Appendix G

Paleontological Assessment

PALEONTOLOGICAL ASSESSMENT FOR THE COMMERCIAL/RETAIL NWC MOUNTAIN AND LAKE STREETS PROJECT

CITY OF LAKE ELSINORE, RIVERSIDE COUNTY, CALIFORNIA

APNs 389-030-012 to -018

Prepared for:

Empire Design Group, Inc.
P.O. Box 944
Murrieta, California 92564

Submitted to:

City of Lake Elsinore
Community Development Department
Planning Division
130 South Main Street
Lake Elsinore, California 92530

Prepared by:

Brian F. Smith and Associates, Inc.
14010 Poway Road, Suite A
Poway, California 92064

October 27, 2020

Paleontological Database Information

Author:	Todd A. Wirths, M.S., Senior Paleontologist, California Professional Geologist No. 7588
Consulting Firm:	Brian F. Smith and Associates, Inc. 14010 Poway Road, Suite A Poway, California 92064 (858) 484-0915
Report Date:	October 27, 2020
Report Title:	Paleontological Assessment for the Commercial/Retail NWC Mountain and Lake Streets Project, City of Lake Elsinore, Riverside County, California (APNs 389-030-012 to -018)
Prepared for:	Empire Design Group, Inc. P.O. Box 944 Murrieta, California 94564
Submitted to:	City of Lake Elsinore Community Development Department Planning Division 130 South Main Street Lake Elsinore, California 92530
Prepared by:	Brian F. Smith and Associates, Inc. 14010 Poway Road, Suite A Poway, California 92064
USGS Quadrangle:	*Alberhill, California* (7.5 minute)
Study Area:	Approximately six acres
Key Words*:*	Paleontological assessment; Quaternary alluvial deposits; Pauba Fanglomerate; High sensitivity; Lake Elsinore, Riverside County.

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I. INTRODUCTION AND LOCATION

A paleontological resource assessment has been completed for the Commercial/Retail NWC Mountain and Lake Streets Project (Assessor's Parcel Numbers 389-030-012 to -018), located at the northwest corner of the intersection of Mountain Street and Lake Street in the city of Lake Elsinore in Riverside County, California (Figures 1 and 2). On the U.S. Geological Survey, 7.5-minute, 1:24,000-scale *Alberhill, California* topographic quadrangle map, the project is located within Section 27, Township 5 South, Range 5 West, San Bernardino Base and Meridian (see Figure 2). The approximately six-acre project consists of a commercial development including a gas station, car wash, and convenience store, as well as retail and restaurant space.

II. REGULATORY SETTING

The California Environmental Quality Act (CEQA), which is patterned after the National Environmental Policy Act, is the overriding environmental document that sets the requirement for protecting California's cultural and paleontological resources. The document does not establish specific rules that must be followed, but mandates that governing permitting agencies (lead agencies) set their own guidelines for the protection of nonrenewable paleontological resources under their jurisdiction.

State of California

Under Guidelines for the Implementation of CEQA, as amended March 29, 1999 (Title 1, Chapter 3, California Code of Regulations: 15000 et seq.), procedures define the type of activities, persons, and public agencies required to comply with CEQA. In the Environmental Checklist, one of the questions to answer is, "Will the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" (Section 15023, Appendix G, Section XIV, Part a). California Public Resources Code (PRC) Section 5097.5 states:

a) 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, rock art, 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.
b) As used in this section, "public lands" means lands owned by, or under the jurisdiction of, the state, or any city, county, district, authority, or public corporation, or any agency thereof.

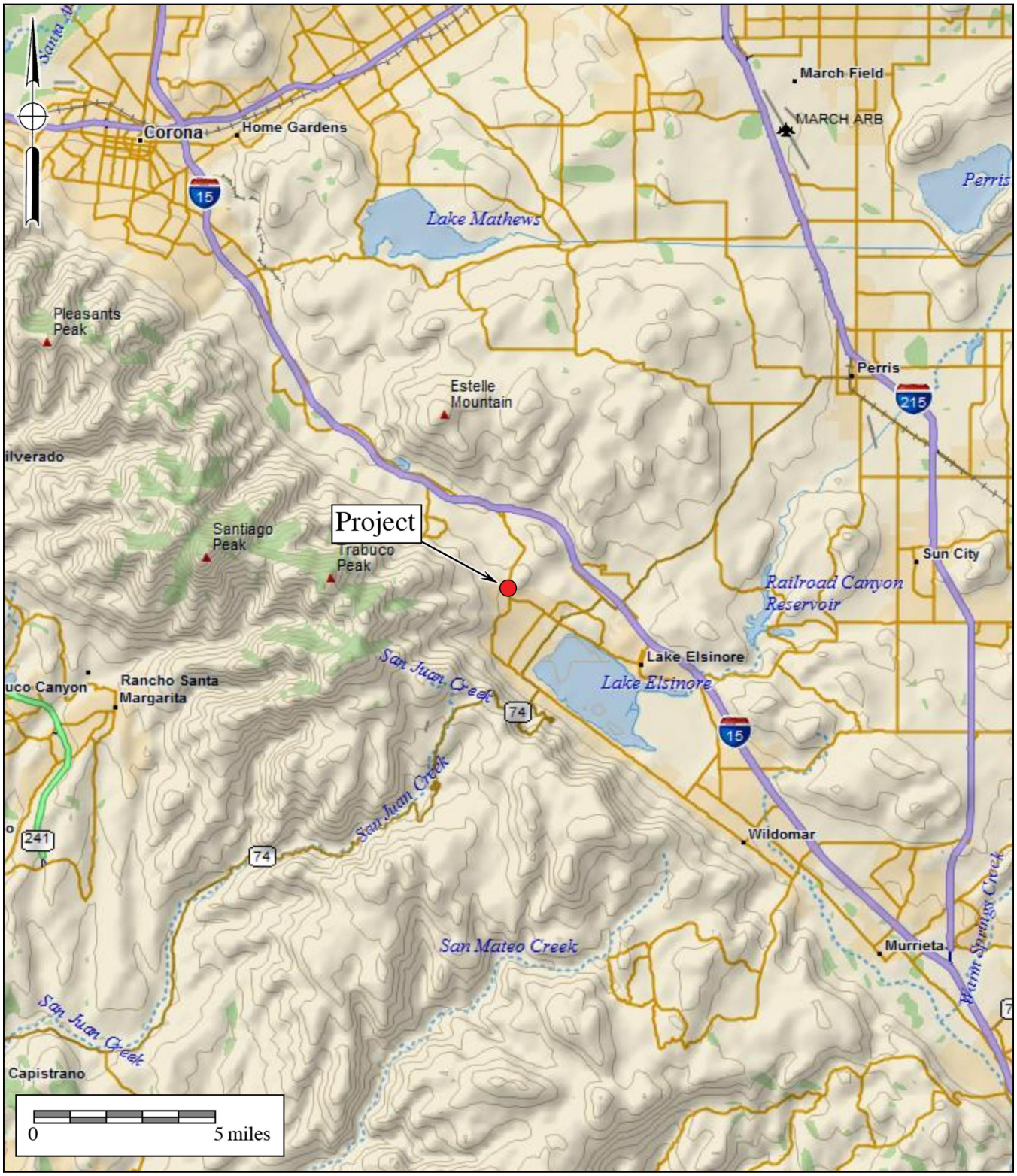

Figure 1

General Location Map

The Commercial/Retail NWC Mountain and Lake Streets Project

DeLorme (1:250,000)

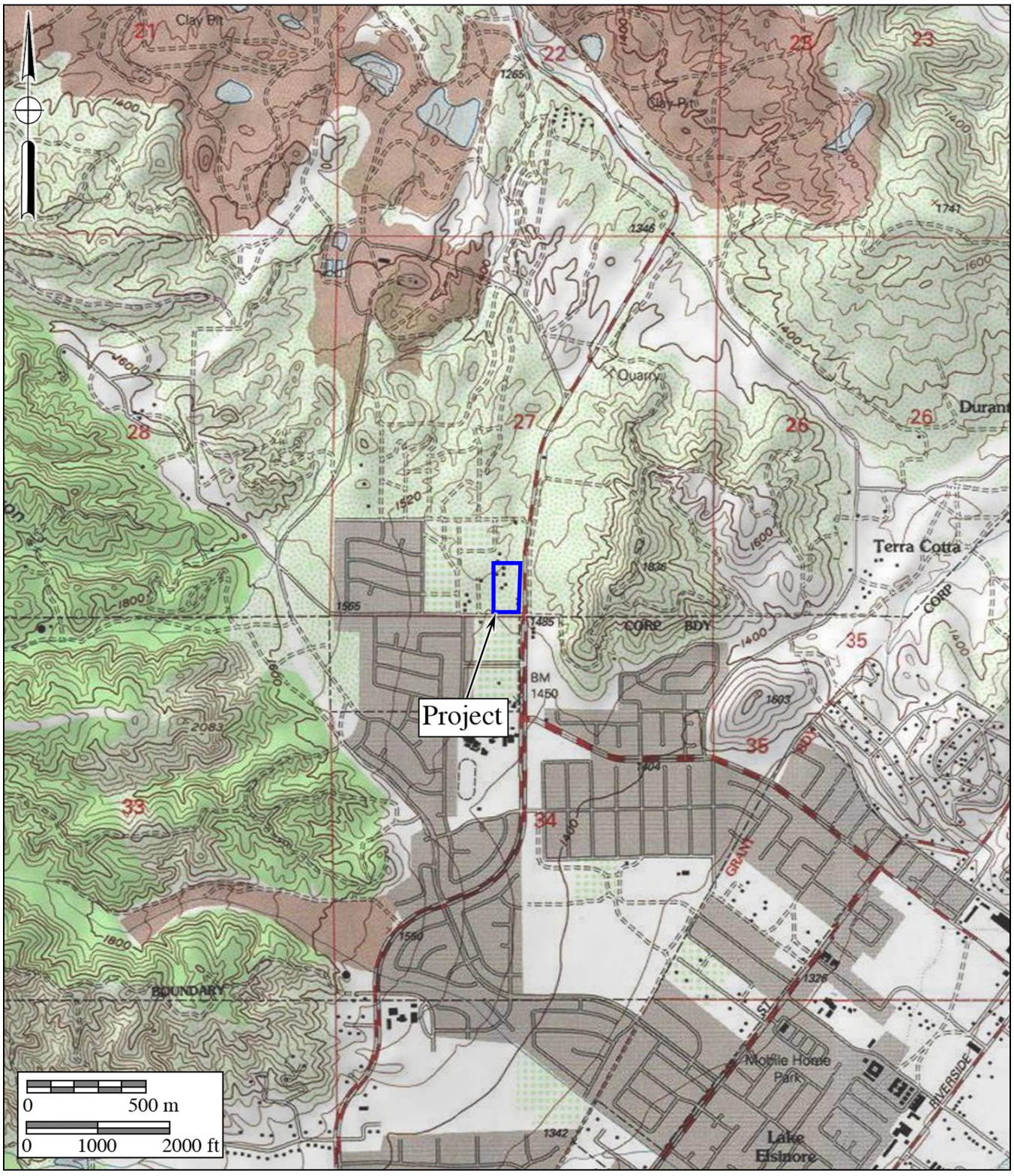

Figure 2

Project Location Map

The Commercial/Retail NWC Mountain and Lake Streets Project

USGS *Alberhill* Quadrangle (7.5-minute series)

County of Riverside

An interactive paleontological sensitivity mapping database is available online and maintained by the County of Riverside as a research tool to access the County's assignment of paleontological sensitivity levels for the various geologic formations within the county (County of Riverside 2020). This is specifically addressed in Section V of this report.

Paleontological resources are further addressed under the 2008 Multipurpose Open Space Element of the Riverside County General Plan, Policy OS 19.9, which states:

> This policy requires that when existing information indicates that a site proposed for development may contain paleontological resources, a paleontologist shall monitor site 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. (County of Riverside 2008)

The "SABER Policy" (Safeguard Artifacts Being Excavated in Riverside County), enacted in October 2011 by the Riverside County Board of Supervisors, also requires that any paleontological resources found or unearthed in the county of Riverside be curated at the Western Science Center Museum on Searl Parkway in the city of Hemet.

City of Lake Elsinore

Paleontological resources are outlined in Chapter 4.6.7 of the City of Lake Elsinore General Plan, which was adopted on December 13, 2011 (City of Lake Elsinore 2011a). In the General Plan, mapped geologic areas are delineated according to their potential to yield fossils and are presented as Figure 4.6, "Paleontological Resources." This map figure is copied from the County of Riverside's interactive, online paleontological sensitivity mapping database, borrowing the paleontological sensitivity rating system as applied to geologic formations (County of Riverside 2020).

Goal 8 of the General Plan, "Preserve paleontological resources occurring within the City," states the following:

> … development in areas delineated as "High" or "Undetermined" potential sensitivity for paleontological resources [as shown on General Plan Figure 4.6], require the project applicant to hire a certified paleontologist, who must perform a literature search and/or survey and apply the relevant treatment for the site as recommended by the Society for Vertebrate Paleontology. (City of Lake Elsinore 2011a:4-63)

The City of Lake Elsinore Community Development Department will conduct an environmental review of a project and implement appropriate paleontological mitigation procedures, if necessary, prior to the project's approval.

The City of Lake Elsinore General Plan Update (City of Lake Elsinore 2011b) presents the City Paleontological Resource Map as Figure 3.2-3 and further defines paleontological sensitivity ratings, as applied to geological formations, using definitions from the County of Riverside sensitivity system as a baseline reference (City of Lake Elsinore 2011b:3.2-23). Paleontological goals, policies, and implementation programs stated in the General Plan Update are unchanged from those stated in the General Plan.

III. GEOLOGY

The geology of the area surrounding the project is shown on Figure 3 (after Morton and Miller 2006). The project lies within the Elsinore fault zone, which is locally comprised of several active fault segments (Weber 1977; Morton and Miller 2006). The estimated trace of the northwest-southeast-trending Glen Ivy North fault segment is mapped just south of the property (dashed black line on Figure 3 [Morton and Miller 2006; Weber 1977]).

The geologic units mapped as underlying the project indicate that the property is underlain by Holocene and late Pleistocene, young, sandy, alluvial-valley deposits (areas labeled "Qyv_a" and shown in pale orange on Figure 3). These sedimentary deposits are indicated by Morton and Miller (2006) as almost entirely of Holocene age, consisting of unconsolidated silt, sand, and clay-bearing alluvium. The thickness of the alluvial-valley deposits underlying the project is not known. Previously, Weber (1977) mapped the deposits underlying the project as late Pleistocene-aged older flood plain and valley fill alluvium. Mapped just east of the project are outcrops of Cretaceous-aged granite (labeled "Kgu" and shown in pink on Figure 3), the early Pleistocene-aged Pauba Fanglomerate (labeled "Qpf" and shown in faded brown), and Pleistocene-aged older alluvium (labeled "Qoa" and shown in tan). Nearby is the fossiliferous, Paleocene-aged Silverado Formation (labeled "Tsi," in dark orange) and metamorphic rocks ("TRmu," in blue).

IV. PALEONTOLOGICAL RESOURCES

Definition

Paleontological resources are the remains of prehistoric life that have been preserved in geologic strata. These remains are called fossils and include bones, shells, teeth, and plant remains (including their impressions, casts, and molds) in the sedimentary matrix, as well as trace fossils such as footprints and burrows. Fossils are considered older than 5,000 years of age (Society of Vertebrate Paleontology 2010) but may include younger remains (subfossils), for example, when viewed in the context of local extinction of the organism or habitat. Fossils are considered a nonrenewable resource under state, county, and local guidelines (see Section II of this report).

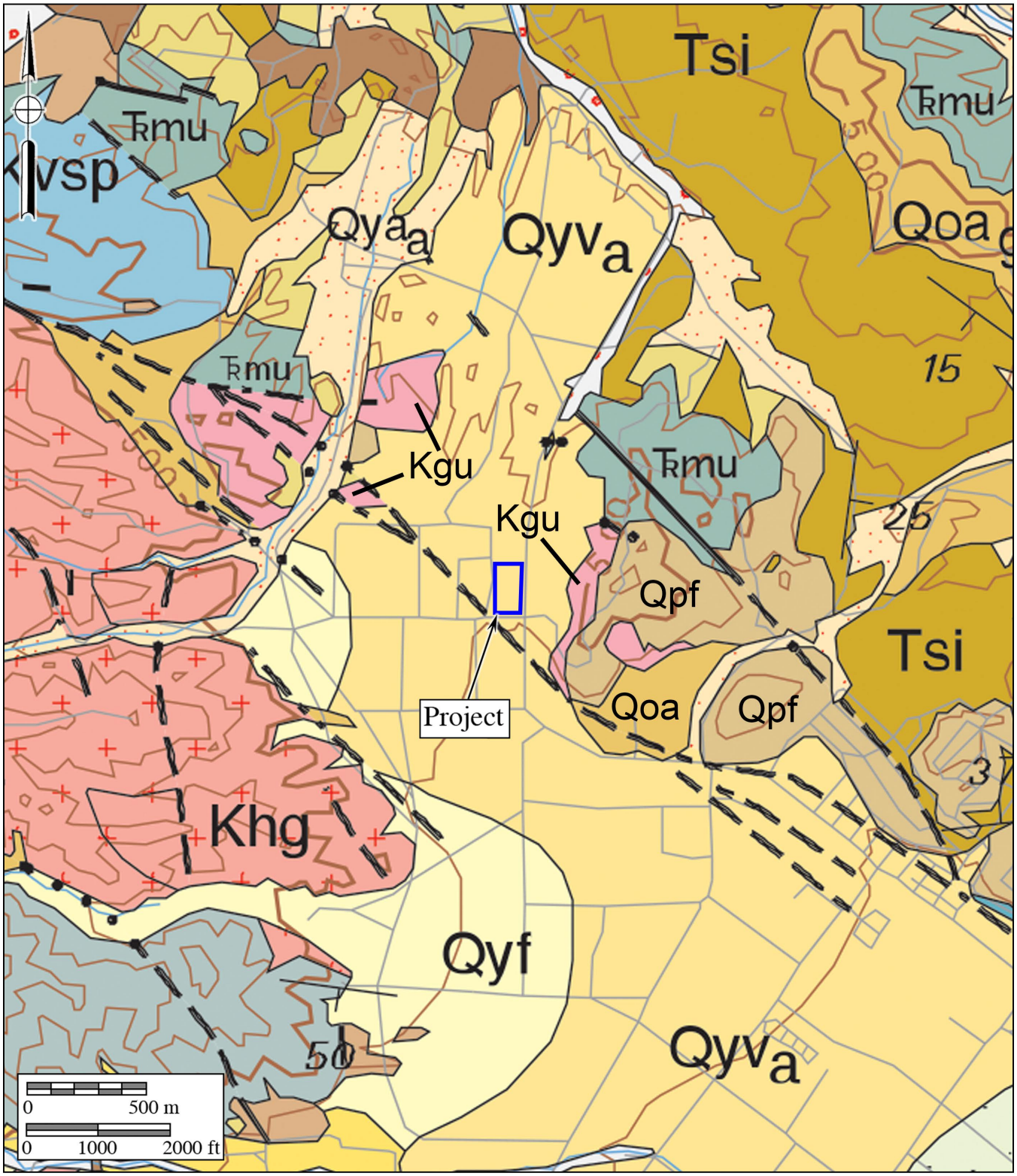

Figure 3

Geologic Map

The Commercial/Retail NWC Mountain and Lake Streets Project

Geology after Morton and Miller (2006)

Fossil Records Search

An in-house records search was performed for paleontological resources that are known in the vicinity of the project. Sources for records include those held by the Los Angeles County Natural History Museum (LACM), the San Bernardino County Museum (SBCM), the University of California at Riverside (UCR), and primary literature. No fossil localities are known from within the project boundaries.

The Paleocene Silverado Formation (historically termed the Martinez Formation) in the Temescal Valley is characterized by occurring as relatively small, scattered outcrops, but is nevertheless fossiliferous. Engel (1959) records the presence of molluscan fossils from his locality El-2 in Section 12 within the southernmost portion of the *Lake Mathews, California* USGS quadrangle, about five miles northwest of the current project, and lists nine bivalve and four gastropod species. A similar locality, El-1, is located approximately a half mile southeast of El-2, and included plant remains as well as marine shell fossils.

A records search was performed by the Department of Earth Sciences at UCR for the Saddleback Estates Project, which was located approximately three and a half miles northwest of the current project between Glen Eden Road and Horsethief Canyon Creek (Kooser 2003, in Appendix B). The records search recognized three fossil localities occurring from within the region, consisting of fossil clams and angiosperm leaves from the Silverado Formation that were collected in the 1930s. However, the available data for these localities are vague; the bivalve specimens appear to be from areas several miles away to the northwest, but the leaf locality appears to be much closer, described as "Hillside above road working storage yard on main road east of Elsinore, Temescal Canyon, Moulton Ranch (?)" (Kooser 2003). Based on this description and mapped outcrops of the Silverado Formation, the location of these leaf fossils could plausibly be from within one mile of the current project (see Figure 3).

The closest known fossil locality held by the LACM is their locality number 6059, which yielded the fossilized remains of a late Pleistocene camel (*Camelops hesternus*) from a location about six miles southeast of the current project. The nearest known SBCM locality is SBCM loc. 5.5.1, located about six miles northwest of the project, consisting of a fossil horse tooth of the Pleistocene genus *Plesippus* sp.

V. PALEONTOLOGICAL SENSITIVITY

Overview

The degree of paleontological sensitivity of any particular area is based on a number of factors, including the documented presence of fossiliferous resources on a site or in nearby areas, the presence of documented fossils within a particular geologic formation or lithostratigraphic unit, and whether or not the original depositional environment of the sediments is one that might have been conducive to the accumulation of organic remains that might have become fossilized over time. Late Quaternary (Holocene, or "modern") alluvium is generally considered to be

geologically too young to contain significant nonrenewable paleontological resources (*i.e.,* fossils) and, therefore, is typically assigned a low paleontological sensitivity. Old, Pleistocene (more than 11,700 years old), alluvial and alluvial fan deposits in the Inland Empire, however, often yield important Ice Age terrestrial vertebrate fossils, such as extinct mammoths, mastodons, giant ground sloths, extinct species of horse, bison, and camel, saber-toothed cats, and others. Therefore, these Pleistocene sediments are accorded a High paleontological resource sensitivity.

Professional Standards

The Society of Vertebrate Paleontology (2010) drafted guidelines outlining procedures that include:

> [E]valuating the potential for impacts of a proposed action on paleontological resources and for mitigating those impacts. Impact mitigation includes pre-project survey and salvage, monitoring and screen washing during excavation to salvage fossils, conservation and inventory, and final reports and specimen curation. The objective of these procedures is to offer standard methods for assessing potential impacts to fossils and mitigating these impacts.

The guidelines include four categories of paleontological sensitivity for geologic units (formations) that might be impacted by a proposed project, as listed below:

- *High Potential:* Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered.
- *Undetermined Potential:* Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment, and that further study is needed to determine the potential of the rock unit.
- *Low Potential:* Rock units that are poorly represented by fossil specimens in institutional collections or based upon a general scientific consensus that only preserve fossils in rare circumstances.
- *No Potential:* Rock units that have no potential to contain significant paleontological resources, such as high-grade metamorphic rocks and plutonic igneous rocks.

Paleontological Sensitivity Assessment

On Figure 4.6, "Paleontological Resources," from the City of Lake Elsinore General Plan (City of Lake Elsinore 2011a), most of the project plots within an area designated as having a "High A" potential paleontological resource sensitivity, as shown in the area colored red on Figure 4. The General Plan Update defines areas assigned with a High A "is based on geologic formations or mappable 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 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" (City of Lake Elsinore 2011b).

The lower southwest portion of the project plots within an area designated as having a "Low" potential paleontological resource sensitivity, as shown in the area colored yellow on Figure 4. The General Plan Update defines areas assigned with a Low paleontological potential or sensitivity as encompassing "lands for which previous field surveys and documentation demonstrates as having a low potential for containing significant paleontological resources subject to adverse impacts" (City of Lake Elsinore 2011b). However, criteria is not provided to define what is meant by "low potential" (City of Lake Elsinore 2011b). In general practice, assignment of a "low" sensitivity reflects rocks that generally do not contain fossils, such as modern (Holocene) sedimentary deposits and igneous rocks. Holocene deposits are generally too young to yield fossils. Since a "low" assignment has been applied to a wide spectrum of rock units, the Riverside County Land Information System, and therefore the City of Lake Elsinore General Plan, suggests that a qualified professional conduct an inspection of the site to determine its suitability to yield fossils.

The Riverside County paleontological sensitivity rating system (and therefore the Lake Elsinore system) is based on the potential of a geologic formation to yield fossils. Typically, fossils are present in many, but not all, geologic formations of sedimentary origin. Factors determining the potential presence of fossils in sedimentary strata include age, depositional environment, and subsequent preservation of hard parts after the death of the organism. Holocene sediments are typically rated by the County (and Lake Elsinore) as having a Low paleontological sensitivity based on their lack for yielding fossils, but as shown in Figure 4, the Holocene alluvium mapped on the majority of the project are not indicated as such. This is due to inaccurate scaling by the County's website to reflect the geology as mapped, shown in Figure 3. The Holocene sediments mapped on the project (Qyv_a), as well as the outcrops of granite (Kgu) and metamorphic rocks (TRmu) nearby, should therefore be colored with the yellow tint. The potentially fossiliferous Pleistocene sediments and Silverado Formation mapped east of the project (Qoa, Qpf, Tsi, respectively) are approximately tinted in red, correctly following County and City criteria.

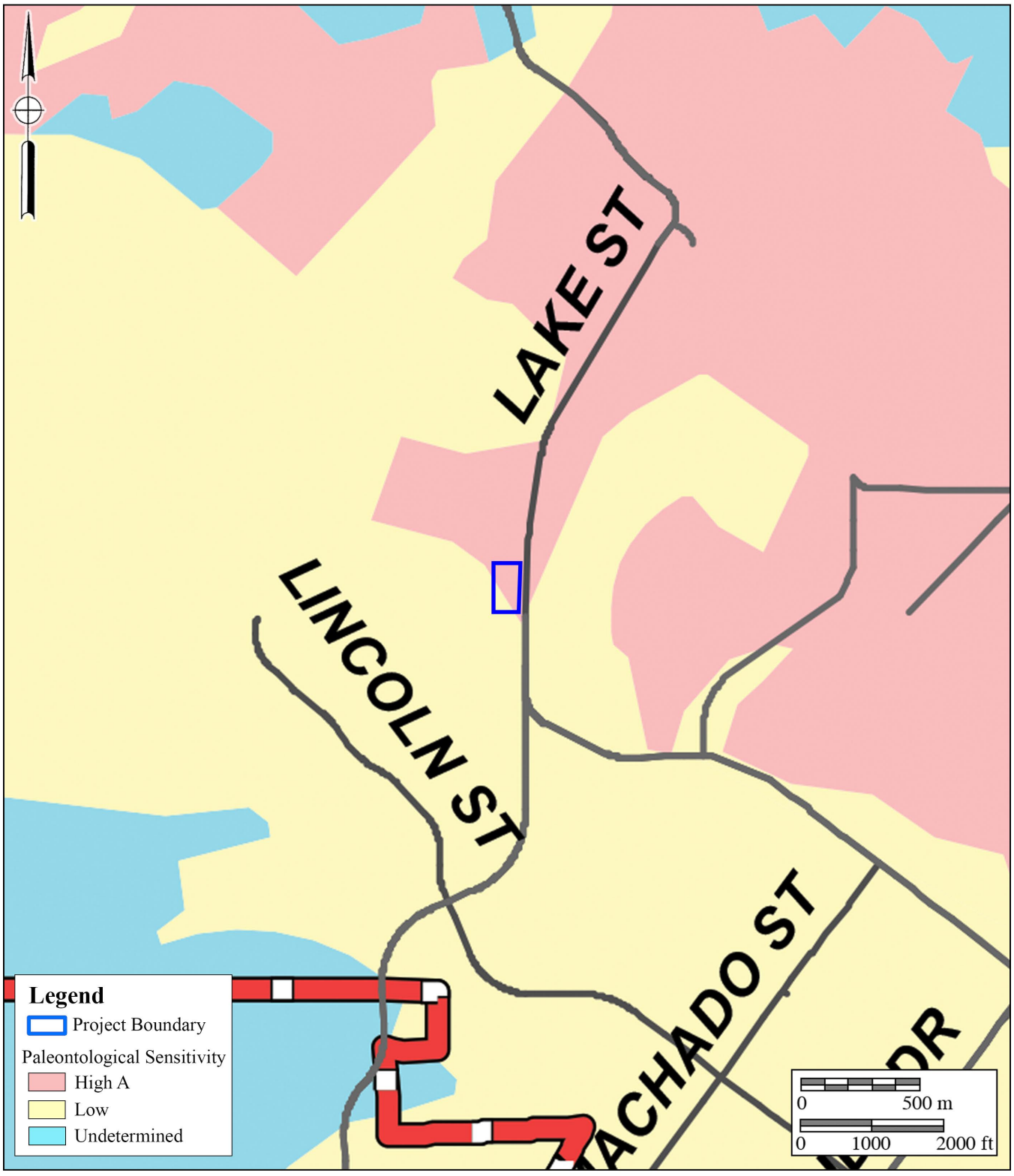

Figure 4

Paleontological Sensitivity Map

The Commercial/Retail NWC Mountain and Lake Streets Project

After City of Lake Elsinore General Plan (2011a)

VI. RECOMMENDATIONS

Based on the nearby presence of mapped outcrops of Quaternary (early to late Pleistocene) Pauba Fanglomerate (Qpf) and alluvial sediments (Qoa), there is a potential for these sedimentary units to underlie the Holocene deposits mapped at the surface at the project. Therefore, on the basis of this criterion, as well as the High A paleontological resource sensitivity locally assigned to these Pleistocene sediments (City of Lake Elsinore 2011a), and nearby large mammal fossil localities that typically occur in these types of Pleistocene deposits, full-time paleontological monitoring is recommended starting at a depth of 10 feet, or when Pleistocene-aged sediments are encountered during excavation activities, whichever is shallowest, during grading, excavation, or utility trenching activities at the Commercial/Retail NWC Mountain and Lake Streets Project.

A drafted Mitigation Monitoring and Reporting Program (MMRP) is proposed and must be consistent with the provisions of CEQA and the City of Lake Elsinore (2011a, 2011b), as well as the guidelines of the Society of Vertebrate Paleontology (2010). If implemented, the MMRP would mitigate any adverse impacts (loss or destruction) to potential nonrenewable paleontological resources (fossils), if present, to a level below significant. Paleontological monitoring may be reduced if, based on the observations and recommendations of the professional-level project paleontologist, the excavations are only occurring in, for example, coarse-grained sediments that are unlikely to yield paleontological resources. The proposed MMRP is outlined below:

1) Monitoring of mass grading and excavation activities in areas identified as likely to contain paleontological resources by a qualified paleontologist or paleontological monitor. Full-time monitoring of grading or excavation activities should be performed starting at a depth of 10 feet, or when Pleistocene-aged sediments are encountered during excavation activities, whichever is shallowest, in undisturbed areas of Quaternary (early to late Pleistocene) sedimentary deposits within the project boundaries. Paleontological monitors will be equipped to salvage fossils as they are unearthed to avoid construction delays and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. The monitor must be empowered to temporarily halt or divert equipment to allow for the removal of abundant or large specimens in a timely manner. Monitoring may be reduced if the potentially fossiliferous units are not present in the subsurface or, if present, are determined by qualified paleontological personnel upon exposure and examination to have a low potential to contain or yield fossil resources.
2) Paleontological salvage during trenching and boring activities is typically from the generated spoils and does not delay the trenching or drilling activities. Fossils are collected and placed in cardboard flats or plastic buckets and identified by field number, collector, and date collected. Notes are taken on the map location and stratigraphy of the site, and the site is photographed before it is vacated and the fossils

are removed to a safe place. On mass grading projects, any discovered fossil site is protected by red flagging to prevent it from being overrun by earthmovers (scrapers) before salvage begins. Fossils are collected in a similar manner, with notes and photographs being taken before removing the fossils. Precise location of the site is determined with the use of handheld Global Positioning System units. If the site involves a large terrestrial vertebrate, such as large bone(s) or a mammoth tusk, that is/are too large to be easily removed by a single monitor, Brian F. Smith and Associates, Inc. (BFSA) will send a fossil recovery crew in to excavate around the find, encase the find within a plaster jacket, and remove it after the plaster is set. For large fossils, use of the contractor's construction equipment is solicited to help remove the jacket to a safe location before it is returned to the BFSA laboratory for preparation.

3) Particularly small invertebrate fossils typically represent multiple specimens of a limited number of organisms, and a scientifically suitable sample can be obtained from one to several five-gallon buckets of fossiliferous sediment. If it is possible to dry screen the sediment in the field, a concentrated sample may consist of one or two buckets of material. For vertebrate fossils, the test is usually the observed presence of small pieces of bones within the sediments. If present, as many as 20 to 40 five-gallon buckets of sediment can be collected and returned to a separate facility to wet-screen the sediment. In the laboratory, individual fossils are cleaned of extraneous matrix, any breaks are repaired, and the specimen, if needed, is stabilized by soaking in an archivally approved acrylic hardener (*e.g.,* a solution of acetone and Paraloid B-72).
4) Preparation of recovered specimens to a point of identification and permanent preservation, including screen washing sediments to recover small invertebrates and vertebrates, if necessary. Preparation of individual vertebrate fossils is often more time-consuming than for accumulations of invertebrate fossils.
5) Identification and curation of specimens into a professional, accredited public museum repository with a commitment to archival conservation and permanent retrievable storage (*e.g.,* the Western Science Center Museum, 2345 Searl Parkway, Hemet, California 92543). The paleontological program should include a written repository agreement prior to the initiation of mitigation activities.
6) Preparation of a final monitoring and mitigation report of findings and significance, including lists of all fossils recovered and necessary maps and graphics to accurately record their original location(s). The report, when submitted to the appropriate lead agency (City of Lake Elsinore), will signify satisfactory completion of the project program to mitigate impacts to any paleontological resources.

VII. CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this paleontological report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief, and have been compiled in accordance with CEQA criteria.

October 27, 2020

Todd A. Wirths
Senior Paleontologist
California Professional Geologist No. 7588

Date

PROFESSIONAL GEOLOGIST
TODD A. WIRTHS
No. 7588
STATE OF CALIFORNIA

VIII. REFERENCES

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APPENDIX A

Qualifications of Key Personnel

Todd A. Wirths, MS, PG No. 7588

Senior Paleontologist

Brian F. Smith and Associates, Inc.
14010 Poway Road • Suite A •
Phone: (858) 679-8218 • Fax: (858) 679-9896 • E-Mail: twirths@bfsa-ca.com

Education

Master of Science, Geological Sciences, San Diego State University, California **1995**

Bachelor of Arts, Earth Sciences, University of California, Santa Cruz **1992**

Professional Certifications

California Professional Geologist #7588, 2003
Riverside County Approved Paleontologist
San Diego County Qualified Paleontologist
Orange County Certified Paleontologist
OSHA HAZWOPER 40-hour trained; current 8-hour annual refresher

Professional Memberships

Board member, San Diego Geological Society
San Diego Association of Geologists; past President (2012) and Vice President (2011)
South Coast Geological Society
Southern California Paleontological Society

Experience

Mr. Wirths has more than a dozen years of professional experience as a senior-level paleontologist throughout southern California. He is also a certified California Professional Geologist. At BFSA, Mr. Wirths conducts on-site paleontological monitoring, trains and supervises junior staff, and performs all research and reporting duties for locations throughout Los Angeles, Ventura, San Bernardino, Riverside, Orange, San Diego, and Imperial Counties. Mr. Wirths was formerly a senior project manager conducting environmental investigations and remediation projects for petroleum hydrocarbon-impacted sites across southern California.

Selected Recent Reports

2019 *Paleontological Assessment for the Eastvale Self Storage Project, City of Eastvale, Riverside County, California.* Prepared for Gossett Development, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Resource Impact Mitigation Monitoring Program for the IPT Perris DC III Western/Nandina Project, Perris, Riverside County, California.* Prepared for IPT/Black Creek Group. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Assessment for the 10407 Elm Avenue Project, City of Fontana, San Bernardino County, California*. Prepared for Advantage Environmental Consultants, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Assessment for the 10575 Foothill Boulevard Project, City of Rancho Cucamonga, San Bernardino County, California*. Prepared for T&B Planning, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Resource Impact Mitigation Program (PRIMP) for the Speedway TPM 37676 Project, Temescal Valley, Riverside County, California.* Prepared for Speedway Development. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Assessment for the Natwar Project, Perris, Riverside County, California.* Prepared for Advantage Environmental Consultants, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Resource and Mitigation Monitoring Assessment, Beyond Food Mart, City of Perris, Riverside County, California.* Prepared for T&B Planning, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Assessment for the MorningStar Marguerite Project, Mission Viejo, Orange County, California.* Prepared for T&B Planning. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Monitoring Report for the West Markham Project (TR 33587), City of Perris, Riverside County, California*. Prepared for Markham JP/ARA, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Monitoring and Mitigation Report for the Artesa at Menifee Town Center Project Site, Sherman Road and La Piedra Road, Menifee, Riverside County, California.* Prepared for MBK Real Estate. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Monitoring Report, Diarq Residence, La Jolla, City of San Diego, San Diego County, California.* Prepared for West Way Drive, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Monitoring Report for the Nimitz Crossing Project, City of San Diego.* Prepared for Voltaire 24, LP. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2019 *Paleontological Resource Impact Mitigation Program (PRIMP) for the Jack Rabbit Trail Logistics Center Project, City of Beaumont, Riverside County, California.* Prepared for JRT BP 1, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2020 *Paleontological Monitoring Report for the Oceanside Beachfront Resort Project, Oceanside, San California.* Prepared for S.D. Malkin Properties. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

2020 *Paleontological Resource Impact Mitigation Program for the Nakase Project, Lake Forest, Orange County, San California.* Prepared for Glenn Lukos Associates, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

APPENDIX B

Record Search

UNIVERSITY OF CALIFORNIA, RIVERSIDE

BERKELEY • DAVIS • IRVINE • LOS ANGELES • RIVERSIDE • SAN DIEGO • SAN FRANCISCO SANTA BARBARA • SANTA CRUZ

GEOLOGY MUSEUM
DEPARTMENT OF EARTH SCIENCES
RIVERSIDE, CALIFORNIA 92521 – 0423

(909) 787-3434
FAX: (909) 787-4324

Dr. MARILYN KOOSER
Museum Scientist

(909) 787-3440
marilyn.kooser@ucr.edu

3 June 2003

Dr. George Kennedy
Brian F. Smith and Associates
12528 Kirkham Court, Suite 3
San Diego, California 92064

Dear Dr. Kennedy,

RE: Fossil locality search for the Saddleback Estates Survey, BFSA#03-41.

A search of our invertebrate and vertebrate fossil locality files has turned up three fossil sites from Paleocene beds of the Santa Ana Mountains. All three sites were collected long ago and documentation of the locations is minimal. "G.W." probably refers to Gordon White, who collected for Shell Oil in the early 1930s. Almost any Paleocene formation was called "Martinez" at the time these were collected.

UCR 1070 was collected by Shell Oil and merely says "Martinez Fm., G.W. 12, North end Santa Ana Mtns." The specimens include one largely complete *Ostrea* and two unidentified, smaller pelecypod valves.

UCR 1085 was also collected by Shell Oil and says "Martinez Fm., G.W. 15, N.E. slope of Santa Ana Mts." That collection consists of three fragments and two more complete valves identified as "*Pedalion* n. sp. A."

UCR 4147 was collected by Ruth Kirkby and is described as "Martinez, Elsinore Quad., Hillside above road working storage yard on main road east of Elsinore, Temescal Canyon, Moulton Ranch (?)". That collection consists of numerous angiosperm leaves, all unidentified.

A bill charging $75 for this search will be sent under separate cover.

Yours truly,

Dr. Marilyn Kooser
Museum Scientist