

September 23, 2022

Mr. Alec Negri
Nine Oak Investments
433 N. Camden, Suite 100
Beverly Hills, California 90210

RE: PALEONTOLOGICAL RESOURCES IDENTIFICATION REPORT FOR THE MISSION VALLEY SHOPPING CENTER PROJECT, CITY OF JURUPA VALLEY, RIVERSIDE COUNTY, CALIFORNIA

Dear Mr. Negri:

In support of the Mission Valley Shopping Center Project (project), Michael Baker International conducted a pedestrian survey, background research of online and published databases, and Natural History Museum of Los Angeles County (NHMLAC) records search to identify the paleontological sensitivity of the project area and determined whether the project could result in significant impacts to paleontological resources in accordance with the California Environmental Quality Act (CEQA). Methods, results, and recommendations are summarized below.

PROJECT LOCATION AND DESCRIPTION

The project area is 8.3 acres and includes Assessor's Parcel Numbers (APNs) 182-022-002, 182-031-001, and 182-031-002. It is located south of Mission Boulevard, north and east of Stobbs Way, and west of Opal Street, in the city of Jurupa Valley in Riverside County. The United States Geological Survey (USGS) 7.5-minute Fontana topographic quadrangle map depicts the project area within Section 8 of Township 2 South, Range 5 West. Elevation within the project area ranges from 900 to 940 feet above mean sea level (**Attachment 1: Figures 1-3**).

The project entails the demolition of the existing commercial retail buildings and surface parking lot at 6322-6328 Mission Boulevard to construct a 78,325-square-foot shopping center with a surface parking lot. The proposed shopping center would consist of two retail spaces totaling 34,600 square feet, an 18,000-square-foot grocery store, 18,000-square-foot fitness center, 2,900-square-foot fast food restaurant with drive-through, 3,825-square-foot car wash facility, 1,000-square-foot restaurant, and 408 parking spaces. The project would provide 277 regular parking spaces, 55 compact parking spaces, 17 accessible parking spaces, 24 electric vehicle parking spaces, 33 clean air vehicle parking spaces, 1 family parking space, and 1 veteran's parking space in a surface parking lot on-site.

Construction of the project would include demolition, grading, building construction, paving, and architectural coatings. It is anticipated that the project would be completed and operational in 2023. The maximum depth of ground disturbance associated with project construction is estimated to be approximately 14 feet below the existing grade for the underground infiltration system.

REGULATORY SETTING

Paleontological resources are the fossilized remains, imprints, or traces of past life preserved in the geologic record. These resources include bones, teeth, soft tissues, shells, plant material, microscopic organisms, footprints, trackways, and burrows. Fossils record the natural history of life on Earth. Despite the frequency of sedimentary rock in the geologic record and the number of organisms that have lived throughout the planet's history, only a minimal number of remains have been preserved in the fossil record.

Paleontological resources are afforded protection by CEQA environmental legislation. Appendix G (part V) of the CEQA Guidelines explains significant impacts on paleontological resources. It details that a project would significantly impact paleontological resources if it disturbs or destroys unique paleontological resources or a unique geologic feature. Additionally, Section 5097.5 of the California Public Resources Code specifies that any unauthorized removal of paleontological remains is a misdemeanor. Penalties for this removal or damage of paleontological resources are set forth in California Penal Code Section 622.5.

GEOLOGIC SETTING

California is divided into 11 geomorphic provinces, each defined by unique geologic and geomorphic characteristics. The project area is in the western flank of the Peninsular Ranges geomorphic province, distinguished by northwest-trending mountain ranges and valleys following the branching San Andreas fault. This geomorphic province also includes physiogeographic features such as the Los Angeles Basin, the southern members of the Channel Islands, and the continental shelf (CGS 2002). The Peninsular Ranges province crosses several counties, as well as Baja California, and is bound by the Pacific Ocean to the west, the Transverse Ranges geomorphic province to the north, and the Colorado Desert geomorphic province to the east. The Peninsular Ranges are dominated by the Peninsular Ranges batholith (Prothero 2017).

The geology of the western Riverside County area was mapped by Rodgers (1967) at a scale of 1:250,000, by Morton and Miller (2006) at a scale of 1:100,000, and by Morton (2003) and Dibblee and Minch (2004) at a scale of 1:24,000. The project area is located south of the Jurupa Mountains within the northern portion of the Perris block, which is bound by the Chino-Elsinore and San Jacinto fault zones to the west and east, respectively (Morton and Matti 1989). Geologic units underlying the project area are mapped as old alluvial fan deposits (Qof1 of Morton 2003 and Qoa of Dibblee and Minch 2004). The old alluvial fan deposits consist of mainly indurated, tan to light reddish-brown sands with some gravels or cobbles present dating from the middle to late Pleistocene epochs in age (770,000 to 11,700 years ago).

The soil in the project area has been mapped as Ramona soil series map unit (NRCS 2022). The Ramona series are Typic Haploxeralfs consisting of brown sandy loam, red-brown to yellow-red sandy clay loam, and strong brown sandy loam, which formed in alluvium derived from igneous source rocks (USDA 2003). Typic Haploxeralfs are a subgroup of fine loamy, freely draining sands with a deep lithic contact (bedrock) greater than 150 centimeters from the soil surface (USDA 2010).

The project area is within the Inland Valleys ecoregion of California (Griffith et al. 2016). Ecoregions denote general similarity in ecosystems and environmental resources. This region consists of alluvial fans and basin floors immediately south of larger mountain ranges, such as the San Gabriel and San Bernardino. The climate in this region has less marine influence relative to other valleys to the west with thermic soil

temperatures and xeric soil moisture, and vegetation present includes Riversidean coastal sage scrub, valley grasslands, and some riparian woodlands.

RECORDS AND LITERATURE REVIEW

Michael Baker International staff requested and received a fossil locality records search through the NHMLAC on August 6, 2022 (**Attachment 2**). The NHMLAC records search did not find any previously known localities within the project area. However, NHMLAC staff identified several localities bearing vertebrate fossils within 19 miles of the project area from similar sedimentary deposits as those found in the project area (**Table 1**).

Table 1 – Previously Recorded Paleontological Resources from NHMLA Records Search

Collection Number	Taxa	Formation	Intervals	Depth	Distance to Project Area
LACM VP 4619	Mammoths	Unknown formation	Pleistocene	100 ft below surface	~6.5 miles W
LACM VP 7811	Snakes	Unknown formation (eolian, tan silt)	Pleistocene	9-11 ft below surface	~9 miles W
LACM VP 1207	Bovids	Unknown formation	Pleistocene	Unknown	~11.5 miles SW
LACM VP 7268, 7271	Horses	Unknown formation	Pleistocene	Unknown	~16 miles W
LACM VP 1728	Horses, camels	Unknown formation (light brown shale with interbeds of very coarse brown sand)	Pleistocene	15-20 ft below surface	~17.5 miles W
LACM VP 7508	Ground sloths, elephants, horses	Unknown formation	Pleistocene	Unknown	~19 miles SW

Michael Baker International conducted supplemental paleontological records searches within 5 miles of the project area using the following databases and literature:

- University of California Museum of Paleontology Locality Search (UCMP 2022)
- San Diego Natural History Museum Collection Database (SDNHM 2022)
- The Paleobiology Database (PBDB 2022)
- *Mammut pacificus* sp. nov., a newly recognized species of mastodon from the Pleistocene of western North America (Dooley et. al. 2019)
- Map My County (RCIT 2022)

While these databases showed no previously identified fossil-bearing localities within the project area, one locality has been reported within 5 miles of the project area (**Table 2**). The records searches were limited to data available online.

Table 2 – Previously Recorded Paleontological Resources from Online Databases

Collection	Taxa	Formation	Intervals	Distance to Project Area
PBDB	Pacific mastodons	Unknown Formation	Pleistocene (Rancholabrean)	~2 miles SW

A review of published scientific literature yielded one reported occurrence of fossils from the Jurupa Valley and the geologic formations underlying the project area. Dooley et. al. (2019) reported a partial dentary from a Pacific mastodon was recovered from sedimentary deposits in Jurupa Valley. It dated to the Rancholabrean North American Land Mammal Age (210,000 to 14,000 years ago; Barnosky et al. 2014). This mastodon specimen reported by Dooley et. al. (2019) is the same reported by the PBDB (see **Table 2**).

Riverside County Information Technology (RCIT 2022) has developed a paleontological sensitivity map which shows the project area as having a “High A” paleontological potential, which is defined as follows:

High A is based on geologic formations or mapped rock units that are known to contain or have the correct age and depositional conditions to contain significant paleontological resources. These include rocks of Silurian or Devonian age and younger that have the potential to contain remains of fossil fish, and Mesozoic and Cenozoic rocks that contain fossilized body elements and trace fossils such as tracks, nests, and eggs.

SUMMARY OF FINDINGS AND RECOMMENDATIONS

The paleontological records search, fossil locality searches, and literature review identified one locality within 5 miles of the project area from similar rock formations to those underlying the project area. Additionally, the RCIT (2022) identifies the sensitivity of the project area as high. Per mitigation impact guidelines set forth by the Society of Vertebrate Paleontology (SVP 2010), due to the known fossil localities, known sensitivity of the geological formations underlying the project area, and depth of construction, the project area has high potential to disturb paleontological resources within undisturbed bedrock.

Full-time paleontological monitoring is recommended during ground disturbance in undisturbed geologic contexts (i.e., bedrock and outcrops) that have the potential to contain significant paleontological resources. Ground disturbance refers to activities that would impact subsurface geologic deposits, such as grading, excavation, boring, etc. Activities taking place in current topsoil or within previously disturbed fill sediments, e.g., clearing, grubbing, and pavement rehabilitation, do not require paleontological monitoring. Bedrock can occur at varying depths depending on the portion of the project area.

The City of Jurupa Valley General Plan Mitigation Monitoring and Reporting Program outlines the following for Paleontological Sensitivity (2017 General Plan: DEIR Section/Mitigation Measure Implementing Action):

4.5.5.3A -Prior to issuance of a grading permit, a project applicant must demonstrate if the proposed project grading will impact underlying soil units or geologic formations that have a moderate to high potential to yield fossiliferous materials. If the potential for fossil discovery is low, no pre-grading monitoring needs to be established.

If the potential for fossil discovery is moderate to high, the applicant must provide a paleontological monitor during rough grading of the project. If a paleontologist is not onsite and possible fossil materials are found, work shall be halted in that area until the material can be assessed by a qualified professional. If materials are found onsite during grading, a qualified professional shall evaluate the find and determine if it represents a significant paleontological resource. If the resource is determined to be significant, the paleontologist shall supervise removal of the material and determine the most

appropriate archival storage of the material. This measure shall be implemented to the satisfaction of the City Planning Department.

The following mitigation measures are recommended to be implemented such that in the event of any discovery of unknown paleontological resources during earthwork, impacts would be less than significant.

PALEO-1: Paleontological Sensitivity Training

The City shall retain a Society of Vertebrate Paleontology-qualified paleontologist (SVP 2010) to provide or supervise a paleontological sensitivity training to all personnel planned to be involved with earth-moving activities, prior to grading or excavation in sedimentary rock material other than topsoil. The training session will focus on how to identify paleontological resources, such as fossils that may be encountered, and the procedures to follow if identified. A qualified professional paleontologist is a professional with a graduate degree in paleontology, geology, or related field, with demonstrated experience in the vertebrate, invertebrate, or botanical paleontology of California, as well as at least one year of full-time professional experience or equivalent specialized training in paleontological research (i.e., the identification of fossil deposits, application of paleontological field and laboratory procedures and techniques, and curation of fossil specimens), and at least four months of supervised field and analytic experience in general North American paleontology (SVP 2010).

PALEO-2: Paleontological Monitoring

Prior to grading or excavation in sedimentary rock material other than topsoil, the City shall retain an SVP-qualified paleontologist to monitor or supervise the monitoring of these activities. The SVP-qualified paleontologist will supervise a paleontological monitor. If fossils are discovered during grading at any depth, the paleontological monitor, in discussion with the SVP-qualified paleontologist, will notify the on-site construction supervisor, who shall redirect work away from the location of the discovery. The recommendations of the SVP-qualified paleontologist shall be implemented with respect to the evaluation and recovery of fossils, after which the on-site construction supervisor shall be notified and shall direct work to continue in the location of the fossil discovery.

If any paleontological resources are encountered at the project area during construction or the course of any ground-disturbance activities, all such activities within 100 feet of the find shall halt immediately. At this time, the applicant shall notify the City and consult with a qualified paleontologist to assess the significance of the find. The assessment will follow SVP (2010) standards. If any find is determined to be significant, appropriate avoidance measures recommended by the consultant and approved by the City must be followed unless avoidance is determined to be unnecessary or infeasible by the City. If avoidance is unnecessary or infeasible, other appropriate measures (e.g., data recovery, excavation) shall be instituted.

PALEO-3: Paleontological Data Recovery Plan

If the fossils are determined to be significant, then the SVP-qualified paleontologist shall prepare and implement a data recovery plan. The plan shall include, but not be limited to, the following measures:

- The paleontologist shall ensure that all significant fossils collected are cleaned, identified, catalogued, and permanently curated with an appropriate institution with a research interest in the materials (which may include the Western Science Center in Hemet);

- The paleontologist shall ensure that specialty studies are completed, as appropriate, for any significant fossil collected; and
- The paleontologist shall ensure that curation of fossils is completed in consultation with the City. A letter of acceptance from the curation institution shall be submitted to the City.

PREPARER QUALIFICATIONS

This memo was prepared by Michael Baker International Principal Investigator-Paleontologist Peter A. Kloess, PhD, and Senior Archaeologist Kholood Abdo, MA, RPA. This report was reviewed for quality assurance and quality control by Senior Associate, Department Manager Margo Nayyar, MA.

Mr. Kloess is a principal investigator and paleontologist with over 20 years of experience in paleontology with seven years in paleontology mitigation. His experience includes private and public consultation, field monitoring, excavation, and laboratory research on projects across the western United States, predominantly in California. He has consulting experience with a range of projects, including construction, transportation, utility, transmission, monitoring, and surveys, as well as experience recovering a diversity of fossils from project sites, such as marine invertebrates, microfossils, plants, small mammals, and birds, large marine and terrestrial mammals, and dinosaurs. He also has extensive experience in paleontological museum collections and lab settings. He has worked on and co-led scientific excavations of large mammals and dinosaurs in California, Utah, New Mexico, and Montana. Mr. Kloess has served as a lab preparator and assistant curator for paleontology museums in California and Montana, where his duties included manual preparation of specimens, casting, jacketing, public outreach, cataloging, and curation. He meets the Society of Vertebrate Paleontology's standards for paleontological Principal Investigator.

Ms. Abdo is an archaeologist with 26 years of experience prehistoric and historical archaeology and cultural resources management. Her experience includes writing technical reports, including National Environmental Policy Act (NEPA), National Historic Preservation Act (NHPA), and CEQA compliance documents. She has supervised and managed all phases of archaeological fieldwork, including survey, Phase II testing and evaluations and data recovery, and monitoring at sites throughout California and Arizona since 1999. In her current capacity as senior archaeologist and laboratory director, Ms. Abdo oversees the processing, analysis, and curation of artifact collections from both prehistoric and historical sites. Her cultural material analysis experience includes flaked and ground stone lithics, glass, prehistoric and historic ceramic, and bead analysis. Ms. Abdo meets the Secretary of the Interior's Professional Qualification Standards for prehistory and historical archaeology.

Ms. Nayyar is a senior cultural resources manager with 12 years of cultural management experience in California, Nevada, Arizona, Idaho, and Mississippi. Her experience includes built environment surveys, evaluation of historic-era resources using guidelines outlined in the National Register of Historic Places and the California Register of Historical Resources, and preparation of cultural resources technical studies pursuant to CEQA and Section 106 of the NHPA, including identification studies, finding of effect documents, memorandum of agreements, programmatic agreements, and Historic American Buildings Survey/Historic American Engineering Record/Historic American Landscapes Survey mitigation documentation. She prepares cultural resources sections for CEQA environmental documents, including infill checklists, initial studies, and environmental impact reports, and NEPA environmental documents, including environmental impact statements and environmental assessments. She also specializes in municipal preservation planning, historic preservation ordinance updates, Native American consultation, and provision of Certified Local Government training to interested local governments. She develops Survey 123 and Esri Collector applications for large-scale historic resources surveys and authors National

Register nomination packets. Ms. Nayyar meets the Secretary of the Interior's Professional Qualification Standards for history and architectural history.

Sincerely,



Peter A. Kloess, MS
Principal Investigator/Paleontologist



Kholood, MA, RPA
Senior Archaeologist

Attachments:

Attachment 1 – Figures

Attachment 2 – Natural History Museum Of Los Angeles County Records Search

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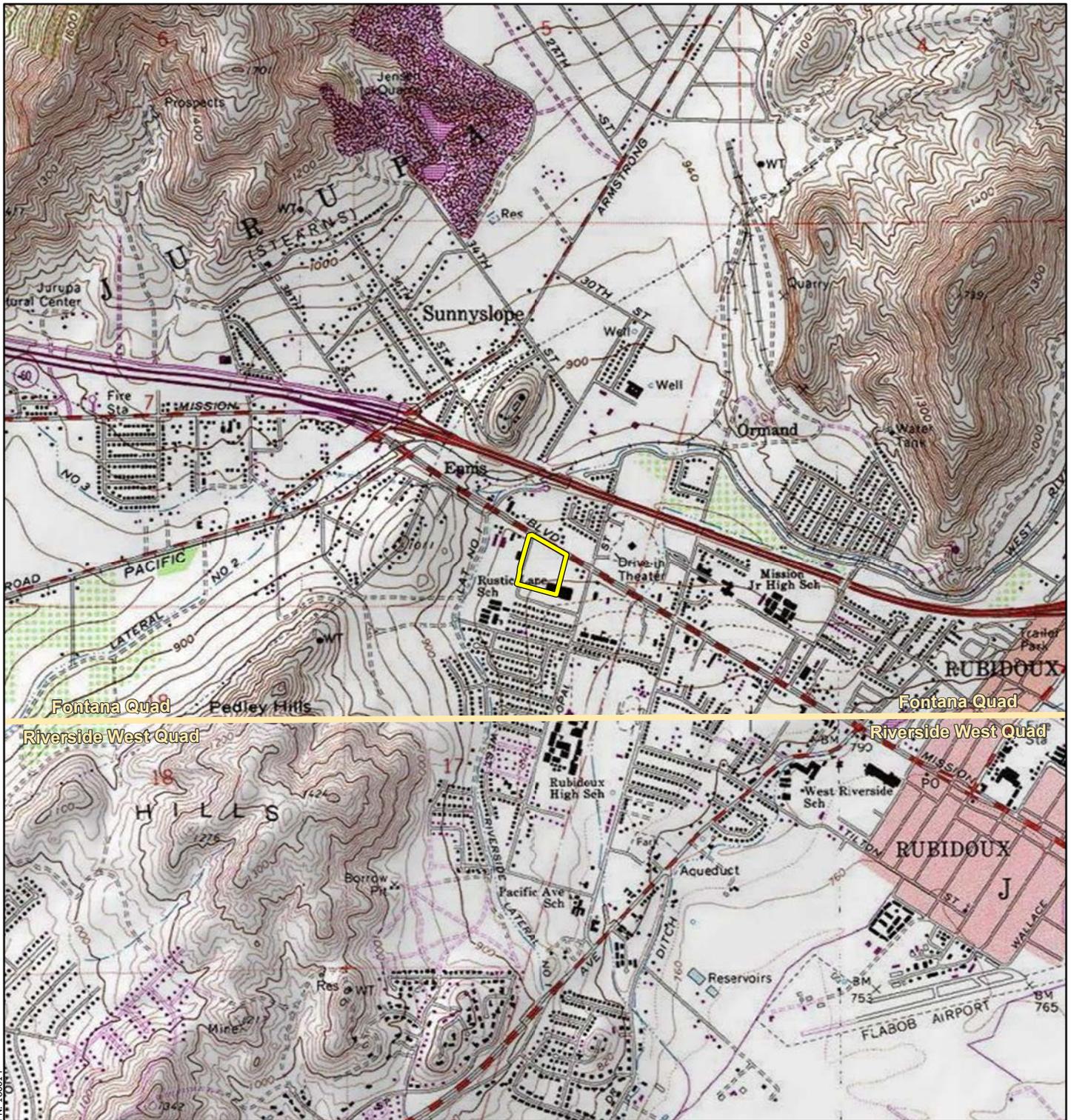
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Attachment 1 Figures



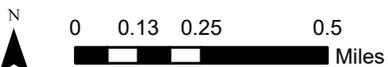
 Project Location



PN: 186514

 Project Site

MISSION VILLAGE SHOPPING CENTER PROJECT
 CITY OF JURUPA VALLEY
Project Vicinity



Source: Esri, ArcGIS Online, USGS 7.5-Minute topographic quadrangle maps: Jurupa Valley, California

Figure 2



PN: 186514

 Project Site

MISSION VILLAGE SHOPPING CENTER PROJECT
CITY OF JURUPA VALLEY
Project Area

Michael Baker
INTERNATIONAL

N



0 50 100 200
Feet

Source: Esri, ArcGIS Online, 2021 Nearmap Imagery: Jurupa Valley, California

Figure 3

Attachment 2

Records Search Results

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

Research & Collections

e-mail: paleorecords@nhm.org

August 6, 2022

Michael Baker International

Attn: Kholood Abdo

re: Paleontological resources for the Jurupa Valley Retail Center Project

Dear Kholood:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at the Jurupa Valley Retail Center project area as outlined on the portion of the Fontana USGS topographic quadrangle map that you sent to me via e-mail on July 29, 2022. We do not have any fossil localities that lie directly within the proposed project area, but we do have fossil localities nearby from the same sedimentary deposits that occur in the proposed project area, either at the surface or at depth.

The following table shows the closest known localities in the collection of the Natural History Museum of Los Angeles County (NHMLA).

Locality Number	Location	Formation	Taxa	Depth
LACM VP 4619	Wineville Ave, Eastvale, CA	Unknown formation (Pleistocene)	Mammoth (<i>Mammuthus</i>)	100 feet bgs
LACM VP 7811	W of Orchard Park, Chino Valley	Unknown formation (eolian, tan silt; Pleistocene)	Whip snake (<i>Masticophis</i>)	9-11 feet bgs
LACM VP 1207	Hill on east side of sewage disposal plant; 1 mile N-NW of Corona	Unknown formation (Pleistocene)	Bovidae	Unknown
LACM VP 7268, 7271	Sundance Condominiums, S of Los Serranos Golf Course	Unknown (Pleistocene)	Horse (<i>Equus</i>)	Unknown
LACM VP 1728	W of intersection of English Rd & Peyton Dr, Chino	Unknown (light brown shale with interbeds of very coarse brown sand; Pleistocene)	Horse (<i>Equus</i>), camel (<i>Camelops</i>)	15-20 feet bgs
LACM VP 7508	Near intersection of	Unknown formation	Ground sloth (<i>Nothrotheriops</i>);	Unknown

Vellano Club Dr. and (Pleistocene)
Palmero Dr.,
Oakcrest
Development; N of
Serrano Canyon,
Chino Hills

elephant family (Proboscidea);
horse (*Equus*)

VP, Vertebrate Paleontology; IP, Invertebrate Paleontology; bgs, below ground surface

This records search covers only the records of the NHMLA. It is not intended as a paleontological assessment of the project area for the purposes of CEQA or NEPA. Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a full paleontological assessment of the project area be conducted by a paleontologist meeting Bureau of Land Management or Society of Vertebrate Paleontology standards.

Sincerely,



Alyssa Bell, Ph.D.
Natural History Museum of Los Angeles County

enclosure: invoice