SUMMARY

S.1 INTRODUCTION

This Environmental Impact Statement (EIS) provides an analysis of the environmental impacts associated with the Soledad Canyon Sand and Gravel Mining Project ("Project") in Los Angeles County (County), proposed by Transit Mixed Concrete Company (TMC), a division of Southdown, Inc. The EIS provides documentation of potential short- and long-term environmental impacts of the Project and serves as an agency decision-making tool for Project approval.

The majority of the Project site is a "split estate" with the mineral resources owned by the United States of America and administered by the U.S. Department of Interior, Bureau of Land Management (BLM). Accordingly, the decision to allow mining of the federal minerals is a "federal action" requiring federal environmental review pursuant to the National Environmental Policy Act (42 USCA [United States Code Annotated] §§4321-4347; NEPA).

In 1989, the BLM prepared an environmental assessment in accordance with NEPA to analyze the impacts of the proposed sand and gravel sale. The BLM issued a Decision Record approving the sale with a Finding of No Significant Impact (FONSI) statement. In issuing the FONSI, the BLM also committed to analyze the impacts of the project operations (Mining and Reclamation Plan) at a later date.

Because the Project must comply with the California Surface Mining and Reclamation Act of 1975 (SMARA), and the federally owned subsurface mineral resources are administered by the BLM, the County and BLM are both responsible for analyzing and approving a Mining and Reclamation Plan (1997) in compliance with SMARA, and the Code of Federal Regulations. The County has decided to conduct a separate state environmental review process through the preparation of an Environmental Impact Report (EIR) that complies with the California Environmental Quality Act (CEQA).

Due to the potential impact on the federally listed endangered unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*), the BLM has taken the lead for compliance with the Endangered Species Act of 1973, as amended, and has conducted formal consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the act. The results of the USFWS Biological Opinion, which is a non-jeopardy opinion, will be incorporated into BLM's Decision Record on the Project.

The Project is also subject to the jurisdiction of other federal, state, regional, and local agencies, including the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), California Department of Conservation - Division of Mines and Geology (CDMG), California Regional Water Quality Control Board - Los Angeles Region (CRWQCB), State Water Resources Control Board (SWRCB), various departments within the County, South Coast Air Quality Management District (SCAQMD), and local fire departments.

A Draft EIS (DEIS) was released for public review on May 6, 1999, followed by a Supplement to the Draft EIS (SDEIS) released for public review on November 19, 1999. The comment period for these two documents closed on January 10, 2000. In the SDEIS, the BLM identified its Agency Preferred Alternative (APA), pursuant to the requirements of NEPA. 40 CFR 1502.14(e) This APA is the Reduced North Fines Storage Area (RNFSA) Alternative, with conveyor mitigation. An expanded description of the RNFSA Alternative has been included in Section 3.2.14 of this FEIS.

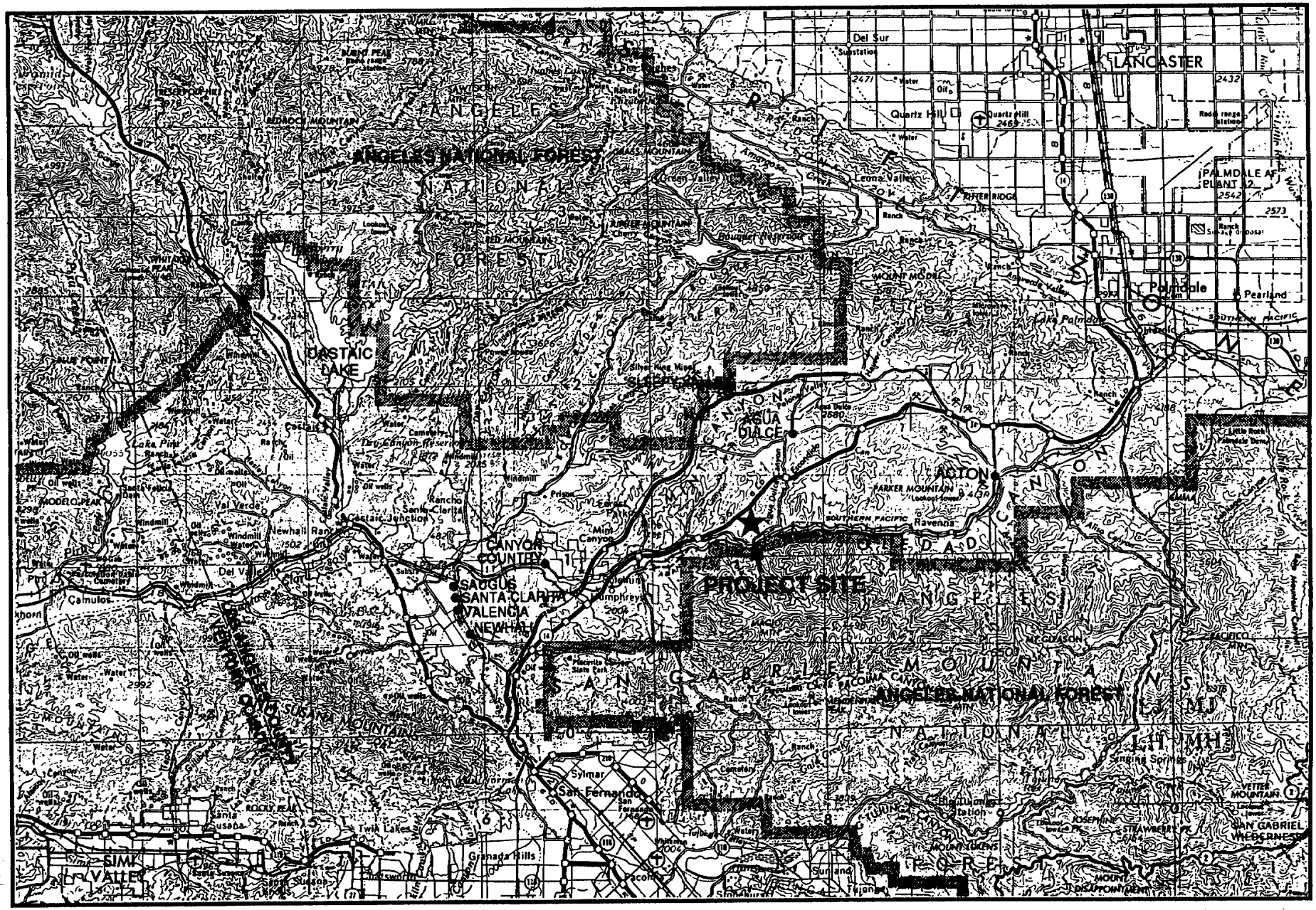
S.2 PROPOSED ACTION AND ALTERNATIVES

S.2.1 Proposed Action

The Applicant has entered into contracts with the BLM (Federal Contracts) to mine the federally owned minerals on the site pursuant to the Applicant's winning bid submitted in response to a court ordered public competitive bid process conducted by the BLM, as required by the federal Minerals Act of 1947. This public competitive bid process was conducted pursuant to an ordered stipulation for compromise settlement of United States of America v. Canyon County Enterprises, Inc. et al., CV 86-535-BAR (JRx). Pursuant to these Federal Contracts, the Project includes plans to mine a total of 83 million tons of material and produce and sell approximately 56.1 million tons of sand and gravel, also known as Portland cement concrete sand and gravel (PCC aggregates), over a 20-year period. The Project includes plans to ship PCC aggregates to markets within the greater Los Angeles area and operate a concrete batch plant to produce and deliver ready-mixed concrete to the local market.

The site for the proposed mining operation is located north of the City of Los Angeles in Soledad Canyon in Sections 9 and 16 of Township 4 North, Range 14 West; San Bernardino Base and Meridian (Figure S-1). The location is within an unincorporated area of the County north of Soledad Canyon Road, south of the Antelope Valley Freeway, and west of Agua Dulce Canyon. Portions of the site have been mined by prior sand and gravel operators since 1968. The County issued a conditional use permit (CUP) for mining sand and gravel in 1972 that expired in 1992.

For purposes of analysis, the Project site has been divided into two areas (Areas A and B) based on land use and land ownership. The surface mining operation will be conducted within the 460 acres of Area A, for which the United States holds the mineral ownership. As a "split estate," the mineral estate is dominant and the mining operator is entitled to occupy as much of the surface as it needs for purposes reasonably incident to mining or related mining activities, and the surface estate owner is precluded from interfering in any way with the mining operation (Federal Stock-Raising Homestead Act). The Project processing facilities will be located primarily within the 40 acres of Area B. All proposed mining and operations will be located north of Soledad Canyon Road and the Santa Clara River. Water resources will be developed in Area B and southwest of Area B, both owned by the C.A. Rasmussen Company and presently under a nonexclusive lease by TMC.



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Source: USGS 1:250,000 series, Los Angeles, CA

REGIONAL LOCATION
Figure S-1

The principal material to be mined will be the Vasquez Conglomerate, which can be divided into the "lower unit" Tvl and the "middle unit" Tv2. A higher proportion of good-quality sand and gravel is located in the unit identified as Tvl, which is overlain by unit Tv2. It is estimated that 70 percent of the Tvl material and 45 percent of the Tv2 material can be sold as product. Therefore, to produce 56.1 million tons of aggregate product, it is estimated that 82.7 million tons of materials will be mined, up to 13.2 million tons of fines will be backfilled into the mined-out areas of the quarry, 12.9 million tons of fines will be stockpiled in the North Fines Storage Area (NFSA), and 0.5 million ton may be trucked offsite in the early years of operation (years 1 to 3).

Based on the maximum mining production (56.1 million tons), the resultant modification to the landform would result in lowering the peak ridge elevation from approximately 700 to about 500 feet above Soledad Canyon Road. Several existing ravines on the north side of the ridge will be filled, resulting in a relatively smooth hillside with relief added to provide a more natural appearance. TMC will recontour and revegetate disturbed ground surfaces, returning the site to an open space condition. Reclamation of the site for TMC's mining impacts has already been guaranteed by TMC through posting a bond with the BLM and state and County governments.

TMC's general mining plan for the site includes preproduction activities, two phases of mining activity, and reclamation activities, as summarized below.

Mine Preproduction Activities. Preproduction activities will include preparing the site for the commencement of mining activities. Preproduction will involve stabilizing the steep slopes of the existing quarry at the southeast corner of the site and constructing the desilting and debris basins at the base of slopes draining the mining area and NFSA. Where it is reasonably feasible, the mining areas will be prestripped with topsoil salvaged as practical. During preproduction, roadways and other site facilities, such as the aggregate processing areas, batch plant, truck facilities, water facilities, office, and parking facilities will be constructed.

Mining Operations. The concept plan of mining cuts (Concept Plan) includes excavation of the deposit in four successive cuts to produce up to 56.1 million tons of aggregate product. Product will be excavated using periodic blasting and heavy excavation equipment. Material will be transported over the site to processing areas using both off-road trucks and conveyor systems. Material will be processed via onsite rock crushers and screens, and then temporarily stockpiled until transported offsite in trucks as either aggregate product or ready-mixed concrete. The excess fines screened at the primary crusher feed will be temporarily stacked on the operating bench and then loaded into off-road trucks and/or earthmoving equipment and moved to the NFSA. The Project would operate 7 days per week with aggregate processing occurring up to 16 hours per day and product shipping occurring 24 hours a day, depending on demand. However, actual mining of material would occur 6 days per week. Phase 1 of the Project includes the first 10 years of the Federal Contracts and Phase 2 includes Project years 11 through 20.

Site Reclamation. The Mining and Reclamation Plan for the Project provides measures to minimize adverse environmental effects of surface mining and return the land to a beneficial end use. The plan includes reclamation processes that are concurrent with mining operations to

minimize adverse effects of surface mining and occur at the end of mining to return the land to a beneficial use. Revegetation of the NFSA will be a concurrent permanent reclamation process as the area is filled.

S.2.1.1 Purpose and Need

The purpose and need for the Proposed Action are as follows:

- provide a reliable and economically sound source of construction minerals primarily for the Santa Clarita Valley and greater Los Angeles area,
- develop construction mineral reserves in the Saugus-Newhall Production-Consumption (P-C) Region in an area designated as a Regionally Significant Construction Aggregate Resource Area by the State of California,
- develop a source of ready-mixed concrete for the Santa Clarita Valley,
- mine the Project site to produce 56.1 million tons of PCC aggregates and provide, at a minimum, $28 million in royalties to the Federal Government in accordance with the Federal Contracts, and
- provide for the environmentally sound and economically feasible reclamation of the site.

S.2.1.2 Project Objectives

Existing aggregate reserves for the Los Angeles County P-C Region, which includes the Saugus-Newhall, Palmdale, San Gabriel Valley, and San Fernando Valley P-C Regions, will be depleted over the next several years. When the existing aggregate reserves are depleted, the Los Angeles market will become dependent on reserves from more distant production locations. Limited recycling of aggregate occurs, but recycling does not represent a significant source of construction material because quality problems with the recycled material preclude its use in many construction applications. For example, California Department of Transportation (Caltrans) specifications forbid the use of recycled aggregate in PCC for its projects (California Department of Conservation 1985, Caltrans Standard Specifications 1996).

Because aggregates are a low value-to-weight commodity, transportation costs determine whether a particular quarry or production location is competitive and/or profitable for a given market. It is generally agreed that as regional reserves are depleted, regional costs of sand and gravel will increase. Because public agencies are the primary purchasers of aggregate products, increased costs associated with bringing materials from distant production locations will be passed on to the taxpayers.

The CDMG monitors consumption of aggregate reserves in six separate aggregate P-C regions within the County. Among the conclusions presented by the CDMG in its 1994 update report are the following:

- The CDMG estimates that the current sand and gravel reserves in the County will run out by the year 2016 unless new reserves are permitted. Actual County consumption for the period from 1982 to 1992 exceeded estimates for the period by 24 percent.

- In the Saugus-Newhall P-C Region, demand for aggregates was approximately 13.6 million tons for the 1982 to 1994 period. This was nearly 48 percent more than projected. The increase in demand over that projected is attributed to greater-than-anticipated population growth.

- The CDMG estimates that the reserves in the San Fernando Valley region will be depleted by the year 2001. As this occurs, the San Fernando Valley region will become increasingly dependent on the Saugus-Newhall and San Gabriel Valley regions to meet its needs. The combined reserves of these three areas is about 543 million tons, and the combined consumption is about 90 percent of the total for the County. Reserves in the Saugus-Newhall and San Gabriel Valley regions could be depleted by the year 2016 and 2009, respectively.

Given the lead time required to bring a new mine on-line (approximately 6 to 9 years), it seems prudent for an agency to maintain at least a 20-year supply of aggregates. The Project will contribute about 56.1 million tons (or about 6.6 percent) of the 845 million tons of aggregates needed to maintain a 20-year supply for years 2015 to 2034.

S.2.1.3 Contract Royalties

The Federal Government, through a public competitive bidding process and the Federal Contracts, has granted TMC the right to produce 56.1 million tons of sand and gravel in Soledad Canyon. TMC agreed to pay the Federal Government $28,000,000 in royalties. According to a letter written to the Local County Agency Formation Commission (LAFCO) by the BLM, 76 percent of these royalties ($21,280,000) will go to a Federal Land and Water Reclamation Fund for projects such as enhancement of wildlife habitats/preserves and recreation. In addition, 4 percent of the royalties ($1,120,000) will go to the State of California, and half of those receipts ($560,000) will be refunded to the County (BLM letter to LAFCO, January 15, 1993).

S.2.1.4 Environmental Consequences and Mitigations

The following sections summarize the issues for each environmental resource. The environmental effects, mitigation measures, and residual impacts for each resource are presented in Table S-1 at the end of this section.

Geotechnical Resources

Topography of the Project site is characterized by moderate to steep slopes. A portion of the site contains surface disturbance from a previous mining operation. The proposed surface mine and mining fines storage areas will alter the landforms in the Project area. All mining cuts and slopes will be constructed or graded for stability and erosion control. Slope stability analysis has shown that mining cut slopes will achieve a suitable factor of safety, assuming a maximum probable earthquake of 7.1M along the Mojave segment of the San Andreas Fault. For fill slopes such as the NFSA, slope stability analysis indicated a less-than-acceptable factor of safety. Mitigation measures stipulating final slope configuration, proper surface compaction, and use of specific soil materials will provide a suitable factor of safety. The unreclaimed high walls remaining from the previous mining operation will be stabilized as the Project is established on the site. The proposed mine will be monitored throughout the life of the Project by a California registered civil engineer or certified geologist. The mine operator (TMC) will maintain all records of correspondence, reports, and designs provided by the registered professionals. Mined areas will be reclaimed through grading and revegetation according to the Reclamation Plan designed for the Project. Supplemental slope stability evaluations for the final slope configurations at the completion of mining were completed, and recommendations for reduced slope angles have been incorporated into the Project. No significant impacts will remain after implementation of the Project Mining and Reclamation Plan.

Water Resources

The Proposed Action would divert water from the underflow of the Santa Clara River. The State of California has enacted a comprehensive regulatory framework in the California Water Code and implemented regulations through which the SWRCB allocates, regulates, and otherwise controls the use of surface water throughout the State, including within the Santa Clara River. The SWRCB has not determined the Santa Clara River to be fully appropriated and thus continues to accept applications to appropriate surface water. TMC has an application to appropriate water pending before the SWRCB that is senior in time and right to any other application pending before the SWRCB in that reach of the river.

The Project is located in the Acton Valley Subunit near the boundary of the Eastern Subunit of the Santa Clara River Valley hydrologic unit. Precipitation is the primary source of water in the Acton Valley Subunit, and although the annual and seasonal precipitation varies, the aquifer recharges quickly regardless of the annual precipitation amount. Water resources are developed from recoverable water retained in stream terraces and the Santa Clara River alluvium. Due to the correlation between known precipitation and actual streamflow, sustained flows during the fall can be predicted based on measured precipitation levels.

The Eastern Subunit comprises a larger area than the Acton Valley Subunit. Water resources in the Eastern Subunit include development of alluvial sediments of the Santa Clara River and development of the Saugus Formation. Neither the Acton Valley Subunit nor the Eastern Subunit is projected to be in danger of overdrafting the respective water resources. The Project is downstream of the communities of Acton and Agua Dulce; therefore, no impacts on water resources to these communities will occur. In the immediate site vicinity, the Santa Clara River flows through a narrow alluvium-filled channel with an underflow occurring even in drier years. Local sensitive ecological habitats occur adjacent to and downstream of the site. No impacts were identified relative to local water users or regional water resources due to the Proposed Action's projected water use; however, uncontrolled pumping of subsurface flows would result in significant impacts on local sensitive ecological habitats during the dry months of dry years. Measures to protect the local sensitive ecological habitats include a habitat protection plan and reduction or cessation of pumping, if necessary. All water resource impacts have been mitigated to less than significant.

Flood

Average rainfall near the Project site is projected to be 14 to 15 inches per year. The site drains to the Santa Clara River. The Project mining operations and facilities are located outside of the Federal Emergency Management Agency (FEMA) Zone A 100-year floodplain of the river and outside of the County Capital Floodway boundary. The potential for erosion and sedimentation from mining areas is a significant adverse impact of the Project. Mitigation of this impact will be accomplished by installing desilting/debris basins, which will exist through the life of the Project to provide control of surface runoff and erosion. The desilting/debris basins will be maintained per specifications in the Project Storm Water Pollution Prevention Plan (SWPPP). Other design measures to control runoff and erosion during premining operations include V-ditches, onsite and specific offsite culverts, drop inlets, and drainage pipes. Impacts from surface runoff from the site will be mitigated to less than significant through these Project mitigation measures.

Water Quality

Both surface and subsurface water quality in the immediate area of the site is considered to be good by the CRWQCB. Three potential sources of water quality impacts may occur onsite: premining and construction activities, mining and processing operations, and mining reclamation.

Three plans have been prepared and will be implemented to mitigate any water quality impacts and assure continued good water quality of the Santa Clara River surface water and groundwater. The Drainage Concept Plan depicts desilting/debris basins to be constructed to avoid and prevent impacts because of increased rates of erosion. The SWPPP describes in detail specific best management practices to reduce pollutants in stormwater discharge. The Spill Prevention, Control, and Countermeasures Plan (SPCCP) identifies procedures and controls that will be implemented over the life of the Project to prevent the release of petroleum and hazardous materials. These three plans will be implemented to control runoff from the site and mitigate potential impacts that could occur from sedimentation or chemical spills to less-than-significant levels.

Noise

The Project site is characterized by mountainous terrain; it is surrounded by mountains that essentially shield the site from any developed areas or residents. The closest residence is located approximately ¼ mile south. Noise sources at the site include natural sounds and manmade sounds from Soledad Canyon Road, trains, aircraft overflight, and concurrent mining operations. The Project is expected to increase noise in the immediate site vicinity. Short-term construction noise will be most heavily concentrated in the area of preproduction operations, while the long-term noise increase will be due to noise created by periodic blasting, heavy mining equipment, increased traffic from truck deliveries to and from the site, and commuter traffic. The long-term noise from operations is significant because some receptors will be subjected to noise levels in excess of 65 dBA expressed as the community noise equivalent level (CNEL). However, because of distance and intervening topography, no significant noise impact on the town of Agua Dulce is predicted. Mining activities will require periodic low-yield blasting to aid excavation. The impacts of vibration due to blasting are less than significant with respect to potential damage to residential structures near the site; however, blast noise and vibration will be audible and perceptible within about ½ mile of the blasting location.

To reduce the increased noise to less-than-significant levels, several measures will be implemented. A soundwall will be built near the River's End Trailer Park to reduce noise due to traffic increases. Berms or cut slopes can also be used to reduce noise exposure to the proposed Bee Canyon Mobile Home Park, if constructed. Blasting will be governed by a Blasting Plan approved by the County and incorporating a public awareness program to inform the local population that blasting will take place during specified hours and under appropriate atmospheric conditions. To mitigate noise and vibration impacts, a restriction on the maximum velocity for vibration and airblast overpressure at nearby receptors will be implemented (i.e., 0.5 in/sec particle velocity for vibration and 133dBL air overpressure based on Office of Surface Mining Reclamation and Enforcement (OSMRE) standards). A monitoring plan for blast-induced ground vibration and air overpressure will be implemented to ensure that performance standards are not exceeded.

Public Services

Fire protection services are provided by the Los Angeles County Fire Department and include three engines, a patrol, and a paramedic squad within 30 minutes of the Project site. The County also maintains a mutual aid agreement with the U.S. Forest Service for fire protection. Typical impacts associated with mining operations include sparks from equipment, storage of fuels, and possible use of explosive materials in a high-fire potential area. No explosives will be stored onsite, and explosives will be used only by an authorized outside contractor. Removal of vegetation in active mining areas will reduce the fire hazard onsite. Fire prevention training will be provided to employees, and fire prevention equipment will be available. A 600,000-gallon onsite water tank will be used to fight fires in an emergency; additionally, earthmoving equipment and manpower are available to aid in fire suppression. Any potential impacts will be mitigated to less than significant, and no additional public services will be required by the Project.

Air Quality

Climate in the Project vicinity is characterized by hot summers and mild winters, infrequent rainfall, moderate afternoon breezes, and generally fair weather. Daily regional airflow brings polluted air from the heavily developed portions of the Los Angeles Basin into the Project area late in the afternoon from late spring to early fall. This condition creates unhealthful air quality and diminishes the scenic vistas of the mountains surrounding Antelope Valley. The Proposed Action will generate significant amounts of exhaust emissions and fugitive dust from construction, mining operations, and increased offsite traffic. Nitrogen oxides, reactive organics, and PM-10 exceed SCAQMD thresholds in Phases 1 and 2. No microscale CO impacts are projected. Measures will be implemented to minimize air quality impacts. Fugitive dust will be minimized by utilizing a conveyor system to the NFSA, active watering, appropriate filtering (rock and sand processing), broom-truck sweeping, and dust suppressants. Air pollution increases due to heavy equipment and vehicle travel will be minimized by using ARB/EPA-certified engines, maintaining equipment in low-emission condition, using low-emission machinery and fuels, eliminating long idling periods by turning equipment off and utilizing various tracking practicies (i.e., 24-hour trucking to reduce emissions effects). During periods of high ambient pollution (i.e., Stage II smog alerts or high winds), construction will be curtailed or ceased. However, even after mitigation, impacts on air quality remain significant. With respect to CEQA, however, the proposed project has been determined to conform to the applicable air quality management plans.

Biota

The Proposed Action would result in the removal of 187 acres of natural vegetation on the 500-acre site over the 20-year life of the Project. The vegetation communities that would be involved include mixtures of coastal sage scrub, desert chaparral, and mixed chaparral. Four sensitive plant species have been found in the NFSA since a 1994 fire. Seeds will be collected and incorporated into the reclamation effort to mitigate any potentially significant impacts on sensitive species to less-than-significant levels. The habitats onsite support a wide variety of wildlife, and the loss of these habitats will be mitigated to the greatest extent possible by reclamation and revegetation. Potential impacts on these species could occur if the species were present onsite in substantial numbers. However, no sensitive wildlife species were observed onsite during surveys conducted between 1990 and 1995. Habitat that could support several sensitive species, including the San Diego coast horned lizard, coast patch-nose snake, and coastal rosy boa, is present mainly outside of the mining area. Moderate potential exists for the coastal western whiptail to occur onsite, but no individuals were found. Potential impacts on the coastal western whiptail would be mitigated to less-than-significant levels through implementation of the proposed component of the Mining and Reclamation Plan.

Approximately 23 acres of riparian habitat occur adjacent to and downstream of the site in the Santa Clara River channel. This reach of the river is part of the essential habitat of the endangered unarmored threespine stickleback (stickleback) fish. A Federal Biological Assessment (1996) was prepared to analyze the impacts of the Proposed Action on biological resources, including the stickleback. Potential impacts on the riparian habitat and the essential habitat of the stickleback could occur from the Project through uncontrolled surface runoff and

uncontrolled pumping of the river underflow. Project design measures for controlling surface runoff from the site will mitigate potential impacts from this source. Measures to protect the riparian habitat and the essential stickleback habitat from uncontrolled pumping of the river underflow will include implementation of the Habitat Protection Plan. The plan includes habitat monitoring and action levels that will result in modification to mining operations to reduce or cease pumping of river underflow when necessary. Potential significant impacts on sensitive fish and riparian habitat are mitigated to less-than-significant levels through implementation of the Habitat Protection Plan.

Cultural Resources

One historic archaeological site (a trash scatter) exists on the site but will not be disturbed by Project activities. The historic archaeological site should be fenced under the direction of an archaeological monitor to assure that the site is not disturbed. Future testing and data recovery may be required if future construction requires site disturbance.

Visual Qualities

The Project is located mainly on the south side of a visually dominant ridgeline that separates Soledad Canyon from the Antelope Valley Freeway. The landform will be altered significantly by the proposed mining operation because of changes in form, line, color, and texture. Some of the effects of landform change will be reduced by reclamation and revegetation of the engineered slopes and resloped roads immediately after mining activity has ceased in a particular area. The Proposed Action will reclaim previously mined areas on the southeastern portion of the site that would otherwise be left in their present disturbed state because no reclamation has occurred. Even so, permanent landform alteration will occur as a result of this Project. Even after recontouring and revegetation of the site, significant impacts will remain to views of the site from the Antelope Valley Freeway, Bee Canyon, and Soledad Canyon Road.

Night-lighting in the processing and operations areas of the site will be provided. No permanent lighting will be provided on the NFSA. The lighting provided will not be a source of annoyance to surrounding properties. However, the amount of lighting provided is less than one-half the amount provided by streetlighting alone for an equivalent acreage of residential development. The Project's source of lighting will add to the amount of indirect light pollution or urban glow that may be observed in rural communities. The impact is considered potentially significant although it is incremental. The Project will incorporate modern light systems that direct lighting to specific areas of the site and prevent stray lighting from spilling over onto adjacent properties.

Traffic

The Project site will be accessed most frequently from the Antelope Valley Freeway by the Soledad Canyon Road interchange and the two-lane, east-westbound Soledad Canyon Road. Traffic impacts of the Proposed Action were assessed using the 1997 County Traffic Impact Analysis Guidelines. Based on the level of service (LOS) analysis, both Soledad Canyon Road and Agua Dulce Road operate under primarily free-flow conditions where drivers can maintain their desired speeds with little or no delay (LOS A) during a.m. and p.m. peak hours. The Project will generate 754 average daily traffic (ADT) in Phase 1 and 1,284 ADT in Phase 2, the

majority of which is truck traffic and no impacts will result. Additional examination of the easternmost segment of Soledad Canyon Road by the County Department of Public Works, Traffic and Lighting Division concluded that the easternmost segment of Soledad Canyon Road operates at LOS D under existing a.m. peak hour conditions, resulting in a significant cumulative projects impact with and without the Project. Mitigation for this roadway segment is discussed below.

The analysis shows that the Proposed Action will not significantly impact study area intersections under Phase 1 or Phase 2. Under both phases, the Soledad Canyon Road/Antelope Valley Freeway northbound and southbound ramp intersections will be significantly affected with or without the Proposed Action if the other cumulative projects are developed. Both northbound and southbound ramps intersections meet signal warrants for Phases 1 and 2 with cumulative projects. Also, potentially significant safety impacts are associated with trucks merging to and from Soledad Canyon Road at the Project entrance.

The County is requiring mitigation measures that include widening and modifying the easternmost segment of Soledad Canyon Road to provide two through lanes and one exclusive right turn lane. For the Soledad Canyon Road Antelope Valley Freeway intersection, improvements to the north and southbound ramps and traffic signal controls will be required to achieve an acceptable LOS with or without the Proposed Action if cumulative projects are developed. Based on County guidelines, as per agreement with the County, the Project will contribute its fair share of the costs of these improvements.

Several additional measures will be implemented to reduce traffic hazards to a less-than-significant level. The access road to the Project site at Soledad Canyon Road will be designed for safe entry and exiting, including a merge lane for westbound traffic exiting the facility and a turn pocket for eastbound traffic entering the facility. Beginning in Phase 2, and based on a revised Traffic Index analysis, the Applicant will contribute fair-share costs to add pavement to Soledad Canyon Road affected by cumulative pavement wear.

Land Use

In addition to local land use policies, activities at the Project site are governed by state and federal policies. State regulations governing mining activities at the site include those established by the SMGB as well as those implementing SMARA. SMARA provides a two-tiered process of mineral lands inventory and evaluation termed "classification-designation" that serves as a means of identifying and conserving important mineral resources. In 1987, following a public hearing and environmental review process in which the County participated, the Project site was designated by the state as a "Regionally Significant Construction Aggregate Resource Area." All cities and counties are required to incorporate Regionally Significant designation information into their General Plans. Lead Agencies must adopt statements of policy, recognizing the importance of these identified mineral resources, and they must develop implementation procedures. These procedures may include imposition of conditions upon incompatible land uses in and adjoining designated areas in order to mitigate significant land use conflicts before an agency permits a use that would otherwise be incompatible with mineral

extraction. Because the TMC Project site is zoned by the County for heavy manufacturing use, in which mineral extraction is allowed, no potential impacts on land use were identified.

While the County General Plan does specifically identify policies to protect known mineral resource reserves from encroachment of incompatible land uses, the Santa Clarita Valley Area Plan, as updated (1990), allows for consideration of a mobile home park through approval of a Specific Plan in the Bee Canyon area adjacent to the Project site. A proposal currently before the County involves a mobile home park in Bee Canyon that could result in a use that is considered to be incompatible with the adjacent, designated Regionally Significant minerals on the Federal Contracts area.

Because the Project site has been designated as Regionally Significant for mining since 1987; is zoned by the County for heavy manufacturing use in which mineral extraction is allowed; has been subject to a previous mining operation including a previous County-issued CUP for mining, processing, and stockpiling of aggregate; and is surrounded by sites zoned either for heavy manufacturing or agricultural use, no significant adverse impacts on adjacent land use by the Project have been identified. If the Bee Canyon mobile home park project goes forward and that site is eventually rezoned to allow for residential development, an incompatible adjacent use would be created; therefore, potential impact on the designated area would occur through the rezoning.

Public Health and Safety

Public health and safety issues are minimized because current access to the Project site is limited by terrain and current mining operations. Potential impacts will be eliminated by implementation of the Spill Prevention, Control and Countermeasures Plan (SPCCP), the Mine Safety and Health Act (MSHA), Occupational Safety and Health Administration (OSHA) regulations, Forest Service Best Management Practices (BMPs), and all applicable County fire codes. No significant impacts will occur with implementation of the stipulated plans.

Potential public health and safety issues related to air quality were examined and determined to be less than significant. Potential impacts with respect to conjunctivitis, pulmonary silcosis and valley fever are extremely low based on Project conditions and implementation of dust control measures. Potential impacts with respect to asthma are reduced to a level of non-significance through the implementation of air quality mitigation measures.

Unavoidable Significant Adverse Impacts

Even after mitigation, residual impacts on two environmental resources will still be considered significant. Impacts on regional air quality caused by dust and emissions from mining activities will remain. Visual impact will be significant, even after reclamation of the site, because of lowering the ridgeline and filling several ravines that are in the viewshed of the Antelope Valley Freeway.

Cumulative Impacts

Cumulative impacts are the environmental effects that could result from the Proposed Action when considering the combined effects from other existing or reasonably foreseeable future projects. NEPA guidelines require identification of impacts that are collectively significant, as well as recommended mitigation measures for the significant cumulative impacts. Many of the mitigation measures in the FEIS focus on general policies; however, TMC's role in implementing mitigations for cumulative impacts is limited to providing mitigation to reduce, minimize, and avoid its own project-specific impacts, and adhering to regional plans and procedures.

Regional and local plans and projects incorporated in the cumulative analysis include continuing and planned growth in the area and specific projects planned by other groups. In addition, potential mining of the Project site of up to 7.9 million tons beyond the 56.1 million tons proposed to be mined is included in the cumulative analysis, even though it does not constitute a part of the Proposed Action nor is it a separate, proposed activity. The primary environmental issues resulting from general growth plans mainly involve the conversion of land from natural open space to developed uses. The cumulative impacts of these projects, including the TMC Project, would affect many environmental resources within the area, potentially including geotechnical issues, water resources, water quality and flood issues, air quality, noise, public services, biota, cultural resources, visual quality, traffic, noise, land use, and public health and safety. The identified mitigation measures for the Proposed Action will assist to avoid, reduce, or offset cumulative impacts in the Project area.

S.2.2 Other Alternatives Considered

NEPA requires an evaluation of the comparative effects of a range of reasonable alternatives to the Proposed Action that would feasibly attain most of the Project's basic objectives. A feasible alternative is one that is practical or feasible from an economic and technological standpoint, based on common sense. Where the requirements or objectives of a project are very specific or limited in scope, the feasible alternatives are similarly limited. Furthermore, the range of alternatives is governed by the "rule of reason" that requires the EIS to set forth only those alternatives necessary to permit a reasoned choice. The discussion of alternatives should focus on comparing the alternatives and the Proposed Action to allow decision makers to make informed choices from the various options.

The above principles mandate that the range of feasible project alternatives to be evaluated be determined in relation to the purpose and need of the Proposed Action that, in this case, are very specific and limited.

S.2.2.1 Alternatives Considered in Detail

Six alternatives involving the Soledad Canyon site were considered in more detail. In addition, the alternative of "No Action" was assessed. The alternatives considered are as follows:

- **No Action Alternative.** This alternative would retain the Project site in its current land use, which includes an existing quarry and stockpiles. No further mining would occur onsite. There would be no approved reclamation plan or financial assurance for reclamation of the existing mining area onsite.

- **Reduced North Fines Storage Area Alternative (Agency Preferred Alternative).** An alternative to the Concept Plan of Mining Cuts (Optional Approach to Mining Cuts) has been developed that would reduce the extent of the NFSA. Although maintaining the basic mining plan, this approach would allow more and earlier storage of fines in the mine area and reduce the amount of fines going to the NFSA. This would be accomplished by rearranging the order of mining cuts to create more fines storage capacity in Cut 3 and decrease the amount of excess fines generated by mining less Tv2. The total product shipped would remain 56.1 million tons. With conveyor system mitigation for the NFSA, this alternative is the Agency Preferred Alternative.

- **Batch Plant Location Alternative.** This alternative examines locating the batch plant at an offsite location. Consideration was given to locating the batch plant near Lang Station, adjacent to the intersection of Soledad Canyon Road and the Antelope Valley Freeway about 1½ miles west of the Project site. This would require delivering aggregate to the plant by trucks rather than conveyor belts.

- **Reclaimed Water Alternative.** This alternative considers use of other water sources such as reclaimed water and imported water. The nearest existing potential sources of reclaimed water that could serve the Project are County wastewater treatment plants located in Palmdale, Saugus, and Valencia. Presently, no large-scale reclaimed water systems are known to be available in the Santa Clarita Valley. The Castaic Lake Water Agency is currently preparing a Reclaimed Water Master Plan that will encompass a large portion of the valley. However, it is presently unknown when and if suitable quality reclaimed water would be available for use by the Project.

  Water from the State Water Project is potentially available to the County through the Antelope Valley East Kern Water Agency. However, using imported water for habitat maintenance or for increases in habitat is potentially harmful to the unarmored threespine stickleback and other sensitive species because it contains a variety of detrimental predators, competitors, and parasites.

- **Product Transportation Alternative.** This alternative considers using the existing railroad for transportation of aggregate product from the site to the Los Angeles market. Transporting the aggregate product would require truck delivery of aggregate from a single rail distribution location in the Los Angeles region.

- **Alternative North Fines Storage Area Alternative.** This alternative considers a North Fines Storage Area within the area immediately north of the Project fines storage site, still adjacent to the Antelope Valley Freeway. All mining operations would remain the same as those of the Project.

- **Reduced Quantity Mining Concept Alternative.** This alternative examines a mining concept that would potentially reduce some significant environmental impacts of the Proposed Action by reducing the quantity of sand and gravel extracted from the site. Under this alternative, mining activity would progress in a manner similar to the Project for Cuts 1, 2, and a portion of Cut 3. Mining activity would be curtailed after completion of approximately 50 percent of Cut 3, which would avoid lowering the northeast-southwest ridgeline that occurs through the completion of Cuts 3 and 4 of the proposed mining plan. This alternative involves mining 47 million tons of material to produce 32 million tons of PCC aggregates. This alternative has been evaluated because of its potential to reduce visual, air quality, and transportation impacts.

Comparison of Alternatives Considered in Detail to the Proposed Action (TMC Project)

The analysis that follows provides a comparison of the alternatives considered in detail with TMC's proposed mining plan. The alternatives are further compared in Table S-2 included at the end of this section.

- **The No Action Alternative.** When compared to the TMC Project, the No Action Alternative was found to have less impact in all but two resource areas. The No Action Alternative has the potential to result in a greater potential for impact on flooding and water resources. Under this alternative, no mining is proposed to occur, and the site would remain in its present state as vacant land that includes an existing quarry mined by a previous operator. Because there would be no mining, there would be no approved plan or financial assurance for the reclamation of the existing quarry within the site. The existing quarries and stockpiles would not be recontoured, leaving some potentially unstable slopes in place, and the slopes would not be revegetated. The No Action Alternative would also not provide desilting/debris basins to mitigate site erosion and sedimentation impacts that exist presently onsite and would continue with no project. Also, existing conditions onsite may eventually result in potential adverse impacts on water quality and unarmored threespine stickleback habitat in the Santa Clara River due to the sedimentation from the unreclaimed quarry. Finally, without development of the TMC Project, there would be a significant reduction in regional reserves and possible significant regional economic implications in the ability to supply construction materials to the Santa Clarita Valley and greater Los Angeles area.

- **Reduced North Fines Storage Area Alternative.** This alternative would result in less environmental impact then the Proposed Action in three particular resource areas including biota, visual, and air quality. All other resource areas would be similar to or have slight reduction in impacts as compared to the Proposed Action.

  Because this alternative plan of mining cuts would result in a decrease in the amount of excess fines, 36 instead of 54 acres would be disturbed for the NFSA. Also, the NFSA would be disturbed in years 15 through 20 of mining operations instead of the entire 20-year period. The plan of mining cuts also lessens the extent of ridgeline lowering. While there will be less visual impact than the Proposed Action, impacts would remain significant.

The plan of mining cuts would reduce the quantity of material to be excavated to still produce 56.1 million tons of product. There would be a corresponding slight decrease in overall onsite activity including less onsite truck miles travelled, less water for dust control, and a reduction in air quality impacts. While there will be an approximately 28 percent reduction in onsite vehicle mileage, overall air quality impacts would remain significant for NO_X, PM-10, and ROG's.

- **Batch Plant Location Alternative.** By locating the batch plant west of the mining site, additional impacts would occur on traffic due to the additional distance traveled to the batch plant. However, the reduction in water requirements for the mining site from between 23 to 31 acre-feet of water could partially reduce potential impacts on water resources and sensitive biological resources. Slight reduction in impacts on air quality would result because the batch plant is already 1½ miles farther west and thus slightly closer to job sites. A slight reduction in impacts on visual resources would occur because the Lang Station site already has a batch plant on the premises, and another one would not be introduced on the Project site. However, these impacts would remain significant under the Batch Plant Location Alternative. The alternative batch plant location would increase impacts on traffic.

- **Reclaimed Water Alternative.** The Reclaimed Water Alternative could reduce impacts on local water resources. However, based on the means of transporting reclaimed water, other resource areas would have increased impacts such as the increased traffic, noise, and air quality impacts associated with trucking water to the site. Additional short-term impacts on biota, traffic, noise, and air quality would result from construction of a reclaimed water pipeline if a source could be found. Transporting reclaimed water would increase impacts on traffic, noise, and air quality caused by trucks or construction of a pipeline to the site.

  However, potential impacts on water resources and sensitive biological resources due to the TMC Project as presently planned can be mitigated to less than significant. The Reclaimed Water Alternative would create additional impacts and would not eliminate any of the Proposed Action's significant impacts that could not otherwise be mitigated to less-than-significant levels.

- **Product Transportation Alternative.** Use of rail for product transportation would decrease impacts associated with traffic and air quality at the site. Noise impacts on local sensitive receptors from additional train traffic would offset a decrease in truck traffic and would be significant. Additionally, truck trips would be required at the Los Angeles rail end point for final product distribution. These truck trips would cause associated impacts on traffic and air quality that would be significant. Therefore, the rail transportation alternative would decrease impacts associated with traffic at the site but would not reduce the air quality impacts to levels below less than significant because impacts on these resources would be transferred to the Los Angeles rail end point distribution. Air quality impacts would be reduced but would still be significant. This alternative product transport would simply transfer some impacts on other locations and would not reduce any of the Project's significant impacts to less than significant.

- **Alternative North Fines Storage Area.** The Alternative North Fines Storage Area results in several areas of impact that would be greater than those of the Proposed Action fines area including a greater use of water, more complex drainage requirements, and greater impacts on air quality, biota, and visual quality. Increased air quality and water usage impacts result from the further distances of haul truck travel. Biota and drainage impacts result from the features inherent in the proposed sites, including larger drainage areas, flowing water, and oak trees that would require removal. Visual impacts would be placed closer to the Antelope Valley Freeway, would be obtrusive, and would cover a greater surface area than the Proposed Action fines area. Both geotechnical and land use impacts are considered to be similar to or greater than the Proposed Action fines area. The level of impacts on resources under this alternative would either remain the same as the Proposed Action or be increased.

- **Reduced Quantity Mining Concept Alternative.** The Reduced Quantity Mining Concept Alternative would result in less environmental impact than the Proposed Action in three particular resource areas. Overall, this alternative would have less impact on visual resources due to the reduced amount of landform alteration needed to accomplish the concept. In avoiding completion of proposed Cut 3 to the west and eliminating Cut 4, lowering of the northeast-southwest ridgeline is avoided. Nonetheless, because of changes to form, line, and texture associated with the proposed North Fines Storage Area, the visual impacts would remain significant.

  With regard to air quality, this alternative produces 32 million tons of product, which is approximately 57 percent of the Project tonnage. Total air quality impacts over the 20-year mining period would be reduced by approximately 43 percent. However, peak daily operations would remain the same as the Proposed Action. Emissions on a day-to-day basis would remain significant for nitrogen oxide, PM-10, and reactive organic gases under Phases 1 and 2, and CO under Phase 2. The reduced tonnage of aggregates produced by this concept would also result in reduced truck traffic on Soledad Canyon Road over the 20-year mining period. However, on a daily basis, truck traffic could be as high as the Proposed Action. Other impacts under this alternative would be essentially the same as the Proposed Action. This alternative would generate 12.9 million tons of fines, 11.9 million tons of which would still need to be deposited in the proposed North Fines Storage Area. Impacts from drainage, including drainage and erosion control, would be the same as the Proposed Action. Peak water use and impact on water resources would be similar to the Proposed Action but would be less over the life of the TMC Project in proportion to the reduced amount of aggregate mined.

Determination of the Agency Preferred Alternative

NEPA requires identification of the agency's preferred alternative (APA) or alternatives in accordance with 40 CFR Section 1502.14e and BLM NEPA Handbook H-1790-1 (Chapter 5, Section B.2.b). In accordance with the BLM Handbook, the selection of the preferred alternative should be based on the environmental analysis as well as consideration of other factors that influence the decision or are required under another statutory authority. The BLM did not identify an APA in the DEIS; however the SDEIS identified the RNFSA Alternative in

combination with Mitigation Measure AQ3 as the BLM's APA. Accordingly, the RNFSA Alternative is included in this FEIS as the APA. An expanded description of the RNFSA Alternative has been included in Section 3.2.14 of this FEIS.

S.2.2.2 Alternatives Considered but Not Analyzed in Detail

The formulation of alternatives began with a regional search for a mining site that would provide a long-term, economically sound source of PCC aggregates primarily to supply the Los Angeles area. Alternative mining sites were examined as possible sources of sand and gravel prior to selecting the Project site in Soledad Canyon. Consideration of alternative sites was in part based on prior information from the following federal and state reports: (1) South Coast Proposed Resource Management Plan and Final Environmental Impact Statement (BLM 1992), (2) South Coast Resource Management Plan and Record of Decision (BLM 1994), (3) Mineral Land Classification of the Greater Los Angeles Area (CDMG 1979), (4) Mineral Land Classification of the Greater Los Angeles Area, Special Report 143 Part VII (CDMG 1983), and (5) Designation of Regionally Significant Construction Aggregate Resources in the Saugus-Newhall and Palmdale Production-Consumption Regions (CDMG 1985). Together, these documents provide broad-based regional planning information used to determine the feasibility of developing mining projects on potential alternative sites. The reasons that these sites were not further considered for mining or further analysis in this EIS include inability to obtain permits, excessive distance from the target market, excessive expense, and land use conflicts as further described below.

- **Western San Bernardino County.** Two potential mining sites north of Redlands in western San Bernardino County were determined to be infeasible primarily because of the inability to obtain permits. The sites are located in the Santa Ana River and Plunge Creek floodplains. Barriers to procurement of permits included the presence of state and federal endangered plant species and sensitive wildlife species in the area to be mined, as well as conflicting land uses. The lands are considered unavailable for mineral extraction because they have been designated by the BLM as Areas of Critical Environmental Concern (BLM 1992, 1994).

- **Northern Riverside County.** The sites near Corona in northern Riverside County were rejected because the material quality would not provide for the production of PCC aggregates. Additionally, development of the sites would directly impact the endangered Stephens' kangaroo rat. Therefore, these sites would not have provided an economically viable source of PCC aggregate construction materials.

- **Southern Orange County.** Two sites in southern Orange County off the Ortega Highway were rejected as alternatives to the Soledad site because of the questionable quality of the material and the significant distance from the target market. Because the sites are approximately 70 miles from the primary market, they would have high costs resulting from hauling the aggregate material as well as increased air quality impacts. Development of these sites would result in environmental impacts on sensitive habitats including coastal sage scrub, oak woodlands, wildlife movement corridors, and cultural resources. Additionally, the aggregate reserves in the Orange County-Temescal Valley

P-C Region are not sufficient to supply the Los Angeles area and its own needs without greatly accelerating the depletion of available reserves (CDMG 1983).

- **Antelope Valley.** A site near Littlerock in Antelope Valley was considered for the Project; however, this site was determined to be infeasible because of the distance from TMC's primary market. The Littlerock site is approximately 65 miles from the Los Angeles area, and this would result in additional costs to haul the material and increased air quality impacts. Other environmental concerns at the site included impacts on Joshua tree woodland and habitat for the state threatened Mohave ground squirrel, the federally listed threatened desert tortoise, Le Conte's thrasher, and the San Diego coast horned lizard.

- **Ventura County.** A site in Moorpark, which TMC ultimately acquired, was considered as an alternative for the Project. However, the Moorpark site has a high proportion of sand (88 percent) in relation to the gravel (12 percent) content of the aggregate material. In contrast, the Soledad Project site contains approximately 70 percent gravel. To meet the Project objectives to supply the greater Los Angeles area market with construction minerals, the Moorpark site could not produce enough gravel without mining excessive amounts of material. An excessively high production level would not result in a reliable and economically viable source of gravel for the Santa Clarita Valley and the greater Los Angeles area. Additionally, development of this site primarily for the Los Angeles market could accelerate depletion of Ventura County aggregate reserves.

- **Angeles National Forest.** A mining site in the Angeles National Forest was considered as an alternative to the Project site but was determined to be infeasible because the material quality was not proven to provide an adequate supply of PCC aggregates. There was also a lack of access to the general area and the site. Creating access to the site would involve cutting a road through forest land with loss of native habitat. Additionally, the site was not offered for mineral contract by the BLM.

Early in the planning phase of the Proposed Action, alternative concepts were considered for extracting the construction material and quantifying the amount of material that could reasonably be extracted from the site. In the original mining concept, feasibility and environmental factors were considered. This analysis is summarized below.

- **Original Mining Concept.** The original mining concept for the Soledad site consists of mining the entire ridge from the top down and removing up to 170 million tons of product versus the 56.1 million tons of product proposed under the current Project. Under the original concept, mining would consist of five phases over 20 years. This alternative would involve mining over three times the amount of product as compared to the Proposed Action. Accordingly, impacts on most resources, except land use, are expected to be incrementally greater. Implementation of mitigation measures similar to those proposed for the Proposed Action would also reduce impacts on these resources. However, even after mitigation, significant impacts would remain for air quality and visual resources, and an incremental increase in water usage would have resulted.

- **Disposal of Fines at Offsite Landfills.** This alternative considered fines disposal areas at regional landfills rather than onsite as with the proposed plan. Under this alternative, the fines would be disposed of as fill in existing or proposed regional landfills. This alternative was not considered further because air quality and traffic impacts associated with hauling fines to the landfills would be greater than the Proposed Action. Most landfills do not need fill material, and using landfills for fines disposal could be considered a significant impact on public services.

Table S-1
IMPACT AND MITIGATION SUMMARY TABLE

Environmental Impacts	Mitigation Measures	Residual Impact
Geotechnical		
1. The NFSA will significantly alter landform and may result in significant but mitigable impacts related to slope stability (see Mitigation Measures G1 and G4).	G1. Slope stability in the NFSA will be obtained by constructing 2:1 (horizontal to vertical) slopes at 75 percent relative compaction and compacting the outer 30 feet of material on the slope to 80 percent relative compaction. To mitigate the potential for surficial instability, the outer 10 feet of the proposed fill slopes will be constructed with a soil material having minimum strength characteristics of cohesion equal to 175 psf and angle of internal friction equal to 35 degrees or some other alternative soil strength combination that will result in the minimum factor of safety of 1.5.	Less than significant
	G4. To achieve suitable factors of safety for cut slopes, the following mitigation is presented. For the cut slopes at the northeast portion of the mining area, overall inclinations of the slopes will be flattened from 1.15:1 to 1.25:1. For the cut slopes at the far northeast portion of the mining area, the overall inclinations of the slopes will be flattened from 1.15:1 to 1.30:1.	
2. The Cut 3 fill area will significantly alter landform and may result in significant but mitigable impacts related to slope stability (see Mitigation Measures G2 and G4).	G2. Fill slope stability in the Cut 3 fill area will be obtained by constructing 2:1 (horizontal to vertical) slopes and achieving 75 percent relative compaction. Benches will be constructed at 15-foot-wide and 90-foot vertical intervals. To mitigate the potential for surficial instability, the outer 10 feet of the proposed fill slopes will be constructed with a soil material having minimum strength characteristics of cohesion equal to 175 psf and angle of internal friction equal to 35 degrees or some other alternative soil strength combination that will result in the minimum factor of safety of 1.5.	Less than significant
3. To avoid potential slope stability impacts on the near-vertical former mining area cut slopes, Mitigation Measure G3 will be implemented.	G3. Ultimately, the former gravel pit high walls will be altered to a 1.15:1 (horizontal to vertical) slope using 15-foot-wide benches at 100-foot vertical intervals. The bottom of the pit walls on the west, north, and northeast sides will be buttressed with fill to provide a buffer zone and increase slope stability.	Less than significant
4. Mining area cut slopes may result in significant but mitigable impacts relative to slope stability (see Mitigation Measures G4).	G5. Interim mining cuts will be constructed using 35-foot-wide benches over 35-foot elevational changes during the removal of the native material while controlling surface runoff and erosion.	Less than significant
5. Relative to mine safety and procedures, potentially significant operational impacts are avoided by standard conditions for regular monitoring and reporting of fill operations in compliance with the zoning code (see Mitigation Measures G6 and G7).	G6. The mining activity will be regularly monitored throughout the life of the Project by a California registered civil engineer or engineering geologist, and periodic testing of the fill materials will be performed to verify strength parameters of the fill soil and relative compaction. The mine operator will maintain all records of correspondence, reports, and designs provided by the registered professional.	Less than significant
	G7. Proposed mining and reclamation specifications and procedures will be in accordance with the County of Los Angeles Planning and Zoning Code, Title 22, Part 9, Chapter 22.56 Surface Mining Permits.	

Environmental Impacts	Mitigation Measures	Residual Impact
Water Resources		
1. Uncontrolled pumping of subsurface flows would result in significant impacts on local sensitive ecological habitats during the dry months of dry years unless anticipated through monitoring (see Mitigation Measure WR1).	WR1. TMC will conduct a monitoring program for water resources and sensitive ecological habitats in the immediate vicinity of the Project. The habitat protection program will include the following components: a. Four existing monitoring wells, as shown on Figure 3.1.2-5, will be maintained to monitor water levels of the Santa Clara River underflow during the life of the Project. b. Surface flows of the Santa Clara River will be monitored during the life of the Project at a location(s) to be determined in conjunction with responsible agencies prior to the start of mining. c. The riparian and aquatic habitat in the immediate vicinity of the site will be monitored as detailed in the Habitat Protection Plan presented in Appendix F6. d. The Habitat Protection Plan contains action levels that will trigger adjustments to mining operations to reduce Project water consumption to avoid significant degradation of the ecologically sensitive habitats attributable to the Project. Operational adjustments will include one or more of the following: ➢ seasonal sand and gravel production adjustments through stockpiling materials, ➢ seasonal management of concrete production, ➢ stockpiling fines temporarily to eliminate water used in the compaction process, ➢ increased use of dust palliatives for dust control, ➢ temporary reduction or cessation of pumping of river underflows, and ➢ cessation of mining operations, if necessary.	Less than significant
Flood		
1. Removal of existing vegetation will increase the rate of stormwater runoff, including an increase in the amount of sediment carried by runoff. Mining activity will change the size of the watershed drainage, increasing runoff in some areas and decreasing it in others such as the existing 30-inch culvert under Soledad Canyon Road (see Mitigation Measure F1).	F1. The Project will include construction of seven desilting/debris basins according to the specifications of the Drainage Concept Plan to control surface runoff and sedimentation. During final design, the Applicant shall submit detailed plans for the debris basins including a static and seismic slope study that analyzes all proposed debris basin slopes greater than 3:1 gradient. Plans shall be approved by the Department of Public Works prior to the commencement of grading work on the project.	Less than significant
2. The existing 36-inch culvert under Soledad Canyon Road is not adequate to pass projected runoff volumes (see Mitigation Measure F2).	F2. A 45-inch culvert will be installed under Soledad Canyon Road to accommodate existing runoff conditions as well as conditions for the Project. Construction of desilting/debris Basin 2E and the addition of the 45-inch-diameter culvert under Soledad Canyon Road are Project design features that result in beneficial impacts by correcting inadequate existing conditions.	Less than significant

Environmental Impacts	Mitigation Measures	Residual Impact
3. Potential impacts associated with maintenance of debris basins and flood water contact with hazardous materials are avoided by implementing Mitigation Measure F3.	F3. Proper maintenance and cleaning of erosion control facilities and desilting/debris basins will be conducted as part of the Project operations. Inspection frequencies and maintenance procedures are required by the SWPPP (see Appendix B1). These procedures are detailed in the Storm Water Management Practices section of that plan. The following provision will be added to the SWPPP: stormwater desilting/debris basins will be inspected after every storm event and every 24 hours during prolonged storm events. Prevention of spills of hazardous materials such as petroleum fuels and products is addressed in the SPCCP plan (see Appendix B2).	Less than significant
Water Quality		
1. Potentially significant water quality impacts may occur onsite due to premining/construction activities including grading and road construction that will increase debris flow and sedimentation downstream if uncontrolled during the rainy season. Surface/groundwater contamination from oil, grease, fuel, or dust palliatives is possible (see Mitigation Measures WQ1 and WQ2).	WQ1. The proposed Drainage Concept Plan will be implemented by TMC. The drainage concept establishes a drainage plan and facility requirements for the Project and provides the design parameters for the location, sizing, and scheduling of erosion control facilities to handle runoff, sedimentation, and debris flows generated by the Project. The plan addresses drainage during the premining road construction and grading phase, during the mining operation, and after completion of mining.	Less than significant
	WQ2. TMC will implement provisions of the SWPPP. The SWPPP identifies all potential sources of pollutants that will adversely affect stormwater discharges from the site and describes in detail specific BMPs to reduce the levels of pollutants in stormwater discharges. Key elements of the SWPPP include a preventive maintenance program for vehicles and the stormwater conveyance systems, a system of good housekeeping measures to control contamination of runoff, and a system of desilting/debris basins designed for settling out excess suspended sediments in the site runoff, thus controlling downstream sedimentation.	
2. Mining and processing operations could produce hazardous waste spills. Dust suppressants could be hazardous in large quantities and leach into the soil (see Mitigation Measure WQ3).	WQ3. TMC will implement provisions of the SPCCP. Use of secondarily contained aboveground storage tanks to hold dust palliative, diesel fuel, waste oil, fresh motor oil, and hydraulic fluid onsite will minimize exposure of these products to surface water and groundwater. As previously stated, the risk of undetected leaks is much smaller with above storage tanks (ASTs) than with underground storage tanks (USTs). Additionally, the SPCCP identifies procedures and controls that will be implemented over the life of the Project to prevent and minimize the release of chemicals into the area's surface waters. The SPCCP's main focus is storage of diesel, hydraulic oil, motor oil, and waste oil in all ASTs having capacities of greater than 55 gallons (no USTs are planned for the facility). However, areas of the site designated for storage of smaller volumes of potentially hazardous materials (e.g., solvents and cleaners) are also covered in the SPCCP. General compliance requirements relating to facility operations that are addressed in the SPCCP include spill response, leaks and malfunctions, rainwater accumulation, inspection, changes, training, and record-keeping.	Less than significant

Environmental Impacts	Mitigation Measures	Residual Impact
3. Construction of an onsite sanitary septic tank leach field could have a potential impact on water quality because the site is located in an area with severe septic tank limitations because of impermeable soils, fractured rock, and possibly other geotechnical limitations (see Mitigation WQ4).	WQ4. The proposed onsite sanitary septic tank leach field will be built following County review and approval of the location to ensure that there will be no possible impact on water quality. If an appropriate onsite location for the leach field is not found because of the presence of impermeable soils, fractured rock, or other geotechnical limitations, TMC will install a septic tank onsite that is designed for routine pumpout.	Less than significant
4. Mining reclamation impacts involve potential runoff and sedimentation before revegetation (see Mitigation Measure WQ5).	WQ5. Desilting/debris basins will not be removed until disturbed areas have been successfully revegetated.	Less than significant
Noise and Vibration		
1. Blasting associated with mining activities may be audible and perceptible within about ½ mile of the location of blasting. Though the impact on identified receptors is less than significant based on the impact criteria, mitigation consistent with federal Office of Surface Mining Reclamation and Enforcement (OSMRE) regulations will be implemented (see Mitigation Measure N1).	N1. The Applicant will conduct blasting operations in general conformance with the federal OSMRE regulations as stated in 30 CFR, Chapter VII, Sections 816.61 through 816.68, and other applicable regulations. Conformance shall be demonstrated through preparation of a detailed Blasting Plan identifying project compliance with the stated requirements (as minimum standards) and through monitoring of blasting activities. The Blasting Plan shall be reviewed and approved by the County prior to conducting any blasting onsite. The Blasting Plan shall provide for the following: a. Submission and approval by the County of the specific blast design prior to blasting, where such blasting will occur within 1,000 feet of habitable buildings outside the permit area. b. Conducting a public awareness program including notification of all residents within ½ mile of any part of the permit area of the opportunity to request a preblast survey. The notification is to be done at least 30 days prior to initiation of blasting. A TMC information officer who can be contacted by telephone for information will be designated. c. Publication of the anticipated blasting schedule at least 10 days prior to the beginning of the blasting program via a newspaper of general circulation in the Project area and by direct mail to residents within ½ mile. Republication at least every 12 months or whenever substantive changes to the schedule are to be implemented. d. Placement of warning signs and access controls to blast areas. e. Incorporation of the provision that blasting shall be conducted to prevent injury to persons, damage to public or private property outside of the permit area, adverse impacts on any underground mine, and change in course, channel, or availability of surface or groundwater outside of the permit area. f. Conducting blasting so that the maximum air overpressure shall not exceed 133 dB (2 Hz minimum) measured directly between the nearest occupied residence and the blast site (ref. U.S. Bureau of Mines Report of Investigations 8485 (1980) "Structure Response and Damage Produced by Airblast from Surface Mining").	Less than significant

Environmental Impacts	Mitigation Measures	Residual Impact
	g. Conducting blasting so that the peak particle velocity generated from any blast shall not exceed 0.5 in/sec for vibration frequencies below 40 Hz, and 2.0 in/sec for vibration frequencies of 40 Hz or more, measured directly between the nearest residence and the blast site (U.S. Dept. of Interior, Bureau of Mines 1980b). Other methods of determining acceptable particle vibration, such as the use of scaled-distance equations, shall be allowed subject to approval by the County. h. Conducting periodic monitoring offsite to ensure compliance with airblast and vibration standards and provide a seismograph record of each blast. Monitoring shall be conducted at a representative residential receptor and at a representative location adjacent to the Santa Clara River riparian habitat. i. Controlling flyrock at the blast site in accordance with OSMRE regulations. That is, flyrock traveling in the air or along the ground shall not be cast from the blasting site. j. Maintain adequate records as specified by the County of all blasts for a minimum 3-year period. k. Identification of conditions when blasting will be curtailed including atmospheric conditions that are conducive to transmission and amplification of noise offsite and/or conditions conducive to the transport of high levels of fugitive dust emissions offsite. The Blasting Plan will identify such conditions where blasting is to be curtailed by the Applicant. The program shall also specify the candidate control measures specifically aimed at reducing blasting fugitive emissions. l. Identification of other parameters affecting blasting such as the regulatory requirement that blasting be conducted during daylight hours. Blasting shall be prohibited on Sundays and specified holidays. m. Implementing specific measures to prevent nitrate contamination of surface and groundwater due to use of ANFO.	
2. Bee Canyon mobile home lots along the west TMC Project boundary will be subject to noise exposure exceeding 65 community noise level equivalent level (CNEL) during Mining Cut 3 (see Mitigation Measure N2).	N2. Based on the proposed lot configurations of the proposed Bee Canyon Mobile Home Park, homes located west of the westernmost boundary of the TMC Project if constructed at that location, may be subject to significant noise during Mining Cut 3 operations. If the Bee Canyon Mobile Home Park is constructed, the noise impact will be reduced to less than significant by constructing berms or cut slopes to shield lots from direct exposure as confirmed through acoustic evaluation (based on final contours of the Bee Canyon project). It is anticipated that this measure would be applicable only if Bee Canyon were actually constructed. If a soundwall is to be constructed, a detailed study will be conducted by qualified personnel in the fields of structural engineering, environmental noise assessment, and architectural acoustics.	Less than significant

Environmental Impacts	Mitigation Measures	Residual Impact
3. Several lots within the The Rivers End Trailer Park and Bee Canyon Mobile Home Park could experience greater than a 5 dBA CNEL increase in noise level due to increases in ADT projected for Soledad Canyon Road (see Mitigation Measure N3).	N3. At the River's End Trailer Park and the Bee Canyon Mobile Home Park, if constructed, soundwalls or berms will be constructed adjacent to affected lots to mitigate offsite truck transportation noise.	Less than significant
Public Services		
1. Typical impacts associated with mining operation include sparks from equipment, storage of fuels, and possible use of explosive materials in a high-fire potential area (see Mitigation Measures PS1, PS2, PS3, and PS4).	PS1. Fire prevention training for all employees will be conducted based on Cal-OSHA standards, and fire prevention equipment will be available onsite. PS2. No explosives will be stored onsite. PS3. The water storage facilities onsite will be accessible to fire equipment by an all weather road capable of supporting 50,000 pounds. The road width should be a minimum of 26 feet within 25 feet of either side of the tank connection. PS4. The water storage tanks will have a 4 inch and 2 1/2 inch outlet with National Standard threads. These outlets will be no more than 6 feet from the road. PS5. The minimum road width will be 20 feet throughout the mining operation and must reach to within 150 feet of all buildings and equipment. PS6. Grades on gravel roads will not exceed 10%. If they are paved, then a 15% grade is acceptable. PS7. Turnarounds will be provided on any road that exceeds 300 feet or one every 1/4 mile to 1/2 mile. The minimum radius is 32 feet. PS8. A minimum 200-foot fuel break will be provided around any mining operation.	Less than significant
Air Quality		
1. Exhaust pollutants and dust from truck and earthmoving equipment create a potential impact both onsite and in the surrounding area. Daily emissions with mitigation would exceed SCAQMD significance thresholds for NO_x, ROG, and PM-10 in Phase 1 and Phase 2.	Mitigation measure control efficiencies and residual emissions are shown in Tables 3.1.7-11 through 3.1.7-15 in Section 3.1.7. 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	Impacts from mining operations, NO_2, reactive organic gas, and PM-10 emissions will remain significant.

Environmental Impacts	Mitigation Measures	Residual Impact
	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 reduction in all emissions.	
	AQ1b. Project design standard measures will be implemented to control fugitive dust emissions during construction as required by SCAQMD Rules 402 and 403. A fugitive dust plan will be reviewed and approved by SCAQMD on an annual basis.	
	AQ1c. Exhaust Emissions 1. Trucking will be performed on a 24-hour-per-day basis to eliminate idling and decrease emissions. 2. Trucks will not be left idling for prolonged periods. 3. Applicant-operated trucks will be tuned up or repaired. 4. Where applicable, high-pressure fuel injector nozzles will be used, and diesel engine timing will be retarded.	
	AQ2. Dust Emissions 1. Plant area conveyor systems include covered transfer points controlled by negative pressure vented to a bag house augmented by water or surfactant spray. 2. All rock crushing and conveyance equipment must be vented to filters or kept moist using spray bars. 3. Twice-daily watering followed by immediate broom-truck sweeping of onsite paved roads to control the fugitive dust kicked up by the vehicles' tires. For unpaved roads, twice-daily watering and regular application of a chemical dust suppressant. 4. Wet spray during truck loading of sand and broom-truck sweeping of the offsite roadway. Additionally, all trucks shall be equipped with the following: a. properly functioning seals on any openings used to empty the load, including bottom-dump release gates and tailgates; b. splash flaps behind every tire, or set of tires; c. center flaps at the rear of each bottom-dump release gate; d. fenders that cover tops of tires not already covered; e. complete enclosures on all vertical sides of the cargo area; f. shed boards; g. covers to keep materials from blowing or maintain 6 inches from the upper edge of the container area; 5. NFSA will be controlled with water spray. 6. Inactive areas will be controlled by dust suppressants.	

Environmental Impacts	Mitigation Measures	Residual Impact
	AQ3. Use a semi-stationary conveyor system to move fines from the mobile crusher, in the active mining area, to the NFSA.	
	AQ4. Use EPA/CARB certified engines where applicable.	
	AQ5. Install particulate filters on specified equipment.	
Biota		
1. The loss of 187 acres of natural vegetation and wildlife habitat is a significant adverse impact. Four sensitive plant species were found onsite in the NFSA (see Mitigation Measures B1 and B2).	B1. The impacts associated with the loss of natural vegetation communities and wildlife habitat in the Project area are less than significant with implementation of the Mining and Reclamation Plan. The Reclamation Plan (see Section 1.5) provides for concurrent revegetation of the site with species presently found onsite. The Reclamation Plan outlines revegetation specifications and establishes performance criteria for success of revegetation of the site.	Less than significant
	B2. Significant impacts on the sensitive plant species (Peirson's morning glory, slender mariposa lily, Plummer's mariposa lily, and club-haired mariposa lily) in the northwestern region of the Project site because of fines placement, and potentially from placement of desilting/debris Basins B and C, will be mitigated by the following actions. Seeds of these sensitive species shall be collected from impacted populations as fines storage proceeds and/or collected from nearby sites to insure genetic integrity, and the seeds shall be incorporated into the revegetation plan for the site. These plant species, especially Peirson's morning glory, are found in areas that have experienced disturbance such as fire or clearing. Therefore, incorporating the seed of these species into the Revegetation Plan for the site will provide a means to salvage the populations, and impacts on these species will be reduced to less-than-significant levels.	
2. The potential loss of habitat for the coastal western whiptail could result in a significant impact if substantial numbers of the species appear onsite (see Mitigation Measure B3).	B3. A potential significant impact on the coastal western whiptail will be reduced to nonsignificant with the implementation of the Reclamation Plan. This species is often associated with disturbed sites, and implementation of the Project would not result in a permanent loss of its habitat.	Less than significant
3. Stray lighting from facilities potentially could disrupt wildlife activity in adjacent offsite areas (see Mitigation Measure B4).	B4. Impacts from stray lighting from facilities and equipment yards will be reduced with the use of low-intensity lighting and direction shields.	Less than significant
4. Uncontrolled surface runoff from the site could result in a potential significant impact on riparian vegetation and unarmored threespine stickleback habitat (see Mitigation Measure B5).	B5. Potential impacts on the Santa Clara River biological resources from uncontrolled surface runoff from the site will be mitigated through implementation of project design measures including construction and maintenance of seven desilting/debris basins and implementation of the Project SWPPP and the SPCCP.	Less than significant
5. Uncontrolled subsurface pumping from the river could result in a potential significant impact on riparian vegetation and unarmored threespine stickleback habitat (see Mitigation Measure B6).	B6. Potential impacts on riparian habitat and proposed critical habitat of the unarmored threespine stickleback and regionally sensitive riparian vegetation from uncontrolled pumping of underflows of the Santa Clara River will be mitigated through implementation of the habitat protection program described in water resources (Section 3.1.2.3). The monitoring plan will be a multifaceted program of water resource monitoring and habitat monitoring of the permanent flowing stickleback habitat downstream from the site, as well as seasonal habitat adjacent to and downstream of the site. The Habitat Protection Plan is presented in detail in Appendix F6. The monitoring program will contain action levels	Less than significant

Environmental Impacts	Mitigation Measures	Residual Impact
	based on habitat requirements for the unarmored threespine stickleback and riparian vegetation. These action levels will trigger adjustments to mining operations to reduce project water consumption including the temporary cessation of pumping if necessary. In response to below-seasonal average rainfall, mining operations will be adjusted during the dry season to reduce water consumption. Operational adjustments will include one or more of the following: ➢ seasonal sand and gravel production adjustments, ➢ seasonal management of concrete production, ➢ temporary stockpiling of fines, ➢ increased use of dust palliatives, ➢ temporary reduction or cessation of pumping of river underflows, and ➢ cessation of mining operations, if necessary.	
Cultural Resources		
1. To avoid potential impacts on the existing historic archaeological site and historic resource, Mitigation Measures CR1 and CR2 will be implemented.	CR1. Under current construction plans, the historic archaeological site (LAN-1847H) will be avoided. However, to ensure that the site is not disturbed by construction activities, the site will be fenced in under the direction of an archaeological monitor. With this measure, the site will be avoided and protected, which is a preferred mitigation measure under CEQA.	Less than significant
	CR2. If under future construction plans the site cannot be avoided and protected, an archaeological test program that includes archival research will be necessary to determine the site's importance. If the site is found to be important, a data recovery program will be implemented to mitigate impacts to a less-than-significant level.	
Visual Quality		
1. Potential visual impacts due to mining operations result from activities and changes associated with filling the NFSA and lowering the predominant ridgeline onsite. Major changes in the form, line, color, and texture of the existing view from theAntelope Valley Freeway and developments to the north of the site would result (see Mitigation Measures VQ1, VQ2, and VQ3).	VQ1. Reclamation and revegetation will occur starting every growing season after mining activity has ceased in particular areas.	Impacts from mining activities are reduced but remain significant.
	VQ2. During the final phase of reclamation, the roads will be resloped to conform with the surrounding topography.	
	VQ3. Reclamation of the NFSA will include grouping of revegetation to mimic existing topography and contouring to add dimension to the filled slopes.	
2. Nighttime illumination of processing areas on the south side of the ridge will add incrementally to indirect light pollution and is considered potentially significant (see Mitigation Measure VQ4).	VQ4. The project will incorporate modern lighting systems that direct lights to specific areas and prevent stray lighting from spilling onto surrounding areas. No lighting will be directed upward.	Less than significant

Environmental Impacts	Mitigation Measures	Residual Impact
Traffic		
1. A majority of the Project traffic will use the Antelope Valley Freeway/Soledad Canyon Road interchange. Traffic on Soledad Canyon Road at this interchange will have an unacceptable LOS in Phases 1 and 2 with or without Project traffic if other related projects are developed. The east approach of Soledad Canyon Road near the Antelope Valley Freeway intersection will also result in a significant cumulative impact (see Mitigation Measure T1).	T1. Mitigation measures are required for the Soledad Canyon Road/Antelope Valley Freeway NB and SB ramps intersections, and the east approach of Soledad Canyon Road to the Bee Canyon Mobile Home Park's most easterly access road that were determined to have significant cumulative impacts. The roadway improvements and traffic signal controls required to achieve an acceptable LOS are presented below. These improvements will be required with or without the Project if the other related projects are developed as currently proposed. It is recommended that the intersection traffic volumes be monitored by County Public Works to determine if and when the mitigations are required. Pursuant to Los Angeles County Traffic Impact Analysis Guidelines (DPW 1997), the Project's pro-rata percent share of the improvements is 9.1 percent to widen and modify the east approach of Soledad Canyon Road to provide two through lanes and one exclusive right-turn lane (add one westbound through lane). Intersection improvements include restriping of approaches and signals, if warranted. TMC's pro-rata shares of the costs will be 6.5 percent of the cost for the intersection at SR-14 SB ramp/Soledad Canyon Road, and 9.1 percent of the cost at SR-14 NB ramp/Soledad Canyon Road.	Less than significant
2. The Project has a potentially significant safety impact as a result of heavy trucks slowly accelerating into the traffic on Soledad Canyon Road (see Mitigation Measure T2).	T2. Access to the site is proposed to be relocated from its existing location on Soledad Canyon Road to a point opposite of the existing access road for the C.A. Rasmussen mining operations. This would create a conventional four-way intersection on Soledad Canyon Road. The Project will provide one shared left-turn/through lane and one exclusive right-turn lane on the north approach and aligned with the existing access road for the C.A. Rasmussen facility. A left-turn lane and one shared through/right-turn lane on both the east and west approaches on Soledad Canyon Road will be provided. The westbound merging lane will be designed with adequate sight distance to the satisfaction of the County Department of Traffic and Lighting. All striping improvements will also be approved by the Department. Some trees and shrubs to the east and west of the access road will be cleared, as necessary, to afford an unimpeded view of oncoming traffic. If and when actual traffic conditions would warrant a traffic signal, TMC's pro-rata shares of the traffic signal installation costs for the Project access road/Soledad Canyon Road intersection will be 100 percent.	Less than significant
3. Project traffic, combined with cumulative traffic, will contribute to significant pavement wear on Soledad Canyon Road near the proposed Bee Canyon entrance (see Mitigation Measure T3).	T3. The Applicant will contribute its fair share of costs to resurface the specific section(s) of pavement on Soledad Canyon Road. Paving shall be accomplished prior to the start of Phase 2 or at a later date as substantiated with a revised Traffic Index analysis which includes trucks generated by other projects.	Less than significant

Environmental Impacts	Mitigation Measures	Residual Impact
Land Use		
1. The Project is consistent with the site's current zoning designation, as well as compatible with current land uses and zoning of lands in the surrounding areas. The Project has no significant land use impacts (see Mitigation Measure LU1).	LU1. No mitigation measures are required because no significant impacts were identified. However, as a standard condition of TMC Project approval, the County will review and approve the proposed Reclamation Plan to reclaim mined lands to a usable condition. Under the proposed Reclamation Plan, at the conclusion of the Federal Contracts, TMC will reclaim the TMC's Project processing site and/or all inactive disturbed areas. Any areas not used for continued mining will be reclaimed and revegetated for use as open space. Upon approval of all applicable permits and reclamation plans, the Project will be deemed consistent with state, regional, and local land use policies and designations.	No significant impact
Public Health and Safety		
1. The major environmental safety issues involve the risks associated with potential spills of fuels or hazardous materials, safety issues involving public access in and around the project area, and risk of Valley Fever (see Mitigation Measures PHS1 through PHS6).	PHS1. Detailed emergency plans are presented in the SPCCP and will be strictly followed.	Less than significant
	PHS2. All MSHA and other applicable regulations will be strictly enforced.	
	PHS3. Public access will be restricted to reduce the potential for accidents. Mining areas will be fenced, and signs will be posted restricting access to Project site.	
	PHS4. The facility will be gated to control public access.	
	PHS5. Compliance with all regulations and requirements of OSHA, MSHA, and all applicable County 1994 Uniform Fire Codes will be observed.	
	PHS6. TMC will not remove topsoil on high wind days.	

Environmental Impacts	Mitigation Measures	Residual Impact
Cumulative Impacts		
Geotechnical - Cumulative projects grading will increase the potential for significant area wide soils erosion.	Site-specific soils, engineering, revegetation, and erosion controls as required by SMARA and the County for mining projects, and by the County for non-mining projects.	Less than significant
Water Resources - Growth from both mining and non-mining projects has the potential to result in significant, but mitigable impact to local surface and groundwater resources.	Coordinated management plans and individual project-specific measures, such as the gradual reduction of water utilization, use of imported water, state-mandated water conservation, use of treated wastewater, and groundwater recharge.	Less than significant
Flood - Velocity and runoff mainly from nonmining/nonindustrial developments have the potential to significantly increase downstream peak flows and flood concerns.	Regional planning to include integration of downstream flood control structures and upstream retention basins.	Less than significant
Water Quality - Cumulative projects upstream have the potential to significantly affect groundwater quality within the Acton Basin if pollutants are discharged to areas of high groundwater permeability.	Project-specific analysis and mitigation will be necessary to reduce individual project impacts.	Less than significant
Cumulative project development will create impervious surfaces that can impact downstream water quality by contributing stormwater pollutants into drainages to the Santa Clara River. Mining and industrial projects in the area can increase sedimentation from grading activities, and other unregulated activities will also contribute to water quality.	Erosion control practices during construction and construction of storm drains in accordance with County and local provisions. Mining and industrial projects are subject to state and local regulations to control runoff. Also, mining and industrial projects must develop SPCCP.	Less than significant
Noise - Cumulative project-generated traffic has the potential to raise traffic and noise levels along Soledad Canyon Road.	Area projects will require individual environmental studies to quantify their noise impacts and contribute their fair share of necessary mitigation.	Less than significant
Public Services - A potentially significant impact for fire protection services results due to limited County budget to upgrade area fire protection services.	Each project applicant will cooperative with the County to provide mitigation fees and/or dedication of property on which to located additional emergency service facilities.	Less than significant
Air Quality - The project area is out of attainment for O_3 and PM-10. Construction of cumulative projects will further degrade local air quality on a temporary basis. Operational traffic for mining and residential projects will each add incrementally to regional air cell pollutants.	Mitigation measures for the Project (AQ1 and AQ2) can be applied to all mining/industrial projects and many construction activities and will add in reducing impacts. Traffic congestion management and individual project analyses and mitigation will be required for residential/commercial projects.	Impacts remain significant
Biota - Significant cumulative impact from the permanent loss of natural habitats from residential and commercial developments. Mining projects have long-term, but temporary impacts and are subject to federal, state and local regulations governing revegetation.	Regional planning and individual project analysis to avoid sensitive habitats or preserve and enhance habitats where applicable in order to avoid permanent habitat losses.	Impacts remain significant
Cultural Resources - Impacts to area historic and prehistoric resources potentially significant.	Project-specific site surveys, avoidance of sites, and site testing and data recovery, as appropriate under federal, state and local regulations.	Less than significant

Environmental Impacts	Mitigation Measures	Residual Impact
Visual Qualities - Cumulative projects will each contribute to short-term impacts from construction, long-term impacts from landform modification, and incremental increases from nighttime lighting and is considered potentially significant.	Project-specific analyses and individual project mitigation design such as screening, reclamation, revegetation, and landscaping. Nighttime lighting mitigation includes use of low-pressure sodium street lighting, prohibition of nighttime outdoor advertising and light control ordinances.	Less than significant
Traffic - Cumulative traffic impacts were found to be significant for both Phase 1 and Phase 2 if all related projects are developed.	The Project analysis in Section 3.1.11 considers the related projects, thus mitigation is the same as that presented in this table above for the Project.	Less than significant
Land Use - Cumulative projects have the potential to result in incompatible adjacent uses that could result in potentially significant impacts as well as inconsistencies with applicable land use policies.	Cumulative project development planning to be conducted to conform with the applicable land use plans and policies.	Less than significant
Public Health and Safety - Growth in the project area primarily related to mining projects may contribute to onsite health and safety concerns.	To minimize public access, mining areas should be fenced and signs posted restricting access.	Less than significant

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Table S-2

COMPARISON OF SIGNIFICANT EFFECTS FOR PROPOSED ACTION AND ALTERNATIVES

Environmental Factor	Alternative							
	Proposed Action	No Action	Reduced North Fines Storage Area	Batch Plant Location	Reclaimed Water	Railroad Transportation	Alternative North Fines Storage Area	Reduced Quantity Mining Concept
Geotechnical	Landform alteration reduced to nonsignificant.	Steep slopes of existing quarry would remain; however, much less grading to occur.	Less NFSA disturbed; impacts reduced to nonsignificant.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Larger NFSA area disturbed; impacts reduced to nonsignificant.	Less mining and NFSA area disturbed; landform alteration reduced to nonsignificant.
Water Resources	Potential impacts to sensitive habitats from subsurface flow pumping reduced to nonsignificant.	No water would be used. No impact.	Slightly less than Proposed Action due to reduced material mined.	Same as Proposed Action.	Same or less than Proposed Action, depending on source of water.	Same as Proposed Action.	Increased water demand due to increased truck travel; impacts reduced to nonsignificant.	Same as Proposed Action. Less water demand in Phase 2.
Flood	Potential impacts from increased runoff reduced to nonsignificant.	No silting/debris basins would be installed. Erosion and sedimentation would remain potentially significant.	Slightly less than Proposed Action due to reduced material mined.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Alternative sites contain blue line stream; ravines have greater runoff potential. Potential impacts reduced to nonsignificant.	Same as Proposed Action.
Water Quality	Potential impacts from increased sedimentation, debris flows, and operational contaminants reduced to nonsignificant.	No erosion or sedimentation control would result in potentially significant impact.	Same as Proposed Action.	Same as Proposed Action. Slight reduction in water demand.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.
Noise	Potential impacts from onsite activity and increased traffic noise reduced to nonsignificant.	No new noise sources would be introduced. No impact.	Same as Proposed Action.	Same as Proposed Action.	Increased if water is trucked in.	Fewer trucks but increased train noise; potentially significant.	Same as Proposed Action.	Fewer trucks over the long term; reduces impact to nonsignificant.

Table S-2

COMPARISON OF SIGNIFICANT EFFECTS FOR PROPOSED ACTION AND ALTERNATIVES (CONTINUED)

Environmental Factor	Alternative							
	Proposed Action	No Action	Reduced North Fines Storage Area	Batch Plant Location	Reclaimed Water	Railroad Transportation	Alternative North Fines Storage Area	Reduced Quantity Mining Concept
Public Services	Fire hazards reduced to nonsignificant.	No demand for services. No impact.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.
Air Quality	Impacts from mining operations, NO_x, ROG, and PM-10 emissions will remain significant.	No activities result in no impact.	Reduced emissions due to less onsite truck activity, but impact remains significant.	Slightly fewer emissions but impact remains significant.	Increased if water is trucked in.	Fewer trucks, but increases in train emissions remain significant.	Slightly increased emissions; remains significant.	Fewer emissions over the long term, but NO_x, PM-10, and possibly ROG remain significant.
Biota	Loss of 187 acres of natural vegetation and sensitive species reduced to nonsignificant. Potential impacts on sensitive species and unarmored threespine stickleback reduced to nonsignificant.	With no erosion or sediment control, potential significant impacts could occur on habitat of unarmored threespine stickleback.	Less NFSA acreage disturbed but remains significant.	Slightly reduced potential impact on unarmored threespine stickleback from less water drawdown.	Avoids potential impact on unarmored threespine stickleback. Short-term impacts if pipeline constructed.	Same as Proposed Action.	Same as Proposed Action with larger area impacted, and potential to impact endangered slender-horned spineflower in Bee Canyon.	Less acreage disturbed but remains significant. Same potential impacts on unarmored threespine stickleback.
Cultural Resources	Potential impacts on resources reduced to nonsignificant.	No activities result in no impact.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.
Visual	Impacts from visual changes are reduced but remain significant.	No activities result in no impact.	Less NFSA disturbed; less ridgeline lowering; remains significant.	Slightly less impact on south side; remains significant.	Same as Proposed Action.	Same as Proposed Action.	Greater level of impact due to larger area disturbed; disturbance more evident for SR 14.	Preserve ridgeline, but impact remains significant for NFSA.

Table S-2

COMPARISON OF SIGNIFICANT EFFECTS FOR PROPOSED ACTION AND ALTERNATIVES (CONTINUED)

Environmental Factor	Alternative							
	Proposed Action	No Action	Reduced North Fines Storage Area	Batch Plant Location	Reclaimed Water	Railroad Transportation	Alternative North Fines Storage Area	Reduced Quantity Mining Concept
Traffic	Potential roadway constraints and safety hazard from trucks reduced to nonsignificant.	No project trucks result in no impact.	Same as Proposed Action.	Additional truck trips required. Slightly increased traffic. Impact reduced to nonsignificant.	Increased traffic if water is trucked in.	Less truck traffic at site, but increased trucks at rail end points; results in greater potential impact; reduced to nonsignificant.	Same as Proposed Action.	Less traffic; impact over the long term reduced to nonsignificant.
Land Use	Project appears consistent. No impact.	No action results in no impact.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.
Public Health and Safety	Potential impacts associated with fuels and hazardous materials reduced to nonsignificant.	No activities result in no impact.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.	Same as Proposed Action.