3.1.7 Air Quality

3.1.7.1 Affected Environment

Meteorology/Climate

The study area lies near the base of the northern slope of the San Gabriel Mountains in the South Coast Air Basin (SCAB) at its junction with the Mojave Desert Air Basin (MDAB). The MDAB was part of the South-East Desert Air Basin (SEDAB) until May 30, 1996, when the California Air Resources Board (CARB) adopted the boundaries and name of the new air basin. The ridgeline of the mountain range forms both a physical and climatological barrier between the SCAB and MDAB.

The climate of the study area, technically called an interior valley subclimate of southern California's Mediterranean-type climate, is characterized by hot summers, mild winters, infrequent rainfall, moderate afternoon breezes, and generally fair weather. The clouds and fog that form along the Southern California coastline rarely extend as far inland as the Project area, and if they do, they usually burn off quickly after sunrise. Winds blow primarily from the west and west-southwest in response to the regional pattern of airflow from the cool ocean to the heated interior as diverted through canyons and passes that channel the windflow. Although not as pronounced as in coastal areas, the local area is influenced by marine air as evidenced by the diurnal sea breeze.

The most important weather pattern is associated with funneling the daily onshore sea breeze through mountain passes at Soledad Canyon into the upper desert to the north from the heavily developed portions of the Los Angeles Basin, especially during the summer smog season. This daily airflow brings polluted air into the area late in the afternoon from late spring to early fall and can create unhealthful air quality as well as destroy the scenic vistas of the mountains surrounding the Antelope Valley. These circumstances make it difficult for the area to achieve clean air until sources in the developed portions of the SCAB are better controlled and less pollution is carried downwind.

In addition to winds that control the rate and direction of pollution dispersal, Southern California is notorious for strong temperature inversions that limit the vertical depth through which pollution can be mixed. In summer, coastal areas are characterized by a sharp discontinuity between the cool marine air at the surface and the warm, sinking air aloft within the high-pressure cell over the ocean to the west. This marine/subsidence inversion allows for good local mixing but limits vertical distribution or dispersion of pollutants over the SCAB. This boundary layer can be as high as 3,500 feet even during poor dispersion conditions. Air starting onshore at the beach becomes progressively more polluted as sources continue to add pollution from below without any dilution from above. Some dilution occurs in the thermal chimneys along the heated slopes of the San Gabriel Mountains but not enough to prevent the intrusion of significantly polluted air into the Project area.

A second inversion type forms on clear, winter nights when cold air off the mountains sinks to the valley floor while the air aloft over the valley remains warm. This forms radiation inversions.

The Project site is likely to experience a combination of marine/subsidence and radiation inversions. This is evidenced by the diurnal sea breeze that frequently undercuts warm air above. Because some parts of the Project area are less than 2,200 feet in elevation, the site is not high enough to avoid this marine influence that, on many days, can be this low. These inversions can create conditions where very poor vertical mixing occurs and may lead to the greatest localized impacts. During these inversions, mixing heights as low as approximately 150 feet are possible. These inversions, in conjunction with calm winds, trap pollutants, such as automobile and heavy equipment exhaust emissions associated with the Project, near their source. While the marine/subsidence inversions may have limited effects in the Project area, nocturnal radiation inversions are very intense throughout the area and create very limited mixing potential at night, especially during the cooler months of the year.

Temperatures in the Santa Clarita Valley vary greatly between the summer and winter. The area averages approximately 60 to 65°F year-round. Summer afternoons can be quite warm and exceed 85°F. Winter mornings, on the other hand, can be very cool and drop below freezing. Relative humidity is generally low in the summer. Mean annual pan evaporation in the Project area is reported at over 40 inches per year. The warm summer afternoons are quite dry, and the breezes are moderate such that physical comfort is good despite the warm weather. These clean, dry conditions result in intense solar radiation that, when combined with high summer temperatures, are highly instrumental in the formation of photochemical smog.

Rainfall in the Project area varies considerably in both time and space. Almost all of the annual rainfall comes from the fringes of midlatitude storms from late October through March with summers often completely dry except for occasional widely scattered thundershowers. The area is located in a transition area between the semiarid conditions of the Los Angeles Basin and the completely arid portions of the Mojave Desert. Because the most intense and prolonged rain systems occur in conjunction with southwesterly flows from the tropics that feed moist, unstable air into Southern California, the valley's location (partially in the "rainshadow" of the San Gabriel Mountains) further enhances its dryness. Rainfall averages around 14 to 15 inches per year at the Project area. The Santa Clarita Valley may occasionally experience a light winter snowfall (1 to 2 inches per year), but temperatures do not remain cold enough for the snow to stay on the ground for very long.

Air Quality Setting

Ambient Air Quality Standards

Air quality impacts of a Project, combined with existing background air quality levels, must be compared to the applicable ambient air quality standards (AAQS) to gauge their significance. These standards are the levels of air quality considered safe, with an adequate margin of safety, to protect the public health and welfare. They are designed to protect those "sensitive receptors" most susceptible to further respiratory distress such as asthmatics, the elderly, very young children, people already weakened by other disease or illness, and persons engaged in strenuous work or exercise. Healthy adults can tolerate occasional exposure to air pollutant concentrations considerably above these minimum standards before adverse effects are observed. National AAQS (NAAQS) and California AAQS (CAAQS) are listed in Table 3.1.7-1.

Facilities such as those proposed are subject to Rules 402 and 403 as adopted by the South Coast Air Quality Management District (SCAQMD). Rule 402 is a nuisance provision that states that a person shall not discharge from any source whatsoever such quantities of air contaminants or other materials that cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public; or endanger the comfort, repose, health, or safety of any such persons or the public; or cause or have a natural tendency to cause, injury or damage to business or property. Rule 403 is a provision that sets requirements for control and monitoring to any activity or manmade condition capable of generating fugitive dust.

The purpose of SCAQMD Rule 403 is to reduce the amount of particulate matter entrained in the ambient air as a result of man-made fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. The Project is subject to this Rule and will prepare a fugitive dust plan that will be reviewed and approved by the SCAQMD on an annual basis. The plan will include Best Available Control Measures (BACM) and the regulation prohibits both visible dust and PM-10 concentrations in excess 50 $\mu g/m^3$ at the Project boundary. The Project will comply with the requirements of Rule 403.

Baseline Air Quality

Existing levels of ambient air quality and historical trends and projections in the Project area are best documented by measurements made by the SCAQMD at its Santa Clarita air monitoring station located at 24875 San Fernando Road in Newhall, approximately 11 miles southwest of the study area. The Santa Clarita/Newhall station is the most proximate station to the site operated by the SCAQMD and is located in the same Source/Receptor area. The SCAQMD tracks both pollutant levels and wind speed at this station and requires that these data be used for environmental analyses including modeling efforts. As discussed following; while wind data obtained at the Newhall station may not be identical to conditions at the Project site, it is representative and conservative. Historic data published by CARB for the Newhall station notes that based on 6 years of data at 24 observations per day (71,691 total observations), the predominant winds blow from the south by southeast with an average speed of 4.0 miles per hour (mph). Secondary prominent winds blow from the north by northwest with an average speed of 3.4 mph. Prominent winds are highest during the summer and blow out of the south by southeast with an average speed of 5.3 mph while secondary winds are highest during the winter and come from the north with an average speed of 6.0 mph.

In the past, the CARB obtained wind data in the Saugus area which is located north of the Newhall Station to the Project site. The CARB notes that based on 13 years of data at 24 observations per day (112,223 total observations), the predominant winds in the Saugus area blow from the east by southeast with an average speed of 3.7 mph. Secondary prominent winds

Table 3.1.7-1
AMBIENT AIR QUALITY STANDARDS

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Ozone	1 Hour	0.09 ppm (180 μg/m³)	Ultraviolet Photometry	0.12 ppm[8] (235 μg/m³)	Same as Primary Std.	Ethylene Chemiluminescence
	8 Hour	---		0.08 ppm (157 μg/m³)		
Carbon Monoxide	8 Hour	9.0 ppm (10 mg/m³)	Nondispersive Infrared Spectroscopy (NDIR)	9 ppm (10 mg/m³)	None	Non-dispersive Infrared Spectroscopy (NDIR)
	1 Hour	>20 ppm (23 mg/m³)		35 ppm (40 mg/m³)		
Nitrogen Dioxide	Annual Arithmetic Mean	---	Gas Phase Chemiluminescence	0.053 ppm (100 μg/m³)	Same as Primary Std.	Gas Phase Chemiluminescence
	1 Hour	0.25 ppm (470 μg/m³)		---		
Sulfur Dioxide	Annual Arithmetic Mean	---	Fluorescence	0.030 ppm (80 μg/m³)	---	Pararosaniline
	24 Hour	0.04 ppm (105 μg/m³)		0.14 ppm (365 μg/m³)	---	
	3 Hour	---		---	0.5 ppm (1,300 μg/m³)	
	1 Hour	0.25 ppm 655 μg/m³		---	---	
Respirable Particulate Matter (PM10)	Annual Geometric Mean	30 μg/m³	Size Selective Inlet High Volume Sampler ARB Method P (8/22/85)	---	Same as Primary Stds.	Inertial Separation and Gravimetric Analysis
	24 Hour	50 μg/m³		150 μg/m³		
	Annual Arithmetic Mean	---		50 μg/m³		
Visibility Reducing Particulates	8 Hour (10 a.m. to 6 p.m., PST	In sufficient amount to produce an extinction coefficient of 0.23 per kilometer-visibility of 10 miles or more due to particulates when the relative humidity is less than 70 percent.		No Federal Standards		

Pollutant	Averaging Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	Method[4]	Primary[3,5]	Secondary[3,6]	Method[7]
Sulfates	24 Hour	25 $\mu g/m^3$	Turbidimetric Barium Sulfate	No Federal Standards		
Hydrogen Sulfide	1 Hour	0.03 ppm (42 $\mu g/m^3$)	Cadmium Hydroxide STRactan	No Federal Standards		
Lead	30-Day Average	1.5 $\mu g/m^3$	Atomic Absorption	---	---	High Volume Sampler and Atomic Absorption
	Calendar Quarter	---		1.5 $\mu g/m^3$	Same as	

[1] California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter-PM10, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded.

[2] National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM10, the 24-hour standard is attained when 99 percent of the daily concentrations, averaged over 3 years, are equal to or less than the standard.

[3] Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 mm of mercury. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 mm of mercury (1,013.2 millibar); ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Any equivalent procedure which can be shown to the satisfaction of CARB to give equivalent results at or near the level of the air quality standard may be used.

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

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

[7] Reference method as described by the EPA. An "equivalent method" of measurement may be used but must have a "consistent relationship to the reference method" and must be approved by the EPA.

[8] New federal 8-hour ozone standards were promulgated by the EPA on July 18, 1997. The federal 1-hour ozone standard continues to apply in areas that violated the standard.

blow from the west by northwest with an average speed of 6.4 mph. Prominent winds are highest during the summer and blow out of the west by northwest with an average speed of 6.4 mph while secondary winds are highest during the spring and come from the west with an average speed of 7.5 mph (California Surface Wind Climatology, California Air Resources Board, Aerometric Data Division, Reprinted February 1994). It should be noted that the overall average wind speeds do not preclude the presence of very low or high wind speeds, especially during Santa Ana conditions. These Santa Ana conditions, which are prevalent in Southern California from the fall through spring, with an average five to ten occurrences per year, can create strong southern-flowing winds.

While the historic data published by the CARB note that there is a slight shift in wind direction between the Newhall and Saugus stations, wind speeds are fairly similar.

The Saugus data have not been compiled in a format that can be used in dispersion modeling, nor is it prescribed for use in modeling by the SCAQMD. This is because dispersion modeling must include data for a number of meteorological parameters; not just wind speed. The combination of the data for various meteorological conditions on the same dates for the same period and the prequalification of the data by the SCAQMD are critical to the dispersion modeling process. As such, dispersion modeling was conducted using the published meteorological data from the Newhall Station which is provided through SCAQMD specifically for that use.

The project could have a significant impact on the air quality if it results in emission levels in excess of NAAQS. These standards are based on concentration levels developed by a panel of doctors and experts in the field of health care and consider the maximum allowable concentrations with a margin of safety that a typical person can tolerate with no ill effects.

To determine if on-site operations would produce pollutant levels in excess of AAQS, those pollutants which are projected to remain significant for the SCAQMD daily CEQA thresholds and are subject to AAQS (including the combined total of PM-10 from both dust and on-site exhaust emissions) were modeled using the most current accepted version of the Industrial Source Complex Short Term (ISCST3) model. The atmospheric conditions used in the model were as required by the SCAQMD.

Because the AAQS are based on maximum allowable concentration levels, a worst-case scenario includes minimum wind speed and maximum atmospheric stability. Under these conditions, pollutants "stagnate" resulting in elevated concentration levels. These levels are then projected to the most proximate receptor locations. While high winds may generate more dust, they also disperse these pollutants and therefore reduce predicted concentrations. Thus, the use of low wind speed data more closely approximates worst case conditions than the use of high wind speed data would. Furthermore, additional mitigation measures must be implemented for high wind conditions in accordance with SCAQMD rules and regulations (Rule 403 and some of Rule 1186) which govern operations under such conditions.

Monitored air pollutants include ozone (O_3), carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), and PM-10 particulates (those with an aerodynamic diameter of 10 microns [or 0.0004 inch or less]). These measurements have shown that photochemical smog levels (mainly O_3) are high in summer, dust levels may exceed particulate standards throughout the year, and primary vehicular pollutant levels, such as CO, NO_2, or lead, are very low in the area. Table 3.1.7-2 summarizes the last 5 years of published data for the Santa Clarita station.

While O_3 levels continue to exceed the California and national hourly standards, 1995 through 1998 levels show a marked decrease in the number of violations, along with a decrease in the maximum 1-hour concentration. O_3 is the result of chemical reactions of primary pollutants with the emphasis on both reactive hydrocarbons and nitrogen dioxides in bright sunlight.

The O_3 concentrations recorded at the Santa Clarita monitoring site may not be identical to the Project site because the elevation difference between these sites may be as great at 2,000 feet. Elevated O_3 monitoring sites in Southern California occasionally experience high air contaminant concentrations transported aloft. These contaminants may be decoupled from the surface. These elevation differences may cause O_3 levels to be higher at the Project elevation than lower down in the valleys.

Although NO_2 shows that no standards were exceeded, it is a precursor to O_3 formation, which continually does exceed the standards. Hydrocarbons and NO_2 are emitted by both mobile and stationary sources, with the greater portion emanating from mobile sources. Pollutants emitted from upwind cities react during their transport downwind to produce the oxidant concentrations measured at the Santa Clarita monitoring station. Therefore, all upwind areas within the SCAB and portions of the MDAB contribute to the O_3 production.

These concentrations increase during the summer, with concentrations increasing from the late morning through the afternoon.

With regard to particulate matter, monitoring only began recently so it is difficult to determine a trend. The state standard for PM-10, which has been monitored since 1989, was exceeded 39 of the 286 times (14 percent) in the last 5 years that it was monitored. The percentage of violations decreased substantially for 1996, and the trend has continued downward to 1998. The federal standard has not been exceeded since monitoring began at this station. Suspended particulate matter (both total suspended particulates [TSP] and PM-10) is a mixture of natural and manmade materials that include soil particles, biological materials, sulfates, nitrates, organic compounds, and lead.

High dust levels result from strong winds acting on loose, arid soil. This is evidenced by the fact that airborne particulate exceedances are strongly correlated with the frequency of desert windstorms (Chambers Group, Inc. 1992b). Much of this dust burden is in the form of large, heavy particles that settle out of the air in proximity to their origin. These larger particles are filtered out by the respiratory system and pose more of a nuisance than a health threat. Smaller particles (PM-10) are created by the combustion of fossil fuels but are also given off from tire wear and brake dust. Furthermore, in general, approximately 35 percent of the silt content within the dust raised during high wind episodes consists of this PM-10 material (AP-42,

Table 3.1.7-2

AIR QUALITY MONITORING SUMMARY FOR SANTA CLARITA MONITORING STATION
(Number of Days Standards Were Exceeded and Maximum Levels During Such Violations[1])

State and Federal Pollutant/Standard	1994	1995	1996	1997	1998
Ozone (O_3)					
State 1-hour > 0.09	118	72	68	54	38
Federal 1-hour > 0.12 ppm	66	26	19	13	16
Federal 8-hour > 0.08 ppm	NS[2]	NS	NS	27	35
Max. 1-hour conc. (ppm)	0.26	0.21	0.17	0.16	0.18
Max. 8-hour conc. (ppm)	NS	NS	NS	0.13	0.15
Carbon Monoxide (CO)					
State 8-hour ≥ 9.1 ppm	0	0	0	0	0
State 1-hour > 20 ppm	0	0	0	0	0
Federal 8-hour ≥ 9.5 ppm	0	0	0	0	0
Federal 1-hour > 35 ppm	0	0	0	0	0
Max. 1-hour conc. (ppm)	9	7	7	7	8
Max. 8-hour conc. (ppm)	3.9	4.1	3.9	6.8	3.4
Nitrogen Dioxide (NO_2)					
State 1-hour > 0.25 (ppm)	0	0	NM[3]	NM	NM
Max. 1-hour conc. (ppm)	0.12	0.16	NM	NM	NM
Inhalable Particulates (PM_{10})					
State 24-hour > 50 ug/m^3	13/58	13/61	5/53[4]	5/59	3/55[4]
Federal 24-hour > 150 (ug/m^3)	0/58	0/61	0/53[4]	0/59	0/55[4]
Max. 24-hour conc. (ug/m^3)	66	87	91[4]	67	60[4]

Sources: Air Quality Data. SCAQMD 1995, 1996, 1997, 1998, and 1999
[1] **With the exception of inhalable particulates (PM-10), all values are based on 365 days per year.**
[2] **NS - No Standard.**
[3] **NM - Not Monitored**
[4] **Less than 12 full months of data and may not be representative.**
ppm = parts per million

Compilation of Air Pollutant Emissions Factors [EPA 1995] Section 13.2.4). However, for the Mojave Desert area east of Barstow, PM-10 material typically consists of approximately 5 percent of the dust raised (Chambers Group 1992b). The study area is anticipated to contain similar levels, although no local data support this.

All other pollutants, particularly those related to vehicular source emissions, such as CO and NO_2, have not exceeded their allowable levels since monitoring began in 1989.

Although major sources of air pollution exist within the Santa Clarita Valley, the data in Table 3.1.7-2 suggest that air quality problems in the study area are mainly due to the transport of pollutants into the area from outside sources. Because the area is subject to violations of both the state and federal air quality standards for O_3 and state standards for PM-10, the area is very sensitive to additional O_3 precursor and particulate pollutant emissions, especially PM-10 particulates, because these standards are already frequently exceeded.

Federal Clean Air Act (FCAA) Requirements

Areas that are in non-attainment for any pollutant for which there is a NAAQS are required to prepare an implementation plan which describes how attainment with the standards will be achieved. Federal agencies are required by 40 CFR 93.150-160 to determine that general Federal actions conform to the applicable State or Federal Implementation Plans (SIPs or FIPs). This FEIS contains an analysis of these requirements and a draft Conformity Determination for the Proposed Action in Appendix E5. The final Conformity Determination is provided in Appendix E6.

The FCAA requires plans to provide for the implementation of all reasonably available control measures "as expeditiously as practicable" including the adoption of reasonably available control technology for reducing emissions from existing sources. Emission control innovations in the form of market-based approaches are explicitly encouraged by the FCAA. The SCAQMD is the first local agency in the country to adopt a market-based approach for controlling stationary source emissions of oxides of nitrogen and sulfur and, in accordance with the pending revisions, is proposing additional market-based control measures. Other federal requirements addressed in the revision include mechanisms to track plan implementation and milestone compliance for O_3 and CO.

In addition, the 1990 amendments to the FCAA require the SCAQMD to develop the following demonstrations or plans addressed in the 1994 Air Quality Management Plan (AQMP): (1) an O_3 attainment demonstration, (2) a post-1996 rate-of-progress demonstration, and (3) a PM-10 SIP (required in 1996) that incorporates best available control measures for fugitive sources.

A SIP is required in any area that has been found to be in violation of NAAQS and has been classified as a non-attainment area. The purpose of the SIP is the elimination or reduction in severity and number of NAAQS violations. The AQMP, as the principal air quality management planning document in the Project area, functions as that part of the SIP applicable to the SCAQMD. The current EPA approved SIP and AQMP are the 1994 revisions, as discussed below.

40CFR 60.670 Subpart 000 - Standards of Performance for Nonmetallic Mineral Processing Plants will apply to portions of the stationary mineral processing equipment to be installed at the TMC facility. The items necessary to ensure compliance with applicable NSPS 000 requirements include notification of proper authorities (SCAQMD), emissions testing, and recordkeeping. All equipment subject to NSPS 000 will require a permit from the SCAQMD, and the provisions of NSPS 000 will be met as part of the SCAQMD permit requirements.

Local Air Quality Management Planning

The SCAQMD and the Southern California Association of Governments (SCAG) are the agencies responsible for preparing the AQMP for the SCAB. Since 1979, a number of AQMPs have been prepared. The most recent comprehensive plan currently approved by the EPA is the 1994 AQMP (SCAQMD 1994), which includes a variety of strategies and control measures. The 1994 AQMP was based on the 1991 AQMP and was designed to comply with state and federal requirements, reduce the high level of pollutant emissions in the SCAB, and ensure clean air for the region through the control measures detailed below. To accomplish its task, the 1991 AQMP relied on a multilevel partnership of governmental agencies at the federal, state, regional, and local level (SCAQMD 1991). These agencies (i.e., the EPA, CARB, local governments, SCAG, and SCAQMD) are the cornerstones that implement the 1994 AQMP and previous AQMP programs.

The control measures in the 1991 AQMP are categorized into three tiers: (1) Tier I includes measures that propose currently available technological applications and management practices that can be adopted within the next 5 years, (2) Tier II measures are based on significant advancement of today's technological applications within the next 10 to 15 years, and (3) Tier III requires the development of new technologies that are currently in the research stage and that will be implemented within the next 20 years (SCAQMD 1991). In addition, the 1991 AQMP provides an attainment planning framework that sets specific dates by which the SCAB will achieve the federal and state air quality standards, as listed in Table 3.1.7-3.

Table 3.1.7-3

PROJECTED ATTAINMENT DATES FOR FEDERAL AND STATE AIR QUALITY STANDARDS FOR THE SOUTH COAST AIR BASIN

Air Pollutant	State	Federal
Nitrogen dioxide (NO_2)	December 31, 1999	December 31, 1994
Carbon monoxide (CO)	2000 - 2010	December 31, 1999
Ozone (O_3)	Beyond 2010	December 31, 2009
Particulate matter (PM-10)	Beyond 2010	December 31, 2005
Source: SCAQMD 1991		

California Clean Air Act (CCAA) Requirements

In addition to federal requirements, the 1994 AQMP meets CCAA requirements. According to the CCAA, air pollution control districts must design their air quality attainment plans to achieve a reduction in basin-wide emissions of 5 percent or more per year (or 15 percent or more in a 3-year period) for all nonattainment pollutants and their precursors. For emission reduction accounting purposes, the CARB has established a 7-year initial reporting period (1988 to 1994) with reporting intervals every 3 years thereafter. As a result, the 1994 AQMP must seek to achieve a 35-percent reduction for the initial period and a 15-percent reduction for every subsequent interval.

The CCAA also requires that the 1994 AQMP control measures reduce overall population exposure to criteria pollutants, with a 40-percent reduction due by the end of 1997 and a 50-percent reduction by 2000. This provision is applicable to O_3, CO, and NO_2 in the SCAB. The CCAA further requires the SCAQMD's Governing Board to determine that the 1994 AQMP is a cost-effective strategy that will achieve attainment of the state standards by the earliest practicable date. In addition, the 1994 AQMP must include an assessment of the cost-effectiveness of available and proposed measures and a list of the measures ranked from the least cost-effective to the most cost-effective. In addition to cost-effectiveness, other factors must be considered including technological feasibility, emissions reduction potential, rates of reduction, public acceptability, and enforceability.

<u>1997 AQMP</u>

The SCAQMD Governing Board adopted the 1997 AQMP on November 15, 1996. The Plan was adopted by the CARB in January 1997 and forwarded to the EPA for their approval. The EPA recently proposed partial approval and partial disapproval of the Plan. After modification and resubmittal to the EPA, the 1997 AQMP/SIP is expected to be approved in 2000. The 1997 AQMP is based on the 1994 Plan and carries forward most of the strategies included therein. However, with recent findings by nationally recognized health experts, the 1997 plan puts greater emphasis on PM-10 particulate matter. The 1997 AQMP also updates the demonstration of attainment of O_3 and CO. Additionally, because the Basin came into attainment of the federal NO_2 standard since the 1994 AQMP was prepared, the 1997 plan includes a maintenance program to assure continued compliance.

The 1997 AQMP also addresses several state and federal planning requirements and incorporates new scientific data, primarily in the form of updated emission inventories, ambient measurements, and new air quality models. Expanding on the control strategies included in the 1994 AQMP, the 1997 plan projects sufficient emission reductions to meet all federal criteria pollutant standards within the time frames allowed under the FCAA.

The 1997 AQMP also addresses notable regulatory rules promulgated since preparation of the 1994 AQMP. These include the implementation of Phase 2 reformulated fuels in 1996, the replacement of Regulation XV rideshare program with an equivalent emission reduction program, and new incentive programs for generating emission credits. Other highlights of the 1997 AQMP are as follows:

- use of the most current air quality information (1995) including special particulate matter data from the PM-10 Technical Enhancement Program;
- improved emissions inventories, especially for motor vehicles, fugitive dust, and ammonia sources;
- a similar but fine-tuned overall control strategy with continuing emphasis on flexible, alternative approaches including intercredit trading;

- a determination that certain control measures contained in the 1994 AQMP are infeasible, most notably the future indirect source measures;
- enhanced modeling for particulates;
- separate analyses for the desert portions within the SCAQMD's jurisdiction: the Coachella Valley within the newly designated Salton Sea Air Basin, and the Antelope Valley within the MDAB;
- attainment to the federal Post-1996 Rate-of-Progress Plan and the Federal Attainment Plans for O_3 and CO;
- a maintenance plan for NO_2; and
- an attainment demonstration and SIP Revision for PM-10.

SCAQMD Rule 403 "Fugitive Dust"

The purpose of this rule is to reduce the amount of particulate matter entrained in the ambient air as a result of man-made fugitive dust sources by requiring actions to prevent, reduce, or mitigate fugitive dust emissions. The project is subject to this Rule and will prepare a fugitive dust plan that will be reviewed and approved by the SCAQMD on an annual basis. The plan will include Best Available Control Measures (BACM) and the regulation prohibits both visible dust and PM-10 concentrations in excess of 50 $\mu g/m^3$ at the Project boundary. The Project will comply with the requirements of Rule 403.

Air Toxics Assessment

The Project will not emit pollutants subject to a federal standard as part of the National Emission Standards for Hazardous Air Pollutants (NESHAPS) program, nor will it be a major Federal source of Hazardous Air Pollutants (HAP). Several California programs exist to regulate toxic air contaminants (TAC) and are summarized following. In addition, Mitigation Measure AQ5 minimizes emissions of diesel exhaust particulates, which are a California TAC but not a Federal HAP. The Project will be required to comply with these programs:

AB2588 - The Air Toxics "Hot Spots" Information and Assessment Act

The Act requires covered facilities to submit an emissions inventory for the approximately 400 hazardous substances subject to the statute. The statute further provides for risk assessments of emissions for higher priority facilities. Facilities are subject to the act if the emissions of criteria pollutants from a permitted stationary source exceeds 10 tons per year or if the facility is on an industry-specific list. Sand and gravel facilities without asphaltic concrete production are not on the industry-specific list.

Typical AB2588 substances emitted for sand and gravel facilities include crystalline silica and asbestos. Asbestos is not present in the formations to be mined and crystalline silica levels in the formation are vey low, less than 5 percent. Other aggregate deposits in the Irwindale, Azusa and Simi Valley areas have crystalline silica contents that range from 20 to 50 percent. The Occupational Safety and Health Administration (OSHA) and the Mine Safety and Health Administration (MSHA) also require that workers be protected from asbestos and crystalline silica. Standard practices employed for the protection of employees and the control of fugitive dust will prevent an offsite hazard from either of these substances. The Project will comply with the requirements of AB2588 as implemented by the SCAQMD.

AB1807 - The Tanner Toxic Air Contaminant Act
SCAQMD Rule 1401

This act, passed in 1983, establishes a regulatory program to identify and assess the public health risk of selected chemicals and regulate emissions of such chemicals. Implementation responsibility for the program lies with the ARB and the SCAQMD. Specifically, SCAQMD Rule 1401 "New Source Review of Toxic Air Contaminants" provides for review of new projects. Diesel exhaust particulates have recently been added to the AB1807 list of chemicals. SCAQMD Rule 1401 has not yet incorporated this recent change. The ARB will be proposing updated diesel exhaust particulate emission standards that will reduce emissions 90 percent by the year 2007. As part of the application process for stationary sources (see SCAQMD Regulation XIII), compliance with Rule 1401 is required and a permit will not be issued unless the proposed project complies with the provisions of Rule 1401. The Project will comply with Rule 1401.

Diesel exhaust particulates have been classified as a TAC under California law, but they have not been classified as a HAP under federal regulations. Diesel exhaust particulates were included in Section 93000 of Title 17 of the California Code of Regulations on August 20, 1999.

The DEIS states that the Project was not expected to release TACs. However, the DEIS was published and circulated for comment in May of 1999, prior to the final State listing of diesel exhaust particulates on August 20, 1999. The Project Applicant, in response to public commentary, has developed mitigation to ensure that concerns over diesel exhaust particulates emissions are addressed.

Proposition 65

Proposition 65: The Safe Drinking Water and Toxics Enforcement Act, prohibits discharges of any chemical "known to the state to cause cancer or reproductive toxicity" to a potential source of drinking water and requires clear and reasonable warnings be provided before an exposure to any listed chemical. The Project, like any industrial and most commercial facilities, will have chemicals listed by Proposition 65 (including diesel particulates which were listed in Proposition 65 in 1990) present at the facility. These chemicals may include a variety of items used in small quantities for routine maintenance of heavy equipment, crystalline silica, and diesel engine exhaust. The Project will comply with all requirements of Proposition 65 including notice to employees, visitors, and the general public, as required.

Locations of Sensitive Receptors

The Project site is set in the hills above Soledad Canyon Road. The area is within an unincorporated area of the County. Mining has been conducted in this area for approximately 20 years, and three quarries currently exist within a ¼-mile radius south and east of the Project site.

The nearest residence is located approximately ¼ mile south of the south-central boundary of the site and over 3,000 feet from the processing facility. The next nearest receptors are located to the west at the River's End Trailer Park. This trailer park is approximately 1,000 feet southwest of the southwest border of the site and approximately 6,000 feet from the processing facility. Existing and planned residential uses proximate to the site include, but are not limited to, the following: Bee Canyon Mobile Home Park, Shadow Pines, Rio Dulce, Sand Canyon, Stonecrest, and Agua Dulce. Several additional smaller developments are also proximate to the site. The closest school to the site is Pinetree Elementary located approximately 2½ miles from the site.

3.1.7.2 Environmental Effects

Significance Criteria

Air impacts result mainly from construction activities and onsite and offsite travel both during construction and after occupancy of the facility. Air quality impacts are considered significant under CEQA if they:

- exceed daily emission criteria established by the SCAQMD,
- interfere with attainment of air quality standards by either violating or contributing to an existing or projected air quality violation,
- violate SCAQMD Rule 402 (nuisance) or Rule 403 (fugitive dust), and/or
- generate pollutants that result in localized emissions exceeding State or National Ambient Air Quality Standards. This is typically demonstrated though a carbon monoxide (CO) hot spot analysis.

NEPA on the other hand, applies a different standard. NEPA examines a project's potential to exceed NAAQS or interfere with attainment of the national standards in the time frame referenced in the SIP. While the intent of daily criteria set forth by the SCAQMD is ultimately aimed at ensuring attainment of both the CAAQS and NAAQS, it does not consider the magnitude of individual projects with relation to the projections included in the SIP. Moreover, for purposes of NEPA, the daily limitations included in the SCAQMD Handbook do not apply to significance determinations. The general guidance under NEPA with respect to air quality significance is that a proposed action is not considered significant if the estimated emissions from the proposed action:

- Have been anticipated in regional and state air quality planning,
- Do not result in exceedences of the NAAQS;
- Do not hinder the progress towards attaining and maintaining air quality standards, and
- Are included and conform with the applicable AQMP and SIP and the project complies with local and state regulations.

Construction

Buildout plans call for installation of the sand and gravel processing facility, the concrete batch plant, and ancillary facilities (i.e., fuel island and scale house). The sand and gravel processing area will encompass 2.3 acres. The concrete batch plant will require 3.0 acres. An additional acre will be devoted to onsite structures. Approximately 1.5 acres will be paved with asphalt, 0.5 acre paved with concrete, and 7.0 acres covered with gravel.

Preproduction grading is estimated at 9 months, and the gravel and batch plants will each take 6 months to construct and will be constructed simultaneously along with the other miscellaneous facilities (i.e., scale house and fuel island).

Construction Exhaust Emissions

Construction equipment will create exhaust pollutants from onsite earth movement and equipment bringing concrete and other building materials onsite. With regard to nuisance odors, any air quality impacts will be confined to the immediate vicinity of the equipment itself. Because the nearest offsite receptor is located approximately ¼ mile from the site, by the time such emissions reach any sensitive receptor sites, they will be diluted to well below any level of air quality concern. An occasional "whiff" of diesel exhaust from trucks accessing the site from public roadways may result. Such brief exhaust odors are an adverse but not significant air quality impact.

Grading and construction activities will consume diesel fuel and thus produce combustion byproducts. It is anticipated that as many as six pieces of heavy earthmoving equipment and one water truck will be used simultaneously onsite for the construction phase. These pieces are typically moved onsite and remain for the duration of construction. Based on AP-42 (EPA 1985), the average calculated power rating for the various types of heavy earthmoving equipment is 190 horsepower. (Note while AP-42 was most currently revised in 1995, mobile source emissions factors are still undergoing revision and have not yet been released to the public.) The average fuel consumption for this same machinery is approximately 12 gallons per hour. Based on a 7-hour day, 5-day-per-week construction schedule (includes equipment downtime for servicing, worker breaks, repairs), 504 gallons of diesel fuel will be consumed on a daily basis for heavy construction equipment, and an additional 7.2 gallons would be used for the water truck (511 gallons per day [gpd] total).

Because the exact type of equipment to be used during construction will vary with the contractor performing the construction, an average of emissions produced by all heavy earthmoving typically used in construction was calculated. This includes track and wheel-type tractors, dozers, scrapers, graders, loaders, off-highway trucks, rollers, and miscellaneous equipment. Additionally, exhaust emissions for the water truck were based on the EMFAC7G emissions model with an assumed speed of 10 mph traveling 40 miles per day.

Exhaust emissions will also be generated by workers commuting to the site. It is anticipated that as many as 10 workers will be involved in preconstruction grading and 25 workers will be involved in the actual building erection. These workers will travel an average roundtrip distance of about 22 miles to the site from the County area on a daily basis. This value is the average daily construction worker commute within the SCAB SCAQMD (*CEQA Air Quality Handbook*). Additionally, haul trucks will be used to bring building materials to the site on a regular basis. While preconstruction is anticipated to use two trucks per day, building erection could use as many as four. Here, a 30-mile radius was assumed. Table 3.1.7-4 gives the calculated daily exhaust emissions for heavy equipment, material deliveries, and workers commuting for Project development.

As shown in Table 3.1.7-4, NO_2 emissions may exceed the SCAQMD significance threshold, and depending on the average level of activity, a significant adverse impact is possible.

Construction Fugitive Dust

Site clearing, building, road construction, and equipment travel on unpaved surfaces will generate considerable quantities of fugitive dust during Project development. The Applicant intends to develop 15.8 acres over 15 months for Project-related facilities used to process rock and sand and the concrete batch plant, as well as the circulation element. This equates to approximately 1.05 acres per month. AP-42 estimates that each acre of land disturbed generates 1.2 tons per month of TSP with an aerodynamic diameter less than 30 microns (PM-30) from dust lofting into the air. This value will vary with soil moisture, silt content, wind speed, and several other factors. Thus, the daily PM-30 dust loading would be 115 pounds. In accordance with SCAQMD Rules 402 and 403, site watering will be implemented in the Project design. This measure can reduce this loading by over 50 percent, and the expected amount of dust lofting into the air is calculated at 58 pounds per day.

In accordance with AP-42, Section 13.2.4, the PM-10 fraction typically consists of about 47 percent of the PM-30 particulates. However, testing of fines taken from the site shows the PM-10 fraction to consist of 20.1 percent of the PM-30. (Note that this test sample was obtained from a fines pile and would be expected to contain a greater amount of the small particles than the excavated material and thus represents a worst-case scenario). Similar tests of onsite material yielded even lower values for PM-10. Laboratory analyses are included in Appendix E1). Thus, the PM-10 portion of the 58 pounds of daily PM-30 dust is 11.7 pounds. Because this value, even when combined with the PM-10 exhaust emissions, is below the 150-pound-per-day SCAQMD level of significance and the significance criteria, no significant adverse impacts are anticipated.

Table 3.1.7-4

UNMITIGATED PROJECT CONSTRUCTION AIR POLLUTION EMISSIONS FOR HEAVY EQUIPMENT, WORKER COMMUTING, AND MATERIAL DELIVERIES INVOLVED IN INITIAL CONSTRUCTION OF TMC SITE[1]

Pollutant	Carbon monoxide (CO)	Nitrogen oxides (NOx as NO_2)	Reactive organics[3]	Sulfur oxides (SOx as SO_2)	PM-10 particulate matter[5]
Daily Emissions (lb/day)					
Employee Commutes	9.7	1.3	0.7	NV[4]	0.0
Material Deliveries	3.4	6.2	0.7	NV	0.5
Onsite Construction Equip.	43.7	78.5	6.9	8.7	6.7
Construction Dust					11.7
Total Daily Emissions (lb/day)	56.8	86.0	8.4	8.7	18.9
SCAQMD Threshold Level (lb/day)	550	100	75	150	150
Exceeds Threshold ?	No	No[2]	No	No	No

[1] Based on 1997 composite vehicle emission factors and assumes an average temperature of 75°F and an average speed of 45 mph. Mobile vehicle emissions factors are as modeled using EMFAC7G. Employee trips are based on 25 roundtrips of 22 miles. Truck trips are based on four roundtrips of 60 miles. Construction equipment includes six pieces of heavy equipment each operating 7 hours per day and one water truck traveling 40 miles per day at 10 mph. Heavy equipment emission factors as calculated using AP-42, 1985.
[2] Although a maximum daily level of 100 pounds is allowable, the average quarterly value cannot exceed 55 pounds per day. Therefore, depending on the actual daily level of construction, this value may be significant.
[3] Based on 93 percent of total organics for vehicle travel.
[4] NV - No Value, EMFAC7G does not calculate this value but resultant valuse is so low as to be inconsequential.
[5] Includes exhaust and tire wear PM-10 particulate matter.

In addition to respiratory problems, this dust creates a soiling nuisance because the material settles on parked cars and other horizontal surfaces. Regular watering, typically implemented in any sizable project and incorporated by Project design, will help control this nuisance. Additionally, because the nearest sensitive receptors are located at a distance of about 3,000 feet from the proposed facilities, dust settlement will not result in a significant adverse air quality impact. This impact is therefore considered potentially adverse but not significant.

Construction Miscellaneous Emissions

Other sources of emissions will also be present during construction of the TMC facility. These result from the following:

- onsite paving,
- increased emissions from storing and dispensing diesel for Project-related construction vehicles and gasoline for worker vehicles, and
- evaporative emissions from cleaners, paints, solvents, and other materials used in building construction.

These are addressed below.

Onsite Paving - Approximately 1.5 acres will be paved with asphaltic concrete, and an additional 1/2 acre will be paved with concrete. Equipment emissions for this paving are included in the previous calculations. The total paved area is approximately 1.5 acres. It is anticipated that 6 inches of asphalt will be applied over an 8-inch base of aggregate. It is also anticipated that this aggregate will be obtained onsite. The asphalt would be brought in from offsite. Based on a paved area of 1.5 acres and a depth of 6 inches, 32,670 cubic feet of asphalt will be applied. Based on a weight of 125 pounds per cubic foot, 2,042 tons of asphalt will be placed. Additional truck trips will be necessary for asphalt delivery. The asphalt will be laid over a 2-day period and must be applied hot. The 2,042 tons will require 76 haul trips over the paving period. Asphalt will be obtained at Lang Station, approximately 2.5 miles from the Project site. Based on 38 roundtrips per day, 190 miles will be traveled on each of the 2 days. This additional traffic will generate 4.4 pounds of CO, 4.7 pounds of NO_2, 0.9 pound of reactive organic gases (ROG), and 0.1 pound of PM-10 emissions on each of the 2 days. Because these emissions would only be produced over a 2-day period, they have not been included in Table 3.1.7-4. However, even with the inclusion of these emissions, only NO_2 emission criteria would be potentially exceeded.

Storage and Transfer of Fuels - Storing and transferring diesel for construction equipment are not expected to add substantially to the air emissions. AP-42 lists transfer operations for diesel loading from tank trucks as 0.03 pound per 1,000 gallons transferred. As previously calculated, the Project construction is expected to consume approximately 511 gpd of diesel fuel. Trucks used to bring materials to the site will also require fuel. Four trucks each making a roundtrip of 60 miles will produce 240 miles of travel. Based on BURDEN7G, the average fuel consumption for these trucks is 6.6 miles per gallon. Thus, an additional 36 gallons of diesel will be required. The fueling losses are then calculated at approximately 0.017 pound per day. (This truck fuel will not be stored or distributed onsite.) Because of the low Reid vapor pressure of diesel, evaporative losses from diesel storage are even lower.

Gasoline will also be necessary for worker vehicles. (No gasoline will be stored or transferred onsite, and no onsite gasoline tanks are proposed.) Based on 25 workers each commuting 22 miles roundtrip, 550 miles would be traveled on a daily basis. Vapor losses at gasoline stations are presented in AP-42 at 1.8 pounds per 1,000 gallons transferred including spillage. Based on the BURDEN7G model, average fuel use is 21.6 miles per gallon, and 25.5 gpd would be dispensed. Losses are then calculated at 0.05 pound per day.

Evaporative Emissions Caused by Use of Cleaners, Paints, and Solvents - Using solvents in the process of cleaning and painting structures will generate only a modest quantity of volatile organic compound (VOC) emissions. Solvents typically volatilize by 100 percent, while coatings, such as paint, lose approximately 40 to 60 percent of their volume due to volatilization. The use of these solvents and paints will be very low in Project construction, and most structures are to be left uncoated. Thus, no impacts from the application of solvents and paints are expected.

Operations

Phase 1

During Phase 1, the facility will produce aggregate and concrete for sale with fines to be stockpiled for reclamation at a later date. Aggregate production is anticipated at 7,963 tons per day (including material for concrete production), while concrete production would be limited to 750 cubic yards per day (1,500 tons). These values are based on a 14-hour work day for plant operations, a 24-hour work day for aggregate hauls, and a 17-hour work day for concrete hauls.

Exhaust Emissions

Exhaust emissions will be generated from operation of onsite heavy equipment used for mining and processing and onsite haul of fines to the reclamation area. Onsite heavy equipment includes those pieces listed in Appendix E2. Heavy equipment emissions were based on the horsepower and usage factors presented in Appendix E2 and their emissions are presented in Table 3.1.7-5.

Mobile Emissions

For the first 10 years of operation (Phase 1), about 340 trucks per day will transport materials (aggregate and concrete) offsite. An additional seven trucks per day are anticipated for the delivery of cement and fly ash to the site. Finally, 15 employees will commute to the site. Including employee commutes, the total average daily Phase 1 traffic volume (ADT) on public roads is 754. The breakdown is as follows:

- 265 two-way heavy truck trips for aggregate deliveries (average 35 miles each direction),
- 75 two-way heavy truck trips for concrete deliveries (average 20 miles each direction),
- 7 two-way heavy truck trips for cement and fly ash deliveries to the site (average 60 miles each direction), and
- 60 one-way vehicle trips for employee commuting (average 11 miles each direction).

Table 3.1.7-5 presents the pollutant loading for Phase 1 project-generated exhaust emissions.

Microscale Impacts

A sensitivity analysis was conducted to determine the potential for CO hot spots along Soledad Canyon Road. For existing ambient conditions, CO data from the SCAQMD Santa Clarita monitoring station were used. Both the 1995 and 1996 1-hour maximums were 7 ppm. All intersections along Soledad Canyon Road are controlled by stop signs, and no signalized intersections currently exist between the Project site and Antelope Valley Freeway.

Table 3.1.7-5

UNMITIGATED EXHAUST EMISSIONS FOR PHASE 1 OPERATIONS AT TMC SOLEDAD CANYON

Pollutant	Carbon monoxide (CO)	Nitrogen oxides (NOx as NO_2)	Reactive organics[2]	Sulfur oxides (SOx as SO_2)	PM-10 particulate matter[3]
Daily Emissions (lb/day)[1]					
Onsite Heavy Equipment	305.1	661.9	58.7	59.2	30.8
Material Hauls	311.2	551.4	57.2	NV[4]	43.9
Employee Commutes	9.7	1.4	0.8	NV	0.0
Other Emissions	6.2	32.0	0.5	3.7	1.2
Total Daily Emissions (lb/day)	632.2	1,246.7	117.2	62.9	75.9
SCAQMD Threshold Level (lb/day)	550	55	55	150	150
Exceeds Threshold ?	Yes	Yes	Yes	No	No

[1] Onsite heavy equipment/materials hauls/employee commutes/other emissions (electrical power generation at power plant and fuel storage and transfer). Onsite equipment emissions factors are based on AP-42, 1985. Materials hauls emissions are based on EMFAC7G and assume 22,390 miles per day at an average speed of 45 mph and an average temperature of 75°F. Employee commute emissions are based on EMFAC7G and assumes 11 automobiles and four light trucks producing 660 miles per day at an average speed of 45 mph, 15 starts after over a 12-hour wait, 30 starts after a 3- to 5-hour wait, and 15 starts after a 40- minute to 1-hour wait, and an average temperature of 75°F. All vehicle trips were generated using 1998 emissions data.
[2] Based on 93 percent of total organics for vehicle travel.
[3] Includes exhaust and tire wear PM-10 particulate matter.
[4] NV = No Value, EMFAC7G does not calculate this value, but resultant value is so low as to be inconsequential.

Furthermore, none of these stop signs are within ½ mile of a receptor. Thus, a link (i.e., the section of roadway between two controlled intersections) analysis was conducted rather than an intersection analysis. The ratio of automobile/light trucks, medium trucks, and heavy trucks was determined from a year 2000 BURDEN7G model run. Note that buses and motorcycles that make up less than 2 percent of the total vehicle fleet were omitted and the ratio of other vehicles adjusted accordingly. Additionlly, all heavy trucks were assumed to be heavy diesels. Table 3.1.7-6 lists the vehicle statistics used in this analysis.

The CO hot-spot analysis was modeled using the CALINE4 computer model distributed by the CARB. The model predicts the CO concentration at a receptor site using a Gaussian dispersion model. A worst-case scenario was used in the model (i.e., minimum wind speed, highest stability class, and receptor at grade). The model predicts that the 2000 with Project traffic will not raise the ambient CO concentration at the nearest sensitive receptor (located 50 feet from the road). When combined with the highest observed CO concentration of 7 ppm in 1996, the 7.5-ppm value will not exceed the state or federal 1-hour maximum levels of 20 and 35 ppm, respectively, nor will it exceed the 9.1 ppm 8-hour standards, and no significant CO impacts are predicted.

Table 3.1.7-6

2000 VEHICLE STATISTICS FOR A.M. PEAK TRAFFIC ON SOLEDAD CANYON ROAD WITHOUT AND WITH PROJECT IMPLEMENTATION

Peak Hour Traffic (vehicles per hour)	Cars & Light Trucks (%)	Medium Trucks (%)	Heavy Trucks (%)	CO Emissions (grams per mile)
2000 With 1.5-Percent-Per-Year Growth				
468	95.49	2.30	2.21	10.49
2000 With 1.5-Percent-Per-Year Growth + Related Projects				
523	95.99	2.10	1.91	10.16
2000 With 1.5-Percent-Per-Year Growth + Related Projects				
574	87.88	1.92	10.28	9.30

Other Combustion Emissions

In addition to onsite- and mobile-generated emissions, emissions will be produced offsite for the generation of electricity. No natural gas lines run to the site, and the use of natural gas is not proposed at this time.

Offsite emissions are based on the electrical usage to operate the process equipment and provide onsite lighting and miscellaneous electrical needs. The prior SCAQMD permit application shows 2,665 horsepower required for both the aggregate and batch plants for the process equipment (with 200 horsepower dedicated to air pollution control equipment). Based on this value and a 14-hour-per-day operational schedule, 27,822 kilowatt-hours are expended on equipment. The electrical usage for lighting and miscellaneous electrical needs was based on the SCAQMD *CEQA Air Quality Handbook* and, based on 5.3 acres or 230,868 square feet of facility area, will require an additional 3,352 kilowatt-hours per day. Table 3.1.7-5 (also derived from factors presented in the SCAQMD Handbook), includes the offsite emissions produced at the servicing power plant.

As shown in Table 3.1.7-5, Phase 1 project-generated levels of CO, nitrogen oxides (NO_x), and ROG will exceed the SCAQMD recommended threshold levels and, based on the impact criteria, a significant impact is anticipated.

Blasting

Low-yield blasting will be required to loosen subsurface materials to the point where they may be mined using the aformentioned heavy equipment. For Phase 1 operations, twice-weekly blasting is proposed.

In accordance with AP-42, CO is the pollutant produced in the greatest quantity from explosives detonation. TNT, an oxygen-deficient explosive, produces more CO than most dynamites, which are oxygen-balanced. Particulates are produced as well, but such large quantities of particulate are generated from shattering the rock and earth that the particulates emitted from the charge are small and cannot be distinguished. NO_x is also formed, but only limited data are available on these emissions. (Oxygen-deficient explosives are said to produce little or no NO_x, but there are little data to support this.) Unburned hydrocarbons also result from explosions, but in most instances, methane is the only species reported.

The explosive of choice would be ammonium nitrate with fuel oil (ANFO). Forty-four 200-pound charges would be used totaling 8,800 pounds per blast event. Based on the emission factors included in AP-42 (1995) Table 13.3-1, this charge would produce 295 pounds of CO, 74.8 pounds of NO_x, and 9 pounds of sulfur oxide (SO_x). These emissions would be additive with the day's exhaust emissions. Information on blasting emissions was provided by an ANFO manufacturer and suggests emissions will be substantially lower than those estimated by AP-42. Emissions from the detonation of forty-four 200-pound ANFO charges using information provided by Energetic Solutions, Technical Development Group, are estimated at 3.2 pounds for NO_x, 1.6 pounds CO, and 0.32 pounds of ammonia or hydrogen. CO and NO_x emissions, which are already projected to exceed the 55-pound-per-day criterion, would be further elevated.

Storage and Transfer of Fuels

As with the construction phase, transferring and storing diesel for construction equipment are not expected to add substantially to the air emissions. AP-42 lists transfer operations for diesel loading from tank trucks as 0.03 pound per 1,000 gallons transferred. Diesel usage for Phase 1 onsite equipment was estimated based on the number of hours of equipment operation and an average fuel consumption of 12 gallons per hour. Based on the hours of operation presented in Appendix E2, 127 hours of equipment usage are anticipated on a daily basis and will require approximately 1,524 gallons of diesel.

Additionally, truck hauls are anticipated to cover 22,390 miles on a daily basis. Based on an average fuel consumption of 6.6 miles per gallon (based on BURDEN7G), 3,392 gallons of diesel will be dispensed on a daily basis. Thus, total diesel consumption is anticipated at 4,916 gpd. The fueling losses are then calculated at approximately 0.15 pound per day. Because of the low Reid vapor pressure of diesel, evaporative losses from diesel storage are even lower.

In addition to diesel, gasoline will be required for employee vehicles. The daily anticipated mileage from employee travel is 660 miles per day. Based on an average fuel consumption of 26 miles per gallon (BURDEN7G), 25 gpd of gasoline will be dispensed. Losses (1.8 pound per 1,000 gallons) are then calculated at 0.04 pound per day.

Dust Emissions

Dust will be generated from the onsite operation of heavy equipment, rock and batch plant operations, materials reclamation, and erosion of the exposed areas. Each of these sources is listed in Table 3.1.7-7. Emission calculations are included in Appendix E2.

Table 3.1.7-7

UNMITIGATED PHASE 1 DAILY PM-10 PARTICULATE DUST AND COMBUSTION EMISSIONS FOR TMC SOLEDAD CANYON FACILITY[1]

Emission Source	Pounds of PM-10 Particulates Generated per Day (Phase 1)
Heavy Equipment, Haul Truck, and Employee Commute Combustion Particulate Emissions	75.9
Heavy Equipment Pit Operations	84.6
Conveyor Losses	<2.0
Rock Plant Processing	21.9
Truck Loading	11.0
Concrete Plant Processing (includes cement unloading, aggregate and materials movement, and TMC truck loading)	6.2
Onsite Truck Movement Over Paved Surfaces	407.9
Onsite Truck Movement Over Unpaved Surfaces	17.5
Scraper Loading, Hauling, and Unloading	528.6
NFSA Activity	9.4
Wind Erosion of Excavation	43.2
Wind Erosion of NFSA	12.8
Wind Erosion of Stockpiles	11.6
Blasting	1.7
Total Unmitigated PM-10 Emissions (No Blasting)	1,232.6
Total Unmitigated PM-10 Emissions (With Blasting)	1,234.3

[1] **Unmitigated emissions include Project-design control measures.**

Blasting - Blasting will be required to fracture stone and provide access to unconsolidated material for removal. Dust emissions for blasting related to crushed stone processing are documented in AP-42.

The area to be blasted depends on the strata, bench size, equipment to remove the material, and so forth. For a bench area of approximately 13,581 square feet, about 1.7 pounds of PM-10 would be released. Blasting would occur twice weekly, and those PM-10 emissions would be additive with daily operations emissions.

Phase 1 PM-10 Emissions Summary - Table 3.1.7-7 summarizes the onsite project-generated PM-10 dust and exhaust particulate loading for 1 day of operation. As shown in the table, unmitigated (i.e., water is used to reduce dust in the active excavation area and for equipment permitted through the SCAQMD by Project design) PM-10 emissions are calculated at approximately 1,232.6 pounds per day without blasting and 1,234.3 pounds per day when blasting is conducted. Based on the 150-pound-per-day impact criterion, this value is considered a significant adverse impact under CEQA.

Phase 2

After 10 years, the facility will go to Phase 2 status. Production of aggregate will rise to 14,480 tons per day while concrete will remain at 750 cubic yards per day. It is anticipated that approximately 20,690 tons of material will be quarried on a daily basis. These values are based on a 16-hour work day for plant operations and a 24-hour work day for material hauls.

Exhaust Emissions

Exhaust emissions will be generated from operation of onsite heavy equipment and onsite haul of fines to the reclamation area. Onsite heavy equipment includes those pieces listed in Appendix E2. Heavy equipment emissions were based on the horsepower and usage factors presented in Appendix E2 and are presented in Table 3.1.7-8.

Mobile Emissions

In Phase 2, the total ADT would rise from 754 (in Phase 1) to 1,284, as follows:

- 500 two-way heavy truck trips for aggregate deliveries (average 35 miles each direction),
- 75 two-way heavy truck trips for concrete deliveries (average 20 miles each direction),
- 7 two-way heavy truck trips for cement and fly ash deliveries to the site (average 60 miles each way), and
- 120 one-way vehicle trips for employee commuting (average 11 miles each way).

Table 3.1.7-8 presents the pollutant loading for Phase 2 Project-generated exhaust emissions.

Microscale Impacts

As with Phase 1 operations, a sensitivity analysis was also conducted to determine the potential for CO hot spots along Soledad Canyon Road. Based on the same ambient CO concentration and receptor location, a worst-case analysis was also conducted for year 2008 traffic both with and without Project implementation. Table 3.1.7-9 lists the vehicle statistics used in this analysis. The traffic along Soledad Canyon Road is predicted to raise the CO level by 0.3 ppm to a concentration of 7.3 ppm at the receptor located at a distance of 50 feet from the roadway either without or with Project implementation. This value will not exceed the state or federal 1-hour maximum levels of 20 and 35 ppm, respectively, nor will it exceed the 9.1-ppm 8-hour standards, and no significant CO impacts are predicted.

Table 3.1.7-8

UNMITIGATED EXHAUST EMISSIONS FOR PHASE 2 OPERATIONS AT TMC SOLEDAD CANYON

Pollutant	Carbon monoxide (CO)	Nitrogen oxides (NOx as NO_2)	Reactive organics[2]	Sulfur oxides (SOx as SO_2)	PM-10 particulate matter[3]
Daily Emissions (lb/day)[1]					
Onsite Heavy Equipment	471.9	1,077.8	98.3	97.2	58.4
Material Hauls	510.8	650.3	59.0	NV[4]	32.5
Employee Commutes	9.6	1.4	0.3	NV	0.1
Other Emissions	7.0	40.4	0.7	4.2	1.4
Total Daily Emissions (lb/day)	999.3	1,769.9	158.3	101.4	92.4
SCAQMD Threshold Level (lb/day)	550	55	55	150	150
Exceeds Threshold ?	Yes	Yes	Yes	No	No

[1] Onsite heavy equipment/materials hauls/employee commutes/other emissions (electrical power generation at power plant and fuel storage and transfer). Onsite equipment emission factors are based on AP-42, 1985. Material hauls emissions are based on EMFACG and assume 38,840 miles per day at an average speed of 45 mph and an average temperature of 75°F. Employee commutes emissions are based on EMFAC7G and assumes 21 automobiles and nine light trucks producing 1,320 miles per day at an average speed of 45 mph, 30 starts after over a 12-hour wait, 60 starts after a 3- to 5-hour wait, 30 starts after a 40-minute to 1-hour wait, and an average temperature of 75°F. All vehicle trips were generated using 2008 emissions data.
[2] Based on 93 percent of total organics for vehicle travel.
[3] Includes exhaust and tire wear PM-10 particulate matter.
[4] NV = No Value, EMFAC7G does not calculate this value, but resultant value is so low as to be inconsequential.

Table 3.1.7-9

2008 VEHICLE STATISTICS FOR A.M. PEAK TRAFFIC ON SOLEDAD CANYON ROAD WITHOUT AND WITH PROJECT IMPLEMENTATION

Peak Hour Traffic (vehicles per hour)	Cars & Light Trucks (%)	Medium Trucks (%)	Heavy Trucks (%)	CO Emissions (grams per mile)
2008 With 1.5-Percent-Per-Year Growth + Related Projects + TMC Phase I				
646	89.01	1.86	9.13	4.55
2008 With 1.5-Percent-Per-Year Growth + Related Projects + TMC Phase I				
687	90.68	1.75	9.32	4.63
2008 With 1.5-Percent-Per-Year Growth + Related Projects + TMC Phase II				
735	85.58	1.63	13.06	4.68

Other Combustion Emissions

In addition to onsite- and mobile-generated emissions, emissions would be produced offsite for the generation of electricity. Offsite emissions are based on the electrical usage to operate the process equipment and provide onsite lighting and miscellaneous electrical needs. As with Phase 1, 2,665 horsepower are required for both the aggregate and batch plants for the process equipment. Based on this value and a 16-hour-per-day operational schedule, 31,797 kilowatt-hours are expended on equipment. The electrical usage for lighting and miscellaneous electrical needs is again anticipated at 3,352 kilowatt-hours per day. Table 3.1.7-8 (also derived from factors presented in the SCAQMD Handbook) includes the offsite emissions produced at the servicing power plant.

As shown in Table 3.1.7-8, Phase 2 Project-generated levels of CO, NO_x, and ROG will exceed the SCAQMD-recommended threshold levels, and based on the impact criteria, a significant impact is anticipated.

Blasting

With the exception of blasting, which will be conducted four times weekly, daily emissions associated with blasting operations are expected to approximate those in Phase 1 and will add to the daily pollutant loading when performed. SO_x will not exceed its criterion and therefore remain insignificant.

Storage and Transfer of Fuels

As with Phase 1, transferring and storing diesel for construction equipment are not expected to add substantially to the air emissions. Diesel vapor emissions are based on 0.03 pound of emissions per 1,000 gallons transferred. It is estimated that 192 hours of equipment usage will be performed on a daily basis with 2,304 gallons transferred at the Project site.

Additionally, truck hauls are anticipated to cover 38,840 miles on a daily basis. Based on an average fuel consumption of 7.0 miles per gallon from the BURDEN7G model, 5,549 gpd of diesel will be used by trucks with 2,304 gallons transferred at the Project site. Thus, total diesel consumption is anticipated at 7,853 gpd. The fueling losses are then calculated at approximately 0.2 pound per day. Because of the low Reid vapor pressure of diesel, evaporative losses from diesel storage are even lower.

In addition to diesel, gasoline will be required for employee vehicles. The daily anticipated milage from employee travel is 1,320 miles per day. Based on an average fuel consumption of 26 miles per gallon from the BURDEN7G model, 51 gpd of gasoline will be dispensed. (This gasoline will not be transferred at the Project site, and no onsite gasoline storage is proposed.) Losses (1.8 pounds per 1,000 gallons) are then calculated at 0.1 pound per day.

Dust Emissions

Dust will be generated from the onsite operation of heavy equipment, rock and batch plant operations, materials reclamation, and erosion of the exposed areas. Each of these sources is described in Appendix E2 and included in Table 3.1.7-10.

Table 3.1.7-10

UNMITIGATED PHASE 2 DAILY PM-10 PARTICULATE DUST AND COMBUSTION EMISSIONS FOR TMC SOLEDAD CANYON FACILITY

Emission Source	Pounds of PM-10 Particulates Generated Per Day (Phase 2)
Heavy Equipment, Haul Truck, and Employee Commute Combustion Particulate Emissions	92.4
Heavy Equipment Pit Operations	153.9
Conveyor Losses	3.0
Rock Plant Processing	40.4
Truck Loading	20.0
Concrete Plant Processing (includes cement unloading, aggregate and materials movement, and TMC truck loading)	6.2
Onsite Truck Movement Over Paved Surfaces	703.1
Onsite Truck Movement Over Unpaved Surfaces	33.1
Scraper Loading, Hauling, and Unloading	959.8
NFSA Activity	15.0
Wind Erosion of Excavation	43.2
Wind Erosion of NFSA	12.8
Wind Erosion of Stockpiles	11.6
Blasting	1.7
Total Unmitigated PM-10 Emissions (No Blasting)	2,094.5
Total Unmitigated PM-10 Emissions (With Blasting)	2,096.2
[1] Unmitigated emissions include Project-design control measures.	

Blasting - Blasting may be necessary to loosen rock material and expose aggregate. As shown for Phase 1, blasting could produce an additional 1.7 pounds of PM-10 when performed and would further elevate onsite dust levels.

Phase 2 PM-10 Emissions Summary - Table 3.1.7-10 summarizes the onsite Project-generated PM-10 dust and exhaust particulate loading for 1 day of operation. As shown in the table, unmitigated PM-10 emissions (except for watering the active excavation area and equipment controlled through SCAQMD permitting) are calculated at approximately 2,094.5 pounds per day. Blasting, when performed, could add an additional 1.7 pounds to this value for a total of 2,096.2 pounds. Based on the 150-pound-per-day impact criterion, this value is considered a significant adverse impact under CEQA.

3.1.7.3 Mitigation Measures

Air quality mitigation is presented for construction to minimize exhaust emissions and fugitive dust. These mitigation measures are committed mitigation that has been included in the modeling calculations for air quality. Mitigation is presented for operations for exhaust and dust emissions. The effectiveness of the mitigation is presented in Tables 3.1.7-11 through 3.1.7-15 in Section 3.1.7.

<u>Construction</u>

Exhaust Emissions

Site construction will create exhaust pollutants from onsite earth movement and equipment bringing building materials onsite. A comparison between project emissions and the levels considered by the SCAQMD to be potentially significant shows that NO_2 emissions may exceed the SCAQMD quarterly threshold criterion and mitigation is necessary.

AQ1a. Mitigation for both heavy equipment and vehicle travel is limited. However, the following will be employed to reduce these emissions to the maximum extent feasible:

1. maintain equipment in tune per manufacturer's specifications;
2. use catalytic converters on gasoline-powered equipment;
3. retard diesel engine timing by 4 degrees;
4. install high-pressure fuel injectors;
5. use reformulated, low-emission diesel fuel;
6. substitute electric and gasoline-powered equipment for diesel-powered equipment where feasible;
7. where applicable, do not leave equipment idling for prolonged periods; and
8. curtail (cease or reduce) construction during periods of high ambient pollutant concentrations (i.e., Stage II smog alerts).

9. retard fuel injection timing, resulting in NO_X reduction of 30 percent (>40 percent in AP-42);

10. use high-pressure fuel injectors resulting in PM-10 reduction in excess of 80 percent with a reduction in hydrocarbons; and

11. use low-emission fuels resulting in unquantified reductions in all emissions.

Fugitive Dust

Dust from physical site disturbance, material deliveries, employee commuting, and wind erosion during high-wind episodes may create a visual and soiling nuisance beyond the property line.

AQ1b. Although dust impacts are not expected to be significant during the construction phase, Project design standard measures will be implemented to control fugitive dust emissions during construction as required by SCAQMD Rules 402 and 403. These rules contain a nuisance provision that gives an SCAQMD inspector wide latitude to enforce dust abatement, particularly in the event of a nuisance complaint. Because of the extreme distances from sensitive receptors, no nuisance complaints are anticipated. Still, typical abatement measures, including daily watering of active construction areas and all traveled dirt roads to minimize dust lofting from vehicular disturbance, will be used.

The Project is subject to Rule 403 and will prepare a fugitive dust plan that will be reviewed and approved by the SCAQMD on an annual basis. The plan will include Best Available Control Measures (BACM) and the regulation prohibits both visible dust and PM-10 concentrations in excess 50 $\mu g/m^3$ at the Project boundary. The Project will comply with the requirements of Rule 403.

<u>Operations</u>

AQ1c. **Exhaust Emissions**

In addition to the mitigation measures presented for onsite operations, TMC has made a commitment to reduce traffic congestion by providing the transit improvements as stated in Section 3.1.7.1. Because most of the trucks will be independently owned and operated, the Applicant has little control over these emissions. Still, the Applicant does have some control over these emissions while the trucks are onsite and in the selection of the owner-operators. Applicable mitigation then includes the following:

1. Trucking will be performed on a 24-hour-per-day basis. This will reduce emissions by allowing trucks to operate during nonpeak hours, increasing truck speeds, and eliminating prolonged idling in traffic, thereby decreasing truck emissions.

2. When operating onsite, trucks will not be left idling for prolonged periods.

3. Applicant-operated trucks that are observed to emit excessive amounts of smoke (particulate matter) will either be tuned up or repaired, as applicable. Private owner-operators will be warned that, if their trucks emit excessive amounts of smoke, they will not be allowed future access to the facility.

4. Where applicable, high-pressure fuel injector nozzles will be used, and diesel engine timing will be retarded by 4 degrees. (This includes both trucks and heavy equipment.)

AQ2. **Dust Emissions**

PM-10 dust emissions are also anticipated to create a significant impact for both Phases 1 and 2.

Mitigation measures and control efficiencies for each dust-generating operation are presented in the following discussion. Tables 3.1.7-14 and 3.1.7-15 in Section 3.1.7 list the PM-10 unmitigated emissions, assumed control efficiency, and mitigated emissions for Phase 1 and 2 operations, respectively.

1. Conveyor Systems

The product conveyor systems include the use of covered transfer points controlled by negative pressure vented to a bag house augmented by water or surfactant spray in the main plant area. Resultant fugitive dust emissions are projected to be roughly equivalent to those produced by covered conveyors, and no further mitigation is warranted.

2. Rock and Sand Processing

As mentioned previously, in accordance with the SCAQMD permitting for the site, all permitted dust-producing equipment involved in rock crushing and conveyance must be vented to filters or kept moist using spray bars.

3. Onsite Truck Travel

Mitigation includes twice-daily watering followed by immediate broom-truck sweeping of paved roads to control the fugitive dust kicked up by the vehicles' tires. The control efficiency is dependent on the ability to remove silt from the road, and application of the above measures is conservatively estimated to result in a 90-percent control efficiency.

In addition to travel over paved surfaces, onsite travel will include material movements over unpaved surfaces because of travel on unpaved roads situated between the paved access road and the aggregate facility. For these unpaved roads, mitigation includes regular application of a chemical dust suppressant with a demonstrated control efficiency in excess of 80 percent.

4. Offsite Truck Travel

The importance of keeping both paved and unpaved roads dust-free is two-fold. First, it reduces onsite fugitive dust emissions by reducing the volume of dust raised by vehicle travel. Second, it keeps dust from being carried out on to Soledad Canyon Road, thereby assuring compliance with both SCAQMD Rules 402 and 403 as well as Assembly Bill No. 3220, Clapton 1486.

Although the dust emissions for offsite truck travel were not included with the onsite emissions inventory, dust blowing from the offsite transport of aggregate during both Phases 1 and 2 adds to the total PM-10 dust loading. Mitigation includes using wet spray during truck loading of sand and broom-truck sweeping of the roadway as trucks leave the site. Furthermore, in accordance with Assembly Bill No. 3220, Clapton 1486, aggregate materials shall only be carried in the cargo area of a vehicle. The cargo area shall not contain any holes, cracks, or openings through which the materials may escape, regardless of the degree to which the vehicle is loaded. Additionally, all trucks shall be equipped with the following:

a. properly functioning seals on any openings used to empty the load, including, but not limited to, bottom-dump release gates and tailgates;

b. splash flaps behind every tire, or set of tires, regardless of position on the truck, truck tractor, or trailer;

c. center flaps at a location to the rear of each bottom-dump release gate or trucks or trailers equipped with bottom-dump release gates. The top of the center flap shall not be lower than the adjacent tires or set of tires, and the bottom of the center flap shall extend to within 5 inches of the pavement surface;

d. fenders that completely cover the tops of the tires not already covered by the truck, truck tractor, or trailer body;

e. complete enclosures on all vertical sides of the cargo area, including, but not limited to, tailgates;

f. shed boards designed to prevent aggregate materials from being deposited on the vehicle body during top loading; and

g. covers to keep transported materials from blowing except that vehicles transporting aggregate materials shall not be required to cover their loads if the load where it contacts the sides, front, and back of the cargo container area remains 6 inches from the upper edge of the container area, and the load, at its peak, does not extend above any part of the upper edge of the cargo container area.

5. North Fines Storage Area Activity

Fugitive emissions from equipment activity in this area will be controlled with water spray with a control efficiency in excess of 50 percent. Implementation of mitigation measure AQ3 will eliminate the use of scrapers in the NFSA.

6. Wind Erosion

While inactive areas will be controlled by dust suppressants with an efficiency in excess of 80 percent, by Project design, active areas will receive water spray with an efficiency of at least 50 percent. Because more area will be inactive than active at any one time, an assumed 75-percent control efficiency is applied to the site as a whole.

AQ3. Conveyor to NFSA

To further reduce PM-10 emissions, TMC shall use a semi-stationary "fines" conveyor system to move fines from the mobile crusher, located in the active mining area, directly to the NFSA. This fines conveyor shall extend along the haul road to the NFSA. A mobile conveyor shall be located in the NFSA and will tie in to this stationary fines conveyor thereby allowing fines to be distributed throughout the NFSA without the need for subsequent trucking of this material.

The mobile crusher has the ability to remove almost all of the fines during the crushing procedure. This crusher shall be equipped with two separate mobile conveyor systems. One of these mobile conveyor systems will transport fines removed in the initial crushing process to the main (stationary) fines conveyor and subsequently to the NFSA. The other mobile conveyor will transport excavation products to the main product conveyor which takes it to the rock plant for further processing.

Not all of the fines are removed at the mobile crusher and the rock plant also produces a modicum of fines during the processing procedure. These fines will be hauled by dump truck from the rock plant back to the stationary fines conveyor where it meets the haul route. From this point the fines will then travel along the stationary fines conveyor to the NFSA. Transfer points on the conveyor will be controlled by wet suppression.

AQ4. EPA/CARB Certified Engines

This mitigation measure incorporates the use of EPA/CARB certified engines where applicable for the Project. Current EPA/CARB emission standards for nonroad engines are shown below.

Current EPA/CARB Emission Standards for Non-road Engines

Rated Power	Year	CO (g/hp-hr)	ROG (g/hp-hr)	NOx (g/hp-hr)	PM-10 (g/hp-hr)
175≤ hp ≤ 750	1996+	8.5	1.0	6.9	0.4
175≤ hp ≤ 750	2001+	8.5	1.0	5.8	0.16
hp = 751+	2000+	8.5	1.0	6.9	0.4

For equipment falling in the appropriate horsepower ranges, the Project will use equipment which meets these standards. For Phase 1, the minimum standards which would apply would be the 1996 standards for 175-750 hp engines and the 2000 standards for equipment rated >750 hp. Additional equipment purchased for Phase 2 of the Project will meet the year 2001 standards for 175-750 hp.

Equipment built to meet EPA/CARB certified engine standards incorporates a number of combustion system improvements. Therefore mitigation measure AQ1 involving retarding diesel engine timing by 4 degrees and installing high-pressure fuel injectors would not be applicable to this equipment.

AQ5. Diesel Exhaust Particulate Controls

No specific significance threshold has been established for diesel exhaust particulates emissions from mobile sources. The Project Applicant, however, has used the exposure risk of 1 in 100,000 set forth in California Proposition 65 as a basis for developing mitigation designed to minimize exposure to diesel exhaust particulate emissions. The 1 in 100,000 exposure risk level in Proposition 65 provides a threshold for exposure to toxics below which no "significant risk" is posed, and therefore the use of this threshold as a standard for this mitigation measure reflects general state law concerning exposure to toxics.

The Project Applicant now proposes to incorporate the use of particulate filters or equivalent technology to ensure that diesel exhaust particulate emissions from mobile sources at the Project site will be reduced to a level which results in an exposure risk of less than 1 in 100,000 for residential receptors.

With the implementation of this mitigation measure, the resulting residual emissions for the Project are shown in revised Tables E2-1 and E2-2, in Appendix E2. Multiplying the daily emissions times the number of operating days per year for each Phase results in annual emissions of diesel particulates of less than 1,735 lbs/year for Phase 1 and Phase 2. Phase 1 would have emissions of diesel particulates of 1,528 lbs/year. Phase 2 would have emissions of diesel particulates of 1,431 lbs/year. At this level of annual emissions, the exposure risk for the Project related to diesel particulate emissions will be less than 1 in 100,000, as shown in the analysis in Appendix E7.

Based on currently available technology, TMC proposes to install particulate filters that achieve 95 percent or greater reduction in diesel exhaust particulates on the following equipment.

Phase 1	Phase 2
13 cu. yd. Pit Loader (2) 100 ton Haul Trucks Water Truck	(2) 13 cu. yd. Pit Loaders (4) 100 ton Haul Trucks Water Truck (2) Front End Loaders 35-ton Dump Truck

Since diesel exhaust has recently begun to receive a high degree of attention, significant advances in control technology for heavy equipment are anticipated in the future. As these advances take place, TMC will review new technologies for their feasibility and applicability. Alternative methods for achieving equivalent or better diesel particulate reductions may be implemented in place of particulate filters. These alternatives may include:

- Conversion of some equipment to alternative or dual-fuel technology, if this becomes feasible.
- Purchasing lower emitting equipment, if it becomes available when new purchases are being considered.
- Use of low sulfur diesel, if it becomes available.

The resulting diesel exhaust PM-10 emissions for onsite equipment are summarized in Tables E2-1 and E2-2 in Appendix E2.

Tables

Table 3.1.7.11 presents the construction emissions, anticipated efficiencies of the AQ1 mitigation control measures, and residual impacts. Calculation of mitigation measures with respect to heavy equipment and disel operations does not easily lend itself to exact quantification for each proposed measure as all measures have a degree of uncertainty and not all measures are cumulative in nature. The reduction efficiency values assigned to the mitigation relative to diesel operations were determined in accordance with a report issued by the CARB based on a 2-day meeting conducted on January 9 and 10, 1992.

Operational exhaust emissions, anticipated control efficiencies, and residual impacts for Phases 1 and 2 are presented in Tables 3.1.7-12 and 3.1.7-13, respectively.

Tables 3.1.7-14 and 3.1.7-15 list the PM-10 unmitigated emissions, assumed control efficiency, and mitigated emissions for Phases 1 and 2, respectively. These tables omit PM-10 exhaust emissions, which were included in Tables 3.1.7-12 and 3.1.7-13.

Table 3.1.7-11

SUMMARY OF CONSTRUCTION EMISSIONS, MITIGATION MEASURE CONTROL EFFICIENCIES, AND RESIDUAL EMISSIONS INVOLVED IN INITIAL CONSTRUCTION[1]

Emission Source	Heavy Equipment Operation	Haul Trucks	Worker Vehicles	Fugitive PM-10 Dust	Fuel Storage and Transfer	Total
CO	43.4	3.1	6.3	0.0	0.0	52.8
Mitigation Control Efficiency (percent)	40.0	40.0	0	NA	NA	
Residual	26.0	1.9	6.3	0.0	0.0	34.2
NO_x (as NO_2)	78.8	7.4	1.0	0.0	0.0	87.2
Mitigation Control Efficiency (percent)	40.0	40.0	0	NA	NA	
Residual	47.3	4.4	1.0	0.0	0.0	52.7
ROG	2.5	1.0	0.6	0.0	<0.07	<4.2
Mitigation Control Efficiency (percent)	15.0	15.0	0	NA	0.0	
Residual	2.1	0.9	0.6	0.0	<0.07	<3.7
SO_x (as SO_2)	8.6	1.6	0.8	0.0	0.0	11.0
Mitigation Control Efficiency (percent)	40.0	40.0	0	NA	NA	
Residual	5.2	1.0	0.8	0.0	0.0	7.0
PM-10	6.8	1.0	1.2	11.7	0.0	20.7
Mitigation Control Efficiency (percent)	40.0	40.0	0	0[2]	NA	
Residual	4.1	0.6	1.2	11.7	0.0	17.6

[1] All emissions are in pounds per day. Mitigation measures are as presented in the text. Where available, control efficiencies are considered conservative for SCAQMD and CARB control factors. Where no control efficiencies are published, control efficiencies are speculative but considered conservative.
[2] In accordance with SCAQMD Rules 402 and 403, active site watering is included in the project design and is already considered in the PM-10 value.

Table 3.1.7-12
SUMMARY OF EMISSIONS, MITIGATION MEASURE CONTROL EFFICIENCIES, AND RESIDUAL EMISSIONS FOR PHASE 1 OPERATIONS[1]

Emission Source	Heavy Equipment Operation	Haul Trucks	Worker Vehicles	Fugitive PM-10 Dust	Fuel Storage and Transfer	Offsite Electrical Generation	Total
CO	305.1	311.2	9.7	0.0	0.0	6.2	632.2
Mitigation Control Efficiency (percent)	56.0	40.0	0	NA	NA	0	
Residual	134.0	186.7	9.7	0.0	0.0	6.2	336.6
NO_x (as NO_2)	661.9	551.4	1.4	0.0	0.0	32.0	1,246.7
Mitigation Control Efficiency (percent)	40.0	40.0	0	NA	NA	0	
Residual	397.0	330.8	1.4	0.0	0.0	32.0	761.2
ROG	58.7	57.2	0.8	0.0	0.2	0.3	117.2
Mitigation Control Efficiency (percent)	69.0	15.0	0	NA	0	0	
Residual	18.4	48.6	0.8	0.0	0.2	0.3	68.3
SO_x (as SO_2)	59.2	NV[2]	NV	0.0	0.0	3.7	62.9
Mitigation Control Efficiency (percent)	26.0	40.0	0	NA	NA	0.0	
Residual	44.1	NV	NV	0.0	0.0	3.7	47.8
PM-10	30.8	43.9	0.0	1,156.7[3]	0.0	1.2	1,232.6 (1,234.3)[4]
Mitigation Control Efficiency (percent)	81.0	40.0	0	83.0[3]	NA	0	
Residual	5.7	26.3	0.0	197.6	0.0	1.2	230.8 (232.5)[4]

[1] All emissions in pounds per day. Mitigation measures are as presented in the text. Where available, control efficiencies are considered conservative for SCAQMD and CARB control factors. Where no control efficiencies are published, control efficiencies are speculative but considered conservative.
[2] NV - no value. This parameter is not modeled by the EMFAC7G model but resultant value would be inconsequential.
[3] Does not include 1.7 pounds during blasting activities.
[4] Includes PM-10 from blasting operations.

Table 3.1.7-13
SUMMARY OF EMISSIONS, MITIGATION MEASURE CONTROL EFFICIENCIES, AND RESIDUAL EMISSIONS FOR PHASE 2 OPERATIONS[1]

Emission Source	Heavy Equipment Operation	Haul Trucks	Worker Vehicles	Fugitive PM-10 Dust	Fuel Storage and Transfer	Offsite Electrical Generation	Total
CO	471.9	510.7	9.6	0.0	0.0	7.0	999.2
Mitigation Control Efficien (percent)	56.0	40.0	0	NA	NA	0	
Residual	209.0	306.4	9.6	0.0	0.0	7.0	532.0
NO_x (as NO_2)	1,077.8	650.2	1.4	0.0	0.0	40.4	1,769.8
Mitigation Control Efficiency (percent)	39.0	40.0	0	NA	NA	0	
Residual	660.0	390.1	1.4	0.0	0.0	40.4	1,091.9
ROG	98.3	59.0	0.3	0.0	0.3	0.4	158.3
Mitigation Control Efficiency (percent)	69.0	15.0	0	NA	0	0	
Residual	30.5	50.2	0.3	0.0	0.3	0.4	81.7
SO_x (as SO_2)	97.3	NV	NV[2]	0.0	0.0	4.2	101.4
Mitigation Control Efficiency (percent)	27.0	40.0	0	NA	NA	0	
Residual	71.5	NV	NV	0.0	0.0	4.2	75.7
PM-10	58.4	32.5	0.1	2,002.1[3]	0.0	1.4	2,094.5 (2,096.2)[4]
Mitigation Control Efficiency (percent)	91.0	40.0	0	83.0[3]	NA	0	
Residual	4.9	19.5	0.1	335.8	0.0	1.4	361.7 (363.4)[4]

[1] All emissions in pounds per day. Mitigation measures are as presented in the text. Where available, control efficiencies are considered conservative for SCAQMD and CARB control factors. Where no control efficiencies are published, control efficiencies are speculative but considered conservative.
[2] NV - no value. This parameter is not modeled by the EMFAC7G model but resultant value would be inconsequential.
[3] Does not include 1.7 pounds during blasting activities.
[4] Includes PM-10 from blasting operations.

Table 3.1.7-14

PHASE 1 PM-10 DUST EMISSIONS, ANTICIPATED CONTROL EFFICIENCY, AND RESIDUAL LEVELS

Emission Source	PM-10 Particulates Generated per Day (pounds)	Control Efficiency (percent)	Residual PM-10 Particulates Generated per Day (pounds)
Heavy Equipment Pit Operations	84.6	0	84.6
Conveyor Losses	2.0	NA[1]	2.0
Rock Plant Processing[2]	21.9	NA	21.9
Aggregate and Fines Loading	11.0	NA	11.0
Concrete Plant Processing (includes Cement Unloading, Aggregate and Material Movement, and TMC Truck Loading)	6.2	NA	6.2
Onsite Truck Movement Over Paved Surfaces	407.9	90	40.8
Onsite Truck Movement Over Unpaved Surfaces[3]	33.7	80	6.7
Scraper Loading, Hauling and Unloading[4]	528.6	100	0
Conveyor System to NFSA[5]	2.8	NA	2.8
NFSA Activity	9.4	50	4.7
Wind Erosion of Excavation	43.2	75	10.8
Wind Erosion of NFSA	12.8	75	3.2
Wind Erosion of Stockpiles	11.6	75	2.9
Blasting	1.7	0	1.7
Totals (No Blasting)	1,175.7	---	197.6
Totals (With Blasting)	1.177.4	---	199.3

[1] NA - Not applicable; the control efficiency is already included within this value by Project design as specified in the prior SCAQMD Permit to Construct.
[2] Rock Plant Processing emissions revised per AP-42, Section 11.19.2.
[3] Emissions increased for process fines hauling with implementation of NFSA conveyor mitigation AQ3.
[4] Scraper emissions removed with implementation of NFSA conveyor mitigation AQ3.
[5] Accounts for conveyor system emissions which will occur with implementation of NFSA conveyor mitigation AQ3.

Table 3.1.7-15

PHASE 2 PM-10 DUST EMISSIONS, ANTICIPATED CONTROL EFFICIENCY, AND RESIDUAL LEVELS

Emission Source	PM-10 Particulates Generated per Day (pounds)	Control Efficiency (percent)	Residual PM-10 Particulates Generated per Day (pounds)
Heavy Equipment Pit Operations	153.9	0	153.9
Conveyor Losses	3.0	NA[1]	3.0
Rock Plant Processing[2]	40.4	NA	40.4
Aggregate and Fines Loading	20.0	NA	20.0
Concrete Plant Processing (includes Cement Unloading, Aggregate and Materials Movement, and TMC Truck Loading)	6.2	NA	6.2
Onsite Truck Movement Over Paved Surfaces	703.1	90	70.3
Onsite Truck Movement Over Unpaved Surfaces[3]	62.6	80	12.5
Scraper Loading, Hauling and Unloading[4]	959.8	100	0
Conveyor System to NFSA[5]	5.1	NA	5.1
NFSA Activity	15.0	50	7.5
Wind Erosion of Excavation	43.2	75	10.8
Wind Erosion of NFSA	12.8	75	3.2
Wind Erosion of Stockpiles	11.6	75	2.9
Blasting	1.7	0	1.7
Totals (No Blasting)	2,036.7	---	335.8
Totals (With Blasting)	2,038.4	---	337.5

1 NA - Not applicable; the control efficiency is already included within this value by Project design as specified in the prior SCAQMD Permit to Construct.
2 Rock Plant Processing emissions revised per AP-42, Section 11.19.2.
3 Emissions increased for process fines hauling with implementation of NFSA conveyor mitigation AQ3.
4 Scraper emissions removed with implementation of NFSA conveyor mitigation AQ3.
5 Accounts for conveyor system emissions which will occur with implementation of NFSA conveyor mitigation AQ3.

Air Dispersion Modeling

Because onsite Phase 1 and Phase 2 operations will create impacts that cannot be fully mitigated, dispersion modeling was performed to determine the potential for significant impacts on residential projects to the north, which could potentially contain receptors at some point in the future, and on existing proximate receptors (i.e., the dwelling located across Soledad Canyon Road to the south of the site and at the River's End Trailer Park located west of the southwest corner of the site).

Air districts in California operate meterological stations that collect data at various locations throughout the district. The SCAQMD operates stations in Lancaster and Newhall (Santa Clarita), the two stations that are closest to the project site. The SCAQMD also prepares data, which it has determined to be representative, to be used in dispersion modeling for projects located near each station. In an effort to ensure that the meteorological data used in the modeling was the most representative available, data from both stations were reviewed.

The Newhall (Santa Clarita) meteorological data was determined to be more representative of the site than Lancaster meteorological data. The Newhall monitoring station is closer to the site and is in the South Coast Air Basin. The Lancaster station is in a separate air basin and air district, the Antelope Valley Air Pollution Control District.

The SCAQMD prepared and recommends the use of meteorological data from the Newhall (Santa Clarita) station for projects located in this region. The data set includes upper and lower air parameters that are representative of the area and includes wind speed and direction, temperature, stability class and mixing height.

Site specific background data is not available for this site, and is not necessary given the availability of quality data from the SCAQMD. Background data from the Newhall station is representative and conservative because the station is located in a semi-industrial area adjacent to open space and is surrounded by urban development. The station is also adjacent to a rail line, in the center of downtown Newhall, and is bounded by Interstate 5 to the west, Highway 14 to the east and industrial or residential development in between. In comparison to the nearby station, the project is located in an area with limited traffic, very low residential and other industrial/commercial development. In addition, one other industrial facility is located near the project site on an adjacent parcel, however that facility is also subject to SCAQMD rules regarding fugitive dust the PM-10. Given the generally fewer sources of emissions that exist in the vicinity of the project site, the Newhall background data is conservative.

This analysis was performed using the Industrial Source Complex Short Term 3 (ISCST3) model. Meteorological data from the Newhall Station and specific data from the TMC facility were used to estimate the potential increase in ambient air pollutant concentrations attributable to the Project. Methodology, model runs, and graphics are contained in Appendix E3.

Based on the SCAQMD New Source Review (Rule 1303), a significant CEQA impact is associated with a project if the project causes a "significant change" in the offsite ambient air concentration. For NO_2, the levels necessary to create a significant change are 1 part per hundred million (pphm) (20 $\mu g/m^3$) for the 1-hour average and 0.05 pphm (1 $\mu g/m^3$) for the annual average. The levels for significant change for PM-10 particulates are 2.5 $\mu g/m^3$ for the 24-hour average and 1 $\mu g/m^3$ for the average annual geometric mean. Rule 1303 also defines the "most stringent air quality standard" as a pollutant level that is not to be exceeded and consists of the ambient pollutant level plus the project-generated pollutant level. For NO_2, the 1-hour average most stringent air quality standard is 25 pphm (500 $\mu g/m^3$), and the annual average value is 5.3 pphm (100 $\mu g/m^3$). (It should be noted that the 500 $\mu g/m^3$ value used by the SCAQMD is actually greater than the 470 $\mu g/m^3$ CAAQS.) The annual average of the most stringent air quality standard for PM-10 particulates is 50 $\mu g/m^3$ for the 24-hour average and 30 $\mu g/m^3$ for average annual geometric mean.

In accordance with the Project analysis, NO_2, ROG, and PM-10 cannot be mitigated to levels that are less than significant with respect to CEQA. Because much of the ROG emissions (49.4 of the 68.3 pounds and 50.5 of the 81.7 pounds for Phases 1 and 2, respectively, predicted after mitigation) will be produced by offsite mobile sources, these emissions will be distributed over a vast area. Furthermore, there are no CAAQS for ROG emissions. This analysis will then focus on NO_2 and PM-10, which are governed by CAAQS and produced onsite in significant quantities.

Phase 1

For Phase 1, the model predicts that the Project will exceed the SCAQMD level for a CEQA significant change for NO_2 (annual average and hourly) and PM-10 (maximum daily and annual) concentrations, creating a CEQA significant impact. When existing background concentrations are added, the most stringent air quality standards will be exceeded for PM-10 (24-hour average) and NO_2 (maximum hourly).

The model predicts that the Project emissions will not cause an exceedance of the most stringent air quality standard at either of the receptors modeled (i.e., the nearest dwelling unit or the River's End Trailer Park) and is not expected to cause an exceedance of the most stringent air quality standard at proposed residential projects north of the Project.

The modeling predicted no exceedences of National Ambient Air Quality Standards (NAAQS) at or beyond the project boundaries for Phase 1 or Phase 2.

Phase 2

The Phase 2 results indicate that the Project will also exceed the SCAQMD level of significance for change for NO_2 and PM-10 at the Project boundary, creating a significant impact. When existing background concentrations are added, the most stringent air quality standards will be exceeded for PM-10 (24-hour average) and NO_2 (maximum hourly).

The model predicts that the Project emissions will not cause an exceedance of the most stringent air quality standard at either of the receptors modeled (i.e., the nearest dwelling unit or the River's End Trailer Park). However, the model does predict an exceedance of the most stringent air quality standard for NO_2 (hourly) at the nearest dwelling unit when existing background levels are added. Because this analysis is based on a worst-case scenario and the model does not take into account changes in elevation, it is doubtful that the standard will be exceeded during normal Phase 2 operations at this location. The Project is not expected to cause an exceedance of the most stringent air quality standard at the proposed residential projects north of the Project.

The modeling predicted no exceedences of National Ambient Air Quality Standards (NAAQS) at or beyond the project boundaries for Phase 1 or Phase 2.

In addition, emissions and modeled results from the proposed Project and alternatives are presented for comparison in Tables 3.1.7.16-19. Model runs were performed for the proposed Project and the RNSFA Alternative with fines conveyor and are included in Appendix E-3. Conservative results were extrapolated for the other alternatives.

Table 3.1-7-16
SUMMARY OF PHASE 2 PM-10 ANNUAL AVERAGE MODEL RESULTS AT HIGHEST BOUNDARY RECEPTOR

Alternative	Daily Direct Onsite Emissions	Background Concentration	Direct Modeled Impact	Cumulative Total Impact	Federal AAQS	State AAQS
Units	lb/day	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$
Proposed Project	342	33.8	9.5	43.3	50	N/A
RNFSA	324	33.8	8.9	42.7	50	N/A
No Project	0	33.8	<=9.5 [2]	<=43.3	50	N/A
Alt. Batch Plant Loc.	342	33.8	<=9.5 [2]	<=43.3	50	N/A
Reclaimed Water	342	33.8	<=9.5 [2]	<=43.3	50	N/A
Rail Haul	342	33.8	<=9.5 [2]	<=43.3	50	N/A
Alt. NFSA Location	342/ 166 [1]	33.8	<=9.5 [2]	<=43.3	50	N/A
Reduced Quantity	205	33.8	<=9.5 [2]	<=43.3	50	N/A

[1] **Additional direct emissions will occur off of the Project site, which would result in emissions at the Alt NFSA locations that are much less than the proposed Project, so the modeled results are conservative.**
[2] **Alternative not modeled, onsite emissions less than proposed Project so modeled results for proposed Project are conservative.**

Table 3.1.7-17
SUMMARY OF PHASE 2 PM-10 24-HOUR AVERAGE MODEL RESULTS AT HIGHEST BOUNDARY RECEPTOR

Alternative	Daily Direct Onsite Emissions	Background Concentration	Direct Modeled Impact	Cumulative Total Impact [3]	Federal AAQS	State AAQS
Units	lb/day	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$
Proposed Project	342	74	41.1	115.1	150	50
RNFSA	324	74	40.8	114.8	150	50
No Project	0	74	<=41.1 [2]	<=115.1	150	50
Alt. Batch Plant Loc.	342	74	<=41.1 [2]	<=115.1	150	50
Reclaimed Water	342	74	<=41.1 [2]	<=115.1	150	50
Rail Haul	342	74	<=41.1 [2]	<=115.1	150	50
Alt. NFSA Location	342/ 166 [1]	74	<=41.1 [2]	<=115.1	150	50
Reduced Quantity	205	74	<=41.1 [2]	<=115.1	150	50

[1] Additional direct emissions will occur off of the Project site, which would result in emissions at the Alt NFSA locations that are much less than the proposed Project, so the modeled results are conservative

[2] Alternative not modeled, onsite emissions less than proposed Project so modeled results for proposed project are conservative.

[3] While the cumulative impact exceeds the state 24 hour standard when background concentrations are added, the project is required to comply with SCAQMD Rule 403 which sets a maximum project related concentration at 50 $\mu g/m^3$ (equal to the state standard). The modeling demonstrates that compliance with this standard is achievable.

Table 3.1.7-18
SUMMARY OF PHASE 2 NO_2 ANNUAL AVERAGE MODEL RESULTS AT HIGHEST BOUNDARY RECEPTOR

Alternative	Daily Direct Onsite Emissions	Background Concentration	Direct Modeled Impact	Cumulative Total Impact	Federal AAQS	State AAQS
Units	lb/day	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$
Proposed Project	660	56.4	22.4	78.8	100	N/A
RNFSA	517	56.4	20.2	76.6	100	N/A
No Project	0	56.4	< =22.4 [2]	< =78.8	100	N/A
Alt. Batch Plant Loc.	660	56.4	< =22.4 [2]	< =78.8	100	N/A
Reclaimed Water	660	56.4	< =22.4 [2]	< =78.8	100	N/A
Rail Haul	660	56.4	< =22.4 [2]	< =78.8	100	N/A
Alt. NFSA Location	660/ 51 [1]	56.4	< =22.4 [2]	< =78.8	100	N/A
Reduced Quantity	364	56.4	< =22.4 [2]	< =78.8	100	N/A

[1] Additional direct emissions will occur off of the Project site, which would result in emissions at the Alt NFSA locations that are much less than the proposed Project, so the modeled results are conservative

[2] Alternative not modeled, onsite emissions less than proposed Project so modeled results for proposed Project are conservative.

Table 3.1.7-19
SUMMARY OF PHASE 2 NO_2 MAXIMUM HOURLY MODEL RESULTS AT HIGHEST BOUNDARY RECEPTOR

Alternative	Daily Direct Onsite Emissions	Background Concentration	Direct Modeled Impact	Cumulative Total Impact [3]	Federal AAQS	State AAQS
Units	lb/day	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$	$\mu g/m^3$
Proposed Project	660	301	454	755	N/A	470
RNFSA	517	301	424	725	N/A	470
No Project	0	301	<=454 [2]	<=755	N/A	470
Alt. Batch Plant Loc.	660	301	<=454 [2]	<=755	N/A	470
Reclaimed Water	660	301	<=454 [2]	<=755	N/A	470
Rail Haul	660	301	<=454 [2]	<=755	N/A	470
Alt. NFSA Location	660/ 51 [1]	301	<=454 [2]	<=755	N/A	470
Reduced Quantity	364	301	<=454 [2]	<=755	N/A	470

[1] Additional direct emissions will occur off of the Project site, which would result in emissions at the Alt NFSA locations that are much less than the proposed Project, so the modeled results are conservative.
[2] Alternative not modeled, onsite emissions less than proposed Project so modeled results for proposed Project are conservative.
[3] While the cumulative impact exceeds the state one hour standard when background concentrations are added, the Project has been determined to be consistent with the AQMP, and conform to the SIP (see Appendix E-6) and will require permits from the SCAQMD.

3.1.7.4 Unavoidable Significant Adverse Effects

Although the proposed mitigation measures will reduce both exhaust and dust emissions to the maximum extent feasible, when summed for the overall Project, the residual impact is expected to remain significant for NO_x and PM-10 emissions for Phase 1 and NO_x, ROG, and PM-10 emissions for Phase 2.

Although TMC has included the use of covered conveyor transfer points, spray bars to keep the material moist, and the use of negative pressure and fabric filters to control fugitive emission points, Phase 2 emissions for the rock plant will increase. Prior to Phase 2 operations, TMC will take the necessary steps to modify both the operation and SCAQMD permits to allow for greater production rates.

3.1.7.5 Federal Conformity

Federal law requires that a Federal lead agency for a project is required to make a "determination" that the Federal action in question "conforms" to the applicable state implementation plan (SIP) prior to the commencement of any work on the action. 40 CFR§93.150(b). The Supplemental Draft Environmental Impact Statement (SDEIS) prepared for the BLM (November 1999) contains a draft conformity analysis prepared pursuant to the requirements of 40 CFR§93.150 et seq, (see Appendix E5 of this document). The BLM has reviewed comments received on the draft conformity analysis as required by this provision, and has responded to those comments in Appendix E6, Final Conformity Determination. The state agencies responsible for the SIP, the South Coast Air Quality Management District (SCAQMD) and the Southern California Association of Governments (SCAG), have provided the requested determination and supporting documents.

It should be noted that this conformity determination is separate from the requirements of both NEPA and CEQA. Conformity determinations are based on overall direct and indirect emissions of a project in relation to the emissions budgets set forth in either a state or federal implementation plan. Accordingly, there is no requirement that the conformity determination be presented in either the EIR or the EIS process. However, the conformity determination has been included in the EIS documentation for this Project in order to streamline environmental review.