EXECUTIVE SUMMARY

ES.1 Introduction

This Environmental Impact Report (EIR) is an informational document intended to disclose to the public and decision-makers the environmental consequences of implementing the Lehigh Permanente Quarry Reclamation Plan Amendment (RPA, or Project) as submitted by Lehigh Southwest Cement Company (Lehigh, or Applicant)¹ to the Santa Clara County Department of Planning and Development (the County). Approval of the Project would amend the existing reclamation plan for the Quarry, which the County approved in March 1985 and would result in the reclamation of an approximately 1,238.7-acre area (the Project Area) within the Applicant's overall 3,510-acre ownership in an unincorporated area of the County. The Project is designed to make the reclaimed lands suitable for future open space uses. It includes site-specific activities to satisfy the reclamation requirements of the Surface Mining and Reclamation Act of 1975, as amended (SMARA) and its implementing regulations² and the County's surface mining ordinance and surface mining and land reclamation standards.³ A lead-agency-approved reclamation plan is required for all mining operations in the state, including the Quarry. The County has primary discretionary authority over the Project and serves as the Lead Agency responsible under the California Environmental Quality Act (CEQA)⁴ and SMARA.

This Executive Summary includes the following sections:

- Introduction (ES.1)
- Project Objectives (ES.2)
- Project Setting and Location (ES.3)
- Project Description (ES.4)
- Alternatives (ES.5)
- Environmentally Superior Alternative (ES.6)
- Areas of Controversy and Issues to be Resolved (ES.7)
- Summary of Impacts and Mitigation Measures (ES.8)

¹ The Permanente Quarry (Mine ID No. 91-43-0004) is owned by Hanson Permanente Cement, Inc. and operated by Lehigh Southwest Cement Company. Lehigh and Hanson both are part of the HeidelbergCement Group, a worldwide producer of construction materials (Lehigh Cement Company, 2011; Hanson, 2011).

² SMARA is set forth in Public Resources Code Section 2710 et seq.; its implementing regulations are found in Title 14 of the California Code of Regulations Section 3500 et seq.

³ Santa Clara County Code §4.10.370; Santa Clara County, 2000. Surface Mining and Land Reclamation Standards, http://www.sccgov.org/SCC/docs%2FPlanning,%20Office%20of%20(DEP)%2Fattachments%2FSurface_Mining_ Stds.pdf, rev. Aug. 29, 2000.

⁴ CEQA is set forth in Public Resources Code Section 21000 et seq.; its implementing regulations (the "CEQA Guidelines) are found in Title 14 of the California Code of Regulations Section 15000 et seq.

A comparative summary of the impacts of the Project and the alternatives to the Project is provided in **Table ES-4**, included at the end of this Executive Summary. The EIR assesses the direct, indirect, and cumulative environmental impacts that could occur as a result of the Project.

ES.2 Project Objectives

The Applicant's objectives for the Project are to:

- Maintain a local, reliable, and economic source of Portland cement-grade limestone and construction aggregate to serve market demands in Santa Clara County, the San Francisco Bay Area and northern California.
- Continue operations at an existing limestone quarry that is uniquely situated to provide for regional needs and that lies in a state-classified MRZ-2⁵ resource area meeting the requirements of SMARA and County Code §4.10.370.
- Reclaim existing mining disturbance to conform to the surrounding topography in contour and vegetation, to achieve long-term slope stability, protect water quality, and permit alternative post-mining uses.
- Apply reclamation standards under SMARA to areas disturbed by mining operations within the Quarry.
- Reclaim existing mining disturbance to avoid or eliminate residual hazards to the environment and public health and safety.

ES.3 Project Setting and Location

The Quarry is a limestone and aggregate mining operation located in an unincorporated area of the County west of the City of Cupertino, approximately 2 miles west of the intersection of Interstate 280 and Highway 85. Vehicular access is provided via Stevens Creek Boulevard, Foothill Expressway, and Permanente Road. The address is 24001 Stevens Creek Boulevard, Cupertino, California.

Mining operations commenced in the Project Area at least as early as 1903 and have been continuous since 1939. The Project Area includes all areas of the Applicant's ownership that have been subject to surface mining operations as well as open space areas that have been set aside to physically separate mining operations and offsite land uses.

⁵ Department of Conservation, Division of Mines and Geology, DMG Open File Report 96-03 (1996).

ES.4 Project Description

ES.4.1 Overview

The Applicant proposes to amend the 1985 Reclamation Plan for a 20-year period dating from Project approval and to reclaim the Project Area in a manner suitable for future open space uses. "Reclamation" in this context, means:

the combined process of land treatment that minimizes water degradation, air pollution, damage to aquatic or wildlife habitat, flooding, erosion, and other adverse effects from surface mining operations... so that mined lands are reclaimed to a usable condition which is readily adaptable for alternate land uses and create no danger to public health or safety. The process may extend to affected lands surrounding mined lands, and may require backfilling, grading, resoiling, revegetation, soil compaction, stabilization, or other measures.

(Pub. Res. Code §2733; Santa Clara County, 2000). The primary areas to be reclaimed are the Quarry pit, two overburden disposal areas referred to as the West Materials Storage Area (WMSA) and the East Materials Storage Area (EMSA), the crusher/Quarry office support area, Surge Pile, Rock Plant, an area south of Permanente Creek that has been disturbed by prior surface mining-related exploratory activities (Exploration Area), and an area adjacent to and within the Permanente Creek corridor (Permanente Creek Restoration Area or PCRA).

The proposed reclamation would not preclude future extraction activities within the Project Area. The Project also does not foreclose the possibility of future mining in other unincorporated areas of the Applicant's 3,510-acre ownership. However, any such future proposal would require authorization from the County and compliance with SMARA and CEQA. The Applicant has a vested right to conduct surface mining (resource extraction) activities in the Quarry pit, WMSA, EMSA, crusher/ Quarry office support area, Surge Pile, and Rock Plant. No County permit is required to mine these areas. "Surface mining" includes the process of obtaining minerals such as rock or aggregate materials by removing overburden⁶ and mining directly from mineral deposits by quarrying and other methods. The separately-permitted Permanente Cement Plant located on the site is outside the Project Area and would not be subject to the RPA.

ES.4.2 Project Components

The Project includes the following components:

• Reclamation of the approximately 264.9-acre Quarry pit, which has been the point of mineral extraction at the Quarry for more than 80 years. Quarry pit walls would be stabilized and the pit would be backfilled primarily with material currently stored in the WMSA, resulting in gentler slopes, a shallower pit, and general consistency with the surrounding topography.

⁶ In the Quarry context, "overburden" refers to rock materials that are not suitable for use as limestone or aggregate.

- Reclamation of the approximately 172.6-acre WMSA, which is an existing overburden storage area located west of the Quarry pit. Final WMSA elevation and contours would be returned roughly to pre-mining contours by transporting most of the materials currently stored in the WMSA into the Quarry pit and by processing the remaining materials for commercial use.
- Inclusion of the approximately 75.2-acre EMSA within the reclamation plan boundary and reclamation of the area, including the creation of a permanent overburden storage area. Final contours would be achieved, and the area graded and revegetated to be consistent with the surrounding area and topography.
- Reclamation of the approximately 53.4-acre crusher/Quarry office support area, an existing area located east of the Quarry pit and west of the EMSA. This area would be reduced in size relative to its current acreage and then reclaimed.
- Reclamation of the approximately 8.8-acre Surge Pile, which is an existing stockpile of crushed aggregate located southeast of the Quarry pit.
- Inclusion of the approximately 19.1-acre Rock Plant within the reclamation plan boundary and reclamation of the area. Structures would be dismantled and removed, and the area revegetated.
- Reclamation of an approximately 19.5-acre Exploration Area located south of Permanente Creek that has been subject to mining-related exploratory activities but not mineral extraction. Reclamation that has begun in this area would be completed, including reclamation of roads and pads, revegetation, and monitoring activities.
- Reclamation of approximately 49.2 acres of disturbance within the PCRA, including the removal of limestone boulders from the Permanente Creek area, revegetation, implementation of erosion control measures, slope stabilization work, and restoration of certain portions of the creek channel and riparian corridor. Most of this work would occur using light trucks and foot crews to avoid damaging or destabilizing the creek channel and upslope areas.
- Designation of approximately 599.3 acres of vegetated buffer area where no mining operations would occur.

The Project would be implemented in three phases over an approximately 20-year period, expected to begin with Project approval and conclude with final reclamation (i.e., certified compliance with reclamation standards) by approximately 2030 as shown in **Table ES-1**, *Reclamation Phasing and Related Activities*.

ES.5 Alternatives

ES.5.1 Alternative 1: Complete Backfill Alternative

The Complete Backfill Alternative would be similar to the Project in all respects except that overburden materials stored in the EMSA would be backfilled into the Quarry pit upon the conclusion of mineral extraction activities. The EMSA was designed to accept total overburden placement of approximately 6.5 million tons (approximately 4.8 million cubic yards) and to provide overburden storage for the surface mining operation until approximately 2015, when final

Phase	Years	Start Date	End Date
Phase 1	9	2011	2020
	Reclamatic	on to Commence in Phase 1	
	PCRA	A Subareas 1 through 7	
	Exploration Area (ongoi	ing reclamation activities would continu	ue)
		EMSA Phase A	
		EMSA Phase B	
		EMSA Phase C	
Phase 2	5	2021	2025
	Reclamatio	on to Commence in Phase 2	
	C	Quarry Pit Phase A	
	C	Quarry Pit Phase B	
		WMSA Phase A	
		WMSA Phase B	
	PCRA	Subareas 1, 2, 6 and 7	
Phase 3	5	2026	2030
	Reclamation Sub	-Phases Commencing in Phase 3	
		WMSA Phase C	
	C	Quarry Pit Phase C	
		Final Reclamation	
	PCRA	Subareas 3,4, 5 and 7	

TABLE ES-1 RECLAMATION PHASING AND RELATED ACTIVITIES

* NOTE : All reclamation timing is approximate. The dates provided in the table above may change subject to market demand and the quality of resource encountered during the mining process. Additional time could be required for one or more of the proposed phases to allow for maintenance and monitoring of revegetation efforts until reclamation goals standards are met.

contouring and revegetation would occur. Under Alternative 1, the approximately 4.8 million cubic yards of overburden stored in the EMSA would be returned to the Quarry pit during reclamation Phase 2.

As a result, final contours in the EMSA would be comparable to what is shown in Figure 5 of the 1985 Reclamation Plan, the Quarry pit's lowest areas would be raised and thereby provide additional support to quarry walls. Removal of mining overburden from the EMSA would abate the notice of violation related to mining related use of this area, remove an existing source of selenium and thereby preclude its mobilization into downstream waterways, and return views from the valley floor and beyond to a pre-mining condition.

Removing the EMSA also would not meet an objective of the Project, which is the screening of views of and noises associated with the industrial uses occurring at the Cement Plant from the valley floor and recreational areas in the vicinity of the Project Area.

ES.5.2 Alternative 2: Central Materials Storage Area Alternative

The Central Materials Storage Area (CMSA) Alternative would be similar to the Project in all respects except that reclamation of the eastern and central portions of the EMSA (as it exists as of reclamation plan amendment approval) would begin immediately, and overburden generated by continued mining in the Quarry pit would be stored in an area farther removed from the closest viewers and air quality- and noise-sensitive receptors. Reclamation activities in the EMSA would be the same as under the Project (including installation of a "cap" to prevent selenium-containing surface runoff from reaching Permanente Creek) except that such activities would be stockpiled in that area. Mitigation measures recommended to address interim Project impacts (i.e., impacts that could occur while reclamation activities are underway) for the EMSA also would be implemented to avoid or reduce impacts associated with the CMSA before final reclamation of the CMSA begins, which would occur upon the conclusion of mineral extraction in the Quarry pit during reclamation Phase 2.

The description of Alternative 2 is based on an overburden storage area included in the Comprehensive RPA, which the Applicant submitted to the County in 2010 and which has been superseded by the Project. It is informed by details and analysis provided in the Comprehensive RPA, including the supporting reports listed below. Implementation of Alternative 2 would occur in accordance with the engineering and other expectations established in these reports, except as noted below.

- Chang Consultants, 2010. Drainage Report for the Permanente Quarry (May 21, 2010)
- Golder Associates, Inc., 2010. Geotechnical Evaluations and Design Recommendations, Permanente Quarry Reclamation Plan Update, Santa Clara County, California (May 2010)
- Golder Associates, Inc., 2010. Geotechnical Evaluations and Design Recommendations, East and Central Materials Storage Areas, Permanente Quarry Reclamation Plan Update, Santa Clara County, California (May 2010).

The CMSA would be approximately 52.2 acres located east of the Quarry pit and contiguous with the western edge of the EMSA. It would accommodate overburden generated by mining of the Quarry pit during reclamation Phase 1 and then would be reclaimed. Development of the CMSA would allow reclamation activities in the eastern and central parts of the EMSA, which are closer to sensitive receptors than the CMSA, to begin immediately upon Project approval.

During the development of the CMSA, its elevations would range from 775 to 1,270 feet amsl. Final overall slopes would be 2:6(H):1.0(V) or flatter. Benches generally would be established at 40-foot vertical intervals. Interbench slopes would be 2H:1V. The static factor of safety (FOS) for global stability (crest of slope to toe of slope) would be approximately 1.7; the static FOS for interbench slopes would be 1.4. These factors are considered acceptable. Seismically-induced displacements would range from 3 to 13 inches, which also is considered acceptable. Connection between the CMSA's eastern edge and the flat pad at the western end of the EMSA would be accomplished via an approximately 11-acre area that overlaps the western edge of the EMSA. This linkage would be designed to minimize any interference with reclamation activities in the EMSA. To the extent that minor portions of the EMSA would be affected by connection activities, affected areas would be reclaimed as part of the CMSA.

ES.5.3 No Project Alternative

A traditional No Project Alternative would consist of a scenario in which a Reclamation Plan does not exist. However, such a scenario is not being considered in this analysis because all mining activities are legally required to have a SMARA-compliant Reclamation Plan. As such, the No Project Alternative cannot consider a scenario that does not include some form of SMARA-compliant reclamation, as the Quarry would consequently not be compliant with California law. The No Project Alternative in this document, therefore, identifies a scenario that would be reasonably be expected to occur in lieu of approving the proposed Reclamation Plan.

Under the No Project Alternative, it is expected that mining would continue at the Quarry at the baseline rate.⁷ However, SMARA mandates that the Project Area be reclaimed in compliance with all regulatory criteria. The Project is intended to fulfill this legal requirement and abate the issues related to Orders to Comply/Notices of Violation (NOVs) issued by the County in 2006 and 2008 related to deviations from the 1985 Reclamation Plan (i.e., engaging in mining activities outside the approved reclamation boundary). Under the No Project Alternative, the proposed Reclamation Plan would not be approved, these NOVs would not be abated, and the Applicant would remain in violation of SMARA and County requirements because an approved reclamation plan would not encompass all mining-related operations and disturbance. This would result in no additional placement of overburden at the EMSA.

Ultimately, however, in order to address the existing NOVs, a SMARA-compliant reclamation plan would have to be developed, approved following its evaluation under CEQA, and implemented by the Applicant. It is expected that such a reclamation plan would be substantially similar in scope and level of activity to that proposed as the Project, including reclamation of the EMSA to address the existing overburden material at that location. So under the No Project Alternative, the principal difference compared to the Project is not <u>whether</u> reclamation would begin, but rather <u>when</u> reclamation would begin.

The baseline (11-year average) annual limestone production rate for the Quarry is reported by the Applicant to be 2,600,000 metric tons (ALG, 2011). The total limestone production under reclamation Phase 1 is estimated by the Applicant to be 42,300,000 metric tons (ALG, 2011). Thus, under the No Project scenario in which mining would continue at the baseline rate, it would take approximately 16 years to reach the same total production as would be reached in 9 years

⁷ Quarry operations are characterized by fluctuating production, in response to continually changing market demands. Accordingly, baseline production is based on an average over the 11-year period from January 1, 2000, to December 31, 2010, which includes periods of relatively high production as well as relatively low production at the Permanente Quarry in response to changing market demands.

under the Project. It is expected that reclamation Phases 2 and 3 of the Project would occur at the end of the 16-year mining period.

Similar to the Project, the No Project scenario would occur in the three phases shown in **Table ES-2**.

Phase	Years	Start Date	End Date	Activities
Phase 1	16	2012	2027	Quarry operations continue at the baseline rate; EMSA reclamation commences in 2023 and is completed in 2027. Reclamation of the Exploration Area and PCRA occur as under the Project.
Phase 2	5	2028	2032 Quarry infill and WMSA reclamation.	
Phase 3	5	2033	2037	Final reclamation, including of the Rock Plant and Surge Pile.

 TABLE ES-2

 "NO PROJECT" PHASING AND RELATED ACTIVITIES

ES.6 Environmentally Superior Alternative

CEQA Guidelines Section 15126.6(e)(2) requires an EIR to identify an environmentally superior alternative. If the environmentally superior alternative is the No Project Alternative, the EIR also must identify an environmentally superior alternative from among the other alternatives. In general, the environmentally superior alternative is defined as that alternative with the least adverse impacts to the project area and its surrounding environment.

The Project would cause significant and unavoidable impacts to Aesthetics, Visual Quality, Light and Glare; Biological Resources; Cultural Resources; and Hydrology and Water Quality. The comparative analysis summarized in **Table ES-4** shows that there are no potential impacts for which the Project is the Least Preferred alternative. For the four resource areas with significant and unavoidable impacts, the Project would be Preferred for two (Aesthetics, Visual Quality, Light, and Glare and Hydrology and Water Quality) and would not be the Least Preferred or Not Preferred for any. Alternative 2 would also be Preferred for two (Cultural Resources and Biological Resources) but would be Not Preferred for Aesthetics, Visual Quality, Light, and Glare. It should be noted that the preference for Alternative 2 over the Project for Biological Resources is for an interim impact prior to final reclamation; post-reclamation, impacts to Biological resources for the two alternatives would be essentially the same. Alternatives 1 and the No Project Alternative would not be Preferred for any of the four resource areas with significant and unavoidable impacts.

Based upon this analysis, none of the three alternatives would provide a material lessening of significant adverse impacts compared with the proposed Project, whereas the Project would be either Preferred over or equivalent to the other alternatives with regard to long-term impacts. Consequently, the proposed Project is the Environmentally Superior Alternative.

ES.7 Areas of Controversy and Issues to be Resolved

Areas of controversy known to the lead agencies, including issues raised by agencies and the public, must be identified in the Executive Summary of an EIR (14 Cal. Code Regs. § 15123). The extensive scoping process to vet the Applicant's various proposals to reclaim the Quarry included four separate Notices of Preparation (NOP), and numerous opportunities for agencies and members of the public to provide input. In total, more than 200 people have provided more than 350 comment letters on the proposals to reclaim the Quarry. A Scoping Report has been prepared for the Project (see Appendix A). It includes copies of each of the NOPs described above, as well as copies of all of the written comments and summaries of all of the oral comments that the County received in response to the respective requests for input. As described in more detail in the Scoping Report, the overarching themes of the comments as they relate to elements carried forward in the proposed Project that fall within the purview of the CEQA process relate to the following main topics:

- The Project Description, including the Project's relationship with the 2007 Proposed RPA, EMSA RPA, Comprehensive RPA; specifics of the WMSA, EMSA, and Quarry pit; the reclamation timeframe; and the volume of material to be used to backfill the Quarry pit. These comments are addressed in this Introduction, as well as in Chapter 2, *Project Description*.
- Alternatives, including CEQA's requirement that a No Project Alternative be evaluated. The No Project Alternative is described in Chapter 3, *Description of Alternatives*, and related impacts are analyzed in Chapter 4, *Environmental Analysis*.
- Aesthetics and Visual Resources, including impacts to ridgeline views, the scenic easement, the visibility of Permanente Quarry terraces and benches, protections provided by the County Zoning Code and Design Review overlay, nighttime lighting effects, and a preference for vegetative buffer areas. These and related comments are addressed in Section 4.1, *Aesthetics, Visual Quality, and Light and Glare*.
- Air Quality, including odor and health-related emissions of diesel, nitrous oxide, sulfur dioxide, dust, arsenic, mercury, and asbestos; a need for an updated health risk assessment; and National Emission Standards for Hazardous Air Pollutants (NESHAP) standards. These and related concerns are addressed in Section 4.3, *Air Quality*.
- Biological Resources, including Permanente Creek and other aquatic and riparian habitat; wetlands; impacts to fish, amphibians, avians, plants, and other species; oak woodland; and the test plots for revegetation efforts. These and related comments are addressed in Section 4.4, *Biological Resources*.
- Cultural Resources, including cultural and historic resources; human remains; and coordination with local tribal governments regarding traditional, cultural, and religious heritage values. These and related comments are addressed in Section 4.5, *Cultural and Paleontological Resources*.
- Geology and Soils, including slope stability, seismicity, and prior grading authorizations. These and related comments are addressed in Section 4.7, *Geology, Soils and Seismicity*.

- Greenhouse Gas Emissions, including the use of low-carbon fuels. See Section 4.8, *Greenhouse Gas Emissions*.
- Hazards and Hazardous Materials, including asbestos, selenium, mercury, petroleum coke, radioactive material, toxic materials, and risks associated with rocks falling from trucks. These and related comments are addressed in Section 4.9, *Hazards and Hazardous Materials*.
- Hydrology and Water Quality, including toxic releases into County watersheds; runoff containing selenium, arsenic, and/or mercury; the potential for surface and groundwater contamination; stormwater and sediment control; streamflows; seeps and springs; beneficial uses of area waters; data concerns; and the status of existing water quality violations. These and related comments are addressed in Section 4.10, *Hydrology and Water Quality*.
- Land Use and Planning, including future use of the site and Project consistency with County land use guidelines and standards. These and related comments are addressed in Section 4.11, *Land Use and Planning*.
- Noise and Vibration, including the effects of blasting, trucks, and earthmoving on recreational users of trails and open space lands in the vicinity of the Project as well as along surface streets. These and related comments are addressed in Section 4.13, *Noise*.
- Recreation, including area trails and Midpeninsula Regional Open Space District lands. See Section 4.16, *Recreation*.
- Transportation and Traffic, including necessary permits; the State Highway System; trip generation, distribution, assignment, Average Daily Traffic, morning and evening peak hour volumes, and cumulative traffic volumes; and damage caused to roads located on adjacent property. These and related comments are addressed in Section 4.17, *Transportation/Traffic*.
- Utilities and Service Systems, including waste disposal, recycling, the storm drainage system, and water demand. See Chapter 2, *Project Description*, and Section 4.18, *Utilities and Service Systems*.
- Cumulative Effects, including with respect to the cement plant and the Permanente Creek Flood Protection Project. Cumulative Effects are analyzed in Section 6, *Cumulative Effects*.

ES.8 Summary of Impacts and Mitigation Measures

This section summarizes the resource areas evaluated in this EIR, as well as impacts of implementation of the Project and alternatives.

ES.8.1 Resource Areas Evaluated

This section summarizes the potential impacts of implementing the Project or alternatives. The affected environment and the potential direct and indirect effects of the Project and alternatives are described and evaluated in Chapter 4 of this EIR for the resource areas listed below. The comparative analysis of alternatives is in Chapter 5 and the cumulative impact analysis is in Chapter 6. Other CEQA considerations are addressed in Chapter 7. Chapter 4 is organized into the following 18 environmental resource or issue areas:

4.2 Agriculture and Forestry Resources 4.3 Air Quality **4.4 Biological Resources** 4.13 Noise 4.5 Cultural and Paleontological Resources 4.6 Energy Conservation 4.7 Geology, Soils and Seismicity 4.8 Greenhouse Gas Emissions 4.9 Hazards and Hazardous Materials

ES.8.2 Summary of Impacts

Table ES-3, included at the end of this Executive Summary, summarizes the impacts of the Project for each of the resource areas assessed in this EIR. Detailed analyses of impacts are contained in Chapter 4. No impacts were indentified for:

- Agriculture and Forestry Resources •
- Population and Housing
- Where potentially significant impacts are identified, mitigation measures are proposed that would reduce the extent of the impacts to a less than significant level, to the extent feasible. Impacts were found to be less than significant or less than significant with mitigation for:
- Air Ouality
- **Energy Conservation**
- Geology, Soils, and Seismicity
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Land Use and Planning

Mineral Resources

Public Services

- Noise
- Recreation
- Transportation/Traffic
- Utilities and Service Systems

Implementing the Project would result in significant and unavoidable impacts for:

- Aesthetics, Visual Quality, and Light and Glare **Biological Resources**
- Hydrology and Water Quality

Table ES-4 compares the conclusions of the impact analyses for the alternatives against the conclusions for the Project. The comparative analysis summarized in Table ES-4 shows no preference among the alternatives for Agriculture and Forestry Resources, Cultural and Paleontological Resources, Hazards and Hazardous Materials, Land Use and Planning, Population and Housing, Public Services, Transportation and Traffic, and Utilities and Service Systems. Of the remaining resource areas:

- The Project was preferred over the alternatives for Aesthetics, Visual Quality, Light, and Glare: and Recreation.
- Alternative 2 was preferred with respect to Biological Resources.

Cultural Resources

- 4.1 Aesthetics, Visual Quality, and Light and Glare 4.10 Hydrology and Water Quality 4.11 Land Use and Planning 4.12 Mineral Resources 4.14 Population and Housing 4.15 Public Services
 - 4.16 Recreation
 - 4.17 Transportation/Traffic
 - 4.18 Utilities and Service Systems

- The Project and Alternative 2 were equally preferred with respect to Hydrology and Water Quality.
- The Project and the No Project Alternative were equally preferred for Energy Conservation.
- The Project was slightly preferred for Air Quality and GHG emissions over Alternative 1 and Alternative 2, but would not be as environmentally advantageous in this respect as the No Project Alternative, which was most preferred for Air Quality and GHG emissions.
- Alternative 1 was most preferred among the alternatives related to Geology and Soils and Mineral Resources.
- Alternative 2 and the No Project Alternative were equally preferred for Noise.

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation			
Aesthetics, Visual Quality, and Light and Glare						
4.1-1: Construction of the Project would have a substantially adverse effect on a scenic vista during an interim period.	Significant	None feasible	Significant and unavoidable			
4.1-2: Monitoring and Maintenance of the Project would not have a substantially adverse long term effect on a scenic vista.	Less than significant	None required	Less than significant			
4.1-3: Construction of the Project would substantially damage scenic resources within a state- or County-designated scenic highway or route during the period of time when active reclamation activities are occurring.	Significant	None feasible	Significant and unavoidable			
4.1-4: Neither active reclamation activities nor monitoring and maintenance of the Project would result in long term substantial damage to scenic resources within a state- or County-designated scenic highway or route.	Less than significant	None required	Less than significant			
4.1-5: The Project would alter and substantially degrade the existing visual character or quality of the Project Area during the period of time when active reclamation activities are occurring.	Significant	None feasible	Significant and unavoidable			
4.1-6 : The implementation of active reclamation activities would alter, but not permanently substantially degrade, the existing visual character or quality of the Project Area.	Less than significant	None required	Less than significant			
4.1-7: Lighting required for the Project would not adversely affect daytime or nighttime views in the Project Area.	Significant	4.1-7: No night lighting in the EMSA.	Less than significant			
4.1-8: The Project would not create new permanent sources of light or glare that would affect daytime or nighttime views in the area.	Less than significant	None required	Less than significant			
6-1: Project construction activities could make a cumulatively considerable contribution a substantial adverse effect on a scenic vista and degradation of the existing visual character or quality of the Project Area.	Significant	None feasible	Significant and unavoidable			

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Agriculture and Forestry Resources		·	
(No impact)			
Air Quality			
4.3-1: The Project would generate emissions of criteria air pollutants which could contribute to existing nonattainment conditions and further degrade air quality.	Less than significant	None required	Less than significant
4.3-2: Project traffic associated with operational and reclamation activities would generate localized CO emissions on roadways and at intersections in the Project vicinity.	Less than significant	None required	Less than significant
4.3-3: The Project would expose people to increased levels of toxic air contaminants, which	Significant	4.3-3a: Submit to the County and the BAAQMD a comprehensive inventory of all Project-related off- road construction equipment expected to be used during any portion of the Project; and	Less than significant
could lead to an increase in the risk of cancer.		4.3-3b: Provide a plan demonstrating that Project-related off-road equipment would achieve a Project (EMSA-specific) wide fleet-average 35 percent reduction in DPM emissions compared to the proposed fleet in the ALG report; or	
		4.3-3c: Submit evidence establishing that there are legally-binding restrictions precluding any occupancy of the caretaker's residence during Phase 1.	
4.3-4: The Project would expose people to increased levels of toxic air contaminants, which could increase acute and chronic health risks.	Less than significant	None required	Less than significant
4.3-5: The Project would increase emissions of PM2.5, which could adversely affect human health.	Significant	4.3-5: Implement Mitigation Measures 4.3-3a and 4.3-3b (or, alternatively, implement Mitigation Measure 4.3-3c).	Less than Significant
Biological Resources			
4.4-1: Project activities could result in adverse effects on special-status and migratory birds.	Less than significant	None required	Less than significant
4.4-2: Project activities could result in adverse	Significant	4.4-2a: Use of Buffers near Active Roosts.	Less than
effects on special-status bats.		4.4-2b: Roosting Bats, Maternity Roosting Season.	significant
		4.4-2c: Bat Roost Replacement.	
4.4-3: Project activities could result in adverse effects on the San Francisco dusky-footed woodrat.	Less than significant	None required	Less than significant

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Biological Resources (cont.)			
4.4-4: Project activities could result adverse effects on special status aquatic organisms.	Less than significant	None required	Less than significant
4.4-5: Project activities could result in selenium- burdened runoff reaching aquatic habitats and, thereby, in deleterious effects to aquatic organisms and their prey base.	Significant	4.4-5: Selenium-related Impacts to Aquatic Habitat.	Significant and unavoidable
4.4-6: Project activities could result in the loss or degradation of riparian habitat associated with Permanente Creek.	Less than significant	None required	Less than significant
4.4-7: Project activities could result in the loss of native oak woodland as defined by Oak Woodlands Conservation Law.	Significant	4.4-7: Sudden Oak Death Minimization Measures.	Less than significant
4.4-8: Project activities could result in substantial adverse effects on wetlands and jurisdictional waters associated with Permanente Creek through direct removal, filling, hydrological interruption, or other means.	Significant	4.4-8a: Wetland Identification and Avoidance.4.4-8b: Wetland Mitigation Plan.	Less than significant
Cultural and Paleontological Resources			
4.5-1: Project activities could cause an adverse change in the significance of an historical resource pursuant to §15064.5 of the CEQA Guidelines and the County's Historic Preservation Ordinance.	Significant	 4.5-1a: Document the physical characteristics and their historic context of the contributing features of the Kaiser Permanente Quarry Mining District; 4.5-1b: Salvage and/or relocate a representative portion of the Permanente Quarry Conveyor System and the remains of the early 1940s crusher; and 4.5-1c: Prepare public information programs to educate the general public on the historic nature of the potential Kaiser Permanente Quarry Mining District. 	Significant and unavoidable
4.5-2: Project activities could cause an adverse change in the significance of an archaeological resource as defined in §15064.5 of the CEQA Guidelines.	Significant	4.5-2: Notify the County if cultural resources are encountered during Project implementation.	Less than significant
4.5-3: Project activities could directly or indirectly destroy a unique paleontological resource or site.	Significant	4.5-3: Notify the County if a paleontological resource is encountered during implementation of the RPA.	Less than significant
4.5-4: Project activities could disturb human remains, including those interred outside of formal cemeteries.	Significant	4.5-4: Notify the County Coroner if human skeletal remains are encountered.	Less than significant

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Energy Conservation			
4.6-1: The Project would include means for avoiding or reducing wasteful and/or unnecessary consumption of energy.	Less than significant	None required	Less than significant
Geology, Soils, and Seismicity			
4.7-1: Rock and soil slopes constructed as part of the proposed reclamation of the EMSA, Quarry pit, and WMSA could fail under static or seismic forces if not properly engineered and constructed.	Significant	4.7-1: Avoidance and containment of shallow slumps and/or fall-back of overburden material.	Less than significant
4.7-2: In the event of a major earthquake in the region, seismic ground shaking could result in injury to site workers, damage to Quarry equipment and structures, or trigger slope failures. In addition, a large earthquake on the San Andreas Fault could result in minor ground deformation along traces of the Berrocal or Monte Vista Fault Zones.	Less than significant	None required	Less than significant
4.7.3: Earthmoving and other ground disturbance associated with the phased reclamation of the site could temporarily promote accelerated erosion and soil loss.	Less than significant	None required	Less than significant
Greenhouse Gas Emissions		·	
4.8-1: The Project could result in an increase in greenhouse gas emissions and contribute to climate change.	Significant	4.8-1a: Develop Annual GHG Inventory.4.8-1b: Greenhouse Gas Emissions Reduction Plan.	Less than significant
4.8-2: The Project could conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHG.	Less than significant	None required	Less than significant
Hazards and Hazardous Materials			
4.9-1: The Project could create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.	Less than significant	None required	Less than significant

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Hazards and Hazardous Materials (cont.)			
4.9-2: The Project could create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.	Less than significant	None required	Less than significant
4.9-3: Sedimentation basins planned for erosion control at the Project site could provide breeding grounds for vectors.	Less than significant	None required	Less than significant
Hydrology and Water Quality			
4.10-1: Post-reclamation conditions in the EMSA, WMSA, and Quarry pit would increase selenium concentrations in Permanente Creek to levels exceeding baseline conditions and RWQCB Basin Plan objectives.	Significant	4.10-1a: Professional Geologist Verification of Non-Limestone-Containing Material Use.4.10-1b: Verification Water Quality Monitoring.	Less than significant
4.10-2: Interim reclamation activities within the Project Area would contribute concentrations of selenium, Total Dissolved Solids (TDS), and sediment in Permanente Creek.	Significant	4.10-2a: Interim Stormwater Control and Sediment Management.4.10-2b: EMSA Interim Stormwater Monitoring Plan.	Significant and unavoidable
4.10-3: The Permanente Creek Reclamation Area (PCRA) reclamation activities would contribute concentrations of selenium, Total Dissolved Solids (TDS), and sediment in Permanente Creek.	Less than significant	None required	Less than significant
4.10-4: The Project would alter the existing drainage pattern of the site, which could result increased storm water runoff rates and on- or offsite flooding.	Significant	4.10-4: Construction of Onsite Detention Facility.	Significant and unavoidable
4.10-5: Groundwater discharge from the Quarry pit after backfilling and reclamation is complete would adversely alter surface water flows to Permanente Creek.	Less than significant	None required	Less than significant
4.10-6: The Project would alter the existing drainage pattern of the site, which could result in increased stormwater ponding, accumulation of selenium, and flooding.	Significant	4.10-6 : Stormwater Control to Avoid Ponded Water and Selenium Accumulation.	Less than significant

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Hydrology and Water Quality (cont.)			
Impact 6-2: Incremental Project-specific activities could contribute to downstream flooding.	Significant	6-2: Construction of Onsite Detention Facility.	Significant and unavoidable
Land Use and Planning			
4.11-1: The Project would be incompatible with adjacent land uses.	Less than significant	None required	Less than significant
Mineral Resources			
4.12-1: The planned backfill of the Quarry pit would hinder further extraction of cement-grade limestone and aggregate resources from the Quarry pit, thereby resulting in the loss of availability of a mineral resource of state, regional, and local significance.	Less than significant	None required	Less than significant
Noise			
4.13-1: Operations associated with reclamation during Phase 1 would exceed County noise standards and increase ambient noise levels at noise-sensitive uses in the vicinity.	Significant	 4.13-1a: Prohibition of heavy equipment operations during nighttime hours. 4.13-1b: Limiting of operations in the EMSA or submittal of evidence establishing that there are legally-binding restrictions precluding any occupancy of the caretaker's residence during the entirety of Phase 1 of the Project. 	Less than significant
4.13-2: Operations associated with reclamation during Phase 2 would increase ambient noise levels at noise-sensitive uses in the vicinity.	Less than significant	None required	Less than significant
4.13-3: Operations associated with reclamation Phase 3 may be audible at noise-sensitive uses in the vicinity.	Less than significant	None required	Less than significant
4.13-4: Operations within the Permanente Creek Reclamation Area may be audible at noise-sensitive uses in the vicinity.	Less than significant	None required	Less than significant
Population and Housing			
(No impact)			

Environmental Impact	Significance before Mitigation	Mitigation Measures	Significance after Mitigation
Public Services			
(No impact)			
Recreation			
4.16-1: The Project would be near a public park and trail and could affect existing or future recreational opportunities.	Less than significant	None required	Less than significant
Transportation/Traffic			
4.17-1: The Project would cause increases in traffic volumes on area roadways, but would not conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system.	Less than significant	None required	Less than significant
4.17-2: Traffic generated by Project activities could affect traffic safety of pedestrians and bicyclists.	Less than significant	None required	Less than significant
4.17-3: The Project would provide safe access, and would not obstruct access to nearby uses or fail to provide for future street right-of-way.	Less than significant	None required	Less than significant
4.17-4: Traffic generated by the Project would contribute to pavement wear-and-tear on area roadways.	Less than significant	None required	Less than significant
Utilities and Service Systems			
4.18-1: The Project would require and result in the construction of new storm water drainage facilities, the construction of which could cause environmental effects.	Less than significant	None required	Less than significant
4.18-2: The Project may not be able to be served by a landfill with sufficient permitted capacity to accommodate the Project's solid waste disposal needs.	Less than significant	None required	Less than significant

Resource Area	Proposed Project	Complete Backfill Alternative (Alternative 1)	Central Materials Storage Area Alternative (Alternative 2)	No Project Alternative
Aesthetics, Visual Quality, and Light and Glare	Impacts determined to be significant and unavoidable relating to a scenic vista (Anza Knoll), a scenic roadway (I-280) and the alteration or substantial degradation of the existing visual character or quality of the Project Area. All other impacts determined to be less than significant or no impact. Preferred.	Implementation of Alternative 1 would cause greater impacts to a scenic vista, scenic and major roadways, and the visual character or quality of the Project Site, than the Project, due to the lower height of the EMSA. Least Preferred.	Implementation of Alternative 2 would be less environmentally advantageous than the Project relative to a scenic vista, scenic and major roadways, and the visual character or quality of the Project Site, due to the lower height of the EMSA. Not Preferred.	Implementation of the No Project Alternative would be less environmentally advantageous than the Project relative a scenic vista, scenic and major roadways, and the visual character or quality of the Project Site, due to the lower height of the EMSA. Not Preferred.
Agriculture and Forest Resources	Implementation of the Project would cause no impact to agriculture and forestry resources. No Preference.	Implementation of Alternative 1 would cause the same impact (no impact) to agriculture and forestry resources as the Project. No Preference.	Implementation of Alternative 2 would cause a greater impact to forestry resources than the Project because it would result in the conversion of forest land to a non-forest use. Not Preferred.	Implementation of the No Project Alternative would cause the same impact (no impact) to agriculture and forestry resources as the Project. No Preference.
Air Quality	Impacts to air quality and health risk would be less than significant or less than significant with mitigation. Slight Preferred.	Implementation of Alternative 1 would cause a greater impact to air quality and health risk than the Project. Not Preferred.	Implementation of Alternative 1 would cause a greater impact to air quality than the Project and the same impact to health risk. Not Preferred.	The No Project Alternative would result in a similar or lesser impact for air quality than the Project, and less impact to health risk. Most Preferred.
Biological Resources	Impacts to biological resources would be less than significant or less than significant with mitigation for all significance criteria except selenium- related impacts to aquatic habitats, which would be significant and unavoidable until final reclamation is complete. No Preference.	Implementation of Alternative 1 would cause similar impacts as the Project except for selenium-related impacts to Permanente Creek, which would be essentially the same until final reclamation is complete and slightly less post-reclamation. No Preference.	Implementation of Alternative 2 would cause similar impacts as the Project except for selenium-related impacts to Permanente Creek, which would be slightly less than the Project both pre- and post-reclamation. Preferred.	Implementation of the No Project Alternative would cause similar impacts as the Project for all areas except selenium-related impacts to Permanente Creek. Because the interim period before reclamation would be longer than for the proposed Project, the extended timeframe would result in a longer period of selenium-related impacts to aquatic habitat. Not Preferred.

TABLE ES-4 PROPOSED PROJECT VS. ALTERNATIVES SUMMARY OF ENVIRONMENTAL IMPACT CONCLUSIONS

TABLE ES-4 (Continued) PROPOSED PROJECT VS. ALTERNATIVES SUMMARY OF ENVIRONMENTAL IMPACT CONCLUSIONS

Resource Area	Proposed Project	Complete Backfill Alternative (Alternative 1)	Central Materials Storage Area Alternative (Alternative 2)	No Project Alternative
Cultural and Paleontological Resources	Impacts to historical resources determined to be significant and unavoidable. Impacts to archaeological, paleontological, and human remains determined to be less than significant with mitigation. No Preference.	Impacts to cultural resources would be the same as the proposed Project. No Preference.	Impacts to cultural resources would be the same as the proposed Project. No Preference.	Impacts to cultural resources would be the same as the proposed Project. No Preference.
Energy Conservation	Impacts to energy conservation would be less than significant. No Preference.	Impacts to energy conservation would be greater than the Project, as more fossil fuel would be required to excavate and move the EMSA materials and thereafter to contour the area. Not Preferred.	Impacts to energy conservation would be greater than the Project, as more fossil fuel would be required to implement this alternative based on the increased surface area. Not Preferred.	Impacts of the No Project Alternative would be substantially the same as the Project. No Preference.
Geology and Soils	Impacts to geology and soils would be less than significant. Slight Preferred.	Impacts to geology and soils would be less than the Project due to additional buttressing of the North Quarry and elimination of potential impacts of the EMSA. Most Preferred.	Impacts to geology and soils would be similar to or slightly greater than the Project due to the combined height of the EMSA/CMSA and slightly reduced factors of safety. Not Preferred.	Impacts to geology and soils would be greater, because baseline conditions of marginal slope stability would continue for a longer period of time. Not Preferred.
Greenhouse Gas Emissions	Impacts to greenhouse gas emissions would be less than significant or less than significant with mitigation. Slight Preferred.	Implementation of Alternative 1 would cause a greater impact to greenhouse gas emissions than the Project. Not Preferred.	Implementation of Alternative 1 would cause a greater impact to greenhouse gas emissions than the Project. Not Preferred.	The No Project Alternative would result in lesser impacts for greenhouse gas emissions than the Project. Most Preferred.
Hazards and Hazardous Materials	The Project would have no impact or less than significant impacts pertaining to hazards and hazardous materials. No Preference.	Impacts to hazards and hazardous materials would be the same as the proposed Project. No Preference.	Impacts to hazards and hazardous materials would be the same as the proposed Project. No Preference.	Impacts to hazards and hazardous materials would be the same as the proposed Project. No Preference.

Resource Area	Proposed Project	Complete Backfill Alternative (Alternative 1)	Central Materials Storage Area Alternative (Alternative 2)	No Project Alternative
Hydrology and Water Quality	Impacts related to water quality would be less than significant with mitigation except for selenium-related impacts to water quality in Permanente Creek, which would be significant and unavoidable until final reclamation is complete. Drainage and flooding impact would be significant and would be unavoidable if adequate detention facility is not feasible. Groundwater impacts would be less than significant. Preferred.	Impacts related to long term selenium leaching to surface water would be less than under the Project; however, the larger area and higher slopes would result in more severe drainage and flooding impacts, and the longer interim period before WMSA and EMSA reclamation could result in more severe interim impacts to water quality. Not Preferred.	Impacts to hydrology and water quality would be similar to or slightly less than the Project. Preferred.	The interim period before reclamation would be longer than for the proposed Project; the extended timeframe would result a longer period of selenium-related water quality impacts. Downstream flooding impacts resulting from backfilling the Quarry pit would be similar to the proposed Project but would occur several years later. Not Preferred.
Land Use and Planning	Impacts to land use and planning determined to be less than significant.	Impacts to land use and planning would be the same as the proposed Project.	Impacts to land use and planning would be the same as the proposed Project.	Impacts to land use and planning would be the same as the proposed Project.
	No Preference.	No Preference.	No Preference.	No Preference.
Mineral Resources	Impacts to mineral resources determined to be less than significant.	Impacts to mineral resources would be slightly less than the proposed Project due to the increased ease	Impacts to mineral resources would be the same as the proposed Project. No Preference.	Impacts to mineral resources would be the same as the proposed Project. No Preference.
	No Preference.	with which potential aggregate material contained within native geologic materials underlying the EMSA could be accessed.	No rieleience.	NO FIELEIEILE.
		Preferred.		
Noise	Noise impacts on the caretaker's residence and the Cristo Rey residential area associated with reclamation during Phase 1 would be less than significant with mitigation incorporated. All other impacts would be less than significant.	Impacts from noise would be greater than the Project due to the additional heavy equipment activity required to excavate and remove the EMSA, combined with removal of the feature that would help shield nearby residences from equipment noise.	Impacts from noise would be less than the Project because the reclaimed EMSA would likely shield equipment activity within the CMSA from off-site residential receptors on the valley floor.	The No Project Alternative would result in lessened overall noise levels compared to the proposed Project, albeit over a longer period of time. Preferred.
	Not Preferred.	Not Preferred.	Fielelieu.	
Population and Housing	The Project would have no impact to population and housing.	Impacts to population and housing would be the same as the proposed Project.	Impacts to population and housing would be the same as the proposed Project.	Impacts to population and housing would be the same as the proposed Project.
		No Preference.	No Preference.	No Preference.

TABLE ES-4 (Continued) PROPOSED PROJECT VS. ALTERNATIVES SUMMARY OF ENVIRONMENTAL IMPACT CONCLUSIONS

TABLE ES-4 (Continued) PROPOSED PROJECT VS. ALTERNATIVES SUMMARY OF ENVIRONMENTAL IMPACT CONCLUSIONS

Resource Area	Proposed Project	Complete Backfill Alternative (Alternative 1)	Central Materials Storage Area Alternative (Alternative 2)	No Project Alternative
Public Services	The Project would have no impact to public services.	Impacts to public services would be the same as the proposed Project.	Impacts to public services would be the same as the proposed Project.	Impacts to public services would be the same as the proposed Project.
	No Preference.	No Preference.	No Preference.	No Preference.
Recreation	Impacts to recreation determined to be no impact or less than significant. Preferred.	Implementation of Alternative 1 would be less environmentally advantageous than the Project because of the shorter height of the EMSA.	Implementation of Alternative 2 would be less environmentally advantageous than the Project because of the shorter height of the EMSA.	Implementation of the No Project Alternative would be less environmentally advantageous than the Project because of the shorter height of the EMSA.
		Not Preferred.	No Preference.	No Preference.
Transportation and Traffic	Impacts to transportation and traffic determined to be less than significant.	Impacts to transportation and traffic would be the same as the proposed Project.	Impacts to transportation and traffic would be the same as the proposed Project.	Impacts to transportation and traffic would be the same as the proposed Project.
	No preference.	No Preference.	No Preference.	No Preference.
Utilities and Service Systems	Impacts to utilities and service systems determined to be less than significant.	Impacts to utilities and service systems would be the same as the proposed Project.	Impacts to utilities and service systems would be the same as the proposed Project.	Impacts to utilities and service systems would be the same as the proposed Project.
	No preference.	No Preference.	No Preference.	No Preference.