

5.9 MINERAL RESOURCES

The analysis in this section is based in part on the following technical report(s):

- *Preliminary Geotechnical Investigation, Proposed Residential Development, 353 Acres, Martin Ranch. Tentative Tract 15576, Devore Area, San Bernardino County, California, Kleinfelder Associates, July 28, 2000.*

A complete copy of this study is included in the Technical Appendices to this Draft EIR (Volume II, Appendix F2).

5.9.1 Environmental Setting

Minerals are any naturally occurring chemical elements or compounds formed from inorganic processes and organic substances. Mappable minerals or an ore deposit is a deposit of ore or mineral having a value materially in excess of the cost of developing, mining, and processing the mineral and reclaiming the project area. The conservation, extraction, and processing of mineral resources are an integral part of development and economy of the City.

Regulatory Setting

Surface and Mining and Reclamation Act

Urban preemption of prime deposits and conflicts between mining and other uses throughout California led to passage of the Surface Mining and Reclamation Act (SMARA) of 1975, which requires all cities and counties to incorporate in their General Plans the mapped designations approved by the state Mining and Geology Board. SMARA declares mineral extraction as essential to the state to meet the needs of society and for continued economic welfare and identifies surface mining regulations to mitigate health and safety hazards and adverse environmental impacts. Under SMARA, the State Geologist must identify and map nonfuel mineral resources of the state to illustrate where economically significant mineral deposits are present. SMARA also requires cities and counties to incorporate in their general plans mapped designations approved by the State Mining and Geology Board.

Mineral Resources and Mineral Hazards Mapping Program

The Mineral Resources and Mineral Hazards Mapping Program (MRMHMP) of the California Geological Survey (CGS) provides data about nonfuel mineral resources, naturally occurring mineral hazards (such as asbestos, radon, and mercury), and historical mining activities throughout the state. The MRMHMP is divided into two projects: the Mineral Resources Project, which provides information about California's nonfuel mineral resources; and the Mineral Hazards Project, which maps and monitors minerals related to public health and safety concerns.

Mineral Resources Classification

The Mineral Resources Project provides information about California's nonfuel mineral resources. It classifies lands throughout the state that contain regionally significant mineral resources as mandated by SMARA. Nonfuel mineral resources include metals such as gold, silver, iron, and copper; industrial metals such as boron compounds, rare-earth elements, clays, limestone, gypsum, salt, and dimension stone; and construction aggregate including sand, gravel, and crushed stone. Development generally results in a demand for minerals, especially construction aggregate.



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The classification process involves the determination of production-consumption (P-C) region boundaries, based on identification of active aggregate operations (production) and the market area served (consumption). The P-C regional boundaries are modified to include only those portions of the region that are urbanized or urbanizing and are classified for their aggregate content. An aggregate appraisal further evaluates the presence or absence of significant sand, gravel, or stone deposits that are suitable sources of aggregate. The classification of these mineral resources is a joint effort of the state and the local governments. It is based on geologic factors and requires that the State Geologist classify the mineral resources area as one of the four mineral resource zones (MRZ), described below.

- **MRZ-1:** Areas where available geologic information indicates that little likelihood exists for the presence of significant mineral resources.
- **MRZ-2:** Areas underlain by mineral deposits where geologic data indicate that significant measured or indicated resources are present. MRZ-2 is divided into MRZ-2a and MRZ-2b on the basis of degree of knowledge and economic factors. Areas classified MRZ-2a contain discovered mineral deposits that are either measured or indicated reserves. Land included in MRZ-2a is of prime importance because it contains known economic mineral deposits. Areas classified MRZ-2b contain discovered mineral deposits that are significant inferred resources as determined by their lateral extension from proven deposits or their similarity to proven deposits. Further exploration could result in upgrading areas classified MRZ-2b to MRZ-2a.
- **MRZ-3:** Areas containing known mineral occurrences of undetermined resource significance. Further exploration within these areas could result in the reclassification of specific localities into MRZ-2a or MRZ-2b categories. MRZ-3 is divided into MRZ-3a and MRZ-3b on the basis of knowledge of economic characteristics of the resources. Land classified MRZ-3b represents areas in geologic settings that appear to be favorable environments for the occurrence of specific mineral deposits. Further exploration could result in the reclassification of all or part of these areas into the MRZ-2a or MRZ-2b categories.
- **MRZ-4:** Areas of no known mineral occurrences where geologic information does not rule out either the presence or absence of significant mineral resources.

The distinction between the MRZ-1 and the MRZ-4 categories is important for land use considerations. It must be emphasized that MRZ-4 classification does not imply that there is little likelihood for the presence of mineral resources, but rather that there is a lack of knowledge regarding mineral occurrence. Further exploration could result in the reclassification of land in MRZ-4 areas to MRZ-3 or MRZ-2.

As part of the classification process, an analysis of site-specific conditions is utilized to calculate the total volume of aggregates within individually identified resource sectors. Resource sectors are in MRZ-2 zones and are identified as having mineral resources of regional or statewide significance.

Existing Conditions

Regional

The project site is in the San Bernardino P-C region of the Greater Los Angeles Sand and Gravel Resource Area. This P-C region covers approximately 1,098 square miles and includes the large urbanizing portions of southwestern San Bernardino County and northwestern Riverside County. The most prominent geographic features of the P-C region include the southern slopes of the eastern San Gabriel Mountains, the southern slopes of the San Bernardino Mountains, and the Cajon Pass to the north. Other important features include

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the major drainages in the area—San Antonio Creek, Day Creek, Dear Creek, Lytle Creek, Cajon Creek, and the Santa Ana River—and the huge alluvial fans that have developed at the mouths of these drainages. These drainages and alluvial fans are important sources of aggregate. Most of the construction aggregate resources in and near the City of San Bernardino are found in the sand and gravel deposits of Cajon Wash, Lytle Creek, Warm Creek, City Creek, and the Santa Ana River.

Project Site

Previous environmental analysis for the project site indicates that the site is designated MRZ-3, meaning the significance of mineral deposits on the site is unknown (City of San Bernardino 2007).

The site is on the southwestern slopes of the San Bernardino Mountains. Most of the site is a southwest-sloping alluvial terrace that is incised on the northwest and southeast by Cable Canyon and Myers Canyon, respectively. The southeast and northern parts of the site are relatively steep hillsides.

A geotechnical investigation of the site by Kleinfelder in 2000 included 25 borings to depths of up to 40 feet below ground surface. The site is underlain mostly by recent (Holocene age) and older (Pleistocene age) alluvial fan deposits dissected by active stream channel deposits within the Cable Canyon Creek and Myers Canyon Creek areas. Materials within 5 to 10 feet of the surface are mainly silty sand and sand with gravel. Below this layer the site is underlain by gravelly sands, sand with silt, and cobbles with occasional boulders at depth.

The nearest area of known mineral resources is about half a mile south of the project site in an area designated as MRZ-2 (City of San Bernardino 2005b).



5.9.2 Thresholds of Significance

According to Appendix G of the CEQA Guidelines, a project would normally have a significant effect on the environment if the project would:

- M-1 Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state.
- M-2 Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan.

5.9.3 Environmental Impacts

The following impact analysis addresses thresholds of significance for which the Initial Study disclosed potentially significant impacts. The applicable thresholds are identified in brackets after the impact statement.

The proposal also includes the annexation of an adjacent 26.4-acre area consisting of six parcels owned by various property owners. A land use proposal has not been submitted for this 26.4-acre area and it is not owned or otherwise under the control of the applicant. For these reasons, no development is expected to occur on these parcels and no additional surveys or studies pertaining to mineral resources were done for this area. The annexation would not contribute to impacts related to mineral resources.

Alternative (Overhead Electric Lines) Development Plan

The Spring Trails project assumes that the Southern California Edison (SCE) overhead electric lines that traverse the western portion of the site would be located underground. In the event that the overhead electric

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lines cannot be located underground, an alternative plan accommodating the lines above ground, as shown in Chapter 3, *Project Description*, Figure 3-3A, *Alternative (Overhead Electric Lines) Development Plan*, is proposed for the project site. The alternative plan for Spring Trails is the same as the preferred plan in every respect except for the treatment of the land beneath the above-ground electric lines and the number of residential lots. The alternative plan contains 304 single-family detached units compared to 307 lots proposed in the preferred development plan. Both scenarios are analyzed in this section to assess their impacts to mineral resources.

IMPACT 5.9-1: SUBSTANTIAL MINERAL RESOURCES WOULD NOT BE MADE UNAVAILABLE FOR EXTRACTION BY IMPLEMENTATION OF THE PROPOSED PROJECT. [THRESHOLDS M-1 AND M-2]

Impact Analysis:

Mineral Resources Onsite

Younger alluvium onsite, designated *Qa1* (see Figure 5.5-1, *Geologic Map*), may be suitable as construction aggregate, but is present onsite in limited amounts, mainly in Cable Canyon and Myers Canyon. Most of the site surface consists of older terrace deposits (*Qot*), which are not thought to be suitable as aggregate because the boulders and gravel in these deposits are moderately weathered and crumbly, suggesting they break down easily (Buchiarelli 2009).

Locally Important Mineral Resource Recovery Sites

There are no mineral resource recovery sites designated in the City of San Bernardino General Plan on or near the project site. There are no existing mineral resource recovery operations on or next to the site.

The buildout of the project site would be similar for the preferred and alternative development plans. Therefore, this analysis is applicable both the preferred development plan and the alternative (overhead electric lines) development plan.

5.9.4 Cumulative Impacts

The proposed project would preclude future extraction of any mineral resources onsite. These resources, however, would be nominal and very unlikely to be economically recoverable. Any permanent mineral resource loss due to development of the project site would not combine with potential mineral resources in the City or region to result in cumulatively considerable impacts. Moreover, based on the General Plan EIR, buildout of the City of San Bernardino General Plan would not have a substantial adverse effect on availability of known mineral resources, primarily because remaining mineral resource sectors in the City are zoned either Public Flood Control or Industrial; mining is permitted in each of these zones, and so buildout of the general plan would not cause unavailability of any known mineral resources. Cumulative impacts, therefore, would be less than significant. This analysis of cumulative impacts is applicable to both the preferred development plan and the alternative (overhead electric lines) development plan.

5.9.5 Existing Regulations and Standard Conditions

State

- Surface Mining and Reclamation Act (SMARA)
- Mineral Resources and Mineral Hazards Mapping Program

5.9.6 Level of Significance Before Mitigation

The following impacts would be less than significant:

- Impact 5.9-1. Substantial mineral resources would not be made unavailable for extraction by implementation of the proposed project.

5.9.7 Mitigation Measures

No significant impacts have been identified and no mitigation is required.

5.9.8 Level of Significance After Mitigation

No significant impacts have been identified.



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