

Appendix E
Paleontology Memo



Rincon Consultants, Inc.

180 North Ashwood Avenue
Ventura, California 93003
805-644-4455

September 28, 2023

Project No: 19-08521

Mark Ross, Manager
SVM-Lockwood, LLC
356 Eric Place
Thousand Oaks, CA 91326
Via email: mark@sunvillagellc.com

**Subject: Lockwood 3 Project, Paleontological Resources Memo
2151 Lockwood Street, Oxnard, California 93036**

Dear Mr. Ross:

Rincon Consultants, Inc. (Rincon) was retained by SVM-Lockwood, LLC to conduct a paleontological resource assessment for the Lockwood 3 Project (project) in Oxnard, California. The goals of this assessment are to identify the geologic units that may be impacted by development of the project, determine the paleontological sensitivity of geologic units in the project site, assess potential for impacts to paleontological resources from development of the project, and recommend mitigation measures to reduce impacts to scientifically significant paleontological resources, as necessary.

Paleontological resources, or fossils, are the evidence of once-living organisms preserved in the rock record. They include both the fossilized remains of ancient plants and animals and the traces thereof (e.g., trackways, imprints, burrows, etc.). Paleontological resources are not found in "soil" but are contained within the geologic deposits or bedrock that underlies the soil layer. Typically, fossils are greater than 5,000 years old (i.e., older than middle Holocene in age) and are typically preserved in sedimentary rocks. Although rare, fossils can also be preserved in volcanic rocks and low-grade metamorphic rocks under certain conditions (Society of Vertebrate Paleontology [SVP] 2010). Fossils occur in a non-continuous and often unpredictable distribution within some sedimentary units, and the potential for fossils to occur within sedimentary units depends on several factors. It is possible to evaluate the potential for geologic units to contain scientifically important paleontological resources, and therefore evaluate the potential for impacts to those resources and provide mitigation for paleontological resources if they are discovered during construction of a development project.

Project Site and Description

The project is located at 2151 Lockwood Street in the City of Oxnard, California, a currently undeveloped 5.17-acre parcel identified by assessor parcel number (APN) 213-0-090-275. The site is bordered by US 101 on the north, an active construction site to the south, and commercial development to the east and west. The project involves the construction of multiple apartment buildings and associated underground utilities (e.g., water, sewer).



Regulatory Setting

State Regulations

California Environmental Quality Act (CEQA)

Paleontological resources are protected under CEQA, which states in part a project will “normally” have a significant effect on the environment if it, among other things, will disrupt or adversely affect a paleontological site except as part of a scientific study. Specifically, in Section VII(f) of Appendix G of the State CEQA Guidelines, the Environmental Checklist Form, the question is posed thus: “Will the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.” To determine the uniqueness of a given paleontological resource, it must first be identified or recovered (i.e., salvaged). Therefore, CEQA mandates mitigation of adverse impacts, to the extent practicable, to paleontological resources.

CEQA does not define “a unique paleontological resource or site.” However, the Society of Vertebrate Paleontology (SVP) has defined a “significant paleontological resource” in the context of environmental review as follows:

Fossils and fossiliferous deposits, here defined as consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information. Paleontological resources are typically to be older than recorded human history and/or older than middle Holocene (i.e., older than about 5,000 radiocarbon years) (SVP 2010).

The loss of paleontological resources meeting the criteria outlined above (i.e., a significant paleontological resource) would be a significant impact under CEQA, and the CEQA lead agency is responsible for ensuring that impacts to paleontological resources are mitigated, where practicable, in compliance with CEQA and other applicable statutes.

California Public Resources Code

Section 5097.5 of the Public Resources Code states:

No person shall knowingly and willfully excavate upon, or remove, destroy, injure or deface any historic or prehistoric ruins, burial grounds, archaeological or vertebrate paleontological site, including fossilized footprints, inscriptions made by human agency, or any other archaeological, paleontological or historical feature, situated on public lands, except with the express permission of the public agency having jurisdiction over such lands. Violation of this section is a misdemeanor.

Here “public lands” means those owned by, or under the jurisdiction of, the state or any city, county, district, authority, or public corporation, or any agency thereof. Consequently, public agencies are required to comply with Public Resources Code Section 5097.5 for their own activities, including construction and maintenance, and for permit actions (e.g., encroachment permits) undertaken by others.



Local Regulations

City of Oxnard

The City of Oxnard created a series of guidelines to “identify the specific procedures and provisions adopted by the City of Oxnard to implement and comply with the requirements of CEQA and consistent with the State CEQA Guidelines” (City of Oxnard 2017). The guidelines addressing paleontological resources are as follows:

Evaluate the degree of disturbance to the project site. Consider whether the site has been vacant or covered by surfaces that required little or no excavation or grading, such that there has been little surface or subsurface disturbance. Sites, from which the native topsoil has been removed, such as landfills, are unlikely to retain paleontological resource potential.

Review the description of the project and the construction/operation activities. Assess the amount of grading, excavation, erosion, and increased human activity (e.g., opening of previously closed lands, new access routes through sensitive areas, or removal of vegetation that could disturb surface and subsurface fossils).

Methods

Rincon evaluated the paleontological sensitivity of the geologic units that underlie the project site to assess the project’s potential for significant impacts to scientifically important paleontological resources. The analysis was based on the results of a paleontological locality search, a review of existing information in the scientific literature regarding known fossils within geologic units mapped at the project site, and previous records searches of known fossil localities in the region. According to the SVP (2010) classification system, geologic units can be assigned a high, low, undetermined, or no potential for containing scientifically significant nonrenewable paleontological resources. Following the literature review, a paleontological sensitivity classification was assigned to each geologic unit mapped within the project site. This criterion is based on rock units within which vertebrate or significant invertebrate fossils have been determined by previous studies to be present or likely to be present. The potential for impacts to significant paleontological resources is based on the potential for ground disturbance to directly impact paleontologically sensitive geologic units.

Geologic Setting

The project site is situated in the Transverse Ranges geomorphic province, one of the eleven geomorphic provinces in California (California Geological Survey 2002). The Transverse Ranges extend approximately 275 miles west-east from Point Arguello in Santa Barbara County, east to the San Bernardino Mountains, and south to the Anacapa-Santa Monica-Hollywood-Raymond-Cucamonga fault zone (Yerkes and Campbell 2005). Locally, the project site is located on the Oxnard Plain, a broad coastal plain formed from sediments primarily deposited by the Santa Clara River.

The region was mapped by Clahan (2003), who recognized one geologic unit underlying the project site, Holocene alluvial deposits. Holocene alluvial deposits consist of poorly sorted clayey sand with occasional gravel. A geotechnical investigation conducted for this project encountered several feet of agricultural fill/disturbed sediments overlying alluvium consisting of sand, silt, clay, and sandy clay within the project site down to depths of up to 50 feet below the surface (Geolabs-Westlake Village 2022), in broad agreement with the map of Clahan (2003).



Paleontological Setting

Holocene-aged sediments are generally considered too young (i.e., less than 5,000 years old) to preserve paleontological resources (SVP 2010). Therefore, Holocene alluvial deposits have low paleontological sensitivity.

Holocene-aged sediments may be underlain in the subsurface by older sediments (i.e., Pleistocene) with higher paleontological sensitivity. However, there are few known fossil localities from areas mapped as Holocene sediments within the Oxnard Plain (Jefferson 2010; Paleobiology Database 2023), despite extensive urban and agricultural development of the region. The nearest fossil localities occur in the City of Ventura, several miles northwest of the project site and in the Camarillo and Las Posas Hills, several miles northeast of the project site. The lack of fossil localities in this region of the Oxnard Plain suggests that the depth at which the transition to older, paleontologically sensitive sediments occurs is not frequently encountered during typical urban development activities, such as those proposed for this project.

Impacts and Recommendations

Ground-disturbing activities for this project are anticipated to include grading for building pads and trenching for underground utilities (e.g., water, sewer). Grading for building pads is anticipated to reach less than 5 feet below the surface. Trenching for underground utilities is expected to reach up to 8 feet below the surface. The project site has been previously disturbed down to “couple of feet” per the geotechnical report (Geolabs-Westlake Village 2022). Therefore, grading and trenching are anticipated to impact previously undisturbed sediments. The geologic map (Clahan 2003) and relative lack of fossil localities in the Oxnard Plain (Jefferson 2010) suggests that the excavations anticipated for this project will impact small amounts of paleontologically sensitive sediments, if any. Ground-disturbing activities within previously undisturbed sediments with high paleontological sensitivity may result in significant impacts to paleontological resources. Given the small volume of potentially paleontologically sensitive sediments that this project will affect, significant impacts to paleontological resources are unlikely, but possible. Mitigation Measure PAL-1 is recommended to ensure that potential impacts to paleontological resources remain less than significant in the event of an unanticipated discovery through the recovery, identification, and curation of previously unrecovered fossils.

PAL-1 Unanticipated Fossil Discovery

SVM-Lockwood, LLC shall include a standard inadvertent discovery clause in every construction contract to inform contractors of this requirement. If a potential fossil is discovered during project construction, construction activity within 50 feet of the find shall cease until the discovery is examined by a Qualified Professional Paleontologist. If the find is determined to be significant, the Qualified Professional Paleontologist shall direct all mitigation measures related to paleontological resources consistent with the SVP (2010) standards.

Sincerely,
Rincon Consultants, Inc.

Jennifer DiCenzo
Paleontological Program Manager

Christopher Duran, MA, RPA
Principal



References

- California Geological Survey. 2002. Note 36 – California Geomorphic Provinces. <https://www.conservation.ca.gov/cgs/Documents/CGS-Note-36.pdf>
- Clahan, K.B. 2003. Geologic map of the Oxnard 7.5-minute quadrangle, Ventura County, California: a digital database. [map.] California Geological Survey, Preliminary Geologic maps PGM-03-04, scale 1:24,000.
- Geolabs-Westlake Village. 2022. Preliminary Geotechnical Investigation, Proposed Multi-Family Residential Development, Lockwood Street, Parcel 1, APN 213-0-090-27, City of Oxnard, California. W.O. 9511. September 20, 2022.
- Jefferson, G.T. 2010. A catalogue of late Quaternary vertebrates from California. *Natural History Museum of Los Angeles County Technical Report*. Volume 7, pp. 5-172.
- Paleobiology Database. 2023. The Paleobiology Database, <http://paleobiodb.org/> (accessed September 2023).
- Society of Vertebrate Paleontology (SVP). 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources. Society of Vertebrate Paleontology Impact Mitigation Guidelines Revision Committee. https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines-1.pdf.
- Yerkes, R.F. and R.H. Campbell. 2005. Preliminary geologic map of the Los Angeles 30' x 60' quadrangle, southern California. United States Geological Survey. [map]. Open-File Report 2005-1019, scale 1:100,000.

