4.3 AIR QUALITY

4.3.1 Existing Conditions

Appendix D of this EIR, prepared by Sespe Consulting, Inc., contains the air quality impact assessment, health risk assessment, greenhouse gas evaluation, and other information related to air quality. A separate section in this EIR (Section 4.4) discusses greenhouse gas emissions. The following pages summarize the air quality impact assessment based primarily on the work by Sespe Consultants. The San Luis Obispo County Air Pollution Control District (SLOAPCD) publishes a CEQA Air Quality Handbook that provides guidance and criteria used by the District in evaluating impacts and mitigation measures for projects. The modeling and technical analysis prepared by Sespe was completed in late 2011 and updated in 2012 after publication of the 2012 edition of the SLOAPCD handbook.

Regional Setting

San Luis Obispo County constitutes a land area of approximately 3,316 square miles with varied vegetation, topography and climate. From a geographical and meteorological standpoint, the county can be divided into three general regions: the Coastal Plateau, the Upper Salinas River Valley, and the East County Plain. Air quality in each of these regions is characteristically different, although the physical features which divide them provide only limited barriers to transport of pollutants between regions.

The climate of the county can be generally characterized as Mediterranean, with warm, dry summers and cooler, relatively damp winters. Along the coast, mild temperatures are the rule throughout the year due to the moderating influence of the Pacific Ocean. This effect is diminished inland in proportion to distance from the ocean or by major intervening terrain features, such as the coastal mountain ranges. As a result, inland areas are characterized by a wider range of temperature conditions. Maximum summer temperatures average about 70 degrees Fahrenheit near the coast, while inland valleys are often in the high 90s. Minimum winter temperatures average from the low 30s along the coast to the low 20s inland.

Regional meteorology is largely dominated by a persistent high pressure area which commonly resides over the eastern Pacific Ocean. Seasonal variations in the strength and position of this pressure cell cause seasonal changes in the weather patterns of the area. The Pacific High remains generally fixed several hundred miles offshore from May through September, enhancing onshore winds and opposing offshore winds. During spring and early summer, as the onshore breezes pass over the cool water of the ocean, fog and low clouds often form in the marine air layer along the coast. Surface heating in the interior valleys dissipates the marine layer as it moves inland.

From November through April the Pacific High tends to migrate southward, allowing northern storms to move across the county. About 90 percent of the total annual rainfall is

received during this period. Winter conditions are usually mild, with intermittent periods of precipitation followed by mostly clear days. Rainfall amounts can vary considerably among different regions in the county. In the Coastal Plain, annual rainfall averages 16 to 28 inches, while the Upper Salinas River Valley generally receives about 12 to 20 inches of rain. The Carrizo Plain is the driest area of the county with less than 12 inches of rain in a typical year.

Airflow around the county plays an important role in the movement and dispersion of pollutants. The speed and direction of local winds are controlled by the location and strength of the Pacific High pressure system and other global patterns, by topographical factors, and by circulation patterns resulting from temperature differences between the land and sea. In spring and summer months, when the Pacific High attains its greatest strength, onshore winds from the northwest generally prevail during the day. At night, as the sea breeze dies, weak drainage winds flow down the coastal mountains and valleys to form a light, easterly land breeze.

In the fall, onshore surface winds decline and the marine layer grows shallow, allowing an occasional reversal to a weak offshore flow. This, along with the diurnal alternation of land-sea breeze circulation, can sometimes produce a "sloshing" effect. Under these conditions, pollutants may accumulate over the ocean for a period of one or more days and are subsequently carried back onshore with the return of the sea breeze. Strong inversions can form at this time, "trapping" pollutants near the surface.

This effect is intensified when the Pacific High weakens or moves inland to the east. This may produce a "Santa Ana" condition in which air, often pollutant-laden, is transported into the county from the east and southeast. This can occur over a period of several days until the high pressure system returns to its normal location, breaking the pattern. The breakup of a Santa Ana condition may result in relatively stagnant conditions and a buildup of pollutants offshore. The onset of the typical daytime sea breeze can bring these pollutants back onshore, where they combine with local emissions to cause high pollutant concentrations. Not all occurrences of the "post Santa Ana" condition lead to high ambient pollutant levels, but it does play an important role in the air pollution meteorology of the county.

The stability of the atmosphere is one of the key factors affecting pollutant dispersion. Atmospheric stability regulates the amount of vertical and horizontal air exchange, or mixing, that can occur within a given air basin. Restricted mixing and low wind speeds are generally associated with a high degree of stability in the atmosphere. These conditions are characteristic of temperature inversions.

Several types of inversions are common to this area. Weak, surface inversions are caused by radiational cooling of air in contact with the cold surface of the earth at night. In valleys and low lying areas this condition is intensified by the addition of cold air flowing downslope from the hills and pooling on the valley floor. Surface inversions are a common occurrence

throughout the county during the winter, particularly on cold mornings when the inversion is strongest. As the morning sun warms the earth and the air near the ground, the inversion lifts, gradually dissipating as the day progresses.

During the late spring and early summer months, cool air over the ocean can intrude under the relatively warmer air over land, causing a marine inversion. These inversions can restrict dispersion along the coast, but they are typically shallow and will dissipate with surface heating.

In contrast, in the summertime the presence of the Pacific high pressure cell can cause the air mass aloft to sink. As the air descends, compressional heating warms it to a temperature higher than the air below. This highly stable atmospheric condition, termed a subsidence inversion, is common to all of coastal California and can act as a nearly impenetrable lid to the vertical mixing of pollutants. The base of the inversion typically ranges from 1,000 to 2,500 feet above sea level; however, levels as low as 250 feet, among the lowest anywhere in the state, have been recorded on the coastal plateau in San Luis Obispo county. The strength of these inversions makes them difficult to disrupt. Consequently, they can persist for one or more days, causing air stagnation and the buildup of pollutants. Highest or worst-case ozone levels are often associated with the presence of this type of inversion.

Local Setting

The Project is within the Upper Salinas River Valley. The Upper Salinas River Valley, located in the northern one-third of the county, houses 25 percent of the county's population. Historically, this region has experienced the highest ozone and particulate levels in the county. Transport of ozone precursors from the coastal plateau and from the San Joaquin Valley may contribute to this condition.

Criteria Pollutants and Ambient Air Quality Standards

Federal and state monitoring and control of air quality is focused on six common air pollutants that are known to cause adverse health effects and environmental and property damage. These six criteria pollutants are briefly described in the following paragraphs, and more information regarding their characteristics is provided in Appendix D (see Appendix B in the Sespe Consultants report).

Ozone (O_3) is formed by the reaction of sunlight with reactive organic gases (ROG, similar to and sometimes referenced as volatile organic compounds or VOC) and nitrogen oxides (NO_X). Ozone is an oxidizing agent and causes irritation in lung tissue that can affect breathing, transfer of oxygen to the blood system, and the ability of the respiratory system to remove foreign particles and fight infection. Ozone is not emitted directly by ground-level pollutant sources, but is formed in the lower atmosphere as a secondary pollutant from the emissions of volatile organic compounds and combustion byproducts. At much higher

altitudes (8 to 20 miles) ozone forms naturally in reactions of sunlight with oxygen, and has the beneficial effect of absorbing ultraviolet rays from the sun.

Particulate Matter (PM_{10} and $PM_{2.5}$) is the general name for very small pieces of solids suspended in the air. It includes a complex mixture of man-made and natural substances such as dust from soil, sea salt from the evaporation of ocean spray, sulfates and nitrates that condense in the atmosphere, elemental carbon (soot), and other materials. The focus of regulation is on smaller sized particles, including those measuring 10 microns or less in diameter (PM_{10}). Such small particles are easily inhaled and deposit within the lungs where they can cause irritation and damage directly, or because of the chemicals that may be adsorbed on their surface and introduced into the lungs. Since 2003, newer standards have been developed for even finer particulates—those with diameters of 2.5 microns ($PM_{2.5}$) or less, which can reach even farther into the lungs causing disease and decreased respiratory function. The main pollutant generated by mining activities is suspended particulate matter. Emissions of suspended particulates that cannot be collected and discharged through a stack are considered fugitive. Fugitive dust is primarily a concern during construction processes such as excavation and grading which disturb earthen materials. In addition, diesel exhaust contains particulates that are considered a toxic air contaminant (see below), which would also be present during mining and contribute to total particulate matter levels.

Carbon monoxide (CO) is a colorless and odorless gas formed by the incomplete combustion of fuel. When inhaled, it displaces oxygen in blood cells and impairs the body's ability to transport oxygen to tissues where it is needed for cellular respiration.

Nitrogen dioxide (NO_2) is a brownish gas in high concentration, and is formed during combustion or rapidly in the atmosphere when oxygen reacts with the colorless gas nitrogen oxide to form nitrogen dioxide. The two, and related compounds, are collectively called "nitrogen oxides." When inhaled, nitrogen dioxide causes irritation and constriction of airways in the lungs. In the atmosphere, it is also a catalyst in the formation of ozone.

Sulfur dioxide (SO_2) is a sharply pungent and colorless gas formed mainly from the combustion of sulfur containing fuels (mainly coal in other parts of the country). In the atmosphere it reacts with water to form sulfuric acid, and when inhaled it causes respiratory irritation and breathing difficulty.

Lead (Pb) was released into the atmosphere in past years mainly through evaporative losses from leaded gasoline. Although its use in motor vehicles has been discontinued, it can still be emitted from some industrial processes and combustion of lead containing materials. When absorbed by the body it can cause neurological damage, and impairs the formation of blood cells.

The US Environmental Protection Agency (USEPA) has established national Ambient Air Quality Standards (AAQ) for the above criteria pollutants, and California has established

similar state AAQS. The AAQS are defined as concentrations in the atmosphere that must not be exceeded more than a specified number of times during a reporting period.

From the above list, the pollutants of most concern in California are ozone and particulate matter – these continue to occur in the atmosphere at concentrations that are near or above applicable standards. Because ozone is not emitted directly from pollution sources, emission standards are established for ROG and NO_X, which are called ozone precursors. These ozone precursors and particulate matter are emitted from a wide variety of dispersed sources, such as motor vehicles, agricultural activities, general construction, and other common human activities. Their control requires attention to transportation, land use, and energy use, as well as to industrial sources. The other criteria pollutants remain important, but controls on industrial sources and other regulations have reduced their concentrations in most areas.

Table 4.3-1 below presents both the federal and the California AAQS. More information related to the information in the table is available in Appendix D, including a series of footnotes that explain the various units in the table, how the various standards apply in different areas of the state, and recent changes in the standards.

Toxic Air Contaminants

Toxic Air Contaminants (TAC) include a large number of compounds, mostly organic substances, listed by California that are either carcinogenic or cause other acute or chronic health effects even when present in small concentrations. At the federal level the similar listing is called Hazardous Air Pollutants (HAP). The California Office of Environmental Health Hazard Assessment (OEHHA) is responsible for developing the scientific basis for listing TACs while the California Air Resources Board (CARB) is responsible for implementing air toxic control measures (ATCM). In 1993, passage of Assembly Bill 2728 required the state to include the 189 federal HAPs within the state TAC list. More information regarding the regulation of TACs is contained in Section 4.3.3.

For purposes of this project, two toxic air contaminants (TACs) are of primary concern. These are Diesel Particulate Matter (DPM) and asbestos. DPM is the result of combustion of diesel fuel, and consists of very fine particulates including soot, organic compounds and other substances. It was identified by California as a TAC based on its carcinogenic potential in 1998, and DPM accounts for about 70 percent of the cancer risk from air pollution in urban areas where on-road sources dominate the inventory. Control programs at the federal and state level are aimed at replacing diesel engines with other power sources where feasible and reducing DPM emissions, as well as criteria pollutants, from engine exhaust through improved technology. DPM is the major constituent evaluated in the health risk assessment for the project, although other substances are also included. Asbestos is still found in older buildings as an insulation or other construction material, but it is also “naturally occurring

TABLE 4.3-1
AMBIENT AIR QUALITY STANDARDS

		California Standards	National Standards	
Pollutant	**Averaging Time**	**Concentration**	**Primary**	**Secondary**
Ozone (O)	1 Hour	0.09 ppm (180 µg/m³)	—	Same as Primary Standard
	8 Hour	0.070 ppm (137 µg/m³)	0.075 ppm (147µg/m)	
Respirable Particulate Matter (PM_{10})	24 Hour	50 µg/m³	150 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m³	—	
Fine Particulate Matter ($PM_{2.5}$)	24 Hour	—	35 µg/m³	Same as Primary Standard
	Annual Arithmetic Mean	12 µg/m³	15 µg/m³	
Carbon Monoxide (CO)	1 Hour	20 ppm (23 mg/m³)	35 ppm (40 mg/m³)	—
	8 Hour	9.0 ppm (10 mg/m³)	9 ppm (10 mg/m³)	—
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m³)	—	—
Nitrogen Dioxide (NO_2)	1 Hour	0.18 ppm (339 µg/m³)	100 ppb (188 µg/m³)	—
	Annual Arithmetic Mean	0.030 ppm (57 µg/m³)	53 ppb (100 µg/m³)	Same as Primary Standard
Sulfur Dioxide (SO_2)	1 Hour	0.25 ppm (655 µg/m³)	75 ppb (196 µg/m³)	—
	3 Hour	—	—	0.5 ppm (1,300 µg/m)
	24 Hour	0.04 ppm (105 µg/m³)	0.14 ppm (for certain areas)	—
	Annual Arithmetic Mean	—	0.030 ppm (for certain areas)	—
Lead	30 Day Average	1.5 µg/m³	—	—
	Calendar Quarter	—	1.5 µg/m³ (for certain areas)	Same as Primary Standard
	Rolling 3-month Average	—	0.15 µg/m³	
Visibility Reducing Particles	8 Hour	Extinction coefficient of 0.23 per kilometer		No National Standards
Sulfates	24 Hour	25 µg/m³		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 µg/m³)		
Vinyl Chloride	24 Hour	0.01 ppm (26 µg/m³)		

asbestos" (NOA) associated with serpentine minerals that are widespread in San Luis Obispo County. NOA can be released to the air during grading and construction in such areas.

Existing Sources of Air Pollutants

No substantial sources of air pollutants currently exist on-site. Sources of air pollutants in close proximity to the project include traffic running on SR 58 and the Hanson Santa Margarita quarry about one-half mile to the west. Other aggregate mines in the region include the Rocky Canyon quarry (five miles to the northwest), the Navajo quarry about 17 miles to the east, and smaller sand and gravel operations along the Salinas River and its tributaries generally within 5 to 15 miles to the north and northeast of the proposed quarry.

SR 58 currently carries average daily traffic volumes that range from 7,200 in the vicinity of US Highway 101 to 1,850 adjacent to the project site. About 3 percent of this traffic volume is heavy trucks, which is typical for highways that do not carry a high proportion of inter-regional truck traffic (such as SR 46, the next major east-west route north of SR 58). Trucks carrying aggregate material and other products along SR 58 constitute an existing source of DPM and other exhaust pollutants in the vicinity. The CARB Community Health Air Pollution Information System (CHAPIS) identifies this source (SR 58) as the only major source of DPM in the area, and also lists the two existing quarries (Hanson Santa Margarita and CalPortland Rocky Canyon) and the Phillips 66 pump station as other sources of air pollution in the area (CARB 2012).

Railroad locomotive operations along the UPRR line that passes through Santa Margarita are an additional source of diesel exhaust and DPM that affects the area.

Ambient Criteria Pollutant Concentrations

Table 4.3-2 contains the concentration data and number of days exceeding each AAQS monitored in the County by SLOAPCD. The site is located closest to the Atascadero monitoring station. The 2010 Network Monitoring Plan published by SLOAPCD describes the Atascadero station:

- Atascadero Ozone – Operated by the SLOAPCD since 1988, this population-oriented neighborhood scale ozone monitor is located near the central business district of downtown Atascadero and is bounded on two sides by elementary schools. It provides a measurement of representative ozone concentration for the City of Atascadero. Ozone concentrations at this site exhibit strong diurnal fluctuations caused by titration of ozone by oxides of nitrogen from nearby mobile and residential sources. Measured concentrations at this site are often similar to those recorded at Paso Robles. The highest ozone concentrations at Atascadero occur when high pressure over the interior southwest U.S. causes transport of "old" ozone and other pollutants into San Luis Obispo County from the east. Under these infrequent conditions transported ozone enhanced by local

TABLE 4.3-2
AMBIENT AIR QUALITY DATA

Measurement	Units	2007	2008	2009	2010
NO_2 – Max. 1 hr. avg. conc.	Ppm	0.046	0.052	0.045	*
NO_2 – Days > State Std.	Days	0	0	0	*
NO_2 – Annual Arithmetic Mean	Ppb	9	8	7	*
NO_2 – AAM Nat. > Nat. Std.	Year	0	0	0	*
NO_2 – AAM State	Ppm	0.0091	0.0077	0.0070	*
NO_2 – AAM State> State Std.	Year	0	0	0	*
Ozone – Max. 1 hour avg. conc.	Ppm	0.079	0.087	0.078	0.077
Ozone – Hrs. > State 1 hr. Std.	hour	0	0	0	0
Ozone – Max. 8 hr. (overlap)	Ppm	0.071	0.079	0.068	0.067
Ozone – Max 8-hr. (State)	Ppm	0.072	0.080	0.068	0.068
Ozone – Days above Nat 8hr. Std	Days	0	1	0	0
Ozone – Days above State 8-hr.	Days	1	3	0	0
PM_{10} – Max. 24 hr. avg. conc. – S	µg/m³	49	43.6	36	23
PM_{10} – Max. 24 hr. (Natl.)	µg/m³	48	44.1	36	23
PM_{10} – Calc. Days > State Std.	Days	*	0	0	*
PM_{10} – Annual Avg. (State)	µg/m³		20.5	17.5	*
PM_{10} – Max. Ann. Avg. from 3 yr. (S)	µg/m³	18	20	20	20
PM_{10} – Calc. Days > Nat. Std.	Days	*	0	0	*
$PM_{2.5}$ – Max. 24 hr. (State)	µg/m³	27.6	28.5	26.9	12.4
$PM_{2.5}$ – Max. 24 hr. (Nat'l)	µg/m³	23.9	28.5	51.6	21.2
$PM_{2.5}$ – Est. Days > Nat. 24-hr. std.	Days	0	0	2	0
$PM_{2.5}$ – 98th Percentile (Nat'l)	µg/m³	22.7	20.2	26.4	16.0
$PM_{2.5}$ – 3yr. Annual AOQ (Nat'l)	µg/m³	7.9	8.1	9.2	6.3
$PM_{2.5}$ – Annual Avg. (State)	µg/m³	8.0	*	7.9	*

Atascadero-Lewis Avenue Monitoring Station Data from CARB website.
* = no data, Max. = maximum, Avg. = average, Ann. = annual, AAM = annual arithmetic mean, Conc. = concentration, Std = standard, hr. = hour, Nat'l = national.

pollutants can cause highly elevated concentrations. The prevailing west or northwest winds from the coast help keep ozone levels at Atascadero low most of the time.

- Atascadero Nitrogen Dioxide – Operated by SLOAPCD since 1990, this population-oriented monitor is considered neighborhood scale and highest concentration for NO_2. This, the only NO_2 monitor in the Salinas River air basin, records the highest NO, NO_2 and NO_X levels in the county. The monitor's location downtown has established a strong

diurnal inverse relationship between ozone and NO_2 levels caused by local mobile sources and residential and commercial combustion of natural gas.

- Atascadero Particulates – Operated by SLOAPCD. The PM_{10} monitor has been operated since 1988. $PM_{2.5}$ monitoring has occurred since 1999 with several different pieces of equipment. All of the particulate monitors used at this station have been urban in scale and provide measurements representative of particulate concentrations in the city of Atascadero.

Other monitoring stations are sited to obtain regional background concentrations. These include Morro Bay, Nipomo Regional Park and Carrizo Plains for ozone concentrations; and Nipomo Regional Park for nitrogen dioxide concentrations. Sulfur dioxide is measured at one station location near a stationary source and carbon monoxide is no longer monitored in the County because concentrations are consistently low.

Ambient Cancer Risk

The California Air Resources Board (CARB) risk maps show that ambient air in the project vicinity exhibits a total cancer risk between zero and 100 excess cancer cases per one million people exposed (see Figure 3 in Appendix A of the air quality impact assessment in Appendix D of this EIR). Relatively higher existing cancer rates (from 50 to 100) are associated generally with the population centers of the County, while the more remote regions are in the 0 to 50 range. A typical value for a worst case residence located as close as possible to SR 58, computed from the SLOAPCD Health Risk Assessment (HRA) Screening Tool (SLOAPCD 2011), is just over 17 excess cancer cases per one million people, which is consistent with the CARB mapping. With the advent of additional controls on diesel exhaust from on-road trucks, these values may be expected to decrease over time. These statements of cancer risk relate only to the risk posed by air pollution based on sources considered by the Emissions Inventory Branch of the CARB. They do not represent actual incidence rates for cancer from all causes.

Nearby Receptors

Figure 4.3-1 and Table 4.3-3 describe receptors (AQR-1 through AQR-8) near the project including residences within 0.25 mile of the project site and outside of the property boundary that contains the project. There are no schools, hospitals, or other uses that are considered sensitive receptors in the vicinity of the project site. The nearest school is Santa Margarita Elementary, over two miles southwest from the proposed quarry location along the proposed truck route.

TABLE 4.3-3
SENSITIVE RECEPTORS – AIR QUALITY

Receptor No.	Distance to Site of Quarry Operations (Feet)	Distance to Property Lines of Quarry (Feet)	Type
AQR-1	1,036	258	Residence
AQR-2	815	50	Residence
AQR-3	1,048	2,594	Residence
AQR-4	1,777	52	Residence
AQR-5	2,282	1,102	Residence
AQR-6	1,202	353	Residence
AQR-7	757	372	Residence
AQR-8	1,116	922	Residence

4.3.2 San Luis Obispo County Plans and Policies

Table 4.3-4 presents a preliminary review of Plans and Policies of the San Luis Obispo County General Plan, relative to this proposed surface mining operation, that are applicable to Air Quality.

4.3.3 Regulatory Setting

Overview of Air Quality Planning and Regulation

Regulations that control air pollutants are developed at the federal, state, and local levels. The Federal Clean Air Act and the California Clean Air Act each contain comprehensive frameworks for air quality planning and regulation. The regulatory system at both levels is based the establishment of Ambient Air Quality Standards (AAQS), and then regulating sources of air pollutants so that the AAQS are not exceeded. Specific limitations are also established for the emissions of toxic air contaminants, discussed below. Some regulations are implemented directly at the federal and state levels, such as the exhaust emissions requirements for vehicles and equipment. Other requirements are implemented through the local Rules and Regulations adopted by the local APCD. Examples of these local requirements include the permitting and control of emissions from point sources and rules to control emissions of fugitive dust or other nuisances.

The federal and state programs require the monitoring of ambient air quality. Geographic areas are classified by US EPA and CARB based on whether the ambient air in the area meets the AAQSs. An “attainment area” is an area in which pollutant concentrations are less than or equal to the AAQS while “non-attainment areas” have pollution levels that exceed the AAQS a specified number of days per year.

TABLE 4.3-4
POLICY CONSISTENCY ANALYSIS – AIR QUALITY

Source	Policy Statement	Discussion	Preliminary Determination
Inland Framework for Planning – Land Use Element, Planning Principle 1, Policy 4	Preserve and protect the air quality of the county by seeking to exceed or at least maintain the minimum state and federal ambient air quality standards.	Operations within the proposed quarry could exceed SLOAPCD emissions thresholds, but are expected to be reduced through mitigation measures consistent with SLOAPCD procedures, which should maintain state and federal air quality standards.	Potentially Inconsistent
COSE Policy AQ 3.2/Implementation Strategy AQ 3.2.1:	The County's CEQA process will use the APCD's CEQA Guidelines to determine significance of impacts and to identify minimum project design and mitigation requirements.	These Guidelines have been followed in the preparation of the analysis in this EIR, and adherence to the procedures and requirements of the SLOAPCD will be a condition in the CUP.	Potentially Consistent
COSE Policy AQ 3.7 Reduce vehicle idling	Encourage the reduction of heavy-vehicle idling throughout the county, particularly near schools, hospitals, senior care facilities, and areas prone to concentrations of people, including residential areas.	Idling restrictions will be posted on-site, and made an ongoing condition of the Use Permit. Trucks are not expected to stop/idle in the vicinity of schools or other sensitive receptors along the truck route.	Potentially Consistent
COSE Policy AQ 3.8 Reduce dust emissions	Reduce PM_{10} and $PM_{2.5}$ emissions from unpaved and paved County roads to the maximum extent feasible.	Project design includes paving access road from SR 58 to quarry entrance, and use of water to suppress dust from internal working areas.	Potentially Consistent

The project is located in the South Central Coast Air Basin (SCCAB), which encompasses the counties of San Luis Obispo, Santa Barbara and Ventura. San Luis Obispo County is considered to be in "non-attainment" for the California ozone and PM_{10} AAQS, but is in attainment for all other California AAQS. With respect to the national AAQS, the US EPA recently designated the eastern portion of San Luis Obispo County as a marginal non-attainment area for the federal ozone standard (Fed Reg Vol 77 No. 98, May 21, 2012, pages 30108-30109). For other criteria pollutants, the County is considered "unclassified," meaning that there is insufficient information to determine whether it is in attainment or nonattainment status. More information regarding the attainment status of the County is contained in Appendix D and is available from San Luis Obispo County APCD (2012a).

In order to make progress towards attainment with the AAQS, each state and air district containing federal non-attainment areas is required to develop a written plan for cleaning the air in those areas. These plans are called State Implementation Plans (SIP). California's SIP contains mobile source and consumer product emission control strategies proposed by CARB

and a compilation of stationary and area source strategies that have been developed by local air districts under CARB supervision. Through these plans, the state and local air districts outline efforts that they will take to reduce air pollutant concentrations to levels below the standards.

State law also requires each air district in state non-attainment areas to develop a Clean Air Plan (CAP) designed to achieve the state standards by the earliest practical date; and this plan must be updated every three years. These plans must assess the cost-effectiveness of available and proposed emission control measures. The SLOAPCD CAP was prepared in 2001, and outlines the District's strategies to reduce ozone precursor emissions from a wide variety of stationary and mobile sources. Every three years, the SLOAPCD prepares a Triennial Report of the air quality improvement for comparison to commitments and attainment demonstrations in the CAP.

Toxic Air Contaminant Regulations

Hazardous air pollutants (HAP) are pollutants listed by US EPA that pose acute, chronic, and/or cancer health risks to exposed individuals. They are regulated through the establishment of Emissions Standards for Hazardous Air Pollutants (ESHAPS), which are then enforced through the states and local APCDs. In California a similar regulatory program addresses Toxic Air Contaminants (TAC).

The Office of Environmental Health Hazard Assessment (OEHHA) is responsible for developing the scientific basis for listing TACs while the California Air Resources Board (CARB) is responsible for implementing air toxic control measures (ATCM). Assembly Bill 1807 (AB 1807) passed in 1983 requires the state of California to identify and control TACs. TACs are formally identified through a detailed process which starts when a chemical's risk to human health and the environment is above certain criteria. Once TACs are identified, the emission sources, controls, technologies and costs are reviewed to determine if regulation is needed to reduce emissions. In 1993, AB1807 was amended by passage of Assembly Bill 2728 (AB 2728) which requires the State to list the 189 federal HAPs in the TAC list.

In 1987, the AB 2588 air toxics "hot spots" program was established. This program requires subject facilities to report their air toxics emissions, determine localized health risks, and notify nearby residents of significant risks. The program was amended in 1992 to require facilities to reduce any significant risks through the development of a risk management plan. The Hotspots Analysis and Reporting Program (HARP) is a tool that is used to assist with calculating TAC emission inventories and performing health risk assessments under the AB 2588 Program.

Diesel exhaust is regulated by U.S. EPA and by CARB through rules that are adopted to limit emissions from on-highway heavy duty trucks and buses and from off-road diesel vehicles. The Off-Road Vehicle Regulation was amended by the ARB in December 2010. Prior to that

time, the Rule phased in from 2010 to 2020; but the December 2010 rulemaking pushed the start date back to 2014 and the date of final implementation back to 2024. In addition, until ARB receives a waiver from U.S. EPA to regulate in-use off-road engines, the provisions that require further control are not enforceable. Registering fleets through the Diesel Off-road On-line Reporting System (DOORS), labeling equipment, idling requirements and sale notification are requirements of the Off-Road Rule that are still in effect. The Regulatory Advisory describing the enforcement delay rule was last updated in May 2011.

On May 19, 2011, ARB issued 15-day amendments to the Truck and Bus Regulation that was adopted in December 2010. New features include language related to low-mileage construction truck credit, early purchase of a new vehicle, credit exchange between On- and Off-Road Rules (bubble concept), and expansion of some credits to more compliance paths. Credits and exemptions aside, by January 1, 2012, trucks over 26,000 pounds that were manufactured between 1996 and 1999 are required to have a particulate filter. By January 1, 2014 all trucks over 26,000 pounds will be required to have a particulate filter. Engine replacement requirements begin in 2015 and end in 2023 when all vehicles will be 2010 model year or later. Fleets taking advantage of certain options and credits start reporting on January 1, 2012. Trucks between 14,000 pounds to 26,000 pounds start compliance in 2015 with 1995 and older engines.

Portable engines are regulated by an air toxic control measure that limits diesel particulate matter and may also be regulated by the Portable Equipment Registration Program (PERP) or local air district permit. In-use portable engines regulated by the ATCM begin phasing in controls to meet emissions reductions criteria on January 1 of 2013, 2017, and 2020. By 2020, in-use portable engines will have Tier 4 particulate emissions characteristics. The PERP program requires compliance with the ATCM for in-use engines and applications for Tier 3 engines may be submitted until June 30, 2012 after which time Interim Tier 4 is required for new registrations in PERP.

Listing of Regulations

Federal, state, and local requirements, applicable to Air Quality, are summarized below in Table 4.3-5.

4.3.4 Assessment Methodology

Emissions from the project—both operations at the project site and the on highway truck traffic—were estimated using standard methods and data bases for source emissions (e.g., AP-42, EMFAC2011, OFFROAD2011, CalEEMod) and were then compared to the SLOAPCD mass-based thresholds to determine the significance of impacts on regional air quality (Appendices C, D, and E contained in the Sespe Consultants Air Quality Assessment, which is Appendix D in this EIR, contains the emissions inventory work). Reasonable worst case assumptions were developed to estimate annual emissions (with the projected maximum

TABLE 4.3-5
SUMMARY OF FEDERAL, STATE, AND LOCAL AIR QUALITY REQUIREMENTS

Requirement	Administering Agency	Applicability
Federal		
40 CFR Part 50 – AAQS	US EPA	Establishes national Ambient Air Quality Standards (AAQS). Primary AAQS are designed to protect human health, with an adequate margin of safety, including sensitive populations such as children, the elderly, and individuals suffering from respiratory disease. Secondary AAQS are designed to protect public welfare and property from damage.
40 CFR Parts 51 and 52 – Implementation Plans	US EPA and states	Requirements for states to prepare Implementation Plans, procedures for adoption, submittal, approval, and promulgation.
40 CFR Part 60 – Performance Standards for New Stationary Sources	US EPA and local APCD	Establishes emissions limits and procedures for specified industrial point sources. May not apply to proposed quarry, which would have only offroad equipment, portable equipment, and fugitive dust sources. Final determination of applicability is to be made by SLOAPCD.
40 CFR Part 61 and 63 – NESHAPS	US EPA and local APCD	Lists Hazardous Air Pollutants (HAPs) and establishes National Emission Standards for HAPs (NESHAPS). NESHAPS for source categories. Not expected to apply to quarry.
40 CFR Part 80 – Regulation of Fuels and Additives	US EPA	Establishes low sulfur content (2001) and Ultra Low Sulfur Diesel (ULSD) specifications starting in 2007.
40 CFR Part 86 – Control of emissions from New and In-Use Highway Vehicles and engines	US EPA	More restrictive emissions standards, ending with 86.007-11 for 2007 and later model year diesel heavy-duty engines and vehicles.
40 CFR Part 89 – Control of Emissions from New and In-Use Nonroad Compression Ignition Vehicles	US EPA	Applies to offroad trucks, other mobile equipment.
State		
26 HSC 39606	Legislature directed CARB to adopt California Ambient Air Quality Standards (AAQS)	For some pollutants, CA AAQS are more stringent than national AAQS. CA AAQS are in 17 CCR 70200.

TABLE 4.3-5 (CONTINUED)
SUMMARY OF FEDERAL, STATE, AND LOCAL AIR QUALITY REQUIREMENTS

Requirement	Administering Agency	Applicability
1 HSC 425	Department of Health Services makes recommendations relative to AAQS to CARB	
25.5 HSC 38500 et seq.	California Global Warming Solutions Act of 2006	Discussed more in Section 4.4 of this EIR.
26 HSC 40910 – District Plans to Attain State Ambient Air Quality Standards	Various APCDs (and Air Quality Management districts) in the state	Each District is responsible for preparing a plain for attaining and maintaining CA AAQS. Includes references to federal AAQS.
26 HSC Part 4 41500 – Nonvehicular Air Pollution Control	CARB	Emissions limitations for various activities and equipment types. Includes CARB review of District attainment plans.
26 HSC Part 5 43000 – Vehicular Air Pollution Control	CARB	CARB to adopt and implement CA motor vehicle emission standards.
26 HSC Part 6 44300 Air Toxics "Hot Spots" Information and Assessment	CARB and Districts	Applies to industrial sources releasing specified pollutants.
California Code of Regulations. Title 13. Motor Vehicles. Division 3. Air Resources Board	CARB	Establishes California fuel standards.
13 CCR Div 3. Chapter 5. Standards for Motor Vehicle Fuels. Article 2. Standards for Diesel Fuel	CARB	Sets standards for sulfur content (Section 2281), aromatic hydrocarbon content (2282).
13 CCR, Div 3. Chapter 9 Off-Road Vehicles and Engines Pollution Control Devices, Article 4 Off-Road Compression-Ignition Engines and Equipment	CARB	Section's 2420 – 2427 establishes emission limits for heavy-duty off-road diesel engines manufactured after 1996 and 2000.

TABLE 4.3-5 (CONTINUED)
SUMMARY OF FEDERAL, STATE, AND LOCAL AIR QUALITY REQUIREMENTS

Requirement	Administering Agency	Applicability
13 CCR Div 3. Ch 9. Article 4.8 In-Use Off-Road Diesel Fueled Fleets	CARB	Section 2449 – 2449.3, applies to off-road equipment with engines greater than 25 hp; establishes limits for NO_X, DPM and other criteria pollutants.
13 CCR Div 3. Ch 9. Article 5, starting with Section 2540 – Portable Engine and Equipment Registration (PERP)	CARB	Registration under this program is voluntary. Establishes permit process, emission limits based on fleet average, inspection and testing, and other requirements for portable equipment, if registered.
Title 17 of the California Code of Regulations (17 CCR Division 3 starting at Section 60000)	CARB and local APCDs	Establishes framework for air quality planning and regulation.
17 CCR Div 3, Ch 1, Subchapter 7 starting at Section 93000	CARB	Regulations regarding Toxic Air Contaminants in California. Section 93001 incorporates federal Hazardous Air Pollutants into California TAC list.
17 CCR Div 3, Ch 1, Subchapter 7.5, starting at Section 93100	CARB	Describes Airborne Toxic Control Measures.
17 CCR 93105	CARB and APCDs	Air Toxic Control Measure for Construction, Grading, Quarrying, and Surface Mining Operations. Surface mining and quarrying requirements are in subsection (f), and include asbestos dust control measures, reporting, monitoring, and record keeping requirements. Subsection (c) provides for a general exemption if a Registered Geologist determines that no serpentine or ultramafic rock is likely to be found.
17 CCR 93114–931116.5	CARB and APCDs	ATCMs for Diesel Fueled Engines – sets limits, compliance schedules, test methods, and other requirements for vehicular and non-vehicular diesel fueled engines.
County – San Luis Obispo County APCD (SLOAPCD)		
Rule 201 – Equipment Not Requiring a Permit	SLOAPCD	Describes those air emissions sources that are exempt from permitting. Some exempt sources are nevertheless subject to prohibitory rules. For instance, road dust is not subject to permit but is limited by Rule 401.
Rule 202 – Permits Required	SLOAPCD	Requires emissions sources that are not exempted by Rule 201 to obtain operating permits from SLOAPCD.

TABLE 4.3-5 (CONTINUED)
SUMMARY OF FEDERAL, STATE, AND LOCAL
AIR QUALITY REQUIREMENTS

Requirement	Administering Agency	Applicability
Rule 219 – Toxics New Source Review	SLOAPCD	Ensures that new sources do not pose excessive health risk to the public by requiring assessment of health risk and application of Toxic Best Available Control Technology (T-BACT) in cases where control is needed to reduce health risk. Applies only if project is required to obtain permit from APCD. Health risk assessment procedures were used in the analysis in this EIR.
Rule 204 – Permit Requirements	SLOAPCD	Contains rule language describing Best Available Control Technology (BACT) and emissions offset requirements for stationary sources.
Rule 401 – Visible Emissions	SLOAPCD	Applies to all activities (with specified exceptions). Limits visibility of fugitive dust to less than No. 1 on the Ringlemann Chart (i.e., 20 percent opacity).
Rule 402 – Nuisance	SLOAPCD	Prohibits discharge of air contaminants from any source (except agricultural operations) that cause nuisance. Odor is not specifically cited, but is considered one type of nuisance.
Rule 403 – Particulate Matter Emission Standards	SLOAPCD	Would not apply to project unless subject to SLOAPCD permitting requirements. Particulate Matter Emissions Standards that affect point sources: • 0.1 grains per dry standard cubic foot at standard conditions for stack discharges. • Maximum hourly discharge rate of particulates based upon process weight table in rule. • Internal combustion engines are exempt from this rule.
Rule 412 – Airborne Toxic Control Measures	SLOAPCD	Incorporates ATCMs from 17 CCR into SLOAPCD Rules and Regulations. Applies only if project is subject to APCD permit requirements.
Rule 431 – Stationary Internal Combustion Engines	SLOAPCD	Applies to stationary internal combustion engines rated at more than 50 brake horsepower. Project is not expected to have any such engines.
Rule 601 – New Source Performance Standards	SLOAPCD	Incorporates federal NSPS. Would apply to project only if it is subject to SLOAPCD permitting requirements as an industrial source.

rate of production of 500,000 tons per year, including 100 days per year of portable rock processing plant operation, and 20 days per year of blasting). Separate estimates were prepared for a worst case peak single day emission scenario.

The potential effects of toxic air contaminants were also assessed using air dispersion modeling software (i.e., ISCST3 in the Lakes AERMOD View Software suite) and health risk assessment software (i.e., HARP and HARP Onramp) to identify potential for the project to result in a localized hot spot (Appendix F in the Sespe Consultants report contains the dispersion model input and data).

Dispersion modeling was performed assuming flat terrain. Flat terrain is a conservative assumption for this project because the receptors are generally located at lower elevations than the sources and the emissions points are close to the ground. Thus, plumes will travel along the ground between sources and receptors which is conservatively modeled as flat (i.e., the actual distance is greater with terrain than a straight line and complex terrain promotes vertical mixing).

The health risk assessment calculations are performed using HARP. The ISCST3 software air dispersion output file (χ/Q) is used as the input file for the HARP health risk assessment module. Before inputting the ISCST3 output into HARP it was converted using the HARP ONRAMP software to a format that is compatible with HARP.

The cancer risk assessment is the most sensitive risk assessment for this type of project due to emissions of diesel particulate matter (DPM). Cancer risk is typically assessed over a 70-year lifetime and would include effects from truck travel on public roads adjacent to nearby receptors as well as on-site sources. The multi-year and receptor-centric nature of cancer HRA requires sources in each portion of the site in which equipment will operate. Thus the model contains volume sources that are spaced out over the majority of the operating area on the project site. The area that each volume source covers is used in the apportionment emissions over the site by phase.

The criteria pollutant models contain only on-site sources and evaluate a year, day, or hour. Thus, the criteria pollutant models (and non-cancer HRA models) assume that project sources are operating in Phase 1 of the quarry at the emission rate (potential to emit, or PTE) of the first year (i.e., closest to the receptors and before anticipated regulatory controls are implemented).

The project has a finite amount of material and would operate only 25 years at the peak rate. Furthermore, the Potential to Emit (PTE) will be reduced by existing regulations that have future effective dates. Specifically, air toxic control measures (ATCM) that affect diesel engines will phase in over the next decade to reduce DPM emissions. If the project lifetime lasts longer than 25 years, the amount mined each year would be less postponing throughput until later years when engines are more controlled and emissions/risk is lower than estimated.

Exposure to TACs by routes other than inhalation is included by the multi-pathway risk assessment. Exposure via home grown produce, dermal absorption, soil ingestion, and

mother's milk are included. Deposition is assumed to occur at a rate of 0.02 meter per second.

Construction phase activity for this project involves the initial access road building and earliest portions of quarry operations necessary to create the pad area for the scale and scale house and related facilities. Prior to the completion of these facilities, the lack of infrastructure on the site precludes quarrying at the intended production level of 500,000 tons per year. Therefore, only the operation phase is assessed. Because the project operations involve the same types of heavy equipment, earth and rock movement, and truck traffic that are typical of construction activities, the mitigation measures recommended for the project are drawn more from construction mitigation procedures (SLOAPCD 2012: Sections 2.3.2, 2.3.3 and Section 4.5) rather than from transportation and land use mitigation measures that are more typical of "operations" in land development projects (SLOAPCD 2012: Section 3.8). The mitigation measures that are required for operations are also required during construction.

4.3.5 Significance Criteria

With appropriate consideration of the significance criteria presented in Appendix G of the CEQA Guidelines, the County of San Luis Obispo has developed and adopted the following significance criteria to determine project effects for Air Quality within San Luis Obispo County. Accordingly, the Las Pilitas Quarry project will have a significant impact if it will:

a) Violate any state or federal ambient air quality standard, or exceed air quality emission thresholds as established by County Air Pollution Control District; and/or

b) Expose any sensitive receptor to substantial air pollutant concentrations; and/or

c) Create or subject individuals to objectionable odors; and/or

d) Be inconsistent with the District's Clean Air Plan.

4.3.6 Project Impacts and Mitigation Measures

The discussion of potential air quality impacts requires that a larger number of specific issues be addressed. This is because of the number of different constituents in air pollution, the different sets of regulations and numerical standards that apply to various air pollutants, and the different and sometimes overlapping approaches to mitigating air emissions. For purposes of this EIR, the air quality contaminants and issues will be organized into four broad discussions to reflect the four general significance criteria listed above. For some issues, there are specific numerical thresholds or criteria used by the SLOAPCD to assess impacts and the requirements for mitigation measures. These are presented along with the impacts discussions. The impact discussions are organized as follows:

- Emissions of Criteria Pollutants (AAQS and SLOAPCD Thresholds, criterion a. above):

  - IMPACT AQ-1a: Emissions of ROG+NO_X
  - IMPACT AQ-1b: Emissions of PM_{10}
  - IMPACT AQ-1c: Emissions of Other Criteria Pollutants (CO and SO_2)
- Exposure of Sensitive Receptors to DPM and Other Health Risks (criterion b.)
  - IMPACT AQ-2a: Emissions of DPM
  - IMPACT AQ-2b: Presence and Disturbance of Naturally Occurring Asbestos
- Creation of Objectionable Odors (criterion c.)
  - IMPACT AQ-3: Creation of Objectionable Odors
- Consistency with SLOAPCD Clean Air Plan (criterion d.)
  - IMPACT AQ-4: Relationship to Clean Air Plan

The Initial Study section on Air Quality also included a fifth criterion related to greenhouse gas (GHG) emission, and identified this as an insignificant impact. The issue of GHG emission is discussed in Section 4.4 of this EIR.

Emissions of ROG+NO_X

Operations at the quarry (at the maximum production rate of 500,000 tons per year, and with assumptions for maximum daily emissions) would generate combined emissions of Reactive Organic Gases (ROG) and nitrogen oxides (NO_X) in excess of the daily SLOAPCD thresholds defining a significant impact for these ozone precursors. The emissions would also exceed the annual threshold, but only by a small amount. These emissions can be reduced through identified mitigation measures. It is likely that the annual ROG+NO_X threshold can be achieved with identified mitigation measures, but it is not certain that daily threshold can be achieved. This impact is, therefore, considered significant and not mitigable.

The specific issues in this impact discussion correlate to the first significance criteria from the Initial Study – "Violate any state or federal ambient air quality standard, or exceed air quality emission thresholds as established by County Air Pollution Control District." The federal and state AAQS are stated in terms of concentrations measured over specified averaging times, and violations of the AAQS are determined if these concentrations at monitoring stations are exceeded over a number of days per year. As a more easily applied means of assessment, the SLOAPCD has established a series of thresholds based on emission rates, which can be estimated more easily than resulting concentrations. Projects exceeding the stated emissions thresholds in terms of pounds/day or tons/year are considered potentially capable of contributing to violations of a federal or state AAQS.

The thresholds defined by the SLOAPCD (2012: Table 3-2) for determining an impact from emissions of ROG+NO_X are:

- Daily: 25 pounds/day
- Annual: 25 tons/year

The project operational emissions of ROG+NO_X were estimated by Sespe Consultants (see Appendix B of the Sespe Consultants report in Appendix D of this EIR), and are summarized in Table 4.3-6 below.

TABLE 4.3-6
SUMMARY OF ROG+NO_X EMISSIONS

Source	Unmitigated Annual Emissions (Tons/Year)	Mitigated Annual Emissions (Tons/Year)	Unmitigated Daily Emissions (Pounds/Day)	Mitigated Daily Emissions (Pounds/Day)
Blasting	2.6	2.6	255.0	255.0
Non-road engines	10.5	7.9	238.5	181.0
Trucks running on-site	0.5	0.5	8.6	8.6
Trucks idling on-site	0.3	0.3	4.3	4.3
Subtotal on-site	13.8	11.3	506.4	448.9
Trucks off-site	25.1	25.1	201.3	201.3
Passenger Vehicles	0.1	0.1	0.4	0.4
Subtotal off-site	25.2	25.2	201.7	201.7
Total	38.9	36.4	708.1	650.6
Total without Blasting	36.4	33.8	453.1	365.6
SLOAPCD Threshold	25	25	25	25

Review of Table 4.3-6 shows that without mitigation the maximum annual emissions of ROG+NO_X would exceed the SLOAPCD threshold of 25 tons/year, but not by a very large amount. The peak daily emissions, however, would be much higher than the 25 pounds/day limit. A large fraction of the peak daily emissions are attributed to blasting, which is expected to occur only one or two days per month, or a maximum of 20 days per year. Even without blasting, however, the daily limit would still be exceeded. The other major sources of ROG+NO_X emissions are the on-highway truck traffic associated with aggregate material deliveries, and the non-road engines. These are in the heavy equipment involved in the quarry operations and in moving and loading aggregate material, and also include the engine associated with the portable rock crushing and sorting equipment that would be brought onto the site for that purpose approximately eight weeks per year.

Mitigation measures for this type of heavy equipment are described as Best Available Control Technology (BACT) for construction operations by SLOAPCD CEQA Air Quality Handbook SLOAPCD (2012: Section 2.3.2) and include the following:

- Further reducing emissions by expanding use of Tier 3 and Tier 4 off-road and 2010 on-road compliant engines.
- Repowering equipment with the cleanest engines available.
- Installing California Verified Diesel Emission Control Strategies. These strategies are listed at: http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm.

The referenced list of Verified Diesel Emission Control Strategies includes several dozen manufacturers and equipment references, most of which are for diesel exhaust particulate filters that are important for other mitigation measures but will not help to reduce NO_X. There are some NO_X reducing catalytic systems that are suitable for rubber-tired off road use, and these may be applicable to the two front end loaders that would be used in the project operations. These measures, along with a restriction on idling trucks (now required by law) and the use of model year 2007 or newer trucks, have been assumed for purposes of estimating the mitigated emissions in Table 4.3-6.

With the mitigation measures described above, ROG+NO_X emissions will be reduced, but not to levels below either the annual (25 tons/year) or daily (25 pounds/day) thresholds established by SLOAPCD.

If operational mitigation measures cannot reduce emissions of ROG+NO_X below the applicable thresholds, then additional mitigation is necessary. The SLOAPCD CEQA Air Quality Handbook (SLOAPCD 2012: Table 3-5) provides a very extensive list of possible mitigation measures, addressing site design, energy efficiency, and transportation. Most of these measures are oriented towards residential land development projects. For projects that would generate in excess of 50 pounds/day of ROG+NO_X, all feasible mitigation measures from the SLOAPCD list should be implemented (SLOAPCD 2012: Section 3.8.1 c.). Site planning and other provisions intended to minimize energy consumption and to minimize the use of portable combustion engines in routine landscape and other maintenance procedures are applicable to this project. These measures may provide some benefit in reducing NO_X emissions, but they are not expected to reduce the impact of the project substantially.

Additional measures to reduce construction equipment emissions are described in the SLOAPCD CEQA Air Quality Handbook as Construction Activity Management Plan (CAMP) Guidelines (SLOAPCD 2012: Section 4.5). Even though the CAMP guidelines apply to construction related impacts, since the equipment and operations are similar to what is proposed it is reasonable to consider them for the operational phase of this project. The

selection and combination of these available mitigation measures must be made in consultation with the SLOAPCD.

Based on a review of the sources within the project, the most effective mitigation measure to reduce NO_X production, beyond those described above, would involve electrification of heavy equipment. While not practical for the mobile equipment on-site, the portable aggregate processing equipment could be operated by grid-supplied electrical power rather than by diesel engines or generators. This measure would require the provision of electrical service at the site beyond what is normally available in rural lands areas. If installed, this power source would only be used several times per year, which would reduce its cost effectiveness. Since its feasibility is unknown, this measure is not included within this EIR but it may be considered later in consultation with SLOAPCD.

Other possibilities for on-site mitigation include a severe restriction on the number of heavy equipment pieces that could operate simultaneously. Depending on the production rate at the quarry, this type of limitation may be feasible at least in the early stages of its operation. At the anticipated production of 500,000 tons per year, however, the full inventory of project equipment presented in Section 2.3.2 of this EIR is expected to be in use. The use of alternative fuel, such as compressed natural gas, or other measures may also be possible, but these would have to be developed by the applicant and accepted by the SLOAPCD.

For operational impacts, off-site mitigation measures to reduce regional $ROG+NO_X$ emissions are required if the annual emissions exceed 25 tons/year, which is the case for this project (SLOAPCD 2012: Section 3.8.3). The same section of the SLOAPCD Handbook also states:

> Whenever off-site mitigation measures are deemed necessary, it is important that the developer, lead agency and APCD work together to develop and implement the measures to ensure successful outcome. This work should begin at least six months prior to issuance of occupancy permits for the project.

If they are deemed necessary, then the off-site mitigation measures should be developed and agreed upon by the applicant, SLOAPCD, other affected parties, and the County Planning and Building Department prior to the start of construction (SLOAPCD 2012:page 3-21). Such off-site mitigation measures may take the form of specific emissions reductions achieved through retrofit activities to improve energy efficiency, improvements or funding to increase the use of transit or alternative transportation, or similar measures reviewed and approved by the SLOAPCD. The Handbook also states (SLOAPCD 2012: pages 3-20 and 3-21) the following:

> If off-site mitigation is required, potential off-site mitigation measures may be proposed and implemented by the project proponent following APCD approval of the appropriateness and effectiveness of the proposed measure(s). Alternatively, the

project proponent can pay a mitigation fee based on the amount of emission reductions needed to bring the project impacts below the applicable significance threshold. The APCD shall use these funds to implement a mitigation program to achieve the required reductions.

A preliminary estimate of the approximate cost of achieving the 25 pounds/day threshold, using the procedures outlined by SLOAPCD (2012: Section 3.8.3) and assuming only the on-site mitigation measures applied to the project in this EIR, indicates that the approximate cost of achieving the threshold would range from 30 to 50 cents per ton of aggregate produced over the 25 year lifetime of the project. The range reflects the inclusion or exclusion of blasting emissions, and there are different justifications for each approach. The economic effect of this additional cost is not clear, and it may depend on whether or not similar air emissions charges are imposed either directly or indirectly on other aggregate sources. The details of this type of analysis and the determination of specific emission reduction measures and costs are matters for consultation between the applicant and the SLOAPCD. At this time, it is assumed that the additional mitigation measures beyond those typical measures associated with quarry projects (identified in the Sespe Consultants report contained in Appendix D of this EIR) would not be implemented. Prior to operations at the quarry site, the applicant and the SLOAPCD may come to an agreement on additional mitigation measures that have the potential to reduce air quality impacts.

In summary, the maximum daily emissions of ROG+NO_X from the project would occur during time when blasting and portable aggregate processing equipment would add to the pollutants generated by other on-site equipment and on-highway truck use. These emissions would exceed the SLOAPCD daily threshold for these ozone precursors by a substantial amount. The emissions can be reduced by the specified mitigation measures, and additional mitigation can be developed in consultation with the SLOAPCD. It is preferable that mitigation be achieved through actual on-site reductions of emissions or through off-site reductions achieved generally in the project vicinity or region. An acceptable and feasible option includes achieving part of the emissions reductions through funding current programs and efforts administered by the SLOAPCD. Based on the analysis in this EIR, it appears that it may be possible to develop additional measures in consultation with SLOAPCD that would be capable of reducing annual emissions to below the 25 tons/year threshold. It is much more problematic, however, to identify measures that would be capable of reducing the peak daily emissions below the 25 pounds/day threshold. For this reason, the ROG+NO_X emissions of the project are considered to be a significant and not mitigable impact.

Description of Impact	**Mitigation Measure**	**Residual Impact**
IMPACT AQ-1a: Emissions of ROG+NO_X. Operations at the quarry at the planned	**MM AQ-1a: Emissions of ROG+NO_X.** Prior to issuance of a Notice to Proceed for the first phase of the quarry operation, the applicant or quarry operator shall provide evidence to the	Significant and not mitigable

Description of Impact	Mitigation Measure	Residual Impact
production rate of 500,000 tons per year would generate combined emissions of Reactive Organic Gases (ROG) and nitrogen oxides (NO_X) in excess of the daily and annual SLOAPCD thresholds defining a significant impact for these ozone precursors.	Department of Planning and Building that an acceptable set of measures to reduce ROG+NO_X emissions has been approved by the SLOAPCD. The Quarry operator shall comply with the following on-site requirements for this project to minimize ROG+NO_X emissions, or achieve equivalent reductions through measures approved by the SLOAPCD: 1. Blasting shall not be conducted on days when portable aggregate processing equipment is in operation. 2. On and off-road diesel equipment shall not idle for more than 5 minutes. Signs shall be posted in the designated queuing areas and/or job sites to remind drivers and operators of the 5 minute idling limit. 3. If not required by other regulations (CARB on-road or off-road diesel requirements), transport operations conducted by the quarry operator shall be restricted to trucks with 2007 model year engines or newer trucks. 4. Use Best Available Control Technology (BACT) measures for construction activities as follows: • Further reducing emissions by expanding use of Tier 3 and Tier 4 off-road and 2010 on-road compliant engines; • Repowering equipment with the cleanest engines available; and • Installing California Verified Diesel Emission Control Strategies. These strategies are listed at: http://www.arb.ca.gov/diesel/verdev/vt/cvt.htm 5. If the combination of these requirements does not meet the standard of 25 pounds per day of ROG+NO_X, then the applicant or quarry operator shall comply with a combination of certain off-site requirements presented in Section 3.8.3 of the "CEQA Air Quality Handbook (April 2012)" prepared by the SLOAPCD, and/or additional measures in a Construction Activities Management Plan (CAMP) described in Section 4.5 of the same Handbook, to achieve this standard to the satisfaction of the SLOAPCD. This requirement may include funding and implementation of off-site mitigation measures consistent with the existing SLOAPCD program described in Section 3.8.3 of the same Handbook.	

Emissions of PM_{10} Fugitive Dust

Operations at the quarry at a production rate of 500,000 tons per year would generate emissions of PM_{10} fugitive dust in excess of the daily SLOAPCD thresholds defining a significant impact for this criteria pollutant. The fugitive dust emissions would not exceed the annual threshold, and daily emissions can be reduced through identified mitigation measures,

but not to a less than significant level based on the analysis in this EIR. Additional mitigation measures must be selected and developed through consultation with SLOAPCD, and off-site mitigation measures consistent with existing SLOAPCD programs may be necessary. Even with additional mitigation measures, it is not certain that the daily threshold would be met during peak activity days at the project. This impact is, therefore, considered significant and unmitigable.

This issue is the second of three that are grouped within the first criteria used in the Initial Study, dealing with the potential to contribute towards the exceedance of an AAQS or other adopted air quality threshold. As with ROG+NO_X, this issue is analyzed by comparing estimated project PM_{10} and fugitive dust emissions with thresholds used by the SLOAPCD. The thresholds defined by the SLOAPCD (2012: Table 3-2) for determining an impact from emissions PM_{10} and fugitive dust are:

- Daily: 25 pounds/day
- Annual: 25 tons/year

The project operational emissions of PM_{10} were estimated by Sespe Consultants (see Appendix B of the Sespe Consultants report in Appendix D of this EIR), and are summarized in Table 4.3-7 below.

Review of Table 4.3-7 shows that although the annual emissions of PM_{10} would remain well below the SLOAPCD threshold of 25 tons/year, the maximum daily emissions would be higher than the 25 pounds/day limit. PM_{10} emissions would originate primarily from loading activities, the portable aggregate plant during times when it is operating, truck traffic, and to a lesser extent from blasting and other quarry activities. Even without the aggregate plant operating, however, the estimated daily emissions of PM_{10} would still exceed the SLOAPCD threshold of 25 pounds per day.

Some of the mitigation measures described above in AQ-1a will also help to reduce dust and particulate emissions, and the SLOAPCD consultation process for those measures will also serve to help refine and apply the mitigation measures listed below for PM_{10} and fugitive dust. The SLOAPCD (2012: Section 2.4) describes a total of 19 mitigation measures designed to reduce fugitive dust emissions from construction activities, most of which are also mentioned in the CAMP guidelines (SLOAPCD 2012: Section 4.5). Since the proposed quarry operations will have characteristics similar to construction activities, the mitigation measures identified for this project have been modified from these SLOAPCD lists, even if a formal CAMP is not required. The organization and monitoring procedures described in the mitigation measures below follow the pattern of a CAMP with the involvement of the SLOAPCD to help ensure implementation consistent with their authority under Rules 401 and 402, related to control of visible emissions and nuisances, respectively.

TABLE 4.3-7
SUMMARY OF PM_{10} EMISSIONS

Source	Unmitigated Annual Emissions (Tons/Year)	Mitigated Annual Emissions (Tons/Year)	Unmitigated Daily Emissions (Pounds/Day)	Mitigated Daily Emissions (Pounds/Day)
Aggregate plant	1.0	1.0	19.7	19.7
Recycle Plant	0.1	0.1	4.7	4.7
Unpaved road dust	2.0	0.25	18.2	2.3
Paved Road Dust	3.2	0.21	26.1	1.7
Reclamation	0.1	0.1	3.0	3.0
Ripping	0.3	0.3	8.8	8.8
Load/unloading	0.9	0.9	18.3	18.3
Blasting	0.1	0.1	7.3	7.3
Non-road engines	0.35	0.18	8.1	4.3
Trucks running on-site	0.2	0.2	0.3	0.3
Trucks idling on-site	0.0	0.0	0.0	0.0
Subtotal on-site	8.0	3.1	114.1	70.4
Trucks off-site	1.0	1.0	8.0	8.0
Passenger Vehicles	0.0	0.0	0.0	0.0
Paved Road Dust	6.2	6.2	49.9	49.9
Subtotal off-site	7.2	7.2	57.9	57.9
Total	15.2	10.4	172.3	128.3
Total without Blasting	15.2	10.3	165.0	121.0
SLOAPCD Threshold	25	25	25	25

In describing mitigation measures contained within a CAMP, SLOAPCD (2012: page 4-12) emphasizes tailoring the measures "...to provide adequate protection to any nearby sensitive receptors." For the proposed quarry project, the nearest residences outside of the subject property itself are located over 1,000 feet away from the quarry boundaries. The distance from the construction site for the project access road is about 830 feet and 1,300 feet to the two closest residential locations. The processing and staging area for the quarry would be located north of the proposed scale and scale house location, approximately 1,400 feet and 1,500 feet from the nearest two residential locations outside of the project property. The nearest school is Santa Margarita Elementary School, located over two miles to the southeast.

In order to achieve the SLOAPCD threshold of 25 pounds/day, it would be necessary to control virtually all of the fugitive dust from both the loading operations and the aggregate processing operations when they occur, plus improve the control on other sources through the mitigation measures as listed. The nature of the material in the proposed quarry (granitic rock

with very little silt and sand) is such that it may be possible to achieve this degree of control. As with ROG+NO_X, additional mitigation measures may be required for the control of fugitive dust and PM_{10}, and these can be developed in consultation with the SLOAPCD. Since the applicant and the SLOAPCD have not reached a formal agreement regarding mitigation associated with fugitive dust and $PM_{10,}$ impacts are considered significant and not mitigable for the daily threshold of fugitive dust and PM_{10} and less than significant for the annual threshold.

Description of Impact	Mitigation Measure	Residual Impact
IMPACT AQ-1b: Emissions of PM_{10} Fugitive Dust. Operations at the quarry at a production rate of 500,000 tons per year would generate emissions of PM_{10} fugitive dust in excess of the daily SLOAPCD thresholds defining a significant impact for this criteria pollutant. The fugitive dust emissions would not exceed the annual threshold.	**MM AQ-1b: Emissions of PM_{10} Fugitive Dust.** The Quarry operator comply with the following on-site requirements for this project to minimize PM_{10} fugitive dust emissions: 1. Reduce the amount of disturbed area where possible, by retaining the natural vegetation and soil within each quarry phase until that phase is ready to start. 2. Use water trucks or sprinkler systems in sufficient quantities to prevent airborne dust from leaving the site. Increased watering frequency would be required whenever wind speeds exceed 15 mph. Reclaimed (non-potable) water should be used whenever possible. 3. All soil or product stockpile areas should be sprayed daily as needed, or be covered or treated to minimize windblown dust. 4. The project access drive should be completed and paved prior to the start of quarry operations and the operation of heavy trucks on the property for aggregate sales purposes. 5. Locations for stockpiles and material storage areas, along with specifications for dust control measures, shall be shown on all applicable construction and mining plans. 6. The quarry operator shall designate a person to monitor the fugitive dust emissions and enhance the implementation of the measures as necessary to minimize dust complaints, reduce visible emissions below 20% opacity, and to prevent transport of dust off-site. Their duties shall include holidays and weekend periods when work may not be in progress. The name and phone number of such person shall be provided to the SLOAPCD prior to issuance of Notice to Proceed or other permit to initiate work on the project. 7. Reclamation and revegetation of all disturbed areas shall occur as soon as practicable in a phased manner consistent with the project plans. Watering or other treatments shall be used on replaced soil material to control windblown dust until vegetation is established. 8. All disturbed soil areas not subject to revegetation shall be stabilized using approved chemical soil binders, jute netting, or other methods approved in advance by the SLOAPCD. 9. Vehicle speed for all quarry vehicles and trucks on unpaved	Significant and not mitigated

Description of Impact	Mitigation Measure	Residual Impact
	portions of the operations area shall not exceed 15 mph. 10. All trucks hauling dirt, sand, soil, or other loose materials are to be covered, fitted with appropriate seals and splash guards, and must be operated in conformance with California Vehicle Code 23114 related to hauling materials. 11. Sweep streets at the end of each day if visible soil material is carried onto the project access road. Water sweepers with reclaimed water should be used where feasible. 12. Prior to commencement of any construction activities (e.g., site preparation, grading or construction activities) the applicant will notify the County Department of Planning and Building and the SLOAPCD, by letter, of the status of the air quality measures outlined above. The letter will state the following: a) The controls that will be implemented; b) The reasons why any unimplemented measures are considered infeasible and the measures incorporated to substitute for these measures; and c) When scheduled construction activities will be initiated to allow for SLOAPCD inspection of the mitigation measures.	

Emissions of Other Criteria Pollutants (CO and SO_2)

The project will result in emissions of carbon monoxide (CO) and small amounts of sulfur dioxide (SO_2). These emissions are not expected to accumulate or to cause exceedances of any AAQS. These emissions are expected to be less than significant and no mitigation measures, beyond those required for other pollutants, are necessary.

These constituents are the third issue evaluated under the first Initial Study criteria related to contributing towards an exceedance of an AAQS or SLOAPCD adopted emission threshold. The SLOAPCD has no annual threshold for CO, and the daily threshold is 550 pounds/day. Emissions from normal quarrying activities, including the periodic operation of the aggregate processing plant and all on-highway truck traffic, as well as the other on-site equipment, will amount to 360 pounds/day [see Appendix C of the SESPE Report, which is Appendix D in this EIR]. The mitigation measures described above for other pollutants will have a very small effect in reducing this.

Blasting operations, which are expected to occur up to 20 times per year, will generate a larger mass of CO – estimated at 1,005 pounds/day when blasting occurs. The CO, however, will not be released instantaneously since it will be generated underground in the volume of rock containing the bore holes when the blast occurs. Over time, as rock material is removed by excavation in the quarry, the CO will be dissipated. The isolated nature of the proposed quarry, with distances to the nearest off-site residences in excess of 1,000 feet, will prevent

the accumulation of CO at significant concentrations. Since the generation of CO will not occur in a confined or semi-confined space, and for the reasons discussed above, CO modeling was not conducted as a part of this evaluation.

The SLOAPCD CEQA Handbook states (SLOAPCD 2012: Section 3.5.5):

> Projects which emit more than 550 lbs/day of carbon monoxide (CO) and occur in a confined or semi-confined space (e.g., parking garage or enclosed indoor stadium) must be modeled to determine their significance. In confined or semi-confined spaces where vehicle activity occurs, CO modeling is required.

As a general practice, CO concentrations are of concern at high volume roadway intersections that operate at a very congested level of service, or in association with confined areas such as tunnels or parking garages as noted above. Neither of those conditions is associated with the proposed project. While the CO emissions are estimated to be 1,005 pounds/day when blasting occurs, the location of these activities and the characteristics discussed above related to release of CO in mining operations result in CO emissions from blasting that are less than significant.

The SLOAPCD (2012: Table 3-2) does not provide any standards for SO_2 emissions, and this pollutant is not discussed in the SLOAPCD CEQA Handbook other than its listing in the table of AAQS. Federal and state regulations have already been established to reduce the sulfur content of diesel fuel. This pollutant has not been considered a problem in the County. For these reasons, SO_2 emissions will not represent a significant impact and no mitigation is necessary.

Description of Impact	**Mitigation Measure**	**Residual Impact**
IMPACT AQ-1c: Emissions of Other Criteria Pollutants (CO and SO_2). The project will result in emissions of carbon monoxide (CO) and small amounts of sulfur dioxide (SO_2) which will not accumulate or cause exceedances of any AAQS.	**MM AQ-1c: Emissions of Other Criteria Pollutants (CO and SO_2).** Since this effect is less than significant, no mitigation is required.	Less than significant

Emissions of DPM

The project operations will emit diesel particulate matter (DPM) above the SLOAPCD threshold. Modeling of the long term carcinogenic effects of DPM, and other carcinogens that may be released in small amounts, indicate that the increase in potential cancer risk may be higher than the SLOAPCD health risk threshold. Mitigation measures to reduce ROG+NO_X emissions (found in Mitigation AQ-1a) will also minimize potential DPM emissions, and will reduce the potential cancer risk below the applicable threshold. This is considered a potential significant impact that can be mitigated.

This issue, which also includes an assessment of other potential acute and chronic health effects, is the first of two issues related to criteria b. in the Initial Study – exposure of any sensitive receptor to substantial air pollutant concentrations. The focus of this discussion is on DPM, since that is the most important potential toxic air contaminant associated with this project; and indeed, it is one of the most important TACs present in urban and suburban areas. As noted above in Section 4.3.1, DPM accounts for about 70 percent of the cancer risk in urban areas. For this reason, there has been intensive development of regulations over the last 10 years to regulate the composition of diesel fuel, to reduce the formation of soot and other particulates in diesel engines, and to control their emissions in diesel exhaust.

Thresholds used by SLOAPCD to evaluate DPM, and related potential health risks, are summarized as follows:

- Daily Threshold: 1.25 pounds/day (SLOAPCD 2012: Table 3-2)

The SLOAPCD CEQA Handbook then states (SLOAPCD 2012: Section 3.5.3):

> Projects that emit more than 1.25 lbs/day of DPM need to implement on-site Best Available Control Technology measures. If sensitive receptors are within 1,000 feet of the project site, a Health Risk Assessment (HRA) may also be required.

Project emissions of DPM were calculated by Sespe Consultants (see Appendix C, page 3, in the Sespe Consultants report, which is Appendix D of this EIR), and are summarized below in Table 4.3-8 below. Unmitigated DPM emissions would exceed the daily threshold, and thus would require preparation of an HRA. With mitigation measures in place (the same mitigation measures outlined in AQ-1a), the 25 year average daily emissions are still higher than the daily threshold, so an HRA was prepared following procedures described by SLOAPCD. For this project, the geographic extent of the HRA was also extended beyond the 1,000 receptor distance to include a second receptor grid in the village area of Santa Margarita, which is about three miles to the southwest along the proposed truck route.

In preparing the health risk assessment, Sespe Consultants considered DPM, and other potential toxic air contaminants which are components of fugitive dust associated with the project (including silica and metals such as cadmium and chromium that are natural constituents of rocks and soils). Sources for these contaminants included the on-road operation of the project heavy trucks in the vicinity and along the proposed truck route as well as the emissions from within the quarry itself. Sespe Consultants prepared separate risk assessments evaluating the potential acute (short term) and chronic (long term) non-carcinogenic effects, and also the long-term carcinogenic effects of these constituents. The acute and chronic non-cancer effects were found to be less than applicable thresholds.

TABLE 4.3-8
SUMMARY OF DPM EMISSIONS

	Unmitigated DPM (Pounds/Day)			Mitigated DPM (Pounds/Day)		
Source	First Year	25 Year Average	70 Year Average	First Year	25 Year Average	70 Year Average
Non-road engines	8.05	0.66	0.40	4.34	0.43	0.25
Trucks-running	0.32	0.05	0.04	0.32	0.05	0.04
Trucks-idling	0.04	0.01	0.01	0.04	0.01	0.01
Subtotal on-site	8.42	0.72	0.45	4.66	0.49	0.29
Off-site trucks	7.97	2.92	2.76	7.97	2.92	2.76
Total	16.39	3.64	3.2	12.63	3.41	3.05
Threshold	1.25	1.25	1.25	1.25	1.25	1.25

The most sensitive or conservative (i.e., the highest risk) analysis, was found to be that associated with potential cancer risk. The health risk assessment assumes potential exposure at several nearby residences (the receptors AQ-1 through AQ-8, described in Table 4.3-3 and shown in Figure 4.3-1), and accounts for multiple path exposure (e.g., inhalation of airborne dust, consumption of garden vegetables, and other pathways) over the lifetime of the project (25 years). Additional receptor points for the health risk assessment were established in a second grid in Santa Margarita to evaluate the effects of heavy truck emissions. The applicable threshold for considering the excess cancer risk results used by SLOAPCD is 10 in one million (SLOAPCD 2012: Section 3.6.1). The results for the cancer health risk assessment are summarized below in Table 4.3-9.

A review of the results presented in Table 4.3-9 shows that in the absence of mitigation, there would be an increase in potential cancer risk in excess of the 10 in one million threshold at three residences (AQR-6, AQR-7 and AQR-8). These residences are located generally south and southwest of the project site. With the assumed mitigation measures (as outlined in Mitigation AQ-1a), the emissions of DMP would be reduced to the point that it would be below 10 at all of the modeled locations.

The results also indicate that at the worst case point in Santa Margarita, the potential cancer risk would be 1.9 in one million. Additional information regarding the cancer risk results is in the Sespe Consulting Inc. report, which is Appendix D of this EIR (specifically in Figure 9 in Appendix A of the Sespe report.) As a reference, recall from Section 4.3.1 that risk maps prepared by CARB indicate that the remote areas in San Luis Obispo County experience current cancer risk rates between 0 and 50, and in the population centers of the County the risk rate is from 50 to 100 per one million.

TABLE 4.3-9
CANCER RISK

Parameter	SM[1]	AQR-1	AQR-2	AQR-3	AQR-4	AQR-5	AQR-6	AQR-7	AQR-8
Unmitigated cancer risk[2]	1.9	5.82	4.11	0.9	5.8	0.8	14.9	24	10.4
Threshold[2]	10	10	10	10	10	10	10	10	10
Significant without mitigation?	No	No	No	No	No	No	Yes	Yes	Yes
Mitigated cancer risk	1.9	2.9	1.9	0.4	2.4	0.4	6.2	9.5	5.3
Significant after mitigation?	No	No	No	No	No	No	No	No	No

[1] Worst-case point in the Santa Margarita village area.

[2] Excess cancer cases per million people exposed.

In summary, project emissions of DPM associated with the on-site equipment operations and the off-site heavy truck operation in the vicinity, have the potential to exceed the applicable standards used by the SLOAPCD. This is true with respect to the daily limits suggested directly for DPM and for the associated cancer risk potential associated with DPM and other trace carcinogens that may be released. The mitigation measures assumed for the project to control NO_X and PM_{10} emissions from diesel engine exhaust would also reduce the emissions of DPM and the associated cancer risk to a level that is consistent with the health risk standard used by the SLOAPCD. Any additional mitigation measures developed in consultation with SLOAPCD to reduce criteria pollutants further may also further reduce the potential cancer risk from the project. This impact is potentially significant, but mitigable.

Description of Impact	Mitigation Measure	Residual Impact
IMPACT AQ-2a: Emissions of DPM. The project operations will emit diesel particulate matter (DPM) above the daily SLOAPCD threshold. Modeling of the long term carcinogenic effects of DPM, and other carcinogens that may be released in small amounts, indicate that the unmitigated increase in potential cancer risk may be higher than the SLOAPCD health risk threshold.	**MM AQ-2a: Emissions of DPM.** Mitigation Measure AQ-1a serves as adequate mitigation for Impact AQ-2a.	Less than significant

Naturally Occurring Asbestos

The project will involve grading and soil removal and quarrying of the underlying rock. If Naturally Occurring Asbestos (NOA) were present, it could be disturbed and emitted into the air where it could expose workers or nearby residents to this toxic air contaminant. This is considered a potential significant impact that is mitigated through compliance with the CARB Air Toxic Control Measure related to NOA.

This issue is the second item to be discussed regarding the possibility for exposure of sensitive receptors to substantial air pollutant concentrations, or criteria b. used in the Initial Study. In this case, the sensitive receptors of most concern would be workers at the quarry site who would be the most directly exposed to dust and potentially occurring NOA at the operations.

The CARB Air Toxic Control Measure for NOA is found at 17 CCR 93105. Subsection (f) describes the asbestos dust control measures, reporting, monitoring, record keeping and other requirements that apply to surface mines and quarries where NOA is present. The Oster/Las Pilitas Quarry site, however, is within the La Panza Granitics geologic area. The rock types present are granitic. NOA is typically associated with ultramafic or serpentine rock, and is not likely to be found at the project site. The SLOAPCD has a review and exemption process that can confirm the absence of NOA, and thus avoid the need for special dust control and other activities. In the event that NOA may be present, then additional requirements would be imposed by the SLOAPCD including, but not limited to:

a. Development of an Asbestos Dust Mitigation Plan which must be approved by the SLOAPCD before operations begin
b. Development and approval of an Asbestos Health and Safety Program (required for some projects)

Thus, the possibility of NOA at the project site is considered a potential significant impact, which can be mitigated through compliance with the existing ATCM and SLOAPCD procedures. NOA is not expected to occur with the area of disturbance associated with the proposed project. If the applicant does not receive an exemption from the SLOAPCD, then the measures contained in the Asbestos Dust Mitigation Plan will reduce potential impacts associated with NOA to a less than significant level.

Description of Impact	Mitigation Measure	Residual Impact
IMPACT AQ-2b: Naturally Occurring Asbestos (NOA). The project will involve grading and soil removal and quarrying of the underlying rock. If NOA were present, it could be disturbed and emitted into the air where it could expose workers or nearby residents to this toxic air contaminant.	**MM AQ-2b: Naturally Occurring Asbestos (NOA).** Prior to the issuance of the Notice to Proceed or related permit to start construction on the project, the quarry operator shall submit evidence to the Department of Planning and Building, that either an exemption has been granted by the SLOAPCD, or the provisions of the CARB Air Toxic Control Measure related to NOA have been implemented.	Less than Significant

Creation of Objectionable Odors

The project proposes to mine granitic rock and produce aggregate products for sale. The project will also accept and process "Type A" inert debris, consisting of Portland Cement Concrete and Asphaltic Concrete, to produce recycled material for use in roadway

construction. These materials and activities are not expected to generate substantial odors detectable outside the project boundaries. This potential effect is considered less than significant and no special mitigation is necessary.

This effect correlates to the third significance criterion (c) in the Initial Study, related to creating or subjecting individuals to objectionable odors. During the public and agency scoping period for the preparation of this EIR, concern was expressed by some residents that the project would produce odors from the manufacture of Asphaltic Concrete (AC), which is done in a "hot plant" by melting asphalt (also called bitumen) and mixing sand and gravel in it to create hot and fluid concrete. Although such a facility was originally proposed as part of the project, and is a common ancillary use associated with aggregate quarries, the applicant withdrew that portion of the project. A hot plant is not part of the project, and therefore will not be present to cause any objectionable odors.

A second concern was raised about the possible release of organic material from recycled PCC or AC pavement brought to the project site for stockpiling, processing, and transport to road construction sites. As proposed, and as described in Section 2.3.1 of this EIR, this material will be limited to "Type A" inert waste. This material may include "fully cured asphalt" which is defined as asphalt that is at ambient temperature, is substantially hardened and is inelastic. Typically, broken AC pavement contains only about 3 to 7 percent asphalt and the rest of its bulk is sand and gravel aggregate. The "Type A" inert waste specifications also prohibit "...soluble pollutants at concentrations in excess of water quality objectives." The regulations governing the "Type A" inert waste processing facility as proposed include limits on storage times and other provisions intended to minimize the potential for such an operation to cause a nuisance. In addition, enforcement of the regulations against causing a nuisance can be carried out by the SLOAPCD as well as by the state Enforcement Agency (Cal Recycle) responsible for overseeing compliance of the recycling operation with state regulations.

Thus, due to the elimination of the hot plant from the project proposal, and the limitation of recyclable materials to "Type A" inert wastes, the project is not expected to produce objectionable odors. Prohibitions against causing a nuisance are included both in the SLOAPCD Rules and Regulations (Rule 402), and in the County Code (Section 27.74.150). Enforcement of permit conditions and anti-nuisance provisions by both local and state agencies will help to ensure that objectionable odors are not produced. The potential to produce objectionable odors is considered a less than significant impact, and no special mitigation measures are considered necessary, beyond general permit conditions that will prohibit nuisance activities.

Description of Impact	Mitigation Measure	Residual Impact
IMPACT AQ-3: Creation of Objectionable Odors. The project proposes to mine granitic rock and produce aggregate products for sale. The project will also accept and process "Type A" inert debris, consisting of Portland Cement Concrete and Asphaltic Concrete, to produce recycled material for use in roadway construction.	**MM AQ-3: Creation of Objectionable Odors.** Since this effect is less than significant, no mitigation is required.	Less than Significant

Consistency with Clean Air Plan

The project will help to provide aggregate construction material within the local market area. It involves activity and the generation of truck traffic that is consistent with regional growth forecasts and traffic modeling used in air quality planning, and the project is not growth inducing. Therefore, it is consistent with the Clean Air Plan and its effects in this regard are considered less than significant.

This issue correlates to the final significance criterion (d) used in the Initial Study.

The Clean Air Plan was published by the San Luis Obispo County Air Pollution Control District in 2001. The Plan contains required control measures to attain/maintain air quality; a majority of which have already been undertaken. The Clean Air Plan does not specifically address quarries, aggregate processing, or recycling plants. The Transportation and Land Use Chapter of the Clean Air Plan contains one measure "L-1, Planning Compact Communities" that states "spread out communities require longer travel distances between home, work, school, and shopping. In general, the more compact a community is, the lower its number of vehicle trips and miles traveled." Though the control measure is in the context of commuter trips, the haul of aggregate is similarly affected by "spread out communities." Thus, the Project would be consistent with this transportation and land use strategy because it makes aggregates available near the end use and may ultimately reduce the total distance that aggregates travel in the Region.

As presented in Section 7.1, the quarry project does not induce growth. The Clean Air Plan accounts for population growth; the aggregate market and corresponding quarry activity levels grow proportionally to population. Thus, the project is considered consistent with the Clean Air Plan, and will not have a significant impact in this regard.

Description of Impact	Mitigation Measure	Residual Impact
IMPACT AQ-4: Consistency with Clean Air Plan. The project involves activities and generation of truck traffic that would be potentially inconsistent with the Clean Air Plan.	**MM AQ-4: Consistency with Clean Air Plan.** Since this effect is less than significant, no mitigation is required.	Less than Significant

Cumulative Effects

Section 15065(a) (3) of the CEQA Guidelines requires a finding that a significant cumulative effect would occur if:

> The project has possible environmental effects that are individually limited but cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.

The SLOAPCD CEQA Air Quality Handbook states (ALOAPCD 2012:Section 1.5.h):

> A cumulative impact analysis should be performed to evaluate the combined air quality impacts of this project and impacts from existing and proposed future development in the area. This should encompass all planned construction activities within one mile of the project.

The proposed Oster/Las Pilitas Quarry is about one-half mile in a crosswind direction from the existing Hanson Santa Margarita Quarry. The Hanson Santa Margarita Quarry has submitted a request to expand the allowable mining area but is not proposing any increase in production or changes to operation that would result in increased air emissions over the current operations according to the Notice of Preparation (NOP). Traffic originating at the Hanson Quarry will not increase as a result of their proposed project, and impacts associated transportation emissions from the proposed Las Pilitas Quarry along the haul routes are less than significant.

Emissions from the existing truck traffic from the Hanson Santa Margarita Quarry is part of the baseline condition in the area, as are emissions from the Rocky Canyon Quarry and other transport service businesses in the area. The 10 in one threshold for cancer risk used to evaluate regulated point source projects is meant to be applied in the context of existing background rates from all sources to determine the significance of emissions from any one source, so it is not a threshold to be used for cumulative effects. From Table 4.3-9, the worst-case cancer risk in the Santa Margarita area from project truck traffic would 1.9 in one million. Since the project daily truck traffic volume would approximately double the number of heavy trucks on this segment of SR 58, a first approximation of the total cancer risk potential would be about 4 in one million. The threshold suggested by SLOAPCD for evaluating non-regulated sources, such as general land development or roadways is an increase in cancer risk of 89 in one million, which is the health risk caused by ambient concentrations of air toxics in San Luis Obispo County (SLOAPCD 2012:1.5.f). Under either threshold, the approximate risk from the existing truck traffic plus that from the project would not represent a significant cancer risk. Furthermore, total aggregate production in a region is determined by market demand, and increased activity at one mine is likely to lead to

decreases at another. Therefore, the cumulative effect of the Hanson Santa Margarita Quarry and the project on nearby receptors is considered less than significant.

Other projects in the region that may be considered in the cumulative impact analysis are reviewed in Section 5.0 of this EIR. The only major foreseeable development in the general vicinity includes the completion of approved residential subdivisions in the southern portion of Atascadero (about 400 dwelling units) and the future development of the Eagle Ranch Specific Plan, in the southwestern portion of Atascadero. These locations are about 3.5 and six miles northwest from the project site, respectively. The Santa Margarita Ranch is closer; the approved Agricultural Cluster subdivision in that project is about two miles southwest from the project site. The remaining portions of the Santa Margarita Ranch property, referenced as the "Future Development Program" in the 2008 EIR for that project (San Luis Obispo County 2008:page 2-1), have not been approved for any development beyond continued agricultural and related uses. The extent of future land uses other than agriculture in this Future Development Program is not known; but this entire area is also much more than one mile from the project site. Rural Residential land to the south of the project site (along SR 58) and east (along Parkhill Road) is already subdivided and built out for the most part. A few small projects, consisting of lot splits or parcel maps, have occurred around the outer edges of Santa Margarita or in more remote portions of the region, but none of these is within one mile of the project site. Thus, there are no significant projects, other than the Hanson Santa Margarita Quarry discussed above, that are within one mile of the project site (note: this distance is consistent with Section 1.5(h) of the SLO County APCD CEQA Air Quality Handbook), which would warrant consideration for cumulative effects.

For these reasons, the potential cumulative air quality effect of the project in conjunction with other development in the region is also considered to be less than significant.

Description of Impact	Mitigation Measure	Residual Impact
IMPACT AQ-5: Cumulative Effects Related to Air Quality. The project, in combination with the Hanson Santa Margarita Quarry and other significant projects, involve activities and generation of truck traffic that would be potentially inconsistent with the Clean Air Plan.	**MM AQ-5: Cumulative Effects Related to Air Quality.** Since this effect is less than significant, no mitigation is required.	Less than Significant