topsoil, and seeding or revegetation where mining has been completed. Once all mining is complete, final reclamation activities (Phase 4) would occur. During Phase 4, final grading of the last Phase 3 extraction area would be accomplished in a few days with a grader and dozer. In addition, a small tractor with a cultivator and a hydroseed truck may be used for several days for final revegetation. Because the total equipment used for final reclamation activities (a dozer, grader, hydroseed truck, and small tractor) would be a small fraction of equipment used for operations, the intensity (and pollutant emissions) of these final reclamation activities would be

substantially lower than the maximum daily and annual emissions analyzed for Project operations. Therefore, these emissions are not estimated in this analysis.

Emissions Summary: Table 3.1.1-8, *Estimated Daily Operational Emissions*, presents the summary of operational emissions for the Project for each phase of mining with implementation of the BMPs for fugitive dust control, including watering of exposed surfaces and unpaved roads twice per day and enforcing a 15-mph speed limit on all unpaved surfaces. Phase 2 and Phase 3 demolition activities are presumed to occur near the end of the prior phase and concurrent with mining activities. Phase 1 construction activities are assumed to be completed prior to the start of mining and are not included in the maximum daily operational emissions estimates. The Phase 1, 2, and 3 operational activities include ongoing reclamation as mining is completed in each sub-area. As discussed above, due to the limited amount of equipment use and duration, pollutant emissions from the Phase 4 final reclamation activities would be substantially lower than the maximum daily and annual emissions analyzed for project Phases 1 through 3, and the Phase 4 emissions are not included in the analysis.

As shown in Table 3.1.1-8, Project emissions of criteria pollutants and ozone precursors during operation of all mining phases would not exceed the daily screening thresholds. Because the total equipment used for final reclamation activities (Phase 4; a dozer, grader, hydroseed truck and small tractor) would be a small fraction of equipment used for operations, the intensity (and pollutant emissions) of these final reclamation activities would be substantially lower than the maximum daily and annual emissions analyzed for project operations and shown in Table 3.1.1-8. Therefore, the Project's operational emissions would not result in a violation of the NAAQS or CAAQS and the impact would be **less than significant**.

Impacts to Sensitive Receptors

Guidelines for the Determination of Significance

The Proposed Project would have a potentially significant environmental impact if it would:

3. Expose sensitive receptors to substantial pollutant concentrations as follows:

    a. The Project places sensitive receptors (including, but not limited to, residences, schools, hospitals, resident care facilities, or day-care centers) near CO "hot spots" or creates CO "hot spots" near sensitive receptors.

    b. Project implementation would result in exposure to TACs (including diesel particulate matter and respirable crystalline silica [particles four microns or less in diameter or PM_4]) resulting in a maximum incremental cancer risk greater than one in one million without application of Toxics-Best Available Control Technology (T-BACT) or a health hazard index greater than one, or exceeding the South Coast Air Quality Management District's threshold of an increase in cancer cases in the population of 0.5.

Guideline Source

This guideline is taken from the County Guidelines for Determining Significance – Air Quality (2007c). The County's significance thresholds are consistent with the SDAPCD's Rule 1210 requirements for stationary sources.

Analysis

As discussed above in *Existing Conditions*, criteria pollutants that would be generated by the Proposed Project are associated with some form of health risk. Existing models have limited sensitivity to small changes in criteria pollutant concentrations; attempting to correlate the amount of project-generated criteria pollutants to specific health effects or additional days of nonattainment would not yield meaningful results. Consequently, an analysis of impacts on human health associated with project-generated regional ROG and NO_X emissions is not included in this assessment. Localized pollutants generated by a project can, however, directly affect nearby sensitive receptors. Consistent with the current state of practice and published guidance by CAPCOA (2009) and CARB (2000), the analysis in this assessment focuses only on those pollutants with the greatest potential to result in a significant, material impact on human health, which are TACs (including DPM and respirable crystalline silica) and locally concentrated CO (i.e., CO hot spots).

Construction-related Health Risk

Project construction would generate DPM emissions from the use of off-road diesel equipment required for demolition, site preparation, and grading and other construction activities, including the Willow Glen Drive improvements. DPM is the primary toxic air contaminant that would be emitted during construction. Health-related risks associated with diesel-exhaust emissions are primarily linked to long-term exposure and the associated risk of contracting cancer. The amount to which the receptors could be exposed, which is a function of concentration and duration of exposure, is the primary factor used to determine health risk. The generation of TAC emissions during construction would be variable and sporadic due to the nature of construction activity. The longest construction period would be prior to Phase 1 for preparation and grading the processing pad and settling ponds. This construction utilizing heavy diesel equipment is anticipated to last a maximum of 50 working days and would require up to six pieces of heavy equipment working at one time (Table 3.1.1-8). The closest sensitive receptors to this activity would be 650 feet west (upwind) of the proposed settling ponds. Project construction activities would also generate fugitive dust emissions (PM_{10} and $PM_{2.5}$). Because the native sand could contain TACs, construction fugitive dust could also include some respirable TACs. During construction implementation of the BMPs for the control of fugitive dust would substantially reduce emissions of fugitive dust related TACs. In addition, as described above, the longest period of construction is anticipated to last 50 working days and would be located 650 feet from the nearest sensitive receptor. DPM disperses rapidly with distance, and concentrations of DPM emissions are typically reduced by 70 percent at approximately 500 feet (CARB 2005). The maximum daily on-site emissions of exhaust PM_{10} (a proxy for DPM) during grading are anticipated to be 0.6 pound per day. This can be compared to, and is less than, the operational off-road equipment exhaust of 0.7 pound per day of PM_{10}. As such, it can be concluded that construction period health risks would be less than those analyzed below for operations. Therefore, due to the short duration and minimal

amount of emissions and distance to the nearest receptors, Project-related TAC emission impacts during construction would not expose sensitive receptors, including residences, schools, hospitals, resident care facilities, or day-care centers, to substantial pollutant concentrations and the impact would be **less than significant**.

Operation-related Health Risk

Toxic Air Contaminants. A Health Risk Assessment (HRA) was completed to support the analysis regarding the potential impacts on the health of nearby potential sensitive receptors and off-site workers due to TACs generated by the long-term operation of the Project. The HRA was completed following OEHHA *Air Toxics Hot Spots Program – Risk Assessment Guidelines – Guidance Manual for Preparation of Health Risk Assessments* (2015).

Almost all diesel exhaust particle mass is 10 microns or less in diameter. Therefore, it was conservatively assumed that all PM_{10} emissions from Project diesel powered vehicle exhaust emissions are DPM.

The fugitive dust trace metal concentrations are based on default values available through the SDAPCD's Air Toxics "Hot Spots" and Emission Inventory Program (SDAPCD 1999). TACs analyzed include arsenic, beryllium, cadmium, chromium (hexavalent and non-hexavalent), copper, lead, manganese, mercury, nickel, selenium, and crystalline silica.

A 30-day lead concentration screening analysis for evaluating sub-chronic lead exposure was completed following direction from the SDAPCD and maximum off-site exposure concentration limits from the CARB's *Risk Management Guidelines for New, Modified, and Existing Sources of Lead* (CARB 2001).

Localized concentrations of pollutants were modeled using the Lakes AERMOD View version 10.0.1. Operation of the Project would result in the generation of DPM emissions and respirable crystalline silica from the use of off-road diesel equipment, on-road haul trucks, and sand excavation and processing operations. Because each phase of mining would concentrate the operation of sand extraction equipment in different areas, potentially affecting different sensitive receptors, separate dispersion models were completed for each mining phase.

Health risks resulting from localized concentration DPM and fugitive dust trace TACs were estimated using the CARB Hotspots Analysis and Reporting Program (HARP), Air Dispersion Modeling and Risk Tool (ADMRT) version 21081. Sand extraction for each mining phase would last three to four years. However, emissions from the processing area and on-road truck deliveries would last for the duration of the Project mining (10 years). Therefore, to be conservative, for the residential and worker cancer risk, an exposure duration of 10 years was selected. The model conservatively assumes that residents would be standing and breathing at the location of the property line closest to the Project site or haul route every day between 17 and 21 hours per day (depending on the age group, starting with fetuses in utero in the third trimester of pregnancy) for 10 years. For off-site worker cancer risk, an exposure duration of 10 years was selected with an assumption of eight hours per day, five days per week of exposure, in accordance with the OEHHA guidelines (2015). Because the dispersion modeling used variable emissions approximately equivalent to typical worker hours, no worker adjustment factors were used. Fraction of time at

home adjustments for residential exposure were selected for age bins 16 years and up. Because a school is located within 0.25 mile of the Project site, fraction of time at home adjustments were not selected for age bin below 16 years. The output of the modeling provides unitized ground level concentrations of the modeled constituent in micrograms per cubic meter for the maximum one-hour and the average over the five-year period of the meteorological data. An inventory of maximum hourly and average annual emissions for each source of TACs was entered into the ADMRT program. The ADMRT combines the emissions inventory, the ground level concentration plots from AERMOD, and pollutant-specific risk factors to determine the health risks at each receptor point identified in the model. The ADMRT output files are included with the Air Quality Technical Report (Appendix I).

Cancer burden evaluates an overall population's increased cancer risk and is defined as the increases in cancer cases in the population due exposure to TACs from a project. Cancer burden is calculated differently from individual risk. Per OEHHA, cancer burden uses a 70-year exposure to evaluate population-wide cancer risk, and the cancer burden only evaluates residential exposure (not schools or worksites). Cancer burden is calculated by multiplying the number of residents exposed to an incremental excess cancer risk of 1 in 1 million by the estimated incremental excess cancer risk of the maximum exposed individual resident (MEIR). Neither the SDAPCD or the County has not adopted thresholds for cancer burden and the operation of the Project is expected to last only 10 years; however, to be conservative and provide comparison to an existing threshold, cancer burden was estimated for the Project (using a 70-year exposure) and compared to the SCAQMD's threshold of an increase in cancer cases in the population of 0.5 (SCAQMD 2015).

As discussed in Section 3.1.1.1, the closest existing sensitive receptors to the Project site are the Adeona Healthcare facility and single-family homes adjacent to the existing and former golf courses south and east of the Project site. In addition, there are single- and multi-family homes along the primary routes for aggregate delivery trucks entering and exiting the Project site, including along Willow Glen Drive and Jamacha Road. The closest school is the Jamacha Elementary School approximately 1,280 feet (0.24 mile) south of the Phase 2 mining area. The sensitive receptor locations are shown in Figure 3.1.1-2, *Receptor Locations*.

The incremental excess cancer risk is an estimate of the chance a person exposed to a specific source of a TAC may have of developing cancer from that exposure beyond the individual's risk of developing cancer from existing background levels of TACs in the ambient air. For context, the average cancer risk from TACs in the ambient air for an individual living in an urban area of California is 830 in 1 million (CARB 2015). Cancer risk estimates do not mean, and should not be interpreted to mean, that a person will develop cancer from estimated exposures to toxic air pollutants.

Operation of the Project would result in the generation of DPM emissions and fugitive dust trace TACs from the use of off-road diesel equipment, on-road haul trucks, and sand processing operations. Fugitive dust trace TACs analyzed include arsenic, beryllium, cadmium, chromium (hexavalent and non-hexavalent), copper, manganese, mercury, nickel, selenium, and crystalline silica. The Project would implement T-BACT, specifically, the implementation of BMPs and the use of water for dust suppression in sand processing, and the implementation of DPM emissions reduction technologies in accordance with USEPA and CARB regulations and implementation schedules. The resulting health risks for the maximum exposed non-Project worker and the

maximum exposed individual residents near the Project site and/or near the haul route are summarized in Table 3.1.1-9, *Health Risks from TAC Emissions*.

As shown in Table 3.1.1-9, the MEIR (i.e., the individual resident with the highest estimated cancer risk and/or health hazard index; located at a rural residence off of Ivanhoe Ranch Road southeast of the Project site) would have incremental increased cancer risk of 2.9 in 1 million, an acute health hazard index of 0.05, and a chronic health hazard index of 0.07 during Phase 2. The increased incremental cancer risk isopleths and the location of the MEIR are shown in Figure 3.1.1-3, *Increased Residential Cancer Risk.* The maximum exposed individual worker (located on Willow Glen Drive just east of the Jamacha Road intersection) would have an incremental increased cancer risk of 0.02 in 1 million, an acute health hazard index of less than 0.01, and a chronic health hazard index of less than 0.01 during Phase 1. The thresholds for increased incremental cancer risk, acute health risk, and chronic health risk would not be exceeded for the maximum exposed individual non-project worker or resident.

Residential cancer burden was estimated using the highest risk for a MEIR from all phases (which would occur in Phase 2). Using the 1 in 1 million cancer risk isopleth for a 70-year exposure overlaid on an aerial image, the number of residences within or touching the isopleth is 23 single-family homes (see Figure 3.1.1-3). Assuming up to 10 residents per residence, the total exposed population would be 230. The cancer burden would be 3.4×10^{-6} times 230, or 0.0008, which is below the SCAQMD threshold of 0.5.

Project implementation would not result in exposure to TACs resulting in a maximum incremental cancer risk greater than 10 in 1 million with application of T-BACT or a health hazard index greater than one or exceeding the SCAQMD's threshold of an increase in cancer cases in the population of 0.5.

A screening analysis was completed for sub-chronic lead exposure, as described above. Using conservative assumptions (a year of calculated lead emissions emitted in 30 days and emissions steady 24-hours per day), the maximum on-site lead concentration would be 0.014 micrograms per cubic meter ($\mu g/m^3$) and the highest concentration at any off-site sensitive receptor would be 0.003 $\mu g/m^3$. These lead concentration levels would be well below the high exposure scenario approval level of 0.12 $\mu g/m^3$ (CARB 2001). No further refinement of the lead concentration modeling/analysis is required.

Therefore, the impact on community health resulting from Project operational emissions of TACs would be **less than significant**.

CO Concentrations (CO Hotspot Analysis). CO hotspots are most likely to occur at heavily congested intersections where idling vehicles increase localized CO concentrations. The County guidelines call for a CO hotspot analysis if the Project would:

- Place sensitive receptors within 500 feet of a signalized intersection with a LOS of E or F, with peak-hour trips exceeding 3,000 vehicles; or

- Cause intersections to operate at LOS E or F, with peak-hour trips exceeding 3,000 vehicles.

The Project would generate approximately 212 average daily trips (ADT) during operation, or 476 ADT including a 2.5 passenger car equivalent (PCE) factor for trucks (LLG 2021a). According to the LMA, one signalized intersection in the study area operates with a LOS of E or F under existing conditions. The two-way stop-controlled intersection of Willow Glen Drive and Muirfield Drive would continue to operate at LOS E during the PM peak hour and degrade from LOS E to LOS F during the AM peak hour under the existing plus Project plus cumulative conditions with a peak hour traffic volume of 2,032 vehicles. The LMA concluded that this would be an acceptable LOS, as no mitigation would be required. Because the only intersection operating at LOS E or F with a significant increased delay resulting from Project and cumulative traffic is not signalized and would have a peak hour traffic less than 3,000 vehicles, Project implementation would not result in the formation of CO hotspots. Impacts to sensitive receptors resulting from CO hotspots would be **less than significant**.

Odor Impacts

Guidelines for the Determination of Significance

The Proposed Project would have a potentially significant environmental impact if it would:

4. Generate objectionable odors or place sensitive receptors next to existing objectionable odors that would affect a considerable number of persons or the public.

Guideline Source

This guideline is taken from the County Guidelines for Determining Significance – Air Quality (2007c).

Analysis

SDAPCD Rule 51 (Public Nuisance) and California Health & Safety Code, Division 26, Part 4, Chapter 3, Section 541700, prohibit the emission of any material that causes nuisance to a considerable number of persons or endangers the comfort, health, or safety of the public. In addition, the County's Zoning Ordinance, Section 6318, states: "all commercial and industrial uses shall be so operated as to not emit matter causing unpleasant odors which are perceptible by the average person at or beyond any lot line of the lot containing said uses." Projects required to obtain permits from SDAPCD, typically industrial and some commercial projects, 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.

According to the SCAQMD CEQA Air Quality Handbook, land uses associated with odor complaints include agricultural uses, wastewater treatment plants, food processing plants, chemical plants, composting activities, refineries, landfills, dairies, and fiberglass molding operations (SCAQMD 1993). The Project, involving a sand mining and processing facility, would not include any of these uses. Project construction and operation could result in minor amounts of odors associated with unburned hydrocarbons in diesel heavy equipment exhaust. The Project sand processing and truck loading area would be located approximately 650 feet from the nearest residence. Sand extraction activities could require up to three pieces of equipment, but the equipment would be located at least 100 feet from residences in accordance with the Project's

proposed property line setbacks. Most mining activities would occur at distances much greater than 100 feet from residences based on the large area of the mining site. The odor of diesel exhaust from the mining equipment may be objectionable to some; however, emissions would be intermittent based on the mobile nature of mining activities and the Project's proposed phasing and would disperse rapidly with distance (CARB 2005); therefore, the Project's mining activities would not affect a substantial number of people. As such, impacts associated with odors during construction and operation of the Project would be **less than significant**.

Other Emissions

Guidelines for the Determination of Significance

The Proposed Project would have a potentially significant environmental impact if it would:

5. Result in other emissions adversely affecting a substantial number of people.

Guideline Source

This guideline is taken from Appendix G of the CEQA Guidelines.

Analysis

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

Valley Fever and Generation of Fugitive Dust

To address comments and concerns related to Valley Fever, a Valley Fever Report (Appendix J of this EIR) was prepared for the Project.

The Project site is located near the southern edge of zip code 92019; however, Valley Fever case counts and incidence rates within the nearby 91935, 91978, 92020, and 92021 are also included for disclosure. The County of San Diego Health and Human Service Agency prepared case counts and rates of Valley Fever between years 2010 and 2019 for these zip codes and for San Diego County as a whole, which can be found in Table 3.1.1-3. The number of cases and rates of exposure of Valley Fever within these zip codes are representative of people residing in the vicinity of and north and south of the Project site but are not necessarily representative of the location of exposure. CDPH defines a confirmed Coccidioidomycosis case per the Council of State and Territorial Epidemiologists as a person with clinically compatible illness and at least one of the clinical or laboratory criteria (CDPH 2020).

Valley Fever is contracted through inhalation of airborne spores of the Coccidioides fungus that may be present in suitable soils. However, due to the spores' very small size and buoyancy, spores can remain aloft for great distances and thus may be present in air that appears quite clear. Conversely, dust in the air may not contain the spores if the airborne soil material has not originated from a location where the fungus and spores are present (CDPH 2020; USGS 2000). Unfortunately, there are no commercially available tests to detect Coccidioides spores in soil.

Although testing is done for scientific purposes, the testing methods do not always detect the spores even if they are present (CDC 2020). However, fugitive dust control is considered the primary tool to reduce potential exposure to the spores, if they are present in the soils being disturbed. The Project would be required to implement a Fugitive Dust Control Plan as a project design feature to minimize airborne emissions from soil-disturbing activities and other proposed mining operations (refer to the discussion under Significance Guideline 2). Since January 2019 confirmed cases only need laboratory evidence to be reported.

The on-site soils that would be disturbed from mining activities include Tujunga sand, Visalia sandy loam, and Riverwash. These soils are not alkaline, are sandy rather than silty (gravelly in the case of Riverwash), are excessively drained (low water holding capacity), have very low in salinity, and are well aerated (U.S. Department of Agriculture 2021). These soil factors do not favor the occurrence of the Coccidioides fungus as described in Appendix J.

The Project site is currently used by the public for golfing activities. The still-operating Ivanhoe course is fertilized, heavily irrigated, and managed throughout the year including with pesticides and fungicides to maintain the turf conditions. The Lakes course was managed the same way until it closed in 2017. The practice of turf management (irrigation, fertilization, and the application of fungicides) results in the soil being considered disturbed and this disturbed condition of the soils also does not favor the occurrence of the Coccidioides fungus.

Because the on-site soil properties and current and past golf course turf management activities do not favor the occurrence of the *Coccidioides* fungus, and because the Project would implement a Fugitive Dust Control Plan as a project design feature to control emissions of fugitive dust and other soil materials, the Project is regarded as having a **less than significant impact** with respect to resulting in other emissions adversely affecting a substantial number of people. The Project would also be required as a project design feature to provide training to all employees on potential risks associated with site work regarding Coccidioidomycosis, including providing a fact sheet entitled "Preventing Work-Related Coccidioidomycosis (Valley Fever)" by the CDPH (2013)).

3.1.1.3 *Cumulative Impact Analysis*

With regard to past and present projects, the background ambient air quality, as measured at the monitoring stations maintained and operated by the SDAPCD, measures the concentrations of pollutants from existing sources. Past and present project impacts are, therefore, included in the background ambient air quality data. For the purpose of non-attainment pollutants, the cumulative study area would be the entire air basin; however, contributions from individual projects on basin-wide non-attainment pollutants cannot be determined through modeling analyses. The screening distance for odors is 1 mile (Sacramento Metropolitan Air Quality Management District [SMAQMD] 2009).

As discussed above, the SDAB has been designated as a federal non-attainment area for ozone, and a State non-attainment area for ozone, PM_{10} and $PM_{2.5}$; therefore, a regional cumulative impact currently exists for ozone precursors (NO_X and VOCs) and PM_{10} and $PM_{2.5}$. In analyzing cumulative impacts for air quality, specific evaluation must occur regarding a project's contribution to the cumulative increase in non-attainment pollutants. A project that has a significant impact on air quality with regard to emissions of PM_{10}, $PM_{2.5}$, NO_X and/or VOCs,

would have a significant cumulative effect. In the event direct impacts from the project are less than significant, a project still may have a cumulatively considerable impact on air quality if the emissions from the Project, in combination with the emissions from other proposed, or reasonably foreseeable, future projects are in excess of the County's air pollutant screening levels. The text below addresses each of the thresholds relative to cumulative contribution during the Project's construction and operational phases.

Construction

Short-term emissions associated with construction may result in localized impacts to sensitive receptors located close to the Project construction area. As discussed under Significance Guideline 2, Project construction emissions would be below significance levels. Short-term cumulative impacts related to air quality could occur if construction of the Project and other projects in the surrounding area were to occur simultaneously. In particular, with respect to local impacts, the consideration of cumulative construction particulate (PM_{10} and $PM_{2.5}$) impacts is limited to cases when projects constructed simultaneously are within a few hundred yards of each other because of (1) the combination of the short range (distance) of particulate dispersion (especially when compared to gaseous pollutants) and (2) the SDAPCD's required dust control measures which further limit particulate dispersion from a project site. Fourteen cumulative projects have been identified within 5 miles of the Proposed Project (refer to Table 1-15). The closest large project on this list is the Ivanhoe Ranch (119 single-family residential units) on the southeast side of the Project site. The construction schedule of Ivanhoe Ranch was not known at the time of this analysis. The closest lot in the Ivanhoe Ranch development is approximately 1,400 feet (0.25 mile) from the construction for the Project's processing area and Willow Glen Drive improvements. According to the Desert Research Institute (DRI), with implementation of standard dust control measures like those required by SDAPCD Rule 55, particulate concentrations are reduced by more than 99 percent at a distance of 400 feet (DRI 1996). As such, even if construction of the Ivanhoe Ranch development were to occur concurrently with the Project, because of the distance between the projects, the Project's construction activities are not anticipated to result in a cumulatively significant impact on air quality.

The Project's construction emissions would be well below the screening thresholds and impacts would be less than significant. As discussed under Significance Guideline 3, the Project would not have significant impacts to sensitive receptors during construction. Therefore, construction of the Project would **not result in a cumulatively considerable contribution** to a significant air quality impact pertaining to emissions of criteria air pollutants and ozone precursors.

Operations

As described in Significance Guidelines 1 and 2, above, the Project would be consistent with the Attainment Plan, and would not exceed the County's screening-level thresholds for criteria pollutants and ozone precursors. As discussed in Significance Guideline 3a, above, the Project would not create a CO hotspot that would result in a cumulatively considerable net increase of CO. Similar to what is described above for cumulative localized construction impacts (pertaining to Significance Guideline 3b), operation of the Project could occur concurrently with construction of the Ivanhoe Ranch project; however, due to the large size of both sites and the dispersive properties of particulate matter (including DPM and soil particle constituents) with implementation of

standard dust control measures, the Proposed Project and Ivanhoe Ranch project would not combine to result in a cumulatively significant impact on air quality. Therefore, potential cumulative impacts associated with operation of the Project would be **less than significant**.

3.1.1.4 *Significance of Impacts*

Based on the analysis provided above, the Proposed Project would not result in significant impacts related to air quality. Therefore, no mitigation is required or proposed.

3.1.1.5 *Conclusion*

Based on the analysis provided above, no significant Project-specific or cumulative impacts related to air quality would result from implementation of the Project.

Table 3.1.1-1
SUMMARY OF COMMON SOURCES AND HUMAN HEALTH EFFECTS OF CRITERIA AIR POLLUTANTS

Pollutant	Major Man-Made Sources	Human Health Effects
Carbon Monoxide (CO)	An odorless, colorless gas formed when carbon in fuel is not burned completely; a component of motor vehicle exhaust.	Reduces the ability of blood to deliver oxygen to vital tissues, affecting the cardiovascular and nervous system. Impairs vision, causes dizziness, and can lead to unconsciousness or death.
Nitrogen Dioxide (NO_2)	A reddish-brown gas formed during fuel combustion for motor vehicles and industrial sources. Sources include motor vehicles, electric utilities, and other sources that burn fuel.	Respiratory irritant; aggravates lung and heart problems. Precursor to ozone and acid rain. Contributes to climate change and nutrient overloading which deteriorates water quality. Causes brown discoloration of the atmosphere.
Ozone (O_3)	Formed by a chemical reaction between reactive organic gases (ROGs) and nitrogen oxides (NO_X) in the presence of sunlight. Common sources of these precursor pollutants include motor vehicle exhaust, industrial emissions, gasoline storage and transport, solvents, paints, and landfills.	Irritates and causes inflammation of the mucous membranes and lung airways; causes wheezing, coughing, and pain when inhaling deeply; decreases lung capacity; aggravates lung and heart problems. Damages plants; reduces crop yield. Damages rubber, some textiles, and dyes.
Particulate Matter (PM_{10} and $PM_{2.5}$)	Produced by power plants, steel mills, chemical plants, unpaved roads and parking lots, wood-burning stoves and fireplaces, automobiles, and other sources.	Increased respiratory symptoms, such as irritation of the airways, coughing, or difficulty breathing; aggravated asthma; development of chronic bronchitis; irregular heartbeat; nonfatal heart attacks; and premature death in people with heart or lung disease. Impairs visibility (haze).
Sulfur Dioxide (SO_2)	A colorless, nonflammable gas formed when fuel containing sulfur is burned, when gasoline is extracted from oil, or when metal is extracted from ore. Examples are petroleum refineries, cement manufacturing, metal processing facilities, locomotives, and ships.	Respiratory irritant. Aggravates lung and heart problems. In the presence of moisture and oxygen, sulfur dioxide converts to sulfuric acid which can damage marble, iron, and steel. Damages crops and natural vegetation. Impairs visibility. Precursor to acid rain.
Lead	Metallic element emitted from metal refineries, smelters, battery manufacturers, iron, and steel producers, use of leaded fuels by racing and aircraft industries.	Anemia, high blood pressure, brain and kidney damage, neurological disorders, cancer, lowered IQ. Affects animals, plants, and aquatic ecosystems.

Source: CAPCOA 2018

Table 3.1.1-2
AIR QUALITY MONITORING DATA

Air Pollutant	2018	2019	2020
Ozone – El Cajon Monitoring Station			
Max 1-hour (ppm)	0.087	0.094	0.094
Days > CAAQS (0.09 ppm)	0	0	0
Max 8-hour (ppm)	0.079	0.074	0.083
Days > NAAQS (0.070 ppm)	2	2	14
Days > CAAQS (0.070 ppm)	2	2	14
Particulate Matter (PM_{10}) – El Cajon Monitoring Station			
Max Daily (µg/m^3)	43.0	38.7	*
Days > NAAQS (150 µg/m^3)	0	0	*
Days > CAAQS (50 µg/m^3)	0	0	*
Annual Average (µg/m^3)	23.0	*	*
Exceed CAAQS (20 µg/m^3)	Yes	*	*
Particulate Matter ($PM_{2.5}$) – El Cajon Monitoring Station			
Max Daily (µg/m^3)	36.2	23.8	38.2
Days > NAAQS (35 µg/m^3)	1	0	2
Annual Average (µg/m^3)	9.6	8.5	10.3
Exceed NAAQS (15 µg/m^3)	No	No	No
Exceed CAAQS (12 µg/m^3)	No	No	No
Nitrogen Dioxide (NO_2) – El Cajon Monitoring Station			
Max 1-hour (µg/m^3)	45.0	39.0	44.0
Days > NAAQS (188 µg/m^3)	0	0	0
Days > CAAQS (339 µg/m^3)	0	0	0

Sources: CARB 2021a
Notes: > = exceeding; ppm = parts per million; µg/m^3 = micrograms per cubic meter
* = Insufficient data available to determine the value.

Table 3.1.1-3
SAN DIEGO COUNTY VALLEY FEVER INCIDENCE RATES 2010-2019

Location	Number of Cases	Annual Incidence Rate per 100,000 Population
Zip Code 92019	21	4.8
Zip Code 92020	28	4.6
Zip Code 92021	33	4.9
Zip Code 91935	4	Rate not calculated
Zip Code 91978	2	Rate not calculated
San Diego County	2,052	6.3

Source: EnviroMINE 2021

Table 3.1.1-4
CALIFORNIA AND NATIONAL AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards	Federal Standards Primary[a]	Federal Standards Secondary[b]
O_3	1 Hour	0.09 ppm (180 µg/m^3)	–	–
	8 Hour	0.070 ppm (137 µg/m^3)	0.070 ppm (147 µg/m^3)	Same as Primary
PM_{10}	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary
	AAM	20 µg/m^3	–	Same as Primary
$PM_{2.5}$	24 Hour	–	35 µg/m^3	Same as Primary
	AAM	12 µg/m^3	12.0 µg/m^3	Same as Primary
CO	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	–
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	–
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	–	–
NO_2	AAM	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary
	1 Hour	0.18 ppm (339 µg/m^3)	0.100 ppm (188 µg/m^3)	–
SO_2	24 Hour	0.04 ppm (105 µg/m^3)	–	–
	3 Hour	–	–	0.5 ppm (1,300 µg/m^3)
	1 Hour	0.25 ppm (655 µg/m^3)	0.075 ppm (196 µg/m^3)	–
Lead	30-day Avg.	1.5 µg/m^3	–	–
	Calendar Quarter	–	1.5 µg/m^3	Same as Primary
	Rolling 3-month Avg.	–	0.15 µg/m^3	Same as Primary
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per km – visibility ≥ 10 miles (0.07 per km – ≥30 miles for Lake Tahoe)	No Federal Standards	No Federal Standards
Sulfates	24 Hour	25 µg/m^3	No Federal Standards	No Federal Standards
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m^3)	No Federal Standards	No Federal Standards
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m^3)	No Federal Standards	No Federal Standards

Source: CARB 2016
Note: More detailed information in the data presented in this table can be found at the CARB website (www.arb.ca.gov).
[a] National Primary Standards: The levels of air quality necessary, within an adequate margin of safety, to protect the public health.
[b] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.
O_3: ozone; ppm: parts per million; µg/m^3: micrograms per cubic meter; PM_{10}: large particulate matter;
AAM: Annual Arithmetic Mean; $PM_{2.5}$: fine particulate matter; CO: carbon monoxide;
mg/m^3: milligrams per cubic meter; NO_2 nitrogen dioxide; SO_2: sulfur dioxide; km: kilometer; –: No Standard.

Table 3.1.1-5
FEDERAL AND STATE AIR QUALITY DESIGNATION

Criteria Pollutant	Federal Designation	State Designation
Ozone (1-hour)	(No federal standard)	Nonattainment
Ozone (8-hour)	Nonattainment	Nonattainment
Carbon Monoxide (CO)	Attainment	Attainment
PM_{10}	Unclassified	Nonattainment
$PM_{2.5}$	Attainment	Nonattainment
NO_2	Attainment	Attainment
SO_2	Attainment	Attainment
Lead	Attainment	Attainment
Sulfates	(No federal standard)	Attainment
Hydrogen Sulfide	(No federal standard)	Unclassifiable
Visibility Reducing Particles	(No federal standard)	Unclassifiable

Source: SDAPCD 2017

Table 3.1.1-6
SCREENING-LEVEL THRESHOLDS FOR
AIR QUALITY IMPACT ANALYSIS

Pollutant	Total Emissions		
Construction 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 (VOCs)	75		
Operational 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
Oxides of Sulfur (SO_X)	25	250	40
Carbon Monoxide (CO)	100	550	100
Lead and Lead Compounds	---	3.2	0.6
Volatile Organic Compounds (VOCs)	---	75	13.7
Toxic Air Contaminant Emissions			
Excess Cancer Risk	1 in 1 million 10 in 1 million with T-BACT		
Non-Cancer Hazard	1.0		

Source: County 2007c; SDACPD 2019a and 2019b; SCAQMD 2015
T-BACT = Toxics Best Available Control Technology

Table 3.1.1-7
ESTIMATED DAILY CONSTRUCTION EMISSIONS

Construction Activity	ROG*	CO*	NO_X*	SO_X*	PM_{10}*	$PM_{2.5}$*
Phase 1 Site Access	1.5	15.8	7.8	<0.1	4.0	2.2
Phase 1 Roadway Improvements – Demolition	1.1	10.1	7.3	0.0	0.5	0.4
Phase 1 Roadway Improvements – Grading	1.3	13.8	9.5	0.0	1.0	0.6
Phase 1 Roadway Improvements – Paving	1.1	8.3	8.2	0.0	0.7	0.4
Phase 1 Roadway Improvements – Striping	16.1	6.2	5.4	0.0	0.6	0.3
Phase 1 Demolition	1.4	13.5	10.8	<0.1	0.8	0.7
Phase 1 Site Preparation	1.0	10.5	6.0	<0.1	3.5	2.0
Phase 1 Grading	2.0	20.9	15.8	<0.1	4.3	2.5
Phase 2 Demolition	1.2	11.1	10.3	<0.1	0.7	0.5
Phase 3 Demolition	1.1	10.8	10.3	<0.1	1.2	0.6
Maximum Daily Emissions	**16.1**	**20.9**	**15.8**	**<0.1**	**4.3**	**2.5**
Screening-Level Thresholds	*75*	*550*	*250*	*250*	*100*	*55*
Exceed Thresholds?	***No***	***No***	***No***	***No***	***No***	***No***

Source: HELIX 2021d
Note: Estimates assume the implementation of fugitive dust measures (watering twice daily and a 15-mph speed limit on unpaved roads).
* Pollutant Emissions (pounds per day)
ROG = reactive organic gas; CO = carbon monoxide; NO_X = oxides of nitrogen; SO_X = oxides of sulfur; PM_{10} = particulate matter of 10 microns or less; $PM_{2.5}$ = particulate matter of 2.5 microns or less

Table 3.1.1-8
ESTIMATED DAILY OPERATIONAL EMISSIONS

Category	ROG*	CO*	NO_X*	SO_X*	PM_{10}*	$PM_{2.5}$*
Phase 1						
Off-Road Equipment Exhaust	2.0	12.7	18.0	<0.1	0.7	0.6
Mining and Processing Dust	0.0	0.0	0.0	0.0	80.3	15.3
On-Road Mobile Emissions	0.5	6.9	19.9	<0.1	2.9	0.9
Phase 2 Demolition	1.2	10.3	11.1	<0.1	0.7	0.5
Phase 1 Total Daily Maximum Emissions	**3.7**	**29.9**	**49.0**	**0.2**	**84.5**	**17.4**
Screening-Level Thresholds	*75*	*550*	*250*	*250*	*100*	*55*
Exceed Thresholds?	***No***	***No***	***No***	***No***	***No***	***No***
Phase 2						
Off-Road Equipment Exhaust	2.0	12.7	18.0	<0.1	0.7	0.6
Mining and Processing Dust	0.0	0.0	0.0	0.0	80.3	15.3
On-Road Mobile Emissions	0.4	6.9	19.4	0.1	2.9	0.9
Phase 3 Demolition	1.1	10.3	10.8	<0.1	1.2	0.6
Phase 2 Total Daily Maximum Emissions	**3.6**	**29.9**	**48.8**	**0.2**	**85.0**	**17.4**
Screening-Level Thresholds	*75*	*550*	*250*	*250*	*100*	*55*
Exceed Thresholds?	***No***	***No***	***No***	***No***	***No***	***No***
Phase 3						
Off-Road Equipment Exhaust	2.0	12.7	18.0	<0.1	0.7	0.6
Mining and Processing Dust	0.0	0.0	0.0	0.0	80.3	15.3
On-Road Mobile Emissions	0.8	9.9	23.3	0.1	2.7	0.8
Phase 3 Total Daily Maximum Emissions	**2.8**	**22.9**	**41.3**	**0.2**	**83.6**	**16.7**
Screening-Level Thresholds	*75*	*550*	*250*	*250*	*100*	*55*
Exceed Thresholds?	***No***	***No***	***No***	***No***	***No***	***No***

Source: HELIX 2021d

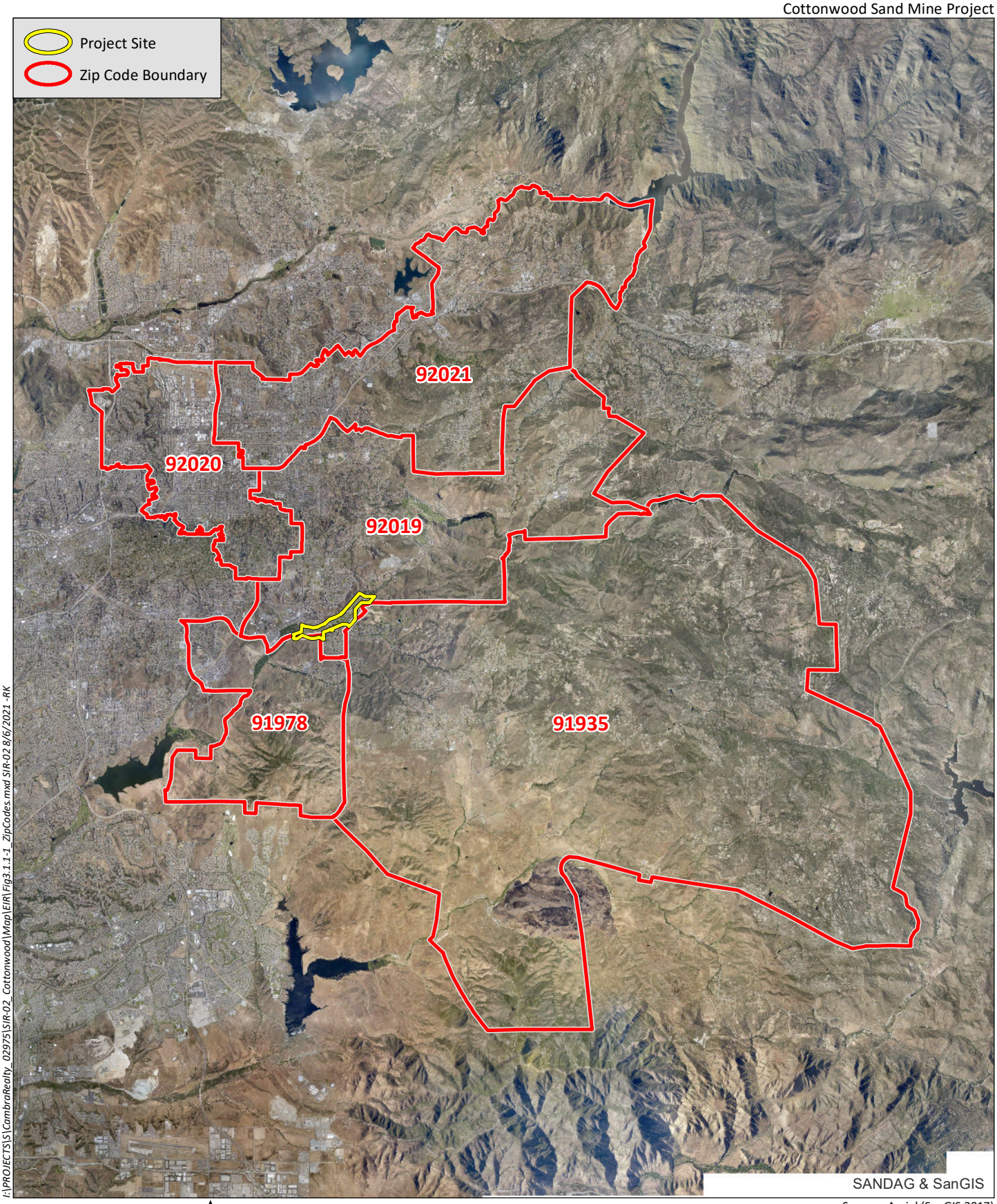
* Pollutant Emissions (pounds per day)

ROG = reactive organic gas; CO = carbon monoxide; NO_X = oxides of nitrogen; SO_X = oxides of sulfur; PM_{10} = particulate matter of 10 microns or less; $PM_{2.5}$ = particulate matter of 2.5 microns or less

Table 3.1.1-9
HEALTH RISKS FROM TAC EMISSIONS

Maximum Exposed Individual	Risk Type	Maximum Risk	SDAPCD Threshold	Exceed Threshold?
Phase 1				
Resident	Incremental Cancer Risk	2.3 in 1 million	10 in 1 million	No
	Chronic Hazard Index	0.05	1	No
	Acute Hazard Index	0.07	1	No
Non-Project Worker	Incremental Cancer Risk	0.02 in 1 million	10 in 1 million	No
	Chronic Hazard Index	<0.01	1	No
	Acute Hazard Index	<0.01	1	No
Phase 2				
Resident	Incremental Cancer Risk	2.9 in 1 million	10 in 1 million	No
	Chronic Hazard Index	0.05	1	No
	Acute Hazard Index	0.09	1	No
Non-Project Worker	Incremental Cancer Risk	<0.01 in 1 million	10 in 1 million	No
	Chronic Hazard Index	<0.01	1	No
	Acute Hazard Index	<0.01	1	No
Phase 3				
Resident	Incremental Cancer Risk	2.7 in 1 million	10 in 1 million	No
	Chronic Hazard Index	0.05	1	No
	Acute Hazard Index	0.07	1	No
Non-Project Worker	Incremental Cancer Risk	<0.01 in 1 million	10 in 1 million	No
	Chronic Hazard Index	<0.01	1	No
	Acute Hazard Index	<0.01	1	No

Source: HELIX 2021d
TAC = toxic air contaminant; SDAPCD = San Diego Air Pollution Control District

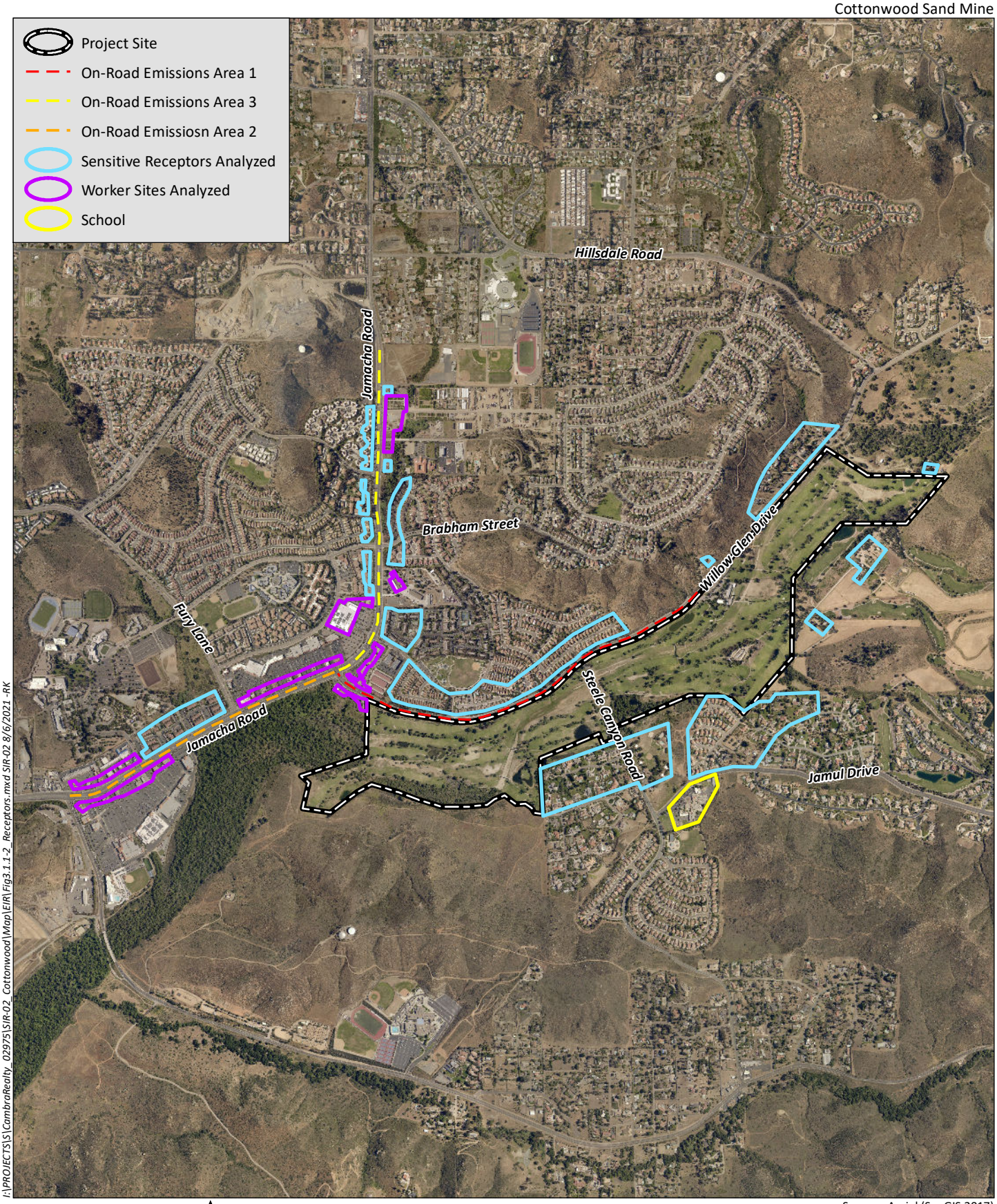


Source: Aerial (SanGIS 2017)

HELIX Environmental Planning

Valley Fever Evaluation Zip Codes

Figure 3.1.1-1



Source: Aerial (SanGIS 2017)

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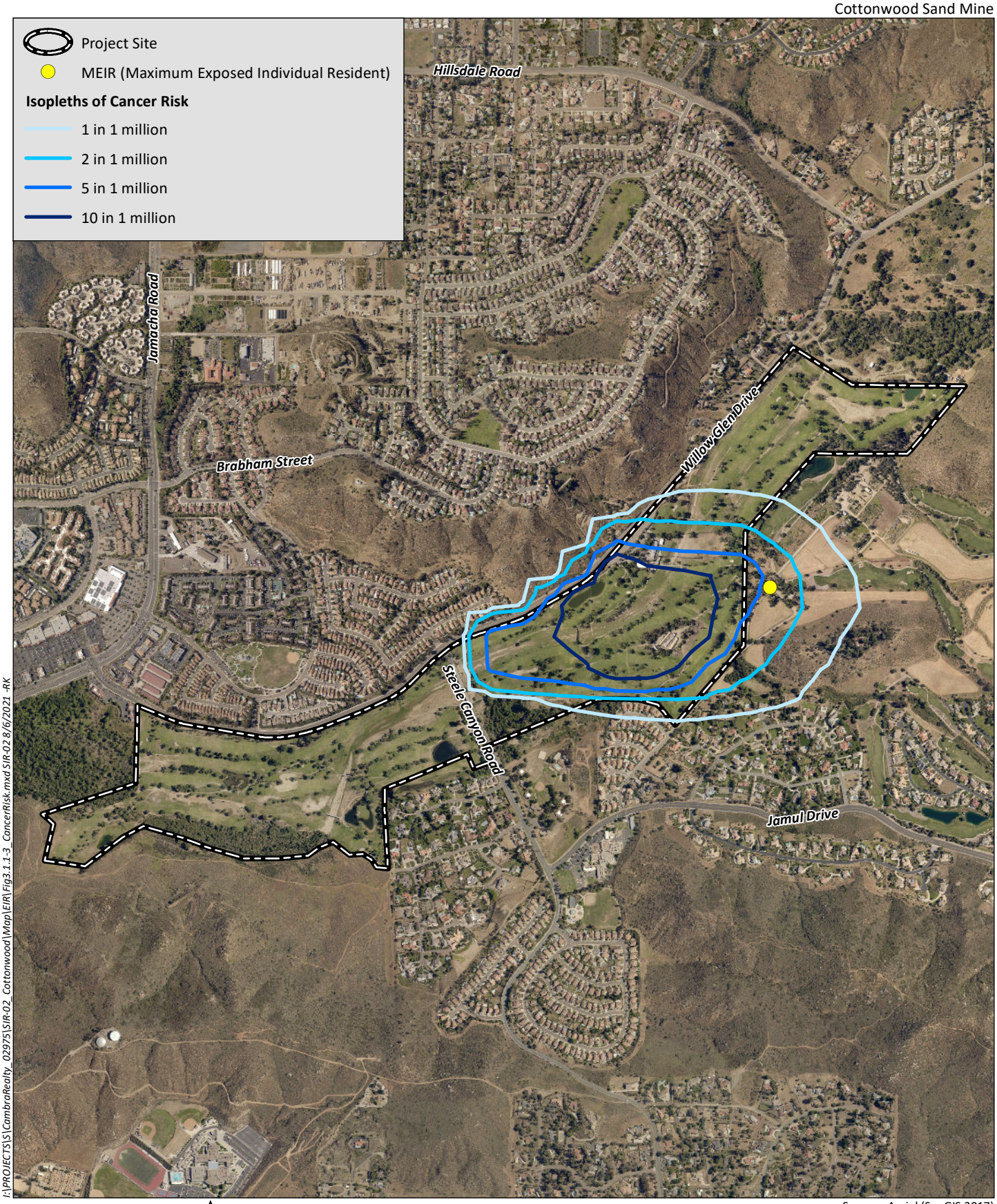
Receptor Locations

Figure 3.1.1-2



Source: Aerial (SanGIS 2017)

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Increased Residential Cancer Risk

Figure 3.1.1-3