CHAPTER 5
Comparison of Alternatives

This section compares the environmental advantages and disadvantages of the Project and alternatives evaluated in detail in this EIR. This comparison is based on the analysis of environmental impacts of the Project and alternatives provided in Sections 4.1 through 4.18 and the descriptions of the Project provided in Chapter 2, *Project Description,* and the alternatives in Section 3.3.1, *Alternatives Evaluated in Detail in this EIR*. This comparison is designed to satisfy the requirements of CEQA Guidelines §15126.6(d), which states:

> *The EIR shall include sufficient information about each alternative to allow meaningful evaluation, analysis, and comparison with the proposed Project. A matrix displaying the major characteristics and significant environmental effects of each alternative may be used to summarize the comparison. If an alternative would cause one or more significant effects in addition to those that would be caused by the project as proposed, the significant effects of the alternative shall be discussed, but in less detail than the significant effects of the project as proposed.*

5.1 Comparison of Methodology

The following methodology was used to compare alternatives in this EIR:

Step 1: Identification of Alternatives. The alternatives development and screening process described in Chapter 3 was used to identify potential alternatives to the Project. Among the many potential alternatives initially considered, the Complete Backfill Alternative, Central Materials Storage Area Alternative, and the No Project Alternative were carried forward for detailed environmental review. No other reasonable feasible alternatives meeting the basic Project Objectives were identified that would substantially reduce or eliminate significant environmental effects of the Project.

Step 2: Determination of Environmental Impacts. Potential environmental impacts of the Project and each of the alternatives were identified and analyzed in detail in Chapter 4.

Step 3: Comparison of Proposed Project with Alternatives. Environmental impacts of the Project were compared to those of each alternative carried forward for analysis to determine the Environmentally Superior Alternative.

5.2 Comparison of Alternatives

As analyzed and documented in Chapter 4, the Project would cause the significant and unavoidable impacts listed below, and would cause a less-than-significant impact (or an impact

that would be less than significant with mitigation incorporated) or no impact for the remaining environmental considerations. The following significant and unavoidable impacts would be caused by the Project:

- Aesthetics, as related 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;

- Biological Resources, related to deleterious effects to aquatic organisms and their prey base from selenium-burdened runoff prior to final reclamation;

- Cultural Resources, related to the demolition of historic features, which contribute to a California Register-eligible historic district (Kaiser Permanente Quarry Mining District); and

- Hydrology and Water Quality, relating to increased concentrations of selenium in Permanente Creek prior to final reclamation, and alteration of the existing drainage pattern resulting in increased stormwater runoff rates and on-or offsite flooding post-reclamation.

Two alternatives in addition to the No Project Alternative were identified for evaluation in this EIR. The potential environmental impacts of each alternative are analyzed in comparison to the Project in each of the 18 resource areas in Sections 4.1 through 4.18.

The results of the comparative analysis of each of the 18 resource areas analyzed in those sections of Chapter 4 are set forth in **Table 5-1**, which compares the conclusions of the impact analyses for the alternatives against the conclusions for the Project. The comparative analysis summarized in Table 5-1 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.

- 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.

TABLE 5-1
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
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.**
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.**

TABLE 5-1 (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
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.**
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. **No Preference.**	Impacts to land use and planning would be the same as the proposed Project. **No Preference.**	Impacts to land use and planning would be the same as the proposed Project. **No Preference.**	Impacts to land use and planning would be the same as the proposed Project. **No Preference.**

TABLE 5-1 (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
Mineral Resources	Impacts to mineral resources determined to be less than significant. **No Preference.**	Impacts to mineral resources would be slightly less than the proposed Project due to the increased ease with which potential aggregate material contained within native geologic materials underlying the EMSA could be accessed. **Preferred.**	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.**
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. **Not Preferred.**	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. **Not Preferred.**	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. **Preferred.**	The No Project Alternative would result in lessened overall noise levels compared to the proposed Project, albeit over a longer period of time. **Preferred.**
Population and Housing	The Project would have no impact to population and housing. **No Preference.**	Impacts to population and housing would be the same as the proposed Project. **No Preference.**	Impacts to population and housing would be the same as the proposed Project. **No Preference.**	Impacts to population and housing would be the same as the proposed Project. **No Preference.**
Public Services	The Project would have no impact to public services. **No Preference.**	Impacts to public services would be the same as the proposed Project. **No Preference.**	Impacts to public services would be the same as the proposed Project. **No Preference.**	Impacts to public services would be the same as the proposed Project. **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. **Not Preferred.**	Implementation of Alternative 2 would be less environmentally advantageous than the Project because of the shorter height of the EMSA. **No Preference.**	Implementation of the No Project Alternative would be less environmentally advantageous than the Project because of the shorter height of the EMSA. **No Preference.**
Transportation and Traffic	Impacts to transportation and traffic determined to be less than significant. **No preference.**	Impacts to transportation and traffic would be the same as the proposed Project. **No Preference.**	Impacts to transportation and traffic would be the same as the proposed Project. **No Preference.**	Impacts to transportation and traffic would be the same as the proposed Project. **No Preference.**
Utilities and Service Systems	Impacts to utilities and service systems determined to be less than significant. **No preference.**	Impacts to utilities and service systems would be the same as the proposed Project. **No Preference.**	Impacts to utilities and service systems would be the same as the proposed Project. **No Preference.**	Impacts to utilities and service systems would be the same as the proposed Project. **No Preference.**

5.3 Identification of the Environmentally Superior Alternative

CEQA Guidelines §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. CEQA Guidelines §15126.6(a) places emphasis on alternatives that "avoid or substantially lessen the significant effects" of a project; distinctions between impacts that are less than significant or are mitigated to less than significant typically are not considered when selecting an environmentally superior alternative.

The Project would cause significant and unavoidable impacts to Cultural Resources; Aesthetics, Visual Quality, Light, and Glare; Hydrology and Water Quality; and Biological Resources. The comparative analysis summarized in Table 5-1 shows that there was no preference among the alternatives with respect to Cultural Resources: any of them, if adopted, would result in significant and unavoidable impacts to this resource area. The Project would be less adverse than any of the alternatives with respect to Aesthetics, Visual Quality, Light, and Glare, with Alternative 1 being the least preferable because it would result in a worsened long-term impact (i.e., removal of the EMSA would open up views to the Cement Plant). With respect to Hydrology and Water Quality, Alternative 2 would have only slightly less impacts than the Project, with Alternative 1 and No Project being least preferable. With respect to Biological Resources, Alternative 2 was more preferable than the Project, with No Project being the least preferred.

In summary, the comparative analysis summarized in Table 5-1 shows that there are no potential impacts for which the proposed 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.