

# PALEONTOLOGICAL RESOURCE ASSESSMENT FOR THE 3175 WILSON AVENUE PROJECT

**PERRIS, RIVERSIDE COUNTY**

**APN 300-170-008**

**Prepared for:**

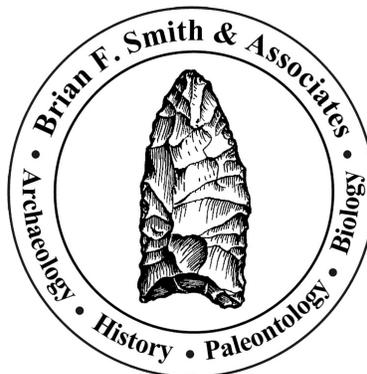
**First Industrial Realty Trust, Inc.  
c/o Advantage Environmental Consultants, Inc.  
145 Vallecitos De Oro, Suite 201  
San Marcos, California 92069**

**Submitted to:**

**City of Perris  
Planning and Development  
135 North D Street  
Perris, California 92570**

**Prepared by:**

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



*July 24, 2020*

## **Paleontological Database Information**

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Professional Geologist No. 7588

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**Report Date:** July 24, 2020

**Report Title:** Paleontological Resource Assessment for the 3175 Wilson  
Avenue Project, Perris, Riverside County, APN 300-170-008

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**USGS Quadrangle:** *Perris, California (7.5 minute)*

**Study Area:** 9.69 acres

**Key Words:** Low to High paleontological resource sensitivity; Riverside  
County; Perris Valley; Quaternary very old alluvial fan deposits;  
excavation monitoring starting at five feet below the surface.

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## **I. INTRODUCTION AND LOCATION**

In response to a requirement by the City of Perris for the environmental assessment of a proposed industrial building development, Brian F. Smith and Associates, Inc. (BFSA) conducted a paleontological resource assessment of the 3175 Wilson Avenue Project located within the Perris Valley Commerce Center Specific Plan (PVCCSP) area in the city of Perris, Riverside County, California. The proposed 9.69-acre development project is located south of Rider Street, east of Wilson Avenue, north of Placentia Avenue, and west of the Perris Valley Storm Drain Channel. The subject property is assigned Assessor's Parcel Number (APN) 300-170-008. The property is located within Section 17, Township 4 South, Range 3 West on the USGS 7.5-minute *Perris, California* topographic quadrangle (Figures 1 and 2).

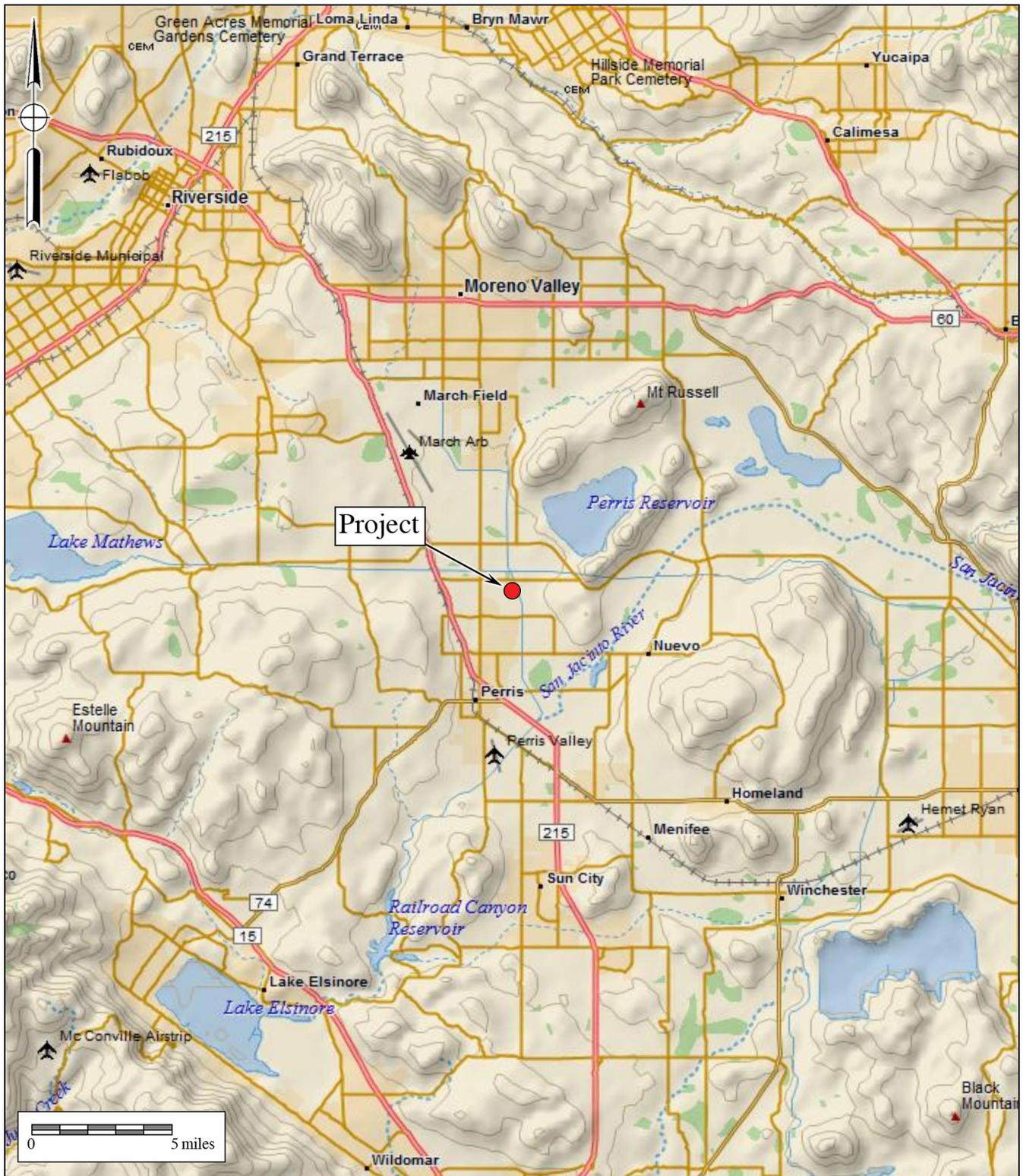
## **II. REGULATORY SETTING**

The California Environmental Quality Act (CEQA), patterned after the National Environmental Policy Act (NEPA), 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). The 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.



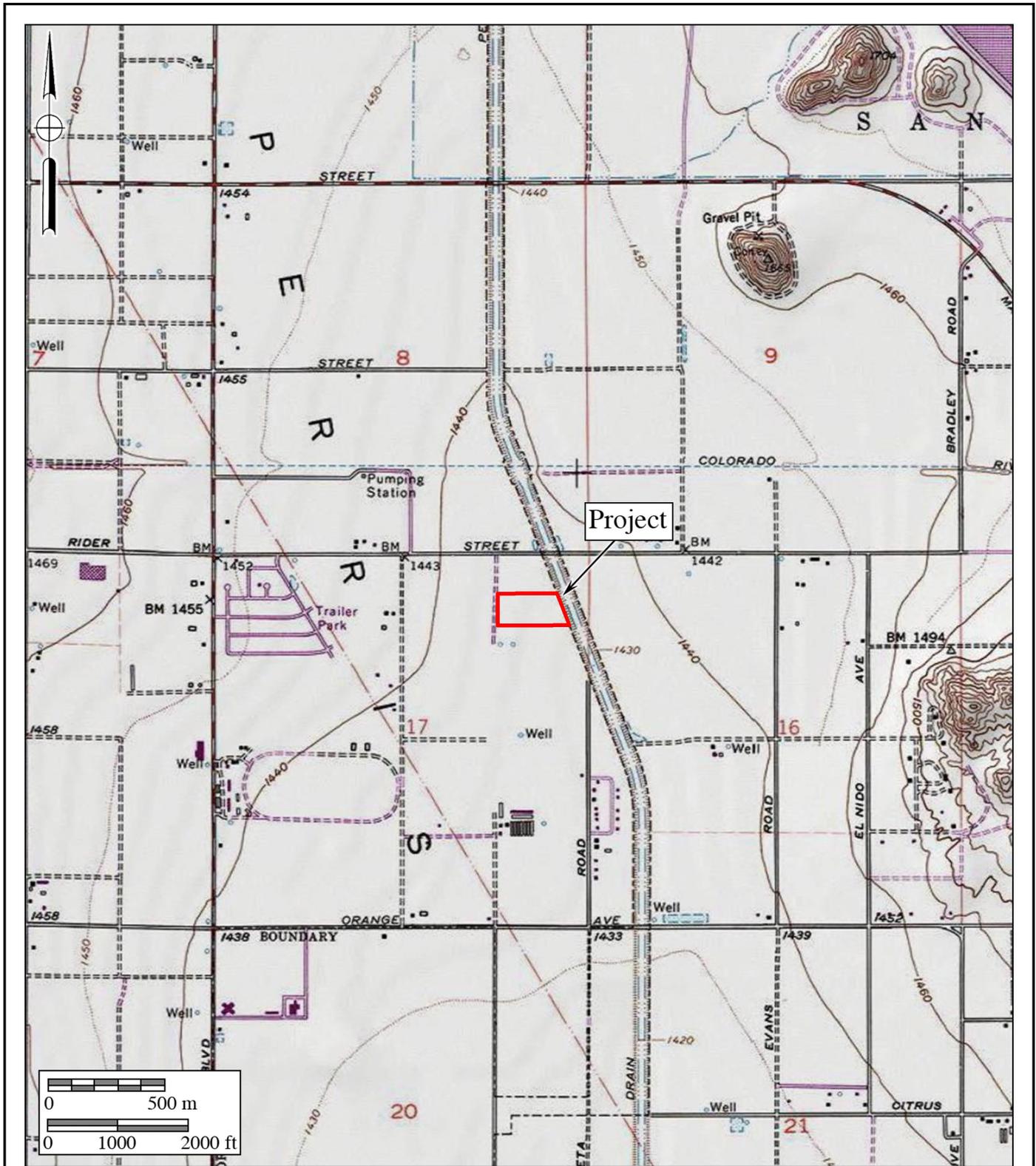
**Figure 1**

**General Location Map**

The 3175 Wilson Avenue Project

DeLorme (1:250,000)





**Figure 2**

**Project Location Map**

The 3175 Wilson Avenue Project

USGS Perris Quadrangle (7.5-minute series)



### **City of Perris**

The City of Perris has allocated requirements addressing paleontological resources in the Conservation Element of the City's General Plan (City of Perris 2005, p. 26-27; Exhibit CN-7). The Conservation Element "provides goals and policies as a framework for the management, preservation, and use of the City's resources." Goals, policies, and implementation measures specific to paleontological resources are as follows:

Measure IV.A.4: In Area 1 and Area 2 shown on the Paleontological Sensitivity Map [Exhibit CN-7], paleontological monitoring of all projects requiring subsurface excavations will be required once any excavation begins. In Areas 4 and 5, paleontological monitoring will be required once subsurface excavations reach 5 feet in depth, with monitoring levels reduced if appropriate, at the discretion of a certified Project Paleontologist. (City of Perris 2005, p. 47)

Based on the Paleontological Sensitivity Map in the Conservation Element of the City's Comprehensive General Plan (City of Perris 2005, Exhibit CN-7), the 3175 Wilson Avenue Project is located within Area 4, which requires paleontological monitoring starting at a depth of five feet during earth disturbance activities, or at the discretion of a "certified Project Paleontologist."

### **Local Area**

The 3175 Wilson Avenue Project is within the boundaries of a draft "specific plan" prepared by the City of Perris, called the PVCCSP (City of Perris 2011a). The PVCCSP includes Environmental Impact Report (EIR) mitigation measures addressing cultural resource impacts, which include paleontological resources. These mitigation measures are further elaborated in a final version of the PVCCSP (City of Perris 2011b). In the final PVCCSP (City of Perris 2011b), Mitigation Measure (MM) Cultural 1 outlines the requirements for preparation of a Phase I Cultural Resources Study, which has been completed through the preparation of this assessment. MM Cultural 5 would be applicable to the proposed 3175 Wilson Avenue Project, should a mitigation monitoring and reporting program (MMRP) be proposed. Since an MMRP is outlined in this assessment for the project, MM Cultural 5 is satisfied (see Section VI of this assessment).

## **III. GEOLOGY**

The geology of the project and immediately surrounding areas is shown on the published geologic map of the *Perris* quadrangle (Figure 3, after Morton 2003). The map indicates that the project is located on Holocene ("modern") and upper Pleistocene (10,000 to perhaps 100,000 year old) young alluvial valley deposits (Qyv<sub>sa</sub>, shown in light yellow on Figure 3), which may overlie at depth, older, lower Pleistocene (approximately 1.8 million to perhaps 200,000 to 300,000 year old) very old alluvial fan deposits (Qvof<sub>a</sub>, shown in light brown on Figure 3).



## 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) when viewed in the context of local extinction of the organism or habitat, for example. Fossils are considered a non-renewable resource under state and county guidelines (Section II of this report).

### Professional Standard

The Society of Vertebrate Paleontology 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. (Society of Vertebrate Paleontology 2010)

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.

### **City Assessment**

Based on the Paleontological Sensitivity Map in the Conservation Element of the City's Comprehensive General Plan (City of Perris 2005, Exhibit CN-7), the 3175 Wilson Avenue Project is located within Area 4, which is assigned a "low to high" paleontological sensitivity, based on the presence of the Pleistocene older valley deposits (high sensitivity) underlying young alluvium at the surface (low sensitivity). Sites located within Area 4 require that paleontological monitoring be initiated once subsurface excavations reach five feet below the surface, with a stipulation that monitoring "levels" be reduced at the discretion of the project paleontologist, if appropriate (City of Perris 2005, Goal IV.A.4).

Because the project is located in an area specified by the City of Perris (2005) that monitoring for paleontological resources commences once excavations reach a depth of five feet ("Area 4"), the Draft PVCCSP (City of Perris 2011a) requires an item in a mitigation measure to be implemented to minimize adverse impacts to fossils that might be present. This item is within mitigation measure MM Cultural 3 in the draft PVCCSP (page 4.4-16, City of Perris 2011a), and repeated in MM Cultural 5 in the final PVCCSP (page 11.0-27, City of Perris 2011b), and includes the requirement that a city-approved professional paleontologist verify implementation of the mitigation measures identified in the approved Phase 1 report for the project. In addition, the measures outline necessary field and reporting procedures at the project during excavation activities, and stipulate that monitoring be restricted to areas of older alluvium that might be present below the surface.

### **Fossil Records Search**

A paleontological literature review and collections and records search for a nearby project in Moreno Valley (the Moreno Valley Logistics Center Project) was conducted by a vertebrate paleontologist in the Division of Geological Sciences at the San Bernardino County Museum (SBCM) in Redlands (Scott 2015) (Appendix B). The Moreno Valley Logistics Center Project is located approximately three and one-quarter miles northwest of the 3175 Wilson Avenue Project, but is underlain by very old Pleistocene alluvial fan deposits exposed at the surface (Morton 2003). This records search report indicated that older Pleistocene alluvial fan deposits (Qvof<sub>a</sub> on Figure 3) have a high potential to contain significant nonrenewable paleontological resources (i.e., fossils), and were thus assigned a "high paleontological resource sensitivity" by Scott (2015) (Appendix B). Similar older Pleistocene sediments throughout the lowland (valley) areas of western Riverside County and the Inland Empire have been reported to yield significant fossils of extinct terrestrial mammals from the last Ice Age, such as mammoths, mastodons, giant ground sloths, dire wolves, short-faced bears, saber-toothed cats, large and small horses, camels, and bison. The collections and records search report, however, did not identify any known fossil localities within the boundaries of the proposed Moreno Valley Logistics Center Project, nor within at least one mile in any direction of that project.

The closest recorded fossil localities may be those reported by the SBCM (SBCM localities 5.3.151 and 5.3.153; Scott 2013) from Pleistocene older alluvium near the Lakeview Hot Springs area on the southeast side of the Perris Reservoir. Fossil vertebrates collected from these localities included mammoths, extinct horses, and extinct bison. Another records search report was performed for a project located about two miles west of the 3175 Wilson Avenue Project (Quinn and Richards 2018). In the report, an attached letter from the Western Science Center indicated that Pleistocene fossils were recovered in similar very old alluvial fan sediments from a locality about nine miles to the northeast, in Moreno Valley.

## **V. PALEONTOLOGICAL SENSITIVITY**

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 is thus typically assigned a low paleontological sensitivity. Older, Pleistocene (> 11,700 year 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 (Scott 2015). These Pleistocene sediments are thus accorded a High paleontological resource sensitivity.

## **VI. RECOMMENDATIONS**

The existence of potentially fossiliferous Quaternary very old alluvial fan deposits beneath the Holocene and upper Pleistocene young alluvial valley deposits (Qyv<sub>sa</sub> on Figure 3); the known occurrence of terrestrial vertebrate fossils at shallow depths from Quaternary older alluvial fan sediments across the Inland Empire of western Riverside County; and the High paleontological sensitivity typically assigned to Quaternary older alluvial fan sediments for yielding paleontological resources all support the recommendation that paleontological monitoring be required during mass grading and excavation activities in undisturbed Quaternary older alluvial fan sediments in order to mitigate any adverse impacts (loss or destruction) to potential nonrenewable paleontological resources. Monitoring is recommended full time starting at a depth of five feet below the surface during earth disturbance activities, as specified by the project’s position within Area 4 of Exhibit CN-7 of the Conservation Element of the General Plan of the City of Perris (2005), and that the project paleontologist may revise the level of monitoring at the project as subsurface conditions potentially change during the course of excavation activities.

Mitigation measure MM Cultural 5 of the PVCCSP (City of Perris 2011b), presented below, is proposed as a part of implementing the MMRP. When implemented with the provisions of CEQA, Scott (2015) (Appendix B), the City of Perris (2005), and those of the guidelines of the Society of Vertebrate Paleontology (2010), this MMRP would mitigate any adverse impacts (loss or destruction) to potential nonrenewable paleontological resources (fossils), if present, to a level below significant.

**MM Cultural 5**

Prior to grading for projects requiring subsurface excavation that exceeds five (5) feet in depth, proponents of the subject implementing development projects shall retain a professional paleontologist to verify implementation of the mitigation measures identified in the approved Phase I Cultural Resources Study and to monitor the subsurface excavation that exceed five (5) feet in depth. Selection of the paleontologist shall be subject to the approval of the City of Perris Planning Manager and no grading activities shall occur at the site until the paleontologist has been approved by the City.

Monitoring should be restricted to undisturbed subsurface areas of older alluvium, which might be present below the surface. The paleontologist shall be prepared to quickly salvage fossils as they are unearthed to avoid construction delays. The paleontologist shall also remove samples of sediments which are likely to contain the remains of small fossil invertebrates and vertebrates. The paleontologist shall have the power to temporarily halt or divert grading equipment to allow for removal of abundant or large specimens.

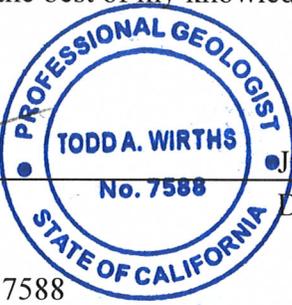
Collected samples of sediments shall be washed to recover small invertebrate and vertebrate fossils. Recovered specimens shall be prepared so that they can be identified and permanently preserved. Specimens shall be identified and curated and placed into an accredited repository (such as the Western Science Center or the Riverside Metropolitan Museum) with permanent curation and retrievable storage.

A report of findings, including an itemized inventory of recovered specimens, shall be prepared upon completion of the steps outlined above. The report shall include a discussion of the significance of all recovered specimens. The report and inventory, when submitted to the City of Perris Planning Division, would signify completion of the program to mitigate impacts to 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.

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

 July 24, 2020  
Date

## VIII. REFERENCES

- City of Perris. 2005. Conservation Element, City of Perris General Plan [http://www.cityofperris.org/city-hall/general-plan/Conservation\\_Element\\_01-08-09.pdf](http://www.cityofperris.org/city-hall/general-plan/Conservation_Element_01-08-09.pdf).
- City of Perris. 2011a. Perris Valley Commerce Center Specific Plan Draft EIR. <http://www.cityofperris.org/city-hall/specific-plans/PVCC/PVCC-DEIR%2007-20-11.pdf>.
- City of Perris. 2011b. Perris Valley Commerce Center Specific Plan Final EIR. [http://www.cityofperris.org/city-hall/specific-plans/PVCC/PVCC\\_MMRP\\_11-30%2011\\_rev.pdf](http://www.cityofperris.org/city-hall/specific-plans/PVCC/PVCC_MMRP_11-30%2011_rev.pdf).
- Morton, D.M. 2003. Preliminary geologic map of the Perris 7.5' quadrangle, Riverside County, California: U. S. Geological Survey Open-File Report 03-270, scale 1:24,000.
- Quinn, H.M., and Richards, M.D. 2018. Paleontological resources assessment report, Canyon Steel Industrial Building project. Unpublished consulting report for Carter Group Architects, Inc., San Clemente, California, by CRM Tech, Colton, California.
- Scott, E. G. 2013. Paleontology literature and records review, Ecos Nuevo project, Lakeview Hot Springs region, Riverside County, California. Unpublished report prepared for Brian F. Smith and Associates, Inc., Poway, California by the Division of Geological Sciences, San Bernardino County Museum, Redlands, California.
- Scott, E.G. 2015. Paleontology literature and records review, Moreno Valley Logistics Center, City of Moreno Valley, Riverside County, California. Unpublished report prepared for Brian F. Smith and Associates, Poway, by the Division of Geological Sciences, San Bernardino County Museum, Redlands, attached.

Society of Vertebrate Paleontology. 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources; by the SVP Impact Mitigation Guidelines Revision Committee: [http://vertpaleo.org/Membership/Member-Ethics/SVP\\_Impact\\_Mitigation\\_Guidelines.aspx](http://vertpaleo.org/Membership/Member-Ethics/SVP_Impact_Mitigation_Guidelines.aspx).

**APPENDIX A**

**Resume**

# Todd A. Wirths, MS, PG

## 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

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<b>Master of Science, Geological Sciences, San Diego State University, California</b>	<b>1995</b>
<b>Bachelor of Arts, Earth Sciences, University of California, Santa Cruz</b>	<b>1993</b>
<b>Associate of Arts, Geological Sciences, Santa Barbara City College</b>	<b>1992</b>

## Professional Certifications

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Professional Geologist, California (#7588), 2003  
Riverside County Approved Paleontologist  
San Diego County Qualified Paleontologist  
Orange County Certified Paleontologist (applied, 2019)  
OSHA HAZWOPER 40-hour trained; current 8-hour annual refresher

## Professional Memberships

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Board member, San Diego Geological Society  
San Diego Association of Geologists (President, 2012; Vice President, 2011)  
South Coast Geological Society

## Publications

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*Picacho and the Cargo Muchachos: Guns, Gold, and Geology of Eastern Imperial County, California:*  
San Diego Associations of Geologists/Sunbelt Publications, 2012 (1<sup>st</sup> ed.), 2014 (2<sup>nd</sup> ed.).  
"Picacho, the Golden Road," *Dezert Magazine*, Winter, 2013.

## Experience

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**Senior Paleontologist**  
**Brian F. Smith and Associates, Inc.**

**October 2012–Present**  
**Poway, California**

Mr. Wirths serves as the director of the paleontology department at BFSa. Mr. Wirths oversees all phases of project-related paleontology, including management of field and junior staff, planning, organizing, and implementing monitoring projects, research, report drafting, regulatory compliance, and laboratory oversight. Mr. Wirths directs or performs resource mitigation monitoring of construction sites, fossil salvage activities, paleontological field surveys and assessments, laboratory fossil preparation and curation. He has drafted dozens of technical reports, including paleontological assessments, site reports, and paleontological resource impact mitigation program (PRIMP) reports. Mr. Wirths created and implemented BFSa-specific fossil-recovery data sheets for field use by monitoring staff. The field

experience of Mr. Wirths includes the use of Trimble GPS data recording, burlap and plaster techniques, collection of microfossils, and wet and dry-screening techniques. Mr. Wirths provides expert identification of fossil marine invertebrates.

**Lead Geological/Paleontological Consultant  
Cogstone Resource Management**

**November 2011–February 2009  
San Diego and Orange, California**

Mr. Wirths conducted on-site paleontological monitoring, drafted/evaluated RFP responses, work plans, and reports; planned, organized, and implemented projects, and trained and supervised junior staff. Field localities include projects in Calaveras, Merced, Tulare, San Joaquin, Kern, San Bernardino, Los Angeles, and Riverside Counties. At the Highway 99 Caltrans expansion project near Merced, Mr. Wirths recovered dozens of Rancholabrean-age vertebrate fossils using plaster and burlap casting techniques.

**Paleontological/Geological Monitor  
San Diego Natural History Museum**

**February 2011–November 2011  
San Diego, California**

Oversaw construction and development sites for fossil resources and logged and interpreted geology during drilling and trenching activities/recovery of fossils. Monitoring projects include the SDG&E Sunrise Powerlink, several SDG&E Wood to Steel projects, San Diego City College expansion, The Bishops School, and the Prebys Cardiovascular Institute.

**Project Manager/Geologist  
Wirths Consulting**

**March 2010–February 2011  
San Diego, California**

Provided environmental consulting services for Apex Companies, H.M. Pitt Labs, Ninyo & Moore, and TRC Solutions, providing project management, reporting, and certified professional field oversight, designing/budgeting an *in situ* chemical oxidation project, and obtaining a City of San Diego business license.

**Senior Project Manager  
ETIC Engineering, Inc.**

**April 2007–August 2009  
Santa Diego, California**

Operated as senior project manager for 10 ExxonMobil retail sites, designed and implemented assessment and remediation projects (including project forecasting/budgeting, managing subcontractors, and composing work plans), composed work plans, assessment reports, and corrective action plans, and managed/mentored staff-level associates.

**Project Manager  
TRC Solution, Inc./TRC Alton Geoscience**

**January 2000–April 2007  
San Diego and Imperial Counties, California**

Operated as project manager for various projects throughout San Diego County, including ExxonMobil Oil Corporation and Unocal Corporation remediation activities, BNSF Railway Company groundwater assessment and remediation, and Ultramar/Valero, Inc., which involved supervising/managing on-site personnel, collecting/managing soils, groundwater, and wood samples, writing reports, and conducting remediation feasibility testing and remedial planning.

**Staff Geologist  
IT Corp./Pacific Environmental Group**

**May 1997–September 2000  
San Diego, Orange, and Los Angeles Counties, California**

Tracked progress of excavation and delineation of impact, sampled/managed soil, and conducted drilling and groundwater monitoring/well installation activities.

## Selected Technical Reports

---

Glover, Amy, Todd **Wirths**, and Sherri Gust

2012 *Paleontological assessment for the Paradise Creek Housing Development, National City, San Diego County, California.* Prepared for The Related Companies of California, Irvine, CA, by Cogstone Resource Mgt., Inc.

Gust, Sherri, Kim Scott, and Todd **Wirths**

2012 *Paleontological resources assessment for the WECC Path 42 Project in Riverside County, California.* Prepared for Southern California Edison, Monrovia, CA, by Cogstone Resource Mgt., Inc.

Horne, Melinda, Todd **Wirths**, and Amy Glover

2012 *Paleontological and cultural resources assessment for the town of Yucca Valley General Plan update, San Bernardino County, California.* Prepared for The Planning Center – DC&E, Santa Ana, CA, by Cogstone Resource Mgt., Inc.

**Wirths**, Todd A., and Sherri Gust

2012 *Paleontological resources assessment for the Truckhaven geothermal expansion project, Imperial County, California.* Prepared for NGP Truckhaven, LLC, Reno, NV, by Cogstone Resource Mgt., Inc.

Kennedy, George L., and Todd A. **Wirths**

2013 *Paleontological Monitoring Report, Aztec Court Apartments, 6237 Montezuma Road, San Diego, San Diego County, California.* Prepared for Warmington Residential California, Inc., Southern California Division. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2013 *Paleontological Monitoring Report, Citywide Sewer Pump Station Upgrades, Group II, Pump Station 60A, Scripps Ranch neighborhood, City of San Diego, San Diego County, California (PTS No. 31233 and WBS No. S-00304).* Prepared for Ortiz Corporation General Engineering Contractors. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2013 *Paleontological Resource Impact Mitigation Program (PRIMP), Rancho Paseo de Valencia, City of Corona and unincorporated Riverside County, California (Tentative Tract Map 34760; APNs 114-040-019, 114-040-020, 275-100-003, and 275-100-004).* Prepared for Rancho Paseo de Valencia. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2013 *Paleontological monitoring report, Casa Aldea Phase II, University City Village Apartments, 6112, 6122, and 6132 Gullstrand Street, University City, San Diego, San Diego County (LDR No. 98-0408, PTS No. 303550).* Prepared for Wise River Builders, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2013 *Paleontological Resource Assessment, Ballpark Village Development, East Village, San Diego, San Diego County, California.* Prepared for Ballpark Village, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2013 *An Updated Phase I Paleontological Resources Assessment for Tentative Tract Maps 36484 and 36485, Audie Murphy Ranch, City of Menifee, County of Riverside, California.* Prepared for Brookfield Residential. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2013 *Paleontological Resource Impact Mitigation Program (PRIMP), Ridge Park project, city of Temecula, Riverside County, California (APNs 922-210-049; 940-310-013, 940-310-015, and 940-310-016; 940-310-044 through 940-310-048; and 940-320-001 through 940-320-007).* Prepared for Ambient Communities. Report on file at Brian F. Smith and Associates, Inc., Poway, CA.

Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological Monitoring Report, Chino Desalter Phase III Expansion Project, 11301 Harrel Street, City of Jurupa Valley, Riverside County, California.* Prepared for W.M. Lyles Co. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological resource and monitoring assessment, proposed Avanti North housing development, Lancaster, Los Angeles County, California (Tentative Tract Map No. 53229).* Prepared for Avanti North, LP. Report on file at Brian F. Smith and Associates, Inc., Poway, CA.

Kennedy, George L., and Todd A. **Wirths**

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Kennedy, George L., and Todd A. **Wirths**

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Kennedy, George L., and Todd A. **Wirths**

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Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological Resource Assessment, Shoshone Valley Road solar array project, Twentynine Palms, San Bernardino County, California (APNs 613-233-01, -02, -03, -04, -27, -28, -29, and -30).* Prepared for Ecos Energy, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, CA.

Kennedy, George L., and Todd A. **Wirths**

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Kennedy, George L., and Todd A. **Wirths**

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Kennedy, George L., and Todd A. **Wirths**

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Kennedy, George L., and Todd A. **Wirths**

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Kennedy, George L., and Todd A. **Wirths**

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Kennedy, George L., and Todd A. **Wirths**

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Kennedy, George L., and Todd A. **Wirths**

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Kennedy, George L., and Todd A. **Wirths**

2014 *Paleontological Monitoring Report, Construction of Pinnacle 15<sup>th</sup> & Island Project, East Village, Downtown San Diego, San Diego County, California.* Prepared for Pinnacle International Development, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., N. Scott Rugh, and Todd A. **Wirths**

2012 *Paleontological Monitoring Report, Construction of 13<sup>th</sup> & Market Project, East Village, Downtown San Diego, San Diego County, California.* Prepared for The Hanover Company. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., N. Scott Rugh, and Todd A. **Wirths**

2013 *Paleontological Monitoring Report, Ariel Suites, Little Italy, City of San Diego, San Diego County, California.* Prepared for Ariel Suites, LP. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., N. Scott Rugh, and Todd A. **Wirths**

2013 *Paleontological Monitoring Report, Village Lindo Paseo Dormitories, SDSU College Area, City of San Diego, San Diego County, California.* Prepared for Village Lindo Paseo, L.P. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., N. Scott Rugh, and Todd A. **Wirths**

2013 *Paleontological Monitoring Report, Grit Processing Improvements Project, Point Loma Wastewater Treatment Plant, San Diego, San Diego County, California (Sewer WO No. 176001; WBS No. S-00315)*. Prepared for Archer Western Contractors. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., N. Scott Rugh, and Todd A. **Wirths**

2013 *Paleontological Monitoring Report, Harbor Drive Trunk Sewer, City of San Diego, San Diego County, California (Project No. 38789)*. Prepared for Burtech Pipeline. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., Todd A. **Wirths**, and Brian F. Smith

2013 *Paleontological and Archaeological Monitoring and Mitigation Report, Lake Forest Sports Park, City of Lake Forest, Orange County, California*. Prepared for Road Builders, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2013 *Negative Paleontological Monitoring and Mitigation Report, San Clemente Senior Housing Project, 2350 South El Camino Real, City of San Clemente, Orange County, California (CUP No. 06-065; APN 060-032-04)*. Prepared for Primus Building Solutions. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

**Wirths**, Todd A., and George L. Kennedy

2014 *Paleontological Monitoring Report, Sewer Main Replacement Group Job 685 (Part of Sewer and Water Group Job 685 (Part of Sewer and Water Group 3014), City Heights Neighborhood of the City of San Diego, San Diego County, California (Project No. 131446; Sewer WBS No. B-00333)*. Prepared for Ortiz Corporation General Engineering Contractors. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

**Wirths**, Todd A., and George L. Kennedy

2015 *Paleontological Monitoring Report, 951 South Beach Boulevard Project, La Habra, Orange County, California (MND No. 14-01)*. Prepared for Fairfield 951 Beach, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2015 *Paleontological Monitoring Report, Casa Aldea Lots 4 & 6, Fairbanks Ranch-Santaluz Area, Northern San Diego, California*. Prepared for Wise River Builders, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2015 *Paleontological Monitoring Report, Pendry Hotel San Diego, Gaslamp Quarter, Downtown San Diego, California*. Prepared for The Robert Green Company. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

**Wirths**, Todd A., and George L. Kennedy

2016 *Paleontological Monitoring Report, The Rey Project, 840 B Street, Downtown San Diego, San Diego County, California*. Prepared for Blue/WP San Diego, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2016 *Paleontological Monitoring Report, Atmosphere Affordable Housing Project, 1453 Fourth Avenue, Downtown San Diego, San Diego County, California.* Prepared for Wakeland Housing & Development Corp. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

**Wirths**, Todd A., and George L. Kennedy

2017 *Paleontological Monitoring Report, Ballpark Village, Lower East Village, Downtown San Diego, California.* Prepared for Ballpark Village, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

**Wirths**, Todd A., and George L. Kennedy

2017 *Paleontological Monitoring Report, 460 16<sup>th</sup> Street, East Village, Downtown San Diego, San Diego County, California.* Prepared for Lennar Multifamily Communities, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

**Wirths**, Todd A., and George L. Kennedy

2017 *Paleontological Resource Impact Mitigation Program (PRIMP) for the La Habra North Project, La Habra, Orange County, California (Tract Map 17809).* Prepared for City Ventures. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2017 *Paleontological Monitoring Report, Imagine Coachella project at the Jordan Christian Academy, West of Coachella in Unincorporated Riverside County, California.* Prepared for M-13 Construction, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., and Todd A. **Wirths**

2017 *Paleontological Monitoring Report, Kettner and Ash Condominiums Project, Columbia District of Downtown San Diego, San Diego County, California.* Prepared for Bosa Development California, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., Todd A. **Wirths**, and N. Scott Rugh

2018 *Paleontological Monitoring Report, Manning Canyon Sewer and Water Replacement Project, Linda Vista, City of San Diego, San Diego County, California.* Prepared for Red Tail Monitoring & Research, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., Todd A. **Wirths**, and N. Scott Rugh

2018 *Paleontological Monitoring Report, Westfield University Towne Center Expansion Project, Phase 2A, La Jolla Village Drive, San Diego, San Diego County, California.* Prepared for Westfield UTC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

**Wirths**, Todd A., and George L. Kennedy

2018 *Negative Paleontological Monitoring Report, Verizon Capistrano Depot Project, 32400 Paseo Adelanto, San Juan Capistrano, Orange County, California (CUP No. 16-003; APN 668-10-023).* Prepared for Trileaf Environmental and Property Consultants. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

Kennedy, George L., Todd A. **Wirths**, and N. Scott Rugh

2019 *Paleontological Monitoring Report, Saint Demiana Coptic Orthodox Church, Santaluz-Torrey Highlands Neighborhood, San Diego, San Diego County, California.* Prepared for Barnhart-Reese Construction, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

**APPENDIX B**

**Paleontological Records Search Results**



## Museum

Leonard X. Hernandez  
Interim Museum Director

12 March 2015

Brian F. Smith and Associates  
attn: George L. Kennedy, Ph.D., Senior Paleontologist  
14010 Poway Road, Suite A  
Poway, CA 92064

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re: **PALEONTOLOGY LITERATURE AND RECORDS REVIEW, MORENO VALLEY LOGISTICS CENTER, CITY OF MORENO VALLEY, RIVERSIDE COUNTY, CALIFORNIA**

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Dear Dr. Kennedy,

The Division of Geological Sciences of the San Bernardino County Museum (SBCM) has completed a literature review and records search for the above-named project in the City of Moreno Valley, Riverside County, California. Specifically, the proposed study area is located in the southwestern quadrant of section 30, Township 3 South, Range 3 West, San Bernardino Base and Meridian, as seen on the Perris, California and the Sunnymead, California 7.5' United States Geological Survey topographic quadrangle maps (1967 editions, photorevised 1973 and 1980, respectively).

Previous mapping of the proposed property (Rogers, 1965; Morton and Matti, 2001; Morton, 2003) indicates that the study area is situated entirely upon surface exposures of early Pleistocene alluvial fan deposits (= unit **Qvof<sub>a</sub>**). These Pleistocene fan deposits may have high paleontologic sensitivity, depending upon their lithology. Pleistocene alluvium elsewhere throughout Riverside County and the Inland Empire has repeatedly been reported to yield significant fossils of extinct animals from the Ice Age (Jefferson, 1991; Reynolds, 1991; Anderson and others, 2002; Scott and Cox, 2008; Springer and others, 2009, 2010; Scott, 2010). Fossils recovered from these Pleistocene sediments represent extinct taxa including mammoths, mastodons, ground sloths, dire wolves, sabre-toothed cats, large and small horses, large and small camels, and bison (Jefferson, 1991; Reynolds, 1991; Scott and Cox, 2008; Springer and others, 2009, 2010; Scott, 2010), as well as plant macro- and microfossils (Anderson and others, 2002). If not previously disturbed by development, and depending upon the lithology exhibited, these sediments have high potential to contain significant nonrenewable paleontologic resources.

For this review, I conducted a search of the Regional Paleontologic Locality Inventory (RPLI) at the SBCM. The results of this search indicate that no previously-recorded fossil resource

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localities from Pleistocene older alluvium are present within the boundaries of the proposed development property, nor from at least within one mile in any direction.

## **Recommendations**

The results of the literature review and the search of the RPLI at the SBCM demonstrate that the proposed study area is situated upon Pleistocene older alluvial deposits that, if not previously disturbed by development and depending upon their lithology, have high potential to contain paleontologic resources. Excavation in this older alluvium therefore has high potential to impact paleontologic resources. A qualified vertebrate paleontologist must develop a program to mitigate impacts to nonrenewable paleontologic resources. This mitigation program must be consistent with the provisions of the California Environmental Quality Act (Scott and Springer, 2003), as well as with regulations currently implemented by the County of Riverside. This program should include, but not be limited to:

1. Monitoring of excavation in areas identified as likely to contain paleontologic resources by a qualified paleontologic monitor. Areas requiring monitoring include all previously-undisturbed Pleistocene older alluvial sediments present, at the surface or at depth, within the boundaries of the property. Paleontologic monitors should 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. Monitors must be empowered to temporarily halt or divert equipment to allow removal of abundant or large specimens. Monitoring may be reduced or eliminated if the potentially-fossiliferous units described herein are determined upon exposure and examination by qualified paleontologic personnel to have low potential to contain fossil resources.
2. Preparation of recovered specimens to a point of identification and permanent preservation, including washing of sediments to recover small invertebrates and vertebrates. Preparation and stabilization of all recovered fossils are essential in order to fully mitigate adverse impacts to the resources (Scott and others, 2004).
3. Identification and curation of specimens into an established, accredited museum repository with permanent retrievable paleontologic storage. These procedures are also essential steps in effective paleontologic mitigation (Scott and others, 2004) and CEQA compliance (Scott and Springer, 2003). The paleontologist must have a written repository agreement in hand prior to the initiation of mitigation activities. Mitigation of adverse impacts to significant paleontologic resources is not complete until such curation into an established, accredited museum repository has been fully completed and documented.
4. Preparation of a report of findings with an appended itemized inventory of specimens. The report and inventory, when submitted to the appropriate Lead Agency along with confirmation of the curation of recovered specimens into an established, accredited museum

repository, would signify completion of the program to mitigate impacts to paleontologic resources.

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Please do not hesitate to contact us with any further questions you may have.

Sincerely,

A handwritten signature in black ink, appearing to read 'Eric Scott', written in a cursive style.

Eric Scott, Curator of Paleontology  
Division of Geological Sciences  
San Bernardino County Museum