

**Final:
Determination of Biologically Equivalent or
Superior Preservation for the Liberty Quarry
Project**

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June 26, 2009

ICF Jones & Stokes. 2009. Final: Determination of Biologically Equivalent or Superior Preservation for the Granite Construction Liberty Quarry Project. June. (J&S 00014.08.) Temecula, CA.

Table of Contents

| | | Page |
|-----------------------|--|------|
| Chapter 1 | Introduction | 1 |
| | 1.1 Project Description..... | 1 |
| | 1.2 Avoidance Feasibility..... | 3 |
| Chapter 2 | Methods | 5 |
| | 2.1 Terminology..... | 5 |
| | 2.2 Assumptions..... | 5 |
| | 2.3 Previous Studies..... | 6 |
| | 2.4 Impact Analysis..... | 7 |
| Chapter 3 | Existing Conditions | 9 |
| | 3.1 Physical Conditions..... | 9 |
| | 3.2 Riparian/Riverine and Vernal Pool Resources..... | 10 |
| | 3.2.1 Riparian/Riverine and Vernal Pool Descriptions..... | 11 |
| | 3.2.2 Species Functions and Values Assessment..... | 15 |
| | 3.2.3 Hydrological Functions and Values Assessment..... | 18 |
| Chapter 4 | Riparian/riparian Resources Impact Analysis | 21 |
| | 4.1 Direct Effects to Riparian/Riverine Functions and Values..... | 21 |
| | 4.2 Indirect Effects to Riparian/Riverine Functions and Values..... | 22 |
| | 4.3 Rationale Why Avoidance Alternative is Not Feasible..... | 23 |
| | 4.4 Reduced Quarry Footprint Alternative Analysis..... | 23 |
| Chapter 5 | Mitigation | 25 |
| | 5.1 Mitigation for Direct Effects..... | 25 |
| | 5.2 Mitigation for Indirect Effects..... | 27 |
| Chapter 6 | Findings | 29 |
| Chapter 7 | References | 31 |
| Appendices | | |
| Appendix A | Photographs of Riparian/Riverine and Vernal Pool Resources | |
| Appendix B | Riverside County Certification and Attachments | |
| Appendix C | Proposed Mitigation Strategy for Direct Impacts to a Rock Vernal Pool | |

Tables

| | Page |
|--|-------------|
| 1 Riparian/Riverine and Vernal Pool Resources within the Project Site | 10 |
| 2 Direct Impacts to Riparian/Riverine and Vernal Pool Resources within the Proposed Impact Footprint | 22 |

Figures

| | Follows Page |
|---|---------------------|
| 1. Regional Vicinity Map | 2 |
| 2. Project Location Map | 2 |
| 3. Proposed Project Map | 2 |
| 4. Soils Map | 10 |
| 5. Existing Biological Resources Map | 10 |
| 6. Riparian/Riverine Resources with Project Impacts Map | 10 |

Acronyms and Abbreviations

| | |
|-------|---|
| amsl | above mean sea level |
| CDFG | California Department of Fish and Game |
| CWA | Clean Water Act |
| DBESP | Determination of Biologically Equivalent or Superior Preservation |
| DEIR | Draft Environmental Impact Report |
| I-15 | Interstate 15 |
| MSHCP | Western Riverside Multiple Species Habitat Conservation Plan |
| MT | Million tons |
| MTPY | Million tons per year |
| NHD | National Hydrography Dataset |
| NPDES | National Pollutant Discharge Elimination System |
| OHWM | Ordinary High Water Mark |
| PQP | Public/Quasi-Public |
| RWQCB | Regional Water Quality Control Board |
| SMARA | Surface Mining and Reclamation Act of 1975 |
| SMER | Santa Margarita Ecological Reserve |
| SWPPP | Stormwater Pollution Prevention Plan |
| USACE | United States Army Corps of Engineers |
| USFWS | United States Fish and Wildlife Service |
| USGS | U.S. Geological Survey |
| WOUS | Waters of the United States |

Chapter 1.0

Introduction

This is a Determination of Biologically Equivalent or Superior Preservation (DBESP) analysis for riparian/riverine and vernal pool resources for the Granite Construction Liberty Quarry Project. A majority of the Quarry Project occurs within unincorporated Riverside County and a small portion can be found in unincorporated San Diego County. The Quarry Project lies south of the City of Temecula and west of the Interstate 15 (I-15) (Figure 1).

The proposed Quarry would occur within a 414-acre property located in Township 8 South, Range 3 West, Section 36 and Township 9 South, Range 3 West, Section 1 of the Temecula, CA 7.5-minute U.S. Geological Survey (USGS) quadrangle map (Temecula 1975) and on page 998, blocks J1 and J2, and page 999, block A1 of the current Thomas Brothers Street Guide and Directory (Thomas Bros. 2007) (Figure 2).

For this report, the term “project site” is equal to the 414-acre property on which the biological resource studies have occurred. The term “impact footprint” refers to the area/location of the proposed quarry and quarry facilities.

1.1 Project Description

Granite Construction Corporation proposes to construct, operate, and maintain surface mining and aggregate processing facilities within a 414-acre property (project site). When completed, the limits of disturbance (impact footprint) for the quarry and facilities will have occurred on 155 acres of the project site. In addition, a proposed road cut of approximately 62 feet will be added to the current 5,600-foot long access road, along with a water booster pump station and a stormwater detention basin, all requiring another 9-acre footprint area at completion, for a total impact of 164 acres. Approximately 70 acres will remain undeveloped on the west side of the property and an additional 180± acres will remain undeveloped at the northeast and southeast property areas as visual buffers from I-15. Fifty-foot undeveloped setbacks will be established between the quarry footprint and adjacent property boundaries. An additional lane to the existing I-15 southbound off-ramp at the Rainbow Valley interchange is proposed to alleviate traffic entering the quarry site from the north. Only a small portion (2.5 acres) of the project site and impact footprint occurs within San Diego County and consists of an approximately 600-foot long project site access

road that will be widened and realigned. The quarry would be accessed via this access road. Directly north of the Project site is the Santa Margarita Ecological Reserve (SMER), which is a field research station that encompasses 4,344 acres along 5 miles of the Santa Margarita River. Figure 3 shows the entire project site and the proposed quarry (impact footprint).

The production life of the proposed project would vary between 55 and 75 years, depending on the rate at which the quarry material is extracted. The proposed maximum aggregate production during the Proposed Project life would be 5 Million Tons Per Year (MTPY). The estimated total quarry volume is more than 270 Million Tons (MT). At a maximum extraction rate of 5 MTPY and total available reserves of more than 270 MT, it is anticipated that the life of the quarry would be more than 50 years (Lilburn Corporation 2009, In preparation).

As described in the *Draft Environmental Impact Report* (Lilburn Corporation 2009, in preparation), four alternatives were considered for the Liberty Quarry project. One of these, the Double Butte Alternate Quarry Location alternative, is not applicable to this DBESP and is not analyzed further because it involves placing the Quarry elsewhere and no environmental review for riparian/riparian resources and vernal pool resources have been performed for this location. The three remaining alternatives are as follows:

No Project Alternative: Under this alternative, the 414-acre project site would not be developed for use as a quarry. Loss of mineral resources and the likelihood of increased air emissions and traffic would result from the continued need to supply the market area with construction-grade aggregate from other sources. The No Project alternative does not meet the proposed project objectives and is not further discussed in this report.

Reduced Quarry Footprint Alternative: This alternative would eliminate approximately 20 acres from the proposed impact footprint (11 acres in the southwest corner of the project site, southwest of the visual berm, where the settling pond and a portion of Phase 3 excavations are planned; and 9 acres in the north project site area because of an increase in the setback from 50 to 400 feet). This would reduce the permitted reserves by approximately 33 MT (approximately 12 percent) (Lilburn Corporation 2009, in preparation).

Reduced Annual Production Alternative: This alternative would limit annual production to 3.5 MT as compared to the requested 5 MT by the proposed project. This would reduce the planned annual production by 1.5 MTPY (30 percent less than proposed annual maximum production levels). The overall operating life of the quarry would extend (Lilburn Corporation 2009, in preparation). The Reduced Annual Production alternative does not reduce impacts to riparian/riverine or vernal pool resources and is therefore, not further discussed in this report.

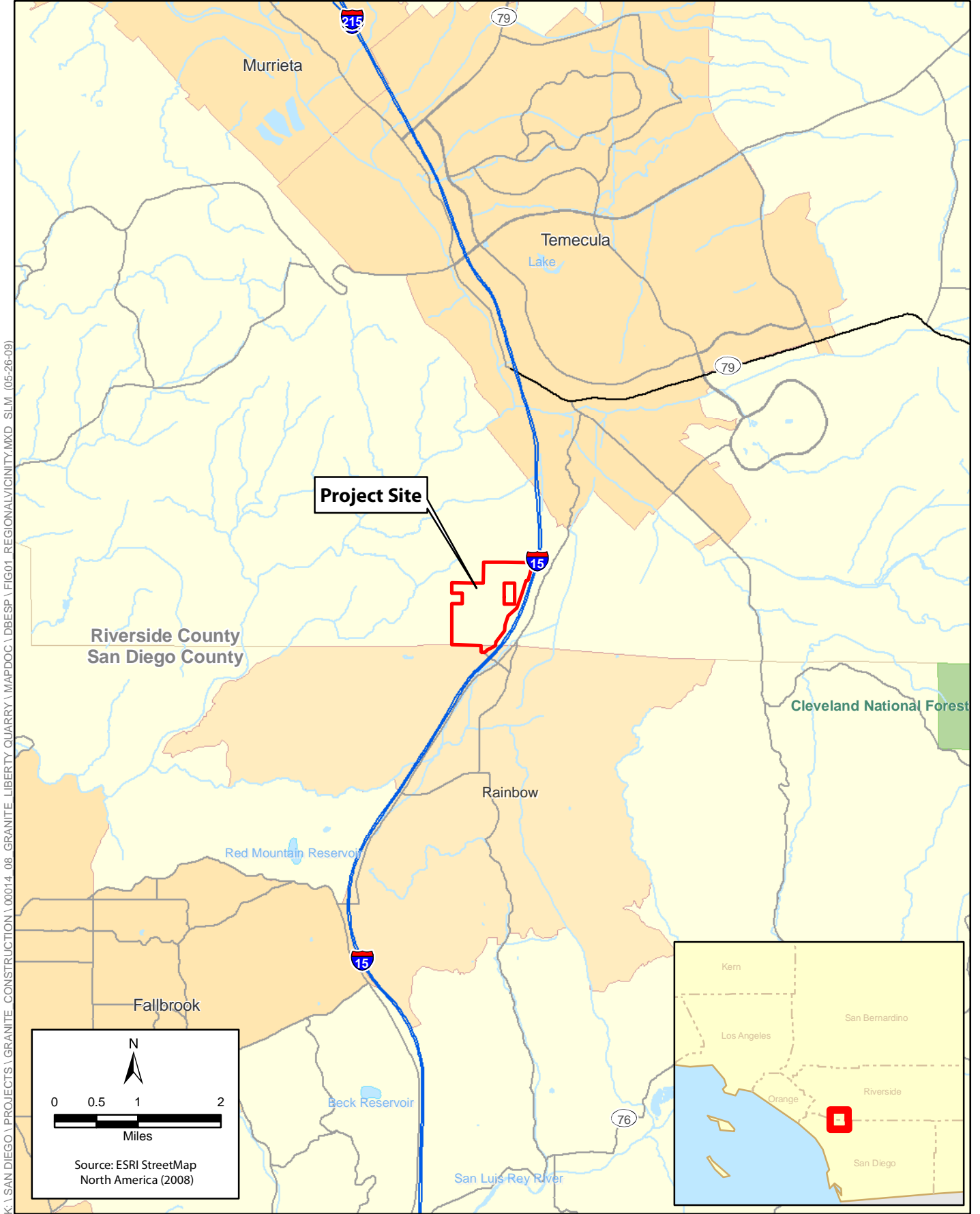
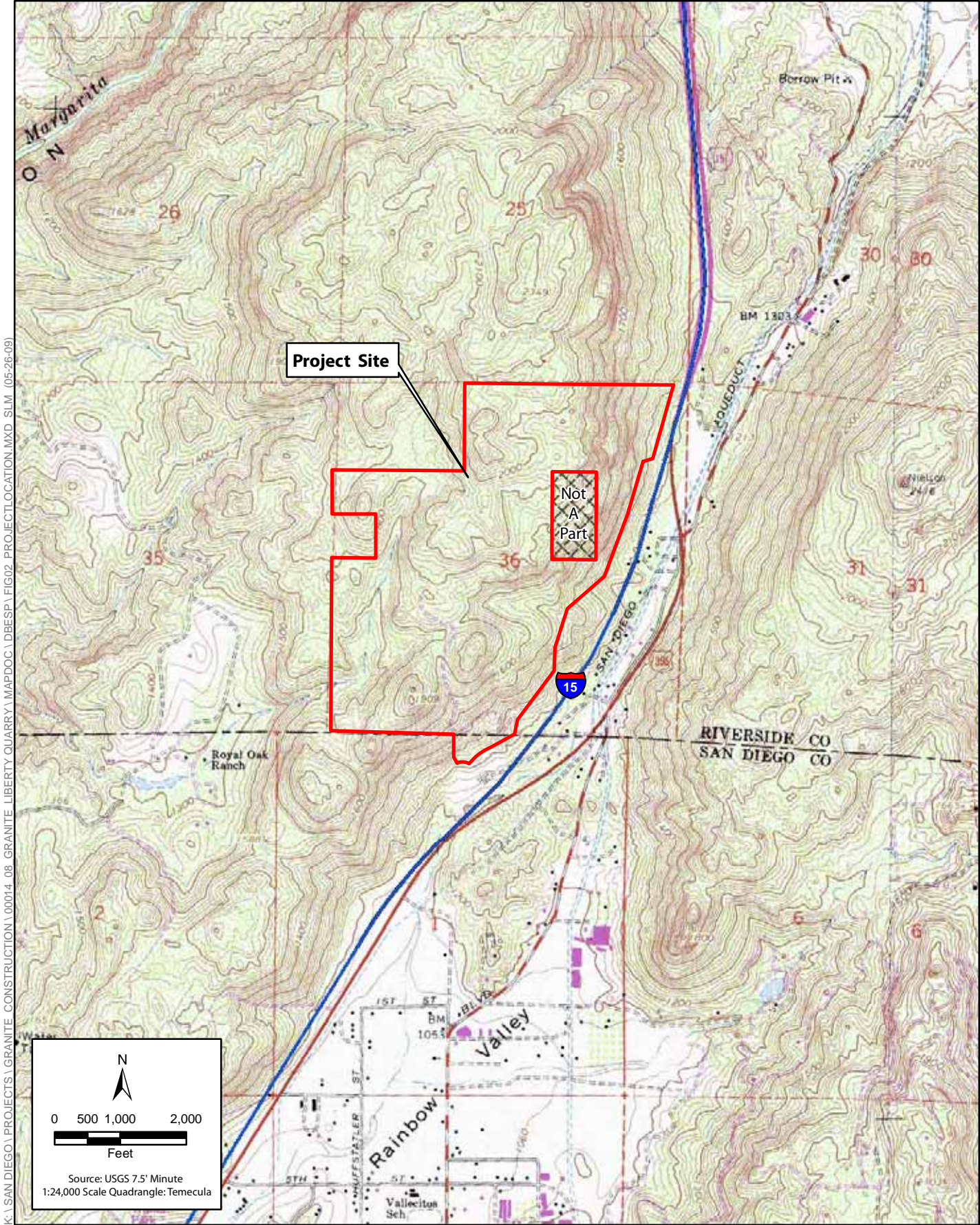


Figure 1
Regional Vicinity Map
DBESP
Liberty Quarry



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Figure 2
Project Location Map
DBESP
Liberty Quarry

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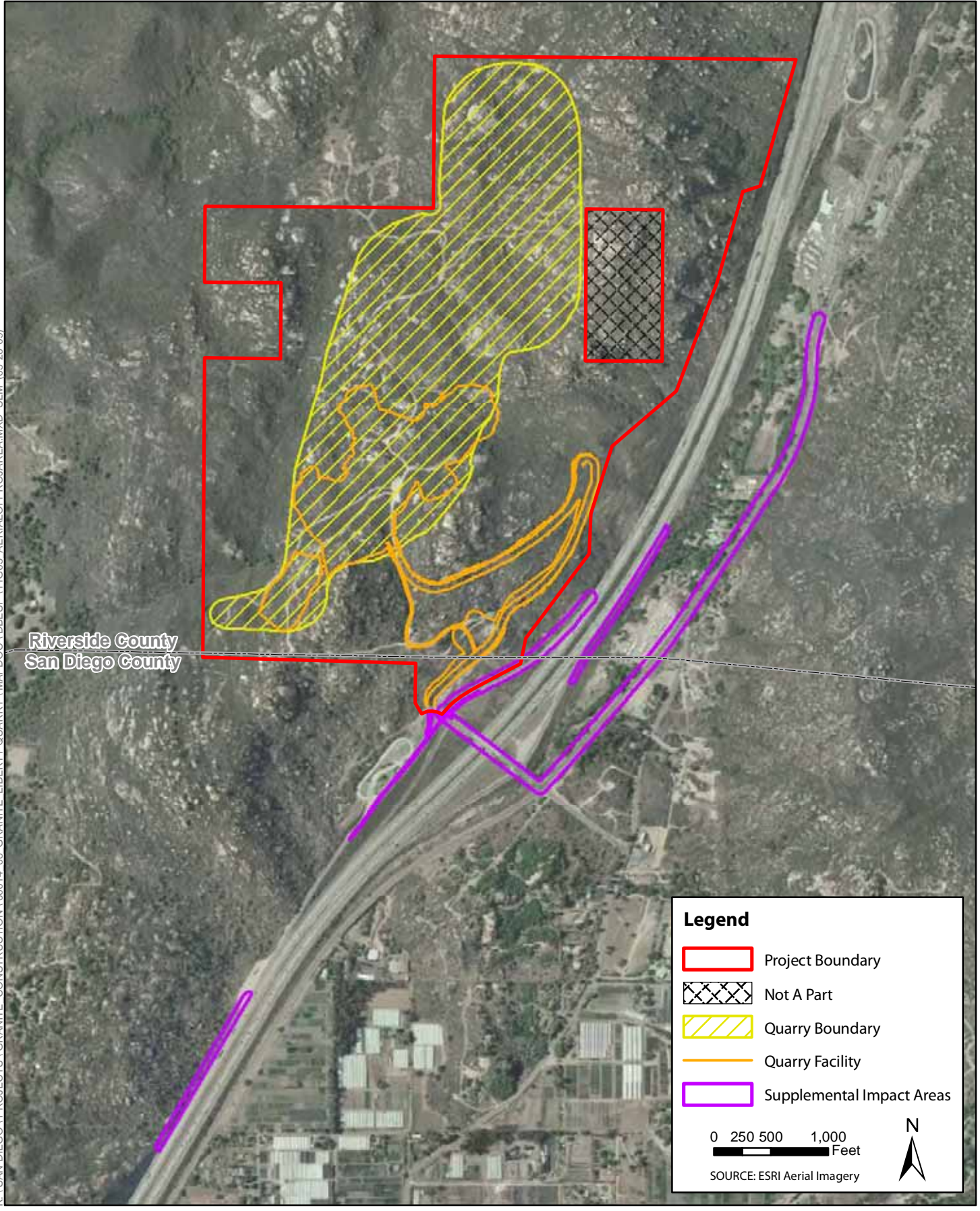


Figure 3
Proposed Project Map
DBESP
Liberty Quarry

1.2 Avoidance Feasibility

This section discusses the feasibility of implementing the alternatives outlined above in Section 1.1, and their potential impacts on riparian/riverine and vernal pool resources within the MSHCP Plan Area. Avoidance of riparian/riverine and vernal pool resources on the proposed project site is also discussed in this section.

The No Project Alternative, described above in Section 1.1, would not meet the proposed project's objective to reduce truck miles traveled on I-15 and reduce greenhouse gas emissions in Riverside County by locating an aggregate source closer to the demand in southwestern Riverside County and northern San Diego County.

The Reduced Quarry Footprint Alternative would be feasible with the size of the quarry reduced in the northern and southwestern portions of the proposed project to reduce noise, lighting, and other edge effects. Remaining lands would become conservation buffers that would be protected through the conservation easement(s) described in Mitigation Measure BIO-1b(1) of the *Draft Environmental Impact Report* (Lilburn Corporation 2009, in preparation).

The Reduced Annual Production Alternative would have no substantial difference in impacts to riparian/riverine and vernal pool resources than the proposed project. This alternative primarily reduces potential impacts to air quality and traffic/transportation issues. In addition, this alternative could potentially reduce potential indirect effects to riparian/riverine resources and vernal pools on the project site due to the lower levels of dust that would be created with a limited operation schedule. However, the long-term dust production resulting from the quarry would likely be equal to the proposed project, since the total amount of material removed from the quarry would be the same.

On-site Avoidance

On-site avoidance measures for the proposed project have been implemented for riparian/riverine resources. The quarry project site has been located at the head waters of the drainages observed on site which is intended to reduce the level of impact to downstream resources. Additional avoidance of the riparian/riverine resources would require a much reduced quarry impact footprint, which would limit the economic viability of the project. In addition, complete avoidance of the riparian/riverine features and vernal pools would preclude the development of required access roads to the quarry site. No feasible alternatives exist that would avoid impacts to these resources and result in sufficient acreage remaining for a viable project when the economic, environmental, and legal considerations are taken into account. Therefore, complete avoidance of all the riparian/riverine and vernal pool resources is not considered feasible. Additional details are described in *Section 4.3* of this DBESP.

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2.1 Terminology

Throughout this report the “project site” or “project boundary” is the entire 414-acre property. The term “impact footprint” is defined as all areas that are proposed for development and direct disturbance. This includes the quarry grading footprint, materials lay down, road improvements and any work done for fire abatement. Areas designated for the conservation easement are excluded.

2.2 Assumptions

The proposed quarry project presented in this report and analyzed in the *Draft Environmental Impact Report* (Lilburn Corporation 2009, In preparation) is the most recent project design available. There may be future design modifications once the environmental review process has been completed. Hence, the limits of disturbance may be reduced, particularly if the Reduced Quarry Footprint alternative were chosen. In no case would the limits of disturbance be increased.

All proposed road improvements along Highway 395 would occur within the limits of the existing roadbed. This is an important assumption because riparian/riparian resources in the form of ephemeral drainages and riparian sycamore oak woodland are present along the east side of Highway 395.

Assumptions were made regarding the protection afforded to biological resources within the project site when evaluating impacts on biological resources. It is assumed that all mitigation measures outlined in the *Draft Environmental Impact Report* (Lilburn Corporation 2009, In preparation) would be implemented, including the legal protection of the natural open space on-site via conservation easements and the management of those lands via a comprehensive land use or management plan that would be created and implemented by a qualified entity.

2.3 Previous Studies

Past biological resource reports reviewed and summarized as applicable in this report include

- *Liberty Quarry Draft Environmental Impact Report (Lilburn Corporation 2009, In preparation);*
- *Proposed Liberty Quarry: Biological Technical Report (White 2008a);*
- *Proposed Liberty Quarry: Determination of Consistency with the Western Riverside County MSHCP (White 2008b);*
- *Draft: Jurisdictional Delineation for the Proposed Liberty Quarry Project in Riverside and San Diego Counties, California (ICF Jones & Stokes 2008a);*
- *Evaluation of Constraints Posed by Potential Occurrence of Three Riparian Bird Species at the Liberty Quarry Project, Riverside and San Diego Counties, California (ICF Jones & Stokes 2008b);*
- *Results of the Coastal California Gnatcatcher Surveys for the Liberty Quarry Project (ICF Jones & Stokes 2008c);*
- *Burrowing Owl Focused Habitat Assessment for the Liberty Quarry Project, Riverside and San Diego Counties, California (ICF Jones & Stokes 2008d);*
- *Evaluation of Potential Biological Resource Constraints at Supplemental Areas for the Liberty Quarry Project, Riverside and San Diego Counties, California (ICF Jones & Stokes 2008e);*
- *Examination of Soil Samples from the Granite Construction Liberty Quarry Project, Riverside County, CA, and Culture of Cysts for Species Determination (Ecological Restoration Service 2008);*
- *Fairy Shrimp Focused Survey Report [Wet Season] for the Granite Construction Liberty Quarry Project, Riverside County, California (ICF Jones & Stokes 2009a);*
- *Results of the Coastal California Gnatcatcher Surveys for the Liberty Quarry Project (specifically for supplemental impact areas near I-15) (ICF Jones & Stokes 2009b); and*
- *Biological Resources Report for the Proposed Widening of the Southbound Interstate 15, on and off ramps at West Rainbow Valley Boulevard, San Diego County, California (ICF Jones & Stokes 2009c).*

The Draft: Jurisdictional Delineation for the Proposed Liberty Quarry Project in Riverside and San Diego Counties, California (ICF Jones & Stokes 2008a) was performed within the proposed impact footprint and thus does not provide a full analysis of jurisdictional resources within the project site.

Taxonomy and nomenclature within this report follow Hickman (1993) for plants, AOU (1998 et seq.) for birds, Baker et al. (2003) for mammals, and Collins and Taggart (2002) for amphibians and reptiles. Photographs of the riparian/riverine resources present within project area are provided in Appendix A.

2.4 Impact Analysis

The impact analysis for the proposed project was conducted by overlaying the proposed impact footprint with the applicable biological resource mapping. All impacts from the quarry impact footprint are considered permanent, direct impacts. Proposed impacts will substantially alter the existing bed and bank of stream channels, the hydrology of the vernal pool resources, and remove all native, existing vegetation within the proposed impact footprint.

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Chapter 3.0

Existing Conditions

The following section briefly addresses conditions and biological resources found within the project site. Refer to Appendix A for photographs of existing riparian/riverine resources within the impact area.

3.1 Physical Conditions

The project site is mostly undeveloped and consists of very steep east- and southeast-facing slopes dominated by large granitic boulder outcrops and exposed granitic bedrock. The project site is vegetated with dense chaparral, sage scrub and woodland habitats (See Section 3.2 for detailed vegetation information). The property contains a paved road that enters the project site at the south end in San Diego County and bisects the property through the north end of the project site in Riverside County. Several unimproved spur roads extend east or west off of this main road into other undeveloped areas of the project site as shown in the proposed project map (Figure 3).

Elevations on the project site vary from approximately 1,200 feet above mean sea level (AMSL) near the entrance to the project site in San Diego County to over 2,100 feet AMSL on the upper peaks at the north end of the property in Riverside County. The landscape descends steeply to the east along the I-15 right-of-way, as well as to the west along the ephemeral drainages that are tributaries of Rainbow Creek and the Santa Margarita River. The existing access road contains a steep switchback, which climbs an east-facing slope to provide access to the higher elevation central and northern portions of the property.

The project site is located adjacent to the Santa Margarita Ecological Reserve which occupies lands adjacent to the west and north property boundaries. The City of Temecula is also located north of the project site. Lands owned by the Bureau of Land Management (BLM) and the Pechanga Reservation occur east of project site across the I-15, and preserve lands located along the Santa Margarita River and the Camp Pendleton Marine Corps Base occur to the west of the project site. A mosaic of land uses exist within the vicinity of the proposed project including federal, county and tribal preserves, the I-15 Freeway ROW, privately held open space, rural development, urban development, and agriculture.

Soils within the project site consist of acid igneous rock land and Cieneba rocky coarse sandy loam. Acid igneous rock land is rough broken terrain. The

topography ranges from low hills to very steep mountains. The soil material is loam to loamy coarse sand in texture and is very shallow over decomposed granite or basic igneous rock. Cieneba rocky coarse sandy loam consists of excessively drained, very shallow to shallow coarse sandy loams (Bowman 1973) and Knecht (1971) (Figure 4).

3.2 Riparian/Riparian and Vernal Pool Resources

Based on species composition and general physiognomy, four native vegetation communities occur within the proposed project site: 1) Chamise/Ceanothus and Chamise/Scrub Oak Chaparral; 2) Oak woodland; 3) Coastal sage scrub and 4) Mesic Grassland. A fifth community, Sycamore Oak Woodland was observed only in the supplemental impact areas associated with improvements east of I-15. Sycamore Oak Woodland would be considered a riparian/riverine resource under Section 6.1.2 of the MSHCP. The remainder would be considered upland communities. There are five distinct drainages mapped within the proposed impact footprint, and two additional drainages within the supplemental impact areas associated with improvements east of I-15, all of which are unvegetated waters. In addition there is a vernal pool (Pool 1) and a seasonal pond (Pool 2) that is not classified as a vernal pool (refer to Figures 5 and 6).

Figure 5 shows the location of vegetation communities, drainages and ponded areas within the project site and proposed impact footprint. Table 1 provides the acreage of riparian/riverine and vernal pool resources. Detailed descriptions are provided below.

Table 1. Riparian/Riverine and Vernal Pool Resources within the Project site

| Riparian/Riverine Resource Type | Location | Total Area w/in Project Site (acres unless otherwise noted) |
|---------------------------------|-----------------------------------|---|
| Sycamore Oak Woodland | Supplemental Impact Areas | 0.2 ac. |
| Unvegetated stream channel | Project Site and Impact Footprint | 7438.5 linear feet (0.3 ac.) ¹ |
| Unvegetated stream channel | Supplemental Impact Areas | 51 linear feet (163 square feet; 0.0 ac.) ¹ |
| Vernal Pool 1 (Rock depression) | Impact Footprint | 48 square feet (0.0 ac.) ² |
| Total | | 0.5 acres |

¹ - Acreage does not include all potentially jurisdictional areas outside of the impact area, only those directly adjacent to and hydrologically connected to impacted drainages.

² - Acreage only includes vernal pools w/in the impact footprint; presence of vernal pools outside the footprint not known.

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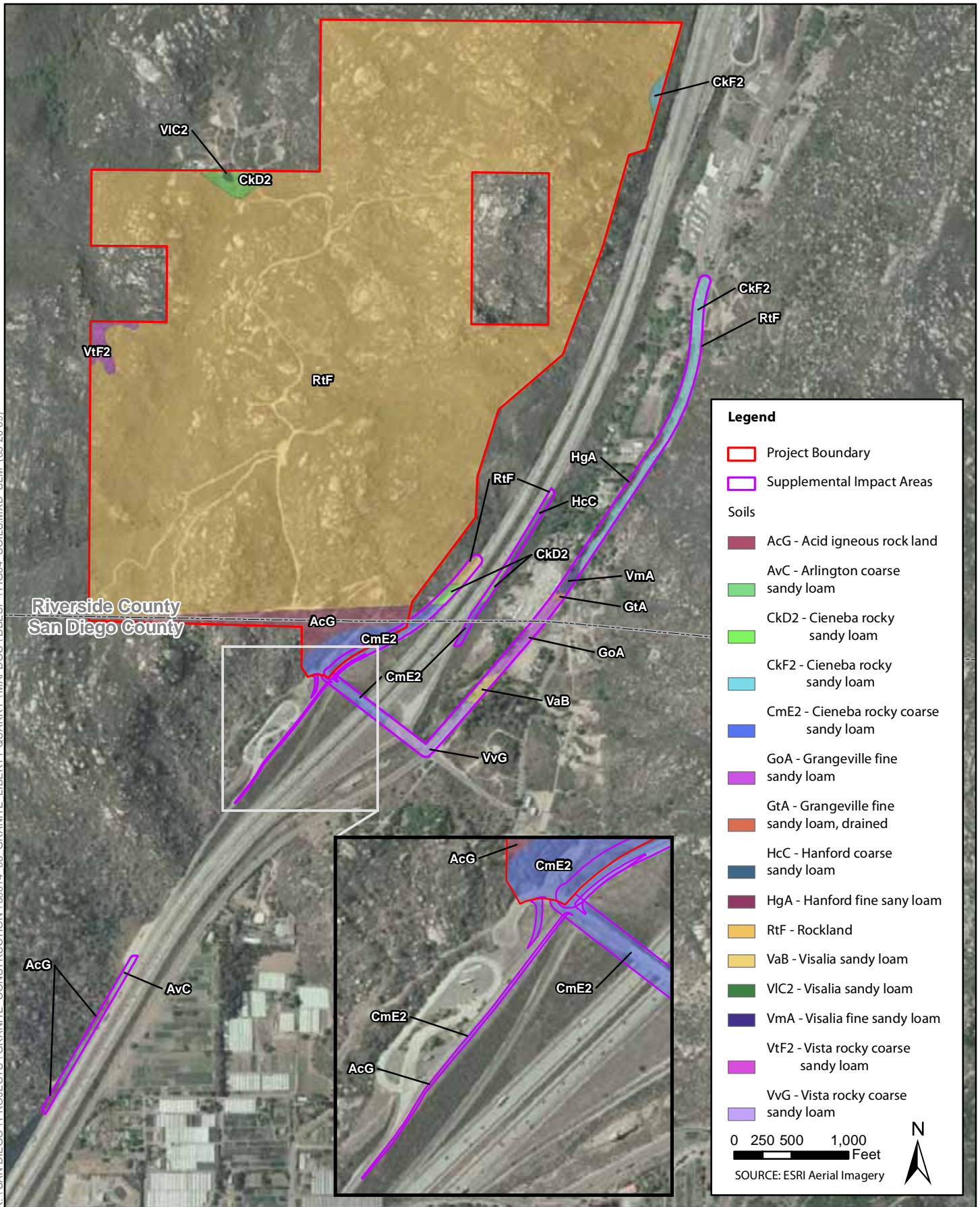
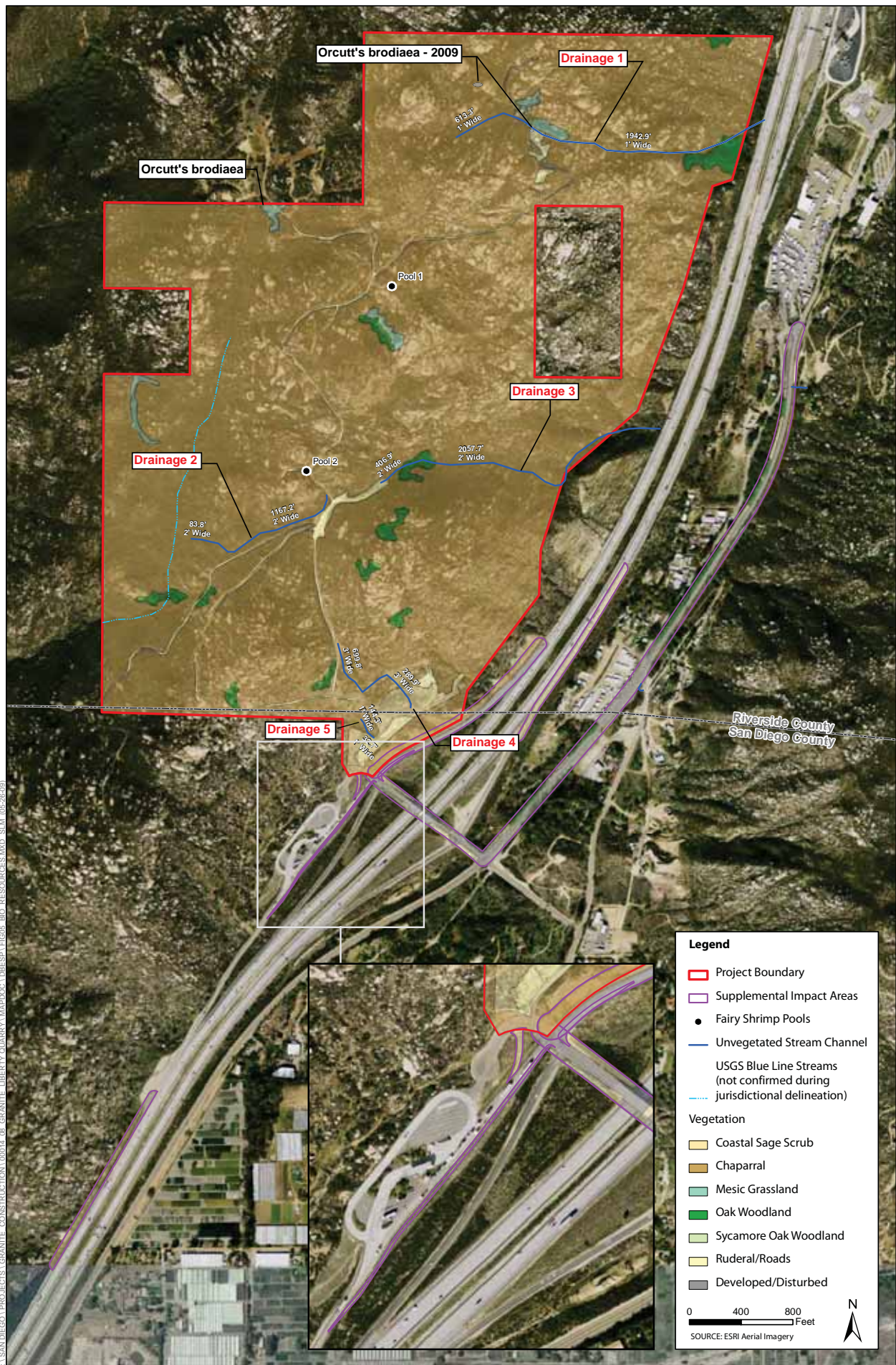


Figure 4
Soils Map
DBESP
Liberty Quarry



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Figure 5
Existing Biological Resources Map
DBESP
Liberty Quarry

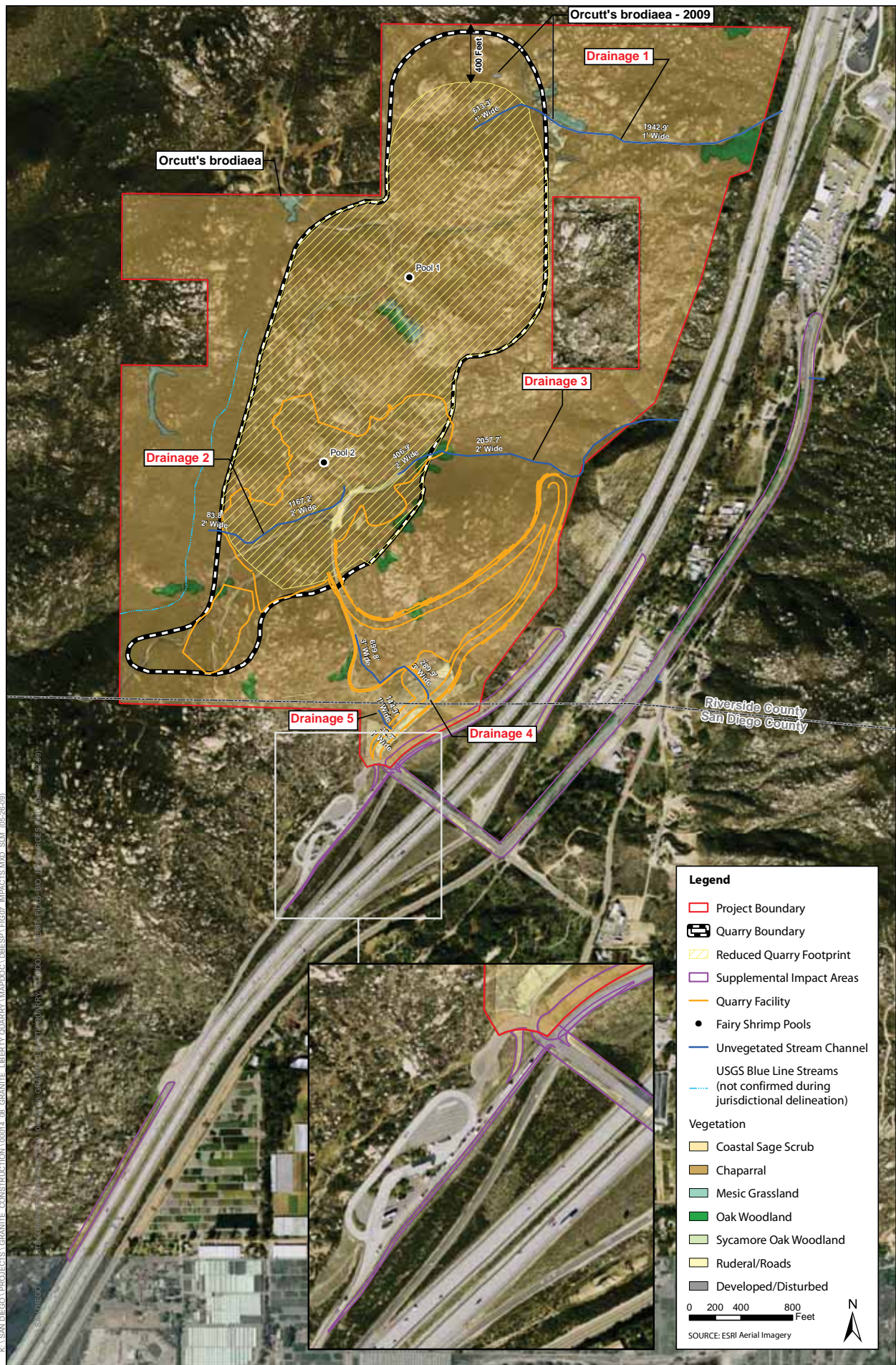


Figure 6
Riparian/Riverine Resources with Project Impacts Map
DBESP
Liberty Quarry

3.2.1 Riparian/Riverine and Vernal Pool Descriptions

Vegetation Communities

The following vegetation communities were observed within the project site.

- Chamise/Ceanothus and Chamise/Scrub Oak Chaparral dominates the project site and is characterized by mixed stands of chamise (*Adenostoma fasciculatum*), occurring on xeric slopes and ridges along with lower elevations consisting of shallower, drier soils. These areas would not meet the riparian/riverine definition under Section 6.1.2 of the MSHCP due to the dominance of upland species.
- Oak woodland occurs in small, localized patches along shaded portions of drainages and on adjacent slopes. Soils tend to be better developed sandy loams. These oak woodlands are dominated by coast live oak (*Quercus agrifolia*) and Engelmann oak (*Q. engelmannii*). They were not characterized as riparian/riverine resources due to the lack of bed and banks and the lack of hydrophytic vegetation. These areas would not meet the riparian/riverine definition under Section 6.1.2 of the MSHCP due to the dominance of upland species.
- Coastal sage scrub on the project site tends to be xeric and similar in composition to Riversidian sage scrub. California buckwheat (*Eriogonum fasciculatum*) and California sagebrush (*Artemisia californica*) dominate these areas. These areas would not meet the riparian/riverine definition under Section 6.1.2 of the MSHCP due to the dominance of upland species.
- Mesic grasslands occur on broad, gently sloping valley bottoms with fine-textured granitic and loam soils, which are moist during the winter season and very dry during summer. Deergrass (*Muhlenbergia rigens*), San Diego bentgrass (*Agrostis pallens*), perennial ryegrass (*Lolium perenne*), nodding bluegrass (*Poa secunda*), San Diego sedge (*Carex spissa*), iris-leaved rush (*Juncus xiphioides*), and valley needlegrass (*Nassella lepida*) dominate these areas. Associated herbs include blue-eyed-grass (*Sisyrinchium bellum*). These areas are not considered riparian/riverine resources because they lack the required “trees, shrubs, persistent emergents, or emergent mosses and lichens, which occur close to or which depend upon soil moisture from a nearby freshwater source; or areas with freshwater flow during all or a portion of the year. These grasslands are mesic and are dominated by species of plants that are classified by Reed (1988) as obligate to facultative meaning they are associated within wetland (iris-leaved rush) or at least areas that retain moisture longer than true uplands.
- Sycamore oak woodland, which was observed within the supplemental impact areas associated with improvements to Highway 395. These areas would meet the riparian/riverine definition under Section 6.1.2 of the MSHCP due to the presence of sycamore (*Platanus racemosa*).

Associated species observed in these areas include coast live oak, poison oak (*Toxicodendron diversilobum*), laurel sumac (*Malosma laurina*), and California blackberry (*Rubus ursinus*).

Unvegetated Drainages

Five non-wetland, unvegetated linear drainages were identified within the proposed impact footprint and two non-wetland, unvegetated drainages were observed within the supplemental impact areas associated with infrastructure improvements east of I-15 (Figure 5). Non-wetland, unvegetated drainages in the impact footprint are predominantly ephemeral drainages with small portions that are intermittent, and are regulated by CDFG, pursuant to Section 1602 of the California Fish and Game Code, and the Army Corps of Engineers, pursuant to Section 404 of the federal Clean Water Act. Unvegetated channels are not wetlands due to the lack of hydrophytic vegetation. All features in the proposed impact footprint were classified as riparian/riverine resources.

The following is a summary of the five drainages within the project study area. Additional detail regarding these drainages is available in the *Draft: Jurisdictional Delineation for the Proposed Liberty Quarry Project in Riverside and San Diego Counties, California* (ICF Jones & Stokes 2008a).

Drainage 1 occurs on the north end of the property, and originates within the central portion of the proposed impact footprint. This intermittent drainage flows down slope over 2,500 linear feet, east to the I-15, is captured through a 48-inch culvert under the highway right-of-way and is ultimately directed into the Rainbow Creek drainage to the southeast. The channel width, based on OHWM indicators, is approximately one-foot wide on average. The upper portion of the stream channel appears to be fed by a sub-surface seep(s) on the extreme west end near the highest rocky peak on the property (not located during survey).

No vegetation occurs within the channel throughout its length, and adjacent upland vegetation is typical of the chaparral communities that dominate many areas of the project site. A mesic grassland approximately ½-acre in size occurs along this channel outside of the proposed impact footprint to the east, but no indicators of wetland hydrology, hydric soils or hydrophytic vegetation were observed to be present in this area.

Drainage 2 occurs within the southwest corner of the property (project site), and originates near the main access road within the central portion of the proposed quarry footprint. This ephemeral drainage flows down slope over 1,250 linear feet, west to the unnamed tributary of Santa Margarita Creek. A clear surface connection and evidence of OHWM was observed downstream to the junction with the blue-line tributary to Santa Margarita Creek. The channel width, based on OHWM indicators, is approximately 2-feet wide on average. The majority of this stream channel parallels a spur-road that descends the west side of the project site.

No vegetation occurs within the channel throughout its length, and adjacent upland vegetation is dominated by chaparral. Hydric soils were lacking and wetlands vegetation was not present. The stream channel contains shallow,

coarse granitic sandy soils generally under one foot deep that are underlain by granitic bedrock, which restrict the development of hydric soils and/or the growth of hydrophytic vegetation within or adjacent to the stream channel despite the presence of intermittent wetlands hydrology.

Drainage 3 occurs on the central area of the property and originates just east of the main access road as shown in Figure 5. This ephemeral drainage flows down slope just under 2,500 linear feet, east to the I-15, is captured through a 48-inch culvert under the highway right-of-way and is ultimately directed into the Rainbow Creek drainage to the southeast. The channel width, based on OHWM indicators, is approximately 2-feet wide on average.

The channel is moderately incised (3 to 4 inches) with well-defined bed and banks near the upstream end to barely incised (1 to 2 inches) and contained primarily within a boulder and bedrock channel near the downstream end. The upper channel near data point number 3 was dry at the time of the surveys in April 2008. No vegetation occurs within the channel throughout its length, and adjacent upland vegetation includes chaparral and oak woodland communities.

Wetland hydrology within this ephemeral channel was lacking and only identified by the presence of drainage patterns, but wetlands hydrology is not present. Hydric soils were also lacking and wetlands vegetation was not present. The lack of all three indicators for wetlands within the OHWM indicate that Drainage 3 is a two-foot wide non-wetland WOUS. The stream channel contains shallow, sandy soils generally under 12-inches deep that are underlain by granitic bedrock, which restrict the development of hydric soils and/or the growth of hydrophytic vegetation within or adjacent to the stream channel despite the presence of intermittent wetlands hydrology.

Drainage 4 occurs near the south end of the property, and originates outside of the proposed quarry footprint. This intermittent drainage flows down slope approximately 850 linear feet, east to the existing access road and toe-of-slope and is captured through a 36-inch culvert placed under the existing central access road near the boundaries of the Riverside and San Diego county parcels. The flow from this channel is directed under the highway right-of-way through culverted WOUS and ultimately flows into the Rainbow Creek drainage to the southeast. The channel width, based on OHWM indicators, is approximately 3-feet wide on average.

The channel is contained within a boulder and bedrock channel throughout its length. The central channel was holding less than one-inch of water at the time of the surveys in April 2008. Vegetation within the channel is limited to occasional stands of spreading rush (*Juncus patens*) on sandy substrates that do not amount to a vegetation community, and adjacent upland vegetation includes coastal sage scrub and chaparral. The stream channel is braided through this reach, with two small low-flow channels that diverge and merge near the culvert opening.

Wetland hydrology within this intermittent channel was identified by the presence of surface water and by existing drainage patterns. Hydric soils were

lacking and wetlands vegetation was not dominant. The presence of indicators for wetlands hydrology and the lack of hydric soils and hydrophytic vegetation within the OHWM indicate that Drainage 4 is a three-foot wide non-wetland WOUS. The stream channel for Drainage 4 is dominated by bedrock with small amounts of loose sand. These conditions do not allow for the formation of hydric soils or the growth of large stands of hydrophytic vegetation within the channel.

Drainage 5 occurs near the far south end of the property on the San Diego County parcel and originates outside of the proposed quarry footprint. This ephemeral drainage flows down slope approximately 200 linear feet, east towards the I-15 and is captured through a 24-inch culvert placed on the slope above the existing access road. The channel width, based on OHWM indicators, is approximately 1-foot wide on average.

The stream is contained primarily within a boulder and bedrock channel. The lower channel was dry at the time of the surveys in April 2008. No vegetation occurs within the channel throughout its length, and adjacent upland vegetation is chaparral.

Wetland hydrology within this ephemeral channel was lacking and only identified by the presence of drainage patterns. Hydric soils were lacking and wetlands vegetation was not present. The presence of indicators for wetlands hydrology and the lack of hydric soils and hydrophytic vegetation within the OHWM indicate that Drainage 5 is a one-foot wide non-wetland WOUS. The stream channel for Drainage 5 is dominated by bedrock with small amounts of loose sand. These conditions do not allow for the formation of hydric soils or the growth of large stands of hydrophytic vegetation within the channel.

The two drainages within the supplemental impact areas east of I-15 are also ephemeral drainages with no riparian vegetation. The northern drainage within the supplemental impact area is a 5-foot wide ephemeral drainage. A 3-foot wide corrugated drainage pipe was observed on the western edge of this drainage. The southern drainage is 1-foot wide. A concrete culvert approximately 1-foot in diameter was observed on the western edge of the drainage. Both of these features occur outside the proposed improvements to Highway 395.

On-site unvegetated stream channels do not directly provide habitat for species listed in Section 6.1.2 of the MSHCP. However, ephemeral flows through these channels do flow into riparian areas identified for conservation in the MSHCP and therefore, contribute to the downstream functions and values of those areas. Because these drainages are at the headwaters of each of the tributaries into which they flow, and due to the steep topography over which they flow, there is minimal opportunity for these drainages to dissipate floodwaters and assist in nutrient and sediment trapping.

Vernal Pools

Two seasonally ponded areas were identified within the proposed impact footprint, Pool 1 and Pool 2 (Figures 5 and 6). Pool 1 is an approximate 6-foot by 8-foot unvegetated depression in a large boulder, with a maximum water depth when full of approximately 10 inches. This pool has been identified as a

vernal pool due to the presence of water-starwort (*Callitriche marginata*), a vernal pool associated plant. However this Pool does not have vernal pool soils in that the ponding occurs on a granite boulder rather than being supported by impervious hardpan, claypan, or volcanic rock. Pool 1 also provides habitat for the nonlisted versatile fairy shrimp (*Branchinecta lindahli*), found commonly in road ruts and other depressions.

Pool 2, consists of an approximate 10-foot by 20-foot unvegetated depression along the existing access road. This depression appears to have been created as a result of routine road maintenance. Pool 2 has not been classified as a vernal pool due to the lack of vegetation associated with vernal pool features. This pool has common toad rush (*Juncus bufonias*) and blue-eyed grass (*Sisyrinchium bellum*) around the edge. This feature (Pool 2) is no longer discussed as a vernal pool resource or a riparian/riverine resource.

3.2.2 Species Functions and Values Assessment

The following section analyzes the functions and values provided by the riparian/riverine and vernal pool resources within the impact footprint to special-status wildlife and plant species covered under the Western Riverside County MSHCP (County of Riverside 2003).

Birds (bald eagle, least Bell's vireo, peregrine falcon, southwestern willow flycatcher, and western yellow-billed cuckoo)

ICF Jones & Stokes and Scott White (2008) conducted habitat assessments for special-status riparian bird species, including western yellow-billed cuckoo (*Coccyzus americanus occidentalis*); willow flycatcher (*Empidonax traillii*) (including the southwestern subspecies (*E.t. extimus*)); and least Bell's vireo (*Vireo bellii pusillus*). White (2008) concluded that the project site lacks potentially suitable breeding habitat for all three species. ICF Jones & Stokes Senior Biologist Kurt Campbell agreed with White's opinion that the project site would not support breeding occurrence of these species and the project site lacks potentially suitable breeding habitat for all three species. Therefore, impacts to riparian/riverine resources will not impact these riparian bird species (ICF Jones & Stokes 2008b).

The project site also lacks potential for bald eagle, a species that requires stands of trees for roosting and water bodies for foraging. No potential for impact to this species by the proposed project.

Amphibians (arroyo toad, mountain yellow-legged frog, and California red-legged frog)

The project's riparian/riverine areas do not support adequate aquatic habitat for these species. These species require persistent water from March to mid-June. Drainages 1, 2 and 4, as described in the *Draft: Jurisdictional Delineation for the Proposed Liberty Quarry Project in Riverside and San Diego Counties, California* (ICF Jones & Stokes 2008a) contain small, isolated intermittent segments within larger ephemeral drainages. These intermittent segments are persistent sources of water because they are fed by underground seeps or springs.

The intermittent segments are predominantly within bedrock channels and little to no soil development was observed. Within Drainage 1, the only intermittent segment with persistent water contained approximately 1"-2" of sand within a small isolated seep area. Within Drainage 2, there was a small isolated area with approximately 18" of sand. However, there is a complete lack of deep sandy terraces on project site, which arroyo toad prefers. These small intermittent areas are not connected to other persistent water sources except by large stretches (one-half mile or more) of ephemeral channels that exhibit extremely steep gradients. Arroyo toad prefers shallow-slow-moving water with a low gradient. The project site's lack of lowland stream and deep water pools also eliminates the potential for the presence and potential impact to California red-legged frog.

There is no woody riparian vegetation within any the riparian/riverine resources and therefore water would not be shaded or cool. Mountain yellow-legged frog requires a constant, year-round supply of cool water, which is not present within the riparian/riverine areas. In addition, the project site is outside the known geographic range of the species.

Fish (Santa Ana sucker)

The project site lacks open water and therefore does not support habitat for Santa Ana sucker. The project site also occurs outside the geographic range of the species.

Invertebrates/Crustaceans (Riverside fairy shrimp and vernal pool fairy shrimp)

Dry-season soil sampling was conducted by Ted Lee (TE-038109-1); soil samples were processed by Dr. Chuck Black (TE-835549-3) in August 2008 in both Pools 1 and 2. The access road was last graded prior to the first 2008/2009 wet-season site visit. Wet-season surveys were conducted by Doug Allen (TE-038109-1) and again only in pools 1 and 2.

Fairy shrimp cysts and hatched fairy shrimp were detected in Pool 1 during the dry and wet surveys. These were identified as the non-listed Lindahl's fairy shrimp. No listed fairy shrimp or cysts were detected or collected from Pool 1 during the dry season sampling. No hatched fairy shrimp or fairy shrimp cysts were detected or collected in Pool 2 during the wet season surveys or within the dry season soil samples collected. Based on the conditions of the pools and the results of wet- and dry-protocol surveys conducted in 2008/2009, listed fairy shrimp do not occur within the proposed impact footprint.

Plants

The plants associated within riparian/riverine and vernal pool resources and that are to be provided conservation and protection to under the MSHCP Section 6.1.2 policies include Brand's phacelia, California Orcutt grass, California black walnut, Coulter's matilija poppy, Engelmann oak, Fish's milkwort, graceful tarplant, lemon lily, Mojave tarplant, mud nama, ocellated Humboldt lily, Orcutt's brodiaea, Parish's meadowfoam, prostrate navarretia, San Diego button-celery, San Jacinto Valley crowscale, San Miguel savory, Santa Ana River woolly-star, slender-horned spineflower, smooth tarplant, spreading navarretia, thread-leaved brodiaea, and vernal barley.

White (2008) observed Orcutt's brodiaea within the mesic grassland (See Figure 5) in the northwest portion of the project site outside of the impact area. Several dozen plants were observed during 2003 and 2005. This species was also observed during the field reconnaissance in June 2009 to determine potential onsite rock pool creation (Figure 5). A population of an estimated 50 individuals and a small population of about 5 individuals were found. The population of 50 is located within a small area of wet grassland (including iris-leaved rush, San Diego sedge, and blue-eyed grass) while the small population of five was found in a dryer grassland setting. Orcutt's brodiaea occurs in clay soils in mesic native grasslands often associating with vernal pools (County of Riverside 2003). However, the areas on the project site which support Orcutt's brodiaea lack indications of ponding and lack the necessary topography to support ponding. Due to a lack of vernal pool hydrology, Corey Klutz (an ICF Jones and Stokes botanist) and Scott White determined that these areas do not meet the definition of vernal pools as they are defined in section 6.1.2 of the MSHCP.

The population of roughly 50 individual Orcutt brodiaea does occur within the proposed quarry footprint and thus would be directly impacted (Figure 6). However, the mesic grassland and the Orcutt's brodiaea individuals identified in 2003 and 2005 as well as the small population of five individuals found in 2009 would not be directly impacted by the proposed project.

Engelmann oaks are present within the oak woodlands mapped on the project site (Figure 5), including within areas of the proposed impact footprint. However, these occurrences are within areas mapped as oak woodland and do not qualify as riparian/riverine resources due to the lack of riparian-associated species such as sycamore, willows and cottonwood or water features (e.g., bed and banks).

No other plant species associated with wetlands or vernal pools were observed on the project site. Rainbow manzanita (*Arctostaphylos rainbowensis*) was observed throughout the chaparral areas on the project site, but this species is not dependent upon riparian/riverine or vernal pool resources. Precise locations of individuals of this species were not provided for this report.

Additional Special-Status Wildlife Surveys

Habitat assessment surveys also were conducted for burrowing owl (*ICF Jones & Stokes, 2008d*). The habitat assessment concluded there are no suitable areas for foraging or breeding on the project site or within the immediate vicinity. Areas that were deemed potentially suitable habitat by White (2008) had greater than 30% shrub cover within the marginal patches of habitat. Small open patches occurred within the chaparral community. However, these areas were very small in extent and surrounded by dense chaparral.

ICF Jones & Stokes conducted focused surveys for the coastal California gnatcatcher (*Polioptila californica californica*). Surveys conducted in April 2008 were performed to determine whether California gnatcatchers are located within potentially suitable habitat on the San Diego County portion of the 414-acre property. Additional California gnatcatcher surveys were conducted in March and April 2009 within 250 feet of the proposed on- and off- ramp widening impact area at the West Rainbow Valley Boulevard interchange along the San

Diego County line. The area within the boundaries of Riverside County would fall under jurisdiction of the Western Riverside Multiple Species Habitat Conservation Plan, which does not require protocol surveys for coastal California gnatcatchers.

Both California gnatcatcher surveys were conducted in accordance with the U.S. Fish and Wildlife Service (USFWS) survey protocol. No coastal California gnatcatchers were detected within 300 feet of the impact footprint during the April 2008 surveys. Two additional sensitive species were detected during the April 2008 surveys within the survey area: 1) Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*); and 2) San Diego desert woodrat (*Neotoma lepida intermedia*). Three coastal California gnatcatchers were detected within 250 feet of the supplemental impact footprint during the March and April 2009 surveys. Southern California rufous-crowned sparrow was observed again during the March and April 2009 surveys. Southern California rufous-crowned sparrow is a fully covered species under the MSHCP and no longer is a state Species of Special Concern.

In summary, the riparian/riverine resources within the proposed impact area minimally contribute to the downstream functions and values of the riverine/riparian areas included in the conservation areas on project site (predominantly to the east, west and south of the impact area) as well as to the off-site, downstream drainages within the Santa Margarita watershed. This is because functions are limited to water transport and the features are not expected to transport large volumes of water either. There are two small areas of mesic grassland that support populations of Orcutt's brodiaea that would be downstream of the impact area and therefore, could be indirectly impacted by the proposed project.

Within the quarry footprint a vernal pool (Pool 1), 0.90 acres of mesic grassland (not known to have Orcutt's brodiaea), and roughly 0.1 acres of mesic grassland (known to have an estimated population of 50 individual Orcutt's brodiaea) would be removed. No listed fairy shrimp or special status plants occur within the vernal pool.

3.2.3 Hydrological Functions and Values Assessment

The on-site riparian/riverine resources are expected to minimally support the functions and values of downstream riparian habitat within the Santa Margarita watershed. Approximately 25 percent of this watershed occurs in San Diego County and the remaining 75 percent occurs in Riverside County. The cities of Temecula and Murrieta, as well as the Santa Margarita River, Temecula Creek, Murrieta Creek, Santa Margarita Lagoon, Vail Lake, and Skinner Reservoir are located within this watershed area.

The project site occurs in one of the highest points in the local watershed. The existing access road that runs south to north through the project site is located along a ridgeline that more or less defines the drainage patterns onsite, which

flow to the east and west. Two ephemeral stream channels (White 2008) that occur outside the proposed impact footprint flow west and south along the western boundary of the project property. Storm water from the project site is either conveyed east towards the Rainbow Creek drainage through surface channels that descend steep slopes and culverts located under the I-15, or west down steep slopes towards a blue-line stream that is an upper tributary of the Santa Margarita River.

As mentioned, on-site drainages, including those impacted by the proposed project, flow into tributaries of the Santa Margarita River. The Santa Margarita River flows southwest from the project site and therefore, the majority of downstream drainage length is within San Diego County. National Hydrography Dataset (NHD) (U.S. Geological Survey 2009) drainages mapped downstream of the proposed project within Riverside County are limited to 1) an approximately 3,000 foot section of an unnamed tributary to the Santa Margarita River located along the western edge of the project site; and 2) additional on-site drainages outside of the project impact area, which were not mapped.

Because the on-site drainages are steep and unvegetated and because there are no wetland areas to slow water flow within the impact area, there is limited potential for the riparian/riverine resources on the project site to provide nutrient removal, sediment retention and toxicant trapping. Due to the linear nature of the on-site drainages and limited presence of ponded water, these drainages are considered to have low potential for groundwater recharge.

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Riparian/riparian Resources Impact Analysis

The proposed project includes the development of a 164-acre quarry (see Figure 3). Impacts would be primarily limited to chaparral areas on within the impact footprint, but impacts would also occur to identified riparian/riverine resources.

4.1 Direct Effects to Riparian/Riverine Functions and Values

Unvegetated, non-wetland stream channel and a granite rock pool classified as a vernal pool (Pool 1) would be impacted by the proposed project. None of the riparian/riverine resources associated with Highway 395 would be impacted because all work would occur within the existing roadbed. The project would result in the loss of 0.11 acre of riparian/riverine resources and 48 square feet of vernal pool resources (Pool 1) located within the impact footprint. Direct impacts to these resources are quantified in Table 2 and shown on Figure 6.

The project site lacks suitable habitat for the wildlife species outlined in Section 6.1.2 of the MSHCP (ICF Jones & Stokes 2008b; ICF Jones & Stokes 2008e; ICF Jones & Stokes 2009a; ICF Jones & Stokes 2009c; White 2008a). While the project site does contain suitable ponding habitat for listed fairy shrimp, the existing depressions (rock pool and road rut) were surveyed using protocol surveys, and neither listed fairy shrimp species were encountered. Therefore, direct impacts to the functions and values necessary for these wildlife species would not occur.

The project site supports populations of Engelmann oak and Orcutt's brodiaea, which are identified as benefitting from riparian/riverine conservation guidelines and are full covered species under the MSHCP. Approximately 32 Engelmann oaks would be directly impacted by the proposed project within the oak woodlands. However, the Engelmann oaks on-site are not within vegetation communities meeting the definition of a riparian/riverine resource pursuant to Section 6.1.2.

Table 2. Direct Impacts to Riparian/Riverine and Vernal Pool Resources within the Proposed Impact Footprint

| Riparian/Riverine Resource Type | Location | Total Area on Site (acres unless noted) | Project Impacts (acres) |
|--|---------------------------|--|---|
| Sycamore Oak Woodland | Supplemental impact areas | 0.2 ac. | No impact |
| Unvegetated stream channel | Project Study Area | 7,438.5 linear feet (0.3 ac.) ¹ | 2,510 linear feet (0.11 ac.) ³ |
| Unvegetated stream channel | Supplemental impact areas | 51 linear feet (163 square feet; 0.0 ac.) ¹ | No impact |
| Vernal Pool 1 (Rock basin) | Project Study Area | 48 square feet (0.0 ac.) ² | 48 square feet (0.0 ac.) ² |
| Total | | 0.5 acres | 0.1 acres |

¹ - Acreage does not include all potentially jurisdictional areas outside of the impact area, only those directly adjacent to and hydrologically connected to impacted drainages.

² - Acreage only includes vernal pools w/in the impact footprint.

³ - Does not include the 400-foot setback along northern boundary.

An estimated 50 individuals of Orcutt's brodiaea occurring within a mesic grassland habitat in the northern portion of the site would be directly impacted by the proposed quarry footprint (Figure 6). The remaining mesic grassland where other individuals of Orcutt's brodiaea were observed is located outside the proposed impact quarry footprint and, as such, would not be directly impacted. As discussed in Section 3.1.2, mesic grasslands do not qualify as a riparian/riverine or vernal pool resource per Section 6.1.2 of the MSHCP.

4.2 Indirect Effects to Riparian/Riverine Functions and Values

The project would result in potential indirect impacts to riparian/riverine resources within the project site and within downstream, off-site riparian/riverine areas within Rainbow Creek and unnamed tributaries to the Santa Margarita River. Potential indirect impacts would occur to these resources during the construction of access roads and during the lifetime of the quarry project. These include increased dust and possible increases in toxicant-laden runoff from construction and extraction equipment, and increased potential for exotic, invasive species to invade natural areas on the project site and beyond.

Noise, vibration and lighting are indirect impacts applicable primarily to wildlife species and because no riparian-dependent wildlife species have been observed or are thought to occur on the project site, these indirect impacts will not impact the on-site functions and values of riparian/riverine resources.

4.3 Rationale Why Avoidance Alternative is Not Possible

Complete avoidance of the riparian/riverine and vernal pool resources (rock basin Pool 1) on the project site is not feasible because it would require the reduction of the quarry footprint by roughly one-third such that the avoidance alternative would be cost prohibitive. By situating the quarry within the central portion of the project site at headwaters to the drainages, downstream impacts to riparian/riverine resources were minimized. The centralized location of the proposed quarry within the property was also needed for visual impacts along I-15. The location of the conservation areas on the project site, predominantly to the east and west of the quarry site, also precludes complete avoidance of these drainages. However it would be expected that these proposed conservation areas also have riparian/riverine resources that would be impacted if the quarry were situated within them. The project design prioritized conservation of the downstream drainages on-site due to their potential to provide greater functions and values to riparian/riverine resources than the headwater areas on-site. Although there is minimal suitable habitat in these downstream drainages for riparian-dependent species, they were considered to have greater long-term conservation value than the headwater drainages where direct impacts are proposed.

Drainage 5 will be impacted as a result of improvements to an existing access road. The only feasible access to the proposed quarry is along this existing unpaved access road. Improvements to the existing road would result in unavoidable impacts to this riparian/riverine resource. The crossings would be limited to the minimum number needed and would be located and designed to cause the least impact to environmental resources.

4.4 Reduced Quarry Footprint Alternative Analysis

As shown in Figure 6, the Reduced Quarry Footprint Alternative (described in Section 1) is basically the same as the proposed project in terms of proposed impacts to riparian/riverine resources. The proposed project with implementation of Mitigation Measure BIO-1c(3) of the *Draft Environmental Impact Report* (Lilburn Corporation 2009, In preparation) reduces the proposed project to equal the Reduced Quarry Footprint Alternative along the northern boundary with the 400-foot setback. Thus, the Reduced Quarry Footprint would impact directly and indirectly the same riparian/riverine resources and vernal pool as identified for the proposed project in Sections 4.1 and 4.2. Hence, an estimated 0.08 acres of unvegetated stream channel and 48 square feet of vernal pool (Pool 1). No impacts to Orcutt's brodiaea would occur by this Alternative, nor the proposed project with implementation of the 400-foot setback (*Mitigation Measure BIO-1c(3)* in the DEIR).

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5.1 Mitigation for Direct Effects

Santa Margarita Ecological Reserve Setback

As described in the *Draft Environmental Impact Report* (Lilburn Corporation 2009, in preparation) a 400-foot setback along the northern boundary of the proposed project would occur. This would ensure an adequate buffer between the quarry and the SMER as required by the MSHCP. This measure is *Mitigation Measure BIO-1c(3)* in the DEIR and is provided below. With implementation of this measure direct impacts to unvegetated stream channels would be reduced from 0.11 acre to 0.08 acre. This measure would also preserve all populations of Orcutt's brodiaea found on the project site, including the estimated 50 individuals found on the northern portion of the site during the 2009 field reconnaissance (Figure 6).

“The Applicant shall reduce the Quarry Area to increase the buffer along the northern boundary with the SMER to 400 feet. This 400-foot setback would protect the SMER (a Western Riverside County MSHCP criteria area – EC-G) by reducing project-related noise, lighting, and other edge effects. This conservation buffer would be protected through the permanent on-site conservation easement(s) described below.”

Permanent On-Site Conservation Areas

Consistent with *Mitigation Measure BIO-1b(1)* contained in the *Draft Environmental Impact Report*, the applicant shall provide permanent protection of the non-impacted portions of the project site, consisting of approximately 250 acres (approximately 60 percent of the total site), through the conveyance of conservation easements or similar legal arrangements to San Diego County, the RCA, or another qualified entity at the direction of Riverside County and San Diego County. The conservation easement or other similar legal arrangement shall forever deed and transfer all present and future development rights associated with the conservation easement area lands. The conservation easements shall provide that the conserved area would remain undeveloped in perpetuity for the benefit of on-site species and would reduce the edge effects of the proposed project on adjacent lands. The conservation easements would allow, but not require, active management of the covered area during the active mining phases of the Liberty Quarry. This mitigation measure will ensure the long-term conservation of on-site stream channels, and will support the functions and

values of the downstream off-site tributaries within the Santa Margarita watershed.

Creation/Enhancement for Unvegetated Stream Channels

Direct impacts to unvegetated stream channels within the project footprint will be mitigated at a 2:1 ratio. The proposed mitigation amount provided here has assimilated the 400-foot setback along the northern boundary. Thus, an estimated 0.08 acres would be directly impacted. All proposed mitigation would occur within the Santa Margarita watershed. This mitigation would include creation of approximate 0.08 acres of ephemeral jurisdictional channel(s) within the set-aside areas surrounding the project impact footprint, and approximately 0.08 acres of jurisdictional area enhancement, potentially within disturbed wetlands of the Santa Margarita River. If mitigation cannot be achieved in-kind on-site, appropriate credits within an established mitigation bank would be purchased (Lilburn Corporation 2009, In preparation). The Santa Margarita-San Luis Rey Weed Management Program is an USACE In-lieu fee program that removes *Arundo donax* within the Santa Margarita River and is a feasible option for off-site mitigation.

All proposed on-site creation or off-site enhancement areas would be identified in a conceptual habitat mitigation plan consistent with USACE regulatory requirements, and including the following:

- Quantitative success criteria (vegetation cover and species richness)
- Recommendations for soil preparation
- A plant palette to include native species occurring on the Site, such as Engelmann oak, coast live oak, and Rainbow manzanita
- Planting methods
- Irrigation and maintenance requirements
- A long-term mitigation maintenance and monitoring plan with remedial measures

This mitigation measure would support the functions and values of riparian/riverine areas within the Santa Margarita watershed by replacing what was lost (0.08 acres) and enhancing 0.08 acres of riparian/riverine habitat available for use by species covered in Section 6.1.2 of the MSHCP.

Mitigation for Vernal Pools

A 48-square foot rock pool that has been liberally classified as a vernal pool would be directly removed by the proposed quarry. This pool is known to provide habitat for water-starwort, a plant associated with vernal pools and non-listed Lindahl's fairy shrimp. No special status plants or listed fairy shrimp are present. To provide equivalent preservation to this rare habitat, a mitigation ratio of 3:1 is needed. Mitigation will be provided by (1) creation of a rock vernal pool at 1:1 within the remaining project site lands that would occur within the

proposed conservation easement and (2) the purchase of mitigation credits from an approved mitigation bank; Barry Jones/ Skunk Hollow Wetland Mitigation Bank. Implementation of measures (1) and (2) would provide protection and management of the vernal pool resources in perpetuity. Refer to Appendix C for the mitigation strategy for the compensation of rock vernal pool resources.

5.2 Mitigation for Indirect Effects

Water Quality

Drainage water from quarry operations would not be discharged to adjacent jurisdictional waters or the SMER (Western Riverside County MSHCP criteria area EC-G). Drainage water would be collected on the quarry site within a detention basin located at the southern aspect of the quarry area. Drainage water would not be allowed to enter into the watershed of the drainage feature located at the western portion of the 414-acre site, a tributary to a tributary of the Santa Margarita River (Lilburn Corporation 2009, In preparation).

In addition, the applicant shall prepare plans for water pollution and erosion control for all discretionary projects involving the movement of earth in excess of 50 cubic yards within Riverside County. The plans would describe sediment and hazardous materials control, dewatering or diversion structures, fueling and equipment management practices, and use of plant material for erosion control. Plans would be reviewed and approved by Riverside County and participating jurisdiction prior to construction.

To mitigate any potentially significant indirect impacts to riparian resources located downstream of the quarry site, the following measures would be implemented by the applicant during the construction, operation, and reclamation phases:

1. Comply with any and all conditions of permits by the USACE or RWQCB under Sections 404 or 401 of the federal CWA, by CDFG under Section 1602 of the Fish and Game Code, or by Riverside County pursuant to the Western Riverside County MSHCP. Permit conditions generally include both short-term (during construction) and long-term (operation) requirements.
2. Implement all applicable regulations associated with the SWPPP, landscape plan, and any water pollution or erosion control plans prepared for the proposed project to satisfy NPDES permit requirements.
3. The proposed project is subject to reclamation standards of the Surface Mining and Reclamation Act of 1975 (SMARA), and the applicant proposes to revegetate the site at the close of mining. Effective revegetation and maintenance would minimize the effects of invasive plants. Under SMARA, the applicant would be required to reclaim the quarry and any other areas disturbed during its construction and operation (e.g., overburden areas, processing and stockpiling areas, roads, and equipment yards) at the close of mining. The applicant would

reclaim the site to open space (Lilburn Corporation 2009, In preparation). The reclamation plan would include the following:

- A revegetation plan with quantitative success criteria (vegetation cover and species richness)
- Recommendations for soil preparation
- A plant palette to include exclusively native species occurring on the Site, such as Engelmann oak, coast live oak, and Rainbow manzanita, both those to be planted as seeds and nursery stock
- Planting methods, including densities and locations (pounds per acre of seed)
- Irrigation and maintenance requirements
- A monitoring plan over a minimum 5-year period
- Weed control and remedial actions to be required if success criteria are not met

Invasive Species

The project mining and reclamation plan requires the applicant to develop landscape plans that avoid the use of invasive species for the portions of the quarry site that are adjacent to the SMER and/or adjacent jurisdictional waters. The landscape and revegetation plans are subject to approval by Riverside County and to review by the State Mining and Geology Board. With these features, the proposed project would avoid the use of invasive species adjacent to the SMER and jurisdictional areas (Lilburn Corporation 2009, In preparation).

There are additional mitigation measures that will be implemented that address indirect impacts associated with noise, vibration, and lighting, which could impact special-status wildlife species on the project site. However, no suitable habitat exists on the project site for special-status wildlife species discussed in Section 6.1.2 of the MSHCP (Lilburn Corporation 2009, In preparation) and thus such measures have not been included here.

Chapter 6.0

Findings

Implementation of the avoidance, minimization, and compensatory mitigation presented in Chapter 5 and Appendix C would mitigate for proposed impacts to riparian/riparian resources, including unvegetated stream channels and a rock vernal pool. As identified in Chapter 5, the existing riparian/riparian resources in the study area do not provide habitat for Section 6.1.2 planning species. Although Orcutt's brodiaea occurs on the project site, it is located in areas that do not meet the definition of riparian/riverine resources identified in Section 6.1.2 of the Plan. However, with implementation of the 400-foot setback (*Mitigation Measure BIO-1c(3)* in the DEIR), no removal of Orcutt's brodiaea would occur by the proposed project. The 400-foot setback is illustrated on Figure 6 along the northern boundary of the proposed project.

The riparian/riparian resources in the on the project site are limited in extent in terms of riparian vegetation and consequently habitats for riparian-associated wildlife species are generally absent. The only locations within the project site that have riparian/riverine vegetation are along drainages in very isolated and small patches outside of the impact area.

Potential downstream effects to existing or proposed conservation lands and/or conserved species are not expected when proposed mitigation measures are considered in conjunction with the proposed project. In addition, the impacted drainages on-site flow to the south and southwest, away from Riverside County and the existing Criteria Cells and PQP lands. Therefore, from a riparian/riverine planning species perspective, the net effect of the project would be equivalent or superior to existing conditions.

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Chapter 7.0 References

- [AOU] American Ornithologists' Union. 1998. Check-list of North American Birds, 7th ed. Washington, DC: American Ornithologists' Union; includes periodic updates in the journal *The Auk*.
- Baker, R. J., L. C. Bradley, R. D. Bradley, J. W. Dragoo, M. D. Engstrom, R. S. Hoffmann, C. A. Jones, F. Reid, D. W. Rice, and C. Jones. 2003. Revised Checklist of North American Mammals North of Mexico, 2003. Lubbock, TX: Occasional Papers, Museum of Texas Tech University, Number 229.
- Bowman, R.H. 1973. Soil survey of San Diego Area, California. USDA. Soil Conserv. Serv., Washington, DC
- California Department of Fish and Game (CDFG). 2009. *California Natural Diversity Database*. Accessed via Rarefind software (Version 3) and Geographic Information System data published monthly.
- Lilburn Corporation 2009, in preparation. *Liberty Quarry Draft Environmental Impact Report*.
- Collins, J. T., and T. W. Taggart. 2002. Standard Common and Current Scientific Names for North American Amphibians, Turtles, Reptiles, and Crocodilians, 5th Edition. Lawrence, KS: The Center for North American Herpetology.
- County of Riverside 2003. *Western Riverside County Multiple Species Habitat Conservation Plan. Final MSHCP*. June 17, 2003.
- Ecological Restoration Service. 2008. Examination of Soil Samples from the Granite Construction Liberty Quarry Project, Riverside County, CA, and Culture of Cysts for Species Determination. Dated August 8, 2008.
- ICF Jones & Stokes 2008a *Draft: Jurisdictional Delineation for the Proposed Liberty Quarry Project in Riverside and San Diego Counties, California*
- ICF Jones & Stokes 2008b. *Evaluation of Constraints Posed by Potential Occurrence of Three Riparian Bird Species at the Liberty Quarry Project, Riverside and San Diego Counties, California*

- ICF Jones & Stokes 2008c. *Results of the Coastal California Gnatcatcher Surveys for the Liberty Quarry Project*
- ICF Jones & Stokes 2008d. *Burrowing Owl Focused Habitat Assessment for the Liberty Quarry Project, Riverside and San Diego Counties, California*
- ICF Jones & Stokes 2008e. *Evaluation of Potential Biological Resource Constraints at Supplemental Areas for the Liberty Quarry Project, Riverside and San Diego Counties, California.*
- ICF Jones & Stokes 2009a. *Fairy Shrimp Focused Survey Report for the Granite Construction Liberty Quarry Project Riverside County, California.* May 2009.
- ICF Jones & Stokes 2009b. *Results of the Coastal California Gnatcatcher Surveys for the Liberty Quarry Project.* April 2009.
- ICF Jones & Stokes 2009c. *Biological Resources Report for the Proposed Widening of the Southbound Interstate 15, on and off ramps at West Rainbow Valley Boulevard, San Diego County, California.* May 2009.
- Knecht, A.A. 1971. *Soil Survey of Western Riverside Area, California.* U.S. Department of Agriculture, Washington D.C.
- Reed, P. 1998. *National List of Plant Species that occur in Wetlands: (Updated from 1988, Biological Report 88[26.10]).* U.S. Fish & Wildlife Service. Washington, D.C.
- United States Geological Survey. 2009. *National Hydrography Dataset (NHD) Geographical Information System data. 12 Digit Watershed Boundary Dataset 1:24,000 (NHDFlowline).* Available for download at <http://nhd.usgs.gov/index.html>. May.
- White, Scott D. 2008a. *Proposed Liberty Quarry: Biological Technical Report.*
- White, Scott D. 2008b. *Proposed Liberty Quarry: Determination of Consistency with the Western Riverside County MSHCP.*

Appendix A

**Photographs of Riparian/Riverine and Vernal
Pool Resources**



Photo 1: Vernal Pool (Pool 1) – unvegetated rock pool.



Photo 2: Vernal Pool (Pool 1) – during wet season survey.



Photo 3: Pool 2 – unvegetated road pool.



Photo 4: Pool 2 – unvegetated road pool during wet season survey.



Photo 5. Drainage 1 approximately 200 feet downstream of the impact area near the mapped mesic grasslands.



Photo 6. Drainage 1 flows west to east down towards the I-15 corridor and is generally 1 foot wide. This 36-inch culvert is located at the downstream end of the channel near the shoulder of I-15.



Photo 7. The soil pit dug in Drainage 2 showing thick, saturated sandy soils and a poorly defined upper channel. This pit held several inches of water 5 minutes after digging.



Photo 8. Drainage 2 flows west via a steep, sometimes poorly defined lower channel segment in the understory of dense chaparral.



Photo 9. The west end of Drainage 3. This channel flows west to east through the understory of dense chaparral. This channel is generally 2 feet wide.

Photo 10. Drainage 3 also flows west to east down towards the I-15 corridor and is generally 2 foot wide. This partially blocked 48-inch culvert is located at the downstream end of the channel near the shoulder of I-15.





Photo 11. Drainage 4 as seen west of the existing access road. This channel is bedrock constrained, but occasional hydrophytic plants are located within cracks in the bedrock. The flow path is generally 3 feet wide.

Photo 12. The downstream end of Drainage 4 just before it enters a storm water inlet and is diverted southeast under I-15 towards Rainbow Creek.





Photo 13. A concrete brow ditch that diverts sheet flows on this slope into Drainage 5. The channel is generally 1 foot wide and relatively short, and occurs under dense chaparral.

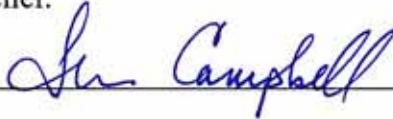
Photo 14. A 12-inch storm water inlet located at the downstream end of Drainage 5.



Appendix B

Riverside County Certification and Attachments

Certification: I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological and natural resources report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.

Date: 6-8-09 Signature: 

BIOLOGICAL REPORT SUMMARY SHEET

(Must be attached to biological report)

| |
|--|
| Applicant Name: Granite Construction, Inc. |
| Assessor's Parcel Number(s) (APN): see attached list |
| APN cont. : _____ |
| Site Location: Section: 36 Township: 8s Range: 3w |
| Site Address: _____ |
| Related Case Number(s): _____ PDB Number: _____ |

| <i>Check ITEM(S) Habitat Assessment</i> | <i>Check ITEM(S) * Focused Survey</i> | SPECIES or HABITAT OF CONCERN | (Circle whether a potential for significant impact to species or resource exists **) | |
|---|---|--------------------------------------|--|----|
| | | | Yes | No |
| | | Arroyo Southwestern Toad | Yes | No |
| | | Drainages/Waters of U.S. | Yes | No |
| | | Coachella Valley Fringed-Toed Lizard | Yes | No |
| | | Coastal California Gnatcatcher | Yes | No |
| | | Coastal Sage Scrub | Yes | No |
| | | Delhi Sands Flower-Loving Fly | Yes | No |
| | | Desert Pupfish | Yes | No |
| | | Desert Slender Salamander | Yes | No |
| | | Desert Tortoise | Yes | No |
| | | Flat-Tailed Horned Lizard | Yes | No |
| | | Least Bell's Vireo | Yes | No |
| | | Oak Woodlands | Yes | No |
| | | Quino Checkerspot Butterfly | Yes | No |
| | | Riverside Fairy Shrimp | Yes | No |
| | | Santa Ana River Woollystar | Yes | No |
| | | San Bernardino Kangaroo Rat | Yes | No |
| | | Slender Horned Spineflower | Yes | No |
| | | Stephens' Kangaroo Rat | Yes | No |
| | | Vernal Pools | Yes | No |

| Check ITEM(S) Habitat Assessment | Check ITEM(S) * Focused Survey | SPECIES or HABITAT OF CONCERN | (Circle whether a potential for significant impact to species or resource exists **) | |
|---|---|------------------------------------|--|----|
| | | | Yes | No |
| | | Wetlands | Yes | No |
| | | Riparian Habitat | Yes | No |
| | | Burrowing Owl | Yes | No |
| | | Bighorn Sheep | Yes | No |
| | | Red-legged Frog | Yes | No |
| x | | Other: Rip/Riv & Vernal Pool DBESP | Yes | No |
| | | Other: | Yes | No |
| | | Other: | Yes | No |
| | | Other: | Yes | No |
| | | Other: | Yes | No |

* Focused Survey: a) Survey on a listed species performed per USFWS or CDFG protocol by licensed individual (i.e., CaGn, SKR, QCB), OR b) For non-listed spp., survey performed per protocol recognized by USFWS or CDFG, or other applicable agency (i.e., Burrowing Owl), OR c) For jurisdictional waters, wetlands, & riparian areas, following protocol of U.S. Army Corp of Engineers.

** Species of concern are any unique, rare, endangered, or threatened species; species used to delineate wetlands and riparian corridors; and any hosts, perching, or food plants used by any animals listed as rare, endangered, threatened or candidate species by either State or Federal regulations, or those tracked by the California Department of Fish and Game Natural Diversity Data Base (NDDB).

I declare under penalty of perjury that the information provided on this summary sheet is in accordance with the information provided in the biological report.

John Campbell Senior Biologist
Signature and Title

June 8, 2009

Date Report Prepared

not applicable

not applicable

10(a) Permit Number (if applicable)

10(a) Permit Expiration Date

County Use Only

Received by: _____ Date: _____

PD-B# _____ Related Case #: _____

Assessor's Parcel Numbers

| | |
|-----------|-----------|
| 918090007 | 918100008 |
| 918090008 | 918100012 |
| 918090009 | 918110001 |
| 918090010 | 918120044 |
| 918090011 | 918130031 |
| 918090012 | 918130043 |
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| 918100006 | |
| 918100007 | |

**LEVEL OF SIGNIFICANCE CHECKLIST
FOR BIOLOGICAL RESOURCES**

(Must be attached to report)

APN *: See attached APN list Riverside County Case No.*: _____ EA Number: _____

Wildlife & Vegetation

| | | | | | | |
|-------------|--|-----------------------|--|-------------|--|--------|
| Potentially | | Less than Significant | | Less than | | No |
| Significant | | with Mitigation | | Significant | | Impact |
| Impact | | Incorporated | | Impact | | |

(Check the level of impact that applies to the following questions)

- a) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Conservation Community Plan, or other approved local, regional, or state conservation plan?
 • • •
- b) Have a substantial adverse effect, either directly or through habitat modifications, on any endangered, or threatened species, as listed in Title 14 of the California Code of Regulations (Sections 670.2 or 670.5) or in Title 50, Code of Federal Regulations (Sections 17.11 or 17.12)?
 • • • Out of Scope
- c) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U. S. Wildlife Service?
 • • • Out of Scope
- d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident migratory wildlife corridors, or impede the use of native wildlife nursery sites?
 • • • Out of Scope
- e) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or U. S. Fish and Wildlife Service?
 • • •
- f) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act or Section 1600 of the California Fish and Game Code (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?
 • • • Out of Scope
- g) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?
 • • • Out of Scope
- h) Create any impact which is individually limited, but cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects as defined in Section 15130 (14 Calif. Code of Regs).
 • • • Out of Scope

* Required

**LEVEL OF SIGNIFICANCE CHECKLIST
FOR BIOLOGICAL RESOURCES**

Findings of Fact:

A DBESP for riparian/riverine and vernal pool resources was performed. An estimated 0.08 acres of unvegetated stream channels and 48 square feet of a rock pool that is classified as a vernal pool.

Proposed Mitigation:

For impacts to unvegetated stream channels, 0.08 acres will be created w/in the proposed conservation easement and another 0.08 acres of jurisdictional stream channel will be enhanced. Creation and enhancement will occur within the Santa Margarita Watershed.

The impact to the vernal pool will be mitigated at a 3:1 ratio and would consist of purchase of mitigation bank credits or off-site land purchase that will have the necessary pool acreage and would be protected and managed in perpetuity.

Monitoring Recommended:

N/A

Prepared By: Jim Campbell Date: June 8, 2009

County Use Only

Received by: _____ Date: _____

PD-B# _____ Related Case #: _____

Assessor's Parcel Numbers

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| 918090007 | 918100008 |
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| 918090010 | 918120044 |
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| 918100007 | |

Appendix C

**Proposed Mitigation Strategy for Direct Impacts
to a Rock Vernal Pool**

Project Mitigation Requirements

A 48-square foot rock pool that has been classified as a vernal pool would be directly removed by the proposed quarry. This pool is known to provide habitat for water-starwort (*Callitriche marginata*), a plant associated with vernal pools and nonlisted Lindahl's fairy shrimp (*Branchinecta lindahli*). Based on the analysis provided in the final DBESP, the project mitigation would require a minimum of a 3:1 ratio to adequately offset the impacts to this vernal pool habitat located within the project disturbance footprint. The impacts to the vernal pool may not occur for up to ten years after the Liberty Quarry project is established.

The proposed conceptual mitigation and monitoring plan for these impacts would include on-site creation of a similar rock vernal pool within an undisturbed portion of the project site at a 1:1 ratio and preservation of this area in perpetuity through a conservation easement. In addition the purchase of vernal pool mitigation credits at an off-site mitigation bank (e.g., Barry Jones/Skunk Hollow wetlands mitigation bank) would occur at a 2:1 ratio. Each component of this proposed conceptual mitigation and monitoring plan is briefly outlined below.

On-site Vernal Pool Creation

To mitigate for direct effects of the proposed Liberty Quarry project on the rock vernal pool, the project proponent will create approximately 48-square feet (1:1 ratio) of rock vernal pool habitat within a designated rock pool creation area located at the north end of the Liberty Quarry Riverside County parcel, near the boundary with the Santa Margarita Ecological Preserve. The vernal pool to be impacted (Pool 1) and the proposed rock pool creation area are shown in Figure 1.

The impacted vernal pool occurs at the east edge of an exposed granitic bedrock outcrop that is sloped approximately 10 degrees to the east. This granitic outcrop provides the entire watershed for the pool. The pool is oriented roughly north-south, is approximately 9 inches deep when full, and has open exposure to the east, south and west.

The proposed creation site was selected based on its physical similarity to the impacted vernal pool area and its location adjacent to the preserve. The proposed mitigation area occurs on an exposed granitic bedrock outcrop that is sloped approximately 10 degrees to the east and provides a large watershed for the pool, has an existing depression near the east edge of the outcrop that is oriented roughly north-south, and has full exposure to the east, south and west just as the impacted pool does. Both the impacted vernal pool and the proposed mitigation area occur between approximately 2,000 and 2,080 feet above mean sea level (AMSL). Both areas are shown in detail in Photos 1 through 4 included at the end of this Appendix.

An existing depression on granitic bedrock outcropping at the proposed mitigation site will be expanded via the use of rock cutting tools and equipment (which may require hand work) and will be developed into a rock pool with physical characteristics similar to those of the impacted pool. The created pool will be modeled on the depth, length, width and existing watershed area of the impacted pool. This pool, once created, will be supplied with soil, floral and faunal materials from the impacted pool. The created pool habitat will have a conceptual mitigation and monitoring plan that will be implemented by the project proponent. The creation of this habitat on the Liberty Quarry site as mitigation for impacts to vernal pools will be preceded by preparation and submittal to the County of a vernal pool conceptual mitigation and monitoring plan, which will include the following basic components:

- A study of the existing rock vernal pool will occur for no less than one complete vernal pool season (i.e., winter-spring). A full inventory of the plants and animals will be completed that

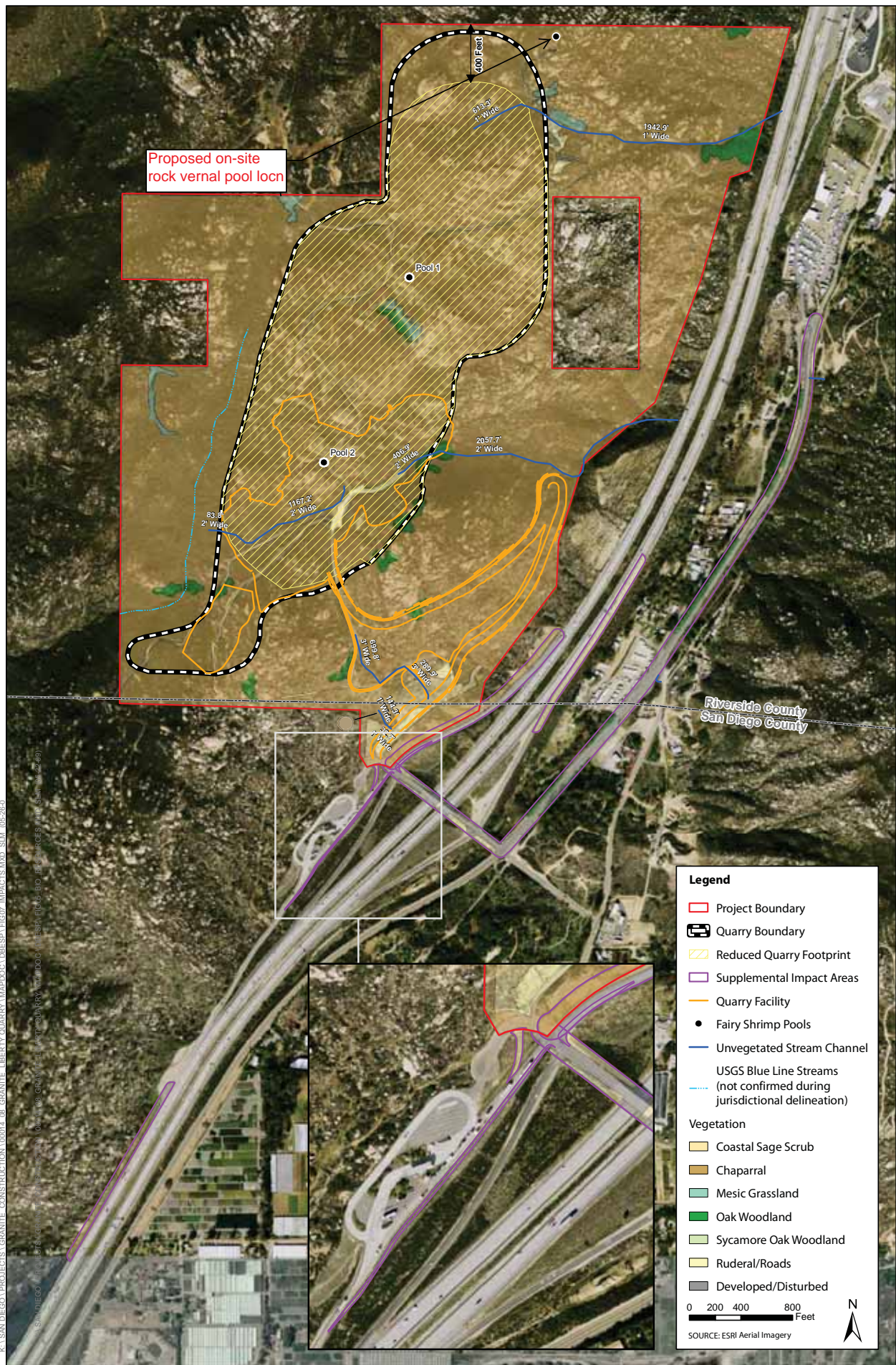
provides at a minimum a qualitative assessment of the population size of each species. This information will be used to create the success criteria for the 5-year monitoring program.

- Concurrently with the one-year study of the existing rock vernal pool, the shallow depression at the proposed creation site will be monitored to ensure that no vernal pool currently exists. Based on the reconnaissance visit performed in June 2009, this depression does not appear to have the capacity to hold water beyond during and shortly after rainfall. If this shallow depression is found to be a vernal pool, the created pool will be positioned outside the watershed of pool but on the same boulder or another location will be found within the project site.
- Direction for salvage, storage, and replanting of plant propagules from the pool to be impacted to the created pool.
- Directions for salvage and application of surface soils containing Lindahl's fairy shrimp cysts (a non-listed species) from the pool to be impacted to the created pool.
- Design guidelines outlining excavation methods for the creation of a rock pool.
- Placement of a temporary barrier around the perimeter of the created pool.
- Development of appropriate success criteria and/or performance criteria for the created pool.
- A 5-year management plan for the created pool.
- A 5-year maintenance plan including potential remedial measures.
- A 5-year mitigation monitoring and reporting plan.
- Integration of the rock pool creation area (including the pool, pool watershed, and an upland buffer area) into the currently proposed conservation easement area (DEIR Mitigation Measure BIO-1b(1)) and the inclusion of provision for management provided in perpetuity.

Granite Construction Corporation would be responsible for development and submittal of the conceptual mitigation plan and construction plans, designation of a contractor to create the mitigation pool and provide long-term management services, designation of a habitat restoration specialist to provide long-term monitoring and reporting, and completion of the conceptual mitigation and monitoring plan including successful creation of a 48-square foot rock pool (0.001 acre) and preservation of the mitigation area through a conservation easement. This plan would comply with all the mitigation requirements specified in the final DBESP.

Off-site Mitigation Credit Purchase

To mitigate for direct effects of the proposed Liberty Quarry project on the single rock vernal pool, the project proponent will also purchase approximately 96-square feet (2:1 ratio) of vernal pool habitat credits from the Barry Jones/Skunk Hollow wetlands mitigation bank. The purchase of these credits will offset any potential temporal loss of vernal pool habitat resulting from the project impacts and help ensure adequate replacement of impacted habitats. The preserve has been established for long-term preservation of several listed fairy shrimp species including Riverside fairy shrimp (*Streptocephalus wootoni*) and vernal pool fairy shrimp (*Branchinecta lynchi*) and several listed species of plants including San Diego ambrosia (*Ambrosia pumila*), and California orcutt-grass (*Orcuttia californica*).



K:\SAN DIEGO\PROJECTS\GRANITE CONSTRUCTION\00014_08_GRANITE LIBERTY QUARRY\MAPDOC\DBESPA FIG07 IMPACTS.MXD, SLM_05-26-0

SAN DIEGO COUNTY PLANNING AND DEVELOPMENT DEPARTMENT, 1600 G ST., 5TH FLOOR, SAN DIEGO, CA 92101

Figure 1
Proposed Rock Vernal Pool Creation Location Map
DBESP
Liberty Quarry



Photo 1. Looking to the northeast across Pool 1. This is the pool containing fairy shrimp that will be impacted by the Liberty Quarry Project and will require on-site and off-site mitigation. This photo was taken in June 2009 and shows the broad, shallow profile of the pool.



Photo 2. Looking to the south across Pool 1. This photo shows the majority of the watershed for the pool, which is limited to the granitic bedrock outcrop shown in the right margin and background of the photo. Note the sparse adjacent vegetation and open exposure to the south.



Photo 3. Looking to the northeast across the proposed mitigation pool site. This photo shows the existing small depression that will be enhanced to match the profile of the impacted pool.



Photo 4. Looking to the south across the proposed pool creation site. This photo shows the majority of the watershed for the proposed creation pool, which is limited to the granitic bedrock outcrop shown in the right margin and foreground of the photo. Note the sparse adjacent vegetation and open exposure to the south, similar to Pool 1.

