



July 31, 2019

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Mr. Hardy:

This letter report documents the results of the paleontological resources monitoring and mitigation program undertaken for the Richland Stoneridge Project (Project). (See Figure 1 Location and Vicinity Map).

The scope of work for this report included a paleontological records search through the Natural History Museum of Los Angeles County's Vertebrate Paleontology Section, a literature search, a review of geological maps, County of Riverside General Plan (2015), and impact analyses that are documented below. No pedestrian survey was undertaken for this report.

## **PROPOSED PROJECT AND LOCATION**

The proposed Project provides for the development of a 699.5-acre master development that would amend the approved "Stoneridge" specific Plans (SP No. 239) by adding approximately 116.5 acres to the Specific Plan boundary, and modify the Specific Plan Land Use Designations to provide light industrial, business park, commercial retail, and open space land uses in lieu of the approved residential town center, and commercial Specific Plan land uses. The project site is located within the Lakeview/Nuevo Area of unincorporated Riverside County, south of Ramona Expressway, north of Nuevo Road, west of the San Jacinto River, and east of Foothill Drive.

The proposed project modifies the Land Use Designations for the existing 574-acre Specific Plan area and adds approximately 116.5 acres of undeveloped land to the northwestern portion of the Specific Plan boundary. The proposed Project provides for the development of 442.8 acres of Light Industrial uses, 83.5 acres of Business Park uses, 13.3 acres of Commercial Retail uses, 118.2 acres of Open Spaces, and 41.8 acres of Circulation. Access to the Project site from the north will be provided via Ramona Expressway and from the south via Nuevo Road.

The Project lies just east of the City of Perris. As shown in Figure 1, the project is in sections 14, 15, and 23, Township 4 South, Range 3 West, San Bernardino Baseline and Meridian on the Perris 7.5-minute US Geological Survey quadrangle. The Project parcel lies south and east of the Bernasconi Hills, and east of a series of lower unnamed hills. The footprint incorporates the eastern edge of some of these hills on its western border. Apart from the two hills on the western edge, the parcel slopes gently to the east. The elevation of the project site ranges from approximately 1400 to 1880 feet above mean sea level (AMSL).

## **GEOLOGICAL SETTING**

The project site is located in the Peninsular Range Geomorphic Province of California. This province encompasses western Riverside County. The Project sits near the eastern margin of the Perris Block, which is bounded on the east by the San Jacinto Fault. Crystalline rocks in Moreno Valley include late Jurassic and Cretaceous granitic rocks of the southern California Batholith. These resistant rocks weather to form gray- or tan-colored, boulder covered, conical buttes and hills.

The project site is in the San Jacinto River Valley, and lies to the west of the San Jacinto River. Dibblee (2003) maps the geology of the site as Qa, surficial sediments (Holocene Epoch), Qoa, older surficial sediments, specifically alluvial fan gravel and sand (Pleistocene Epoch), and qdh, quartz diorite, hornblende-rich (Peninsular Range batholith, Cretaceous Period)(Figure 2). The mapping of Morton (1972) shows the project site to be located on older Qal and Qal1.

Multiple sites within seven miles of the Project have produced Pleistocene mammals and other fossils (Reynolds, 2008). In addition, an extensive late Pleistocene biota was recovered from excavations at Diamond Valley Reservoir in Hemet (Anderson *et al.*, 2002; Springer and Scott, 1994; Springer *et al.*, 1998; Springer *et al.*, 1999; Springer, *et al.*, 2009).

## **THE REGULATORY SETTING**

### **State**

The California Environmental Quality Act (CEQA) provides protection for paleontological resources through environmental legislation. Direction regarding significant impacts on paleontological resources is found under Appendix G (part V) of the CEQA Guidelines. The guidelines state, "A project will normally result in a significant impact on the environment if it will ...disrupt or adversely affect a paleontological resource or site or unique geologic feature, except as part of a scientific study." Per section 5097.5 of the Public Resource Code, it is unlawful to remove paleontological remains without authorization and can result in a misdemeanor. In addition, Section 622.5 of the California Penal Code sets the penalties for damage or removal of paleontological resources.

### **Riverside County**

The County of Riverside's General Plan recognizes the CEQA Guidelines Section 15064.5 as a threshold for the identification and protection of historic resources, archaeological and paleontological resources as well as the determination of significant impacts on those resources. In addition, the County's General Plan includes several Multipurpose Open Space policies to reduce or minimize the effects of development on historic, archaeological and paleontological resources (County of Riverside, 2015). Among them are:

*OS 19.8. "Whenever existing information indicates that a site proposed for development may contain biological, paleontological, or other scientific resources, a report shall be filed stating the extent and potential significance of the resource that may exist within the proposed development and appropriate measures through which the impacts of development may be mitigated."*

*OS 19.9. "This policy requires that when existing information indicates that a site proposed for development may contain paleontological resources, a paleontologist shall monitor grading activities with the authority to halt grading to collect uncovered paleontological resources, curate any resources collected with an appropriate repository, and file a report with the Planning Department documenting and paleontological resources that are found during the course of site grading."*

The County of Riverside has provided a paleontological sensitivity map to assist in determining a property's sensitivity. It shows most of the Project area rated low with some High B paleontological sensitivity near the hills. A rating of High B indicates that there is a high likelihood that a project could disturb significant paleontological resources, but that they are a few feet beneath the ground surface.

## **PROFESSIONAL STANDARDS**

The Society of Vertebrate Paleontology (SVP) 2010 guidelines provided Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. These guidelines are recognized throughout the paleontological resource management community.

## **SCOPE OF STUDY AND PERSONNEL**

This paleontological Resources Assessment was compiled by Dr. Joe Stewart, PhD. Qualifications of author are provided in Attachment A.

## **PALEONTOLOGICAL RESOURCES**

### **Records Search**

ECORP requested a paleontological records search from the Natural History Museum of Los Angeles County (LACM). The report (MacLeod 2019, Appendix A) stated that the museum does not have any fossil localities within a mile of the Project boundaries. The LACM has a record of horse fossil (*Equus*) approximately 10 miles south of the project at Railroad Canyon Reservoir. MacLeod (2019, Appendix A) concluded that shallow excavations in both the coarse older Quaternary Alluvium and the finer-grained younger Quaternary Alluvium found at the surface in the eastern portions of the proposed project area, probably will not uncover any significant vertebrate fossils. Deeper excavations in the latter areas that extend down into the older and perhaps finer-grained sedimentary deposits, however, may well encounter significant fossil vertebrate remains. Any substantial excavations in the sedimentary deposits in the proposed project area, therefore, should be closely monitored to quickly and professionally collect any fossils discovered without impeding development. MacLeod added that sediment samples should also be collected and processed to determine the small fossil potential in the proposed project area. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

### **Literature Review**

A geotechnical investigation was done for the Project (LGC Geotechnical, Inc. 2017). It was based on 13 hollow-stem borings from 5 to 52 feet and 10 test pits. The geologic units they recognized onsite were

Quaternary Very Old Fan Deposits (Qvof) and Cretaceous Lakeview Mountain Tonalite (Klmt). They reported that the upper 4 to 12 inches of the Qvof showed rootlets due to agricultural disturbances and uses. No geologic structure was observed in either deposit; they were described as massive. The deepest deposits of Qvof were on the east side of the Project footprint. One of the test pits did produce caliche (pedogenic calcium carbonate) at a depth of 1.75 to 7.5 feet, and toward the western edge of the Qvof. Caliche can be an indicator of the presence of paleosols.

There are numerous fossil specimens from Diamond Valley Lake, also about 10 miles away, but to the southeast (Anderson et al. 2002; Springer and Scott, 1994; Springer et al., 1998, 1999, 2009). The biota from these localities include spruce trees, mammoths, mastodons, ground sloths, dire wolves, short-faced bears, sabre-toothed cats, large and small horses, large and small camels, and bison.

Recent discoveries in Riverside and other counties in southern California have revealed that Pleistocene fossil soils (paleosols) produce vertebrate fossils in some places (Stewart *et al.* 2012; Raum *et al.* 2014; Stewart and Hakel 2016, 2017, 2019). There are no published fossils from paleosols in the Parris area, but I have observed Pleistocene paleosols less than 4 miles west and two miles northwest of the Project footprint in Perris. I have also seen them at Grand Terrace and at Moreno Valley. As a pedestrian survey was not part of this document, it is not known whether paleosols are present within the Project footprint.

## CONCLUSIONS

Because the paleontological records search recommends construction monitoring and sediment sampling, the geologic mapping shows some Pleistocene sediments at the surface, Pleistocene fossil soils have been found in several nearby areas, and Pleistocene vertebrate fossils have been found in the vicinity, it is recommended a site visit be conducted by a qualified professional paleontologist once the vegetation removal has taken place. If the results indicate a need for paleontological monitoring of construction excavations, there will be a recommendation of the formulation of a Paleontological Resource Impact Management Plan that would reduce the Project impacts to paleontological resources to a less than significant level.

Sincerely,

A handwritten signature in black ink that reads "Joe D. Stewart". The signature is written in a cursive, flowing style.

Dr. Joe Stewart, PhD.  
Principal Paleontologist

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## **LIST OF FIGURES**

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Figure 1. Project Location

Figure 2. Geology

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**ATTACHMENT A**

Qualifications of Author