PALEONTOLOGICAL ASSESSMENT FOR THE FIRST DAY STREET LOGISTCS PROJECT

MORENO VALLEY, RIVERSIDE COUNTY

APN 297-130-036

Prepared for:

First Industrial Realty Trust, Inc.; First Industrial, LP One North Wacker Drive, Suite 4200 Chicago, Illinois 60606

Submitted to:

City of Moreno Valley Community Development Department Planning Division 14177 Frederick Street Moreno Valley, California 92552

Prepared by:

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



September 2, 2022

Paleontological Database Information

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Report Date: September 2, 2022

Report Title: Paleontological Assessment for the First Day Street Logistics

Project, Moreno Valley, Riverside County

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USGS Quadrangle: Section 14, Township 3 South, Range 4 West of the *Riverside*

East, California Quadrangle (7.5-minute).

APN: 297-130-036

Study Area: Approximately eight acres and approximately 1,240 linear feet of

off-site improvements along Day Street

Key Words: Paleontological assessment; Pleistocene very old alluvial fan

deposits; High paleontological resource sensitivity; city of

Moreno Valley.

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I. <u>INTRODUCTION AND LOCATION</u>

This paleontological assessment report has been completed for the First Day Street Logistics Project, located southeast of the intersection of Alessandro Boulevard and Day Street, in the city of Moreno Valley, Riverside County, California (Figures 1 and 2). The project is comprised of one lot totaling approximately eight acres (Assessor's Parcel Number 297-130-036). On the U.S. Geological Survey, 7.5-minute, 1:24,000-scale *Riverside East, California* topographic quadrangle map, the project is located in Section 14, Township 3 South, Range 4 West, of the San Bernardino Baseline and Meridian. Currently, the property is occupied by a tire recycling facility. A 163,242-square-foot warehouse building is proposed for the project. In addition, the project includes off-site improvements along Day Street north to Alessandro Boulevard consisting of general road improvements and the installation of approximately 1,240 linear feet of 12-inch public waterline and four water connections.

As the lead agency, the City of Moreno Valley has required the preparation of a paleontological assessment to evaluate the project's potential to yield paleontological resources. The paleontological assessment of the project included a review of paleontological literature and fossil locality records; a review of the underlying geology; and recommendations to mitigate impacts to potential paleontological resources, if necessary. A paleontological field survey was not conducted since the surface of the project property is flat-lying and developed.

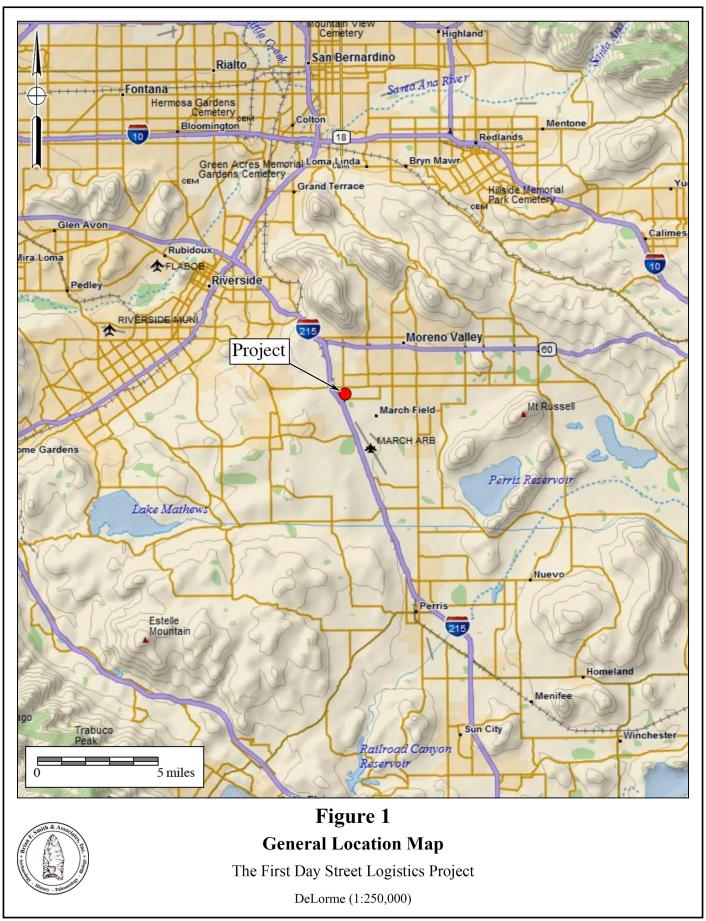
II. <u>REGULATORY SETTING</u>

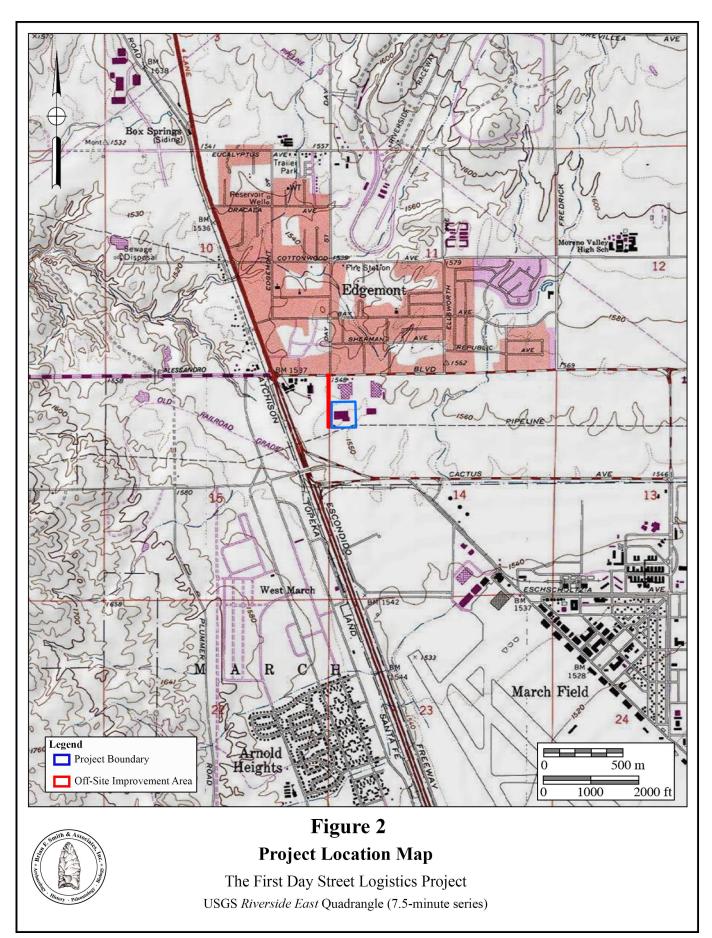
The California Environmental Quality Act (CEQA), which is patterned after the National Environmental Policy Act, is the overriding environmental regulation that sets the requirement for protecting California's cultural and paleontological resources. CEQA mandates that governing permitting agencies (lead agencies) set their own guidelines for the protection of nonrenewable paleontological resources under their jurisdiction.

State of California

Under "Guidelines for Implementation of the California Environmental Quality Act," as amended in December 2018 (California Code of Regulations [CCR] Title 14, Division 6, Chapter 3, Sections 15000 et seq.), procedures define the types of activities, persons, and public agencies required to comply with CEQA. Section 15063 of the CCR provides a process by which a lead agency may review a project's potential impact to the environment, whether the impacts are significant, and provide recommendations, if necessary.

In CEQA's Environmental Checklist Form, one of the questions to answer is, "Would the project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?" (Appendix G, Section VII, Part f). This is to ensure compliance with California Public Resources Code Section 5097.5, the law that protects nonrenewable resources including fossils:





- a) A person shall not 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.
- 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.
- c) A violation of this section is a misdemeanor.

City of Moreno Valley

The treatment of paleontological resources and applicable mitigation measures are outlined in Section 4.7.1.5 of the City of Moreno Valley's Draft Environmental Impact Report (EIR) (RECON Environmental, Inc. 2021). In the Draft EIR, paleontological sensitivity ratings for the city of Moreno Valley are presented in Figure 4.7–4. In Figure 4.7–4, mapped geological formations within the city limits are assigned one of three levels of paleontological sensitivity: no, low/high, and high. The assigned levels generally follow the mapping of Morton and Matti (2001) (see Section III in this report). The "low/high" assignment is the only level of sensitivity with a definition, where excavations shallower than 10 feet are deemed as having a low potential to impact paleontological resources, while excavations deeper than 10 feet are assigned a high sensitivity (RECON Environmental, Inc. 2021). The Draft EIR recognizes that earth disturbance activities associated with future development could significantly impact potential paleontological resources. The Draft EIR's mitigation measure proposing to decrease the level of impact to a level below significant (Mitigation Measure PAL-1) is stated in Section VI in this report.

III. GEOLOGY

The geology mapped at the project and off-site improvement area indicates that the property is underlain by lower Pleistocene (approximately 1.8 million- to perhaps 200,000- to 300,000-year-old), very old, sandy alluvial fan deposits (areas labeled "Qvofa" and shown in brown on Figure 3, after Morton and Cox 2001). These sedimentary deposits are described as:

... mostly well dissected, well-indurated, reddish-brown sand deposits. Commonly contains duripans and locally silcretes. Forms widespread deposits north and south of Moreno Valley, flanking bedrock areas. Forms large area in southeastern part of quadrangle in area of March Air Force Base, and numerous smaller areas in northern part of quadrangle. Derived chiefly from rocks of southern California

batholith. (Morton and Cox 2001)

IV. PALEONTOLOGICAL RESOURCES

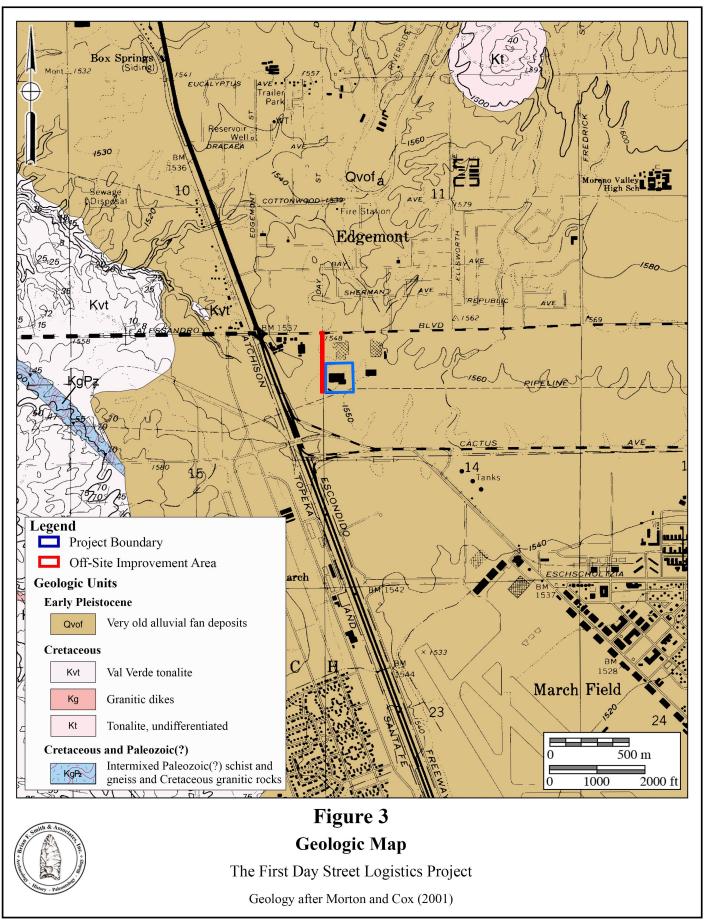
Definition

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 and city guidelines (see Section II of this report).

Fossil Locality Search

A paleontological locality records search was conducted for the nearby Edgemont Commerce Center Project by the Western Science Center (WSC; Radford 2021 [see Appendix B]). The Edgemont Commerce Center Project is located just north of the First Day Street Logistics Project, at the southwest corner of the intersection of Bay Avenue and Day Street. The records search indicated that the WSC did not have records of fossil localities within one mile of the Edgemont Commerce Center Project, but that Pleistocene-aged fossil vertebrates have been found throughout the region from sedimentary deposits similar to those mapped at that project.

The closest known fossil localities to the First Day Street Logistics Project are from the Aldi Distribution Center property, located southwest of Highway 60 and Redlands Boulevard in Moreno Valley, approximately six-and-a-half miles east-northeast of the current project. These localities include WSC fossil localities 192, 193, and 194, all of late Pleistocene age, which consist of the remains of a horse (*Equus* sp.), a giant ground sloth (*Megalonyx jeffersonii*), and a llama (*Hemiauchenia* sp.), animals that became extinct in North America at or soon after the end of the Pleistocene epoch, about 11,700 years ago. The depths of the fossils ranged from approximately 11 to 13 feet below the surface.



V. PALEONTOLOGICAL SENSITIVITY

<u>Overview</u>

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. Holocene 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. Pleistocene (greater 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 (Jefferson 1991). These Pleistocene sediments are thus accorded a High paleontological resource sensitivity.

Professional Standard

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

- <u>High Potential:</u> Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered.
- <u>Undetermined Potential:</u> 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.
- <u>Low Potential</u>: Rock units that are poorly represented by fossil specimens in institutional collections or based on 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.

Using these criteria, based on the presence of nearby significant fossil localities in Riverside County and the strong likelihood that the nearby fossil localities originated from the same geologic formation as that which is mapped at the project, the Pleistocene very old alluvial fan deposits can be considered to have a high potential to yield significant paleontological resources.

City of Moreno Valley Assessment

The City of Moreno Valley's Draft EIR acknowledges that significant impacts to paleontological resources could potentially occur as a result of development within the city limits (RECON Environmental, Inc. 2021). This is based on the project's position within the Draft EIR's Paleontological Sensitivity figure, Figure 4–7.4. Within the project boundaries, levels of paleontological sensitivity fairly match the geologic contacts mapped by Morton and Matti (2001) (see Figure 3). Thus, the Pleistocene, very old, sandy alluvial fan deposits are assigned a high sensitivity. As a result, Mitigation Measure PAL-1 (RECON Environmental, Inc. 2021:4.7-17; see Section VI, below) is provided to reduce potential impacts to fossil resources to a level below significant during earth disturbance activities.

VI. CONCLUSIONS AND RECOMMENDATIONS

Research has confirmed the existence of potentially fossiliferous Pleistocene very old alluvial fan deposits mapped at the surface of the project ("Qvofa" on Figure 3). There are documented occurrences of terrestrial vertebrate fossils at shallow depths from Pleistocene old alluvial fan sediments very close to the project and across the Inland Empire of western Riverside County. These facts, combined with the "High" paleontological sensitivity rating typically assigned to Pleistocene very old alluvial fan sediments support the recommendation that paleontological monitoring be required during mass grading, trenching, and excavation activities at the project and off-site improvement area in undisturbed Pleistocene very old alluvial fan sediments in order to mitigate any adverse impacts (loss or destruction) to potential nonrenewable paleontological resources. Monitoring is recommended on a full-time basis starting at the surface, where mapped, in undisturbed Pleistocene old alluvial fan deposits at the First Day Street Logistics Project. Mitigation Measure PAL-1 listed in the City of Moreno Valley's Draft EIR is presented below:

PAL-1: Applications for future development, wherein the Community Development Director or his or her designee has determined a potential for impacts to paleontological resources, shall review the underlying geology and paleontological sensitivity of the site. If it is determined that the potential exists that sensitive paleontological resources are present, the applicant shall be required to comply with the following mitigation framework.

A qualified paleontological monitor shall be present during grading in project areas where a project specific technical study has determined that such monitoring is necessary due to the potential for paleontological resources to reside within the underlying geologic formations. The geologic technical study shall also provide specific duties of the monitor, and detailed measures to address fossil remains, if found. (RECON Environmental, Inc. 2021)

Paleontological monitoring of geological deposits associated with Pleistocene very old alluvial fan deposits is recommended. Prior to the issuance of a grading plan, a paleontologist shall prepare a Paleontological Resource Impact Mitigation Plan (PRIMP) for submittal and review by the City. Implementation of the PRIMP will ensure that adverse impacts to potentially significant paleontological resources are mitigated to a level less than significant. The PRIMP should follow the outline below:

- 1. Monitoring of mass grading and excavation activities in areas identified as likely to contain paleontological resources shall be performed by a qualified paleontologist or paleontological monitor. The PRIMP shall stipulate that monitoring will be conducted either full or part time at the determination of the paleontologist, based upon the identification of undisturbed sediments of Pleistocene very old alluvial fan deposits ("Qvof_a").
- 2. Paleontological monitors will be equipped to salvage fossils as they are unearthed to avoid construction delays. The monitor must be empowered to temporarily halt or divert equipment to allow 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 upon exposure and examination by qualified paleontological personnel to have low potential to contain fossil resources. The monitor shall notify the project paleontologist, who will then notify the concerned parties of the discovery.
- 3. 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, which is photographed before it is vacated and the fossils are removed to a safe place. On mass grading projects, discovered fossil sites are protected by flagging to prevent them from being over-run 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 GPS units. If the site involves remains from 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, a fossil recovery crew shall excavate around the find, encase the find within a plaster and burlap jacket, and remove it after the plaster is set. For large fossils, use of the contractor's construction equipment may be solicited to

- help remove the jacket to a safe location.
- 4. Isolated fossils are collected by hand, wrapped in paper, and placed in temporary collecting flats or five-gallon buckets. Notes are taken on the map location and stratigraphy of the site, which is photographed before it is vacated and the fossils are removed to a safe place.
- 5. 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.
- 6. In accordance with the "Microfossil Salvage" section of the Society of Vertebrate Paleontology guidelines (2010:7), bulk sampling and screening of fine-grained sedimentary deposits (including carbonate-rich paleosols) must be performed if the deposits are identified to possess indications of producing fossil "microvertebrates" to test the feasibility of the deposit to yield fossil bones and teeth.
- 7. 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).
- 8. Recovered specimens are prepared to a point of identification and permanent preservation (not display), including screen-washing sediments to recover small invertebrates and vertebrates. Preparation of individual vertebrate fossils is often more time-consuming than for accumulations of invertebrate fossils.
- 9. 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) shall be conducted. The paleontological program should include a written repository agreement prior to the initiation of mitigation activities. Prior to curation, the lead agency (e.g., the City of Moreno Valley) will be consulted on the repository/museum to receive the fossil material.
- 10. A final report of findings and significance will be prepared, including lists of all fossils recovered and necessary maps and graphics to accurately record their original location(s). The report, when submitted to, and accepted by, the appropriate lead agency, will signify satisfactory completion of the project program to mitigate impacts to any potential nonrenewable paleontological resources (*i.e.*, fossils) that might have been lost or otherwise adversely affected without such a program in place.
- 11. Decisions regarding the intensity of the MMRP will be made by the project paleontologist based on the significance of the paleontological resources and their

biostratigraphic, biochronologic, paleoecologic, taphonomic, and taxonomic attributes, not upon the ability of a project proponent to fund the MMRP.

VII. <u>CERTIFICATION</u>

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.

September 2, 2022

Date

VIII. REFERENCES

Jefferson, G.T. 1991. A catalogue of late Quaternary vertebrates from California: Part two, mammals. Natural History Museum of Los Angeles County, Technical Reports, no. 7: i-v + 1-129.

Morton, D.M., and Cox, B. 2001. Geologic map of the Riverside East 7.5' quadrangle, Riverside County, California: U. S. Geological Survey Open-File Report 01-452, scale 1:24,000.

Radford, D. 2021. Untitled letter of fossil record search results for the Edgemont Commerce Center Project. Prepared for Brian F. Smith and Associates, Inc., Poway, California, by Western Science Center, Hemet, California. (attached)

RECON Environmental, Inc. 2021. Draft environmental impact report for the MoVal 2040: Moreno Valley comprehensive general plan update, housing element update, and climate action plan, SCH #2020039022. Prepared for the City of Moreno Valley. Electronic document, http://www.moval.org/cdd/documents/general-plan-documents-deir.html.

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. Electronic document, http://vertpaleo.org/Membership/Member-Ethics/SVP_Impact_Mitigation_Guidelines.aspx.

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 •

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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 hydrocarbonimpacted sites across southern California.

Selected Recent Reports

- 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 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 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.
- 2020 Paleontological Resource Impact Mitigation Program for the Sunset Crossroads Project, Banning, Riverside County. Prepared for NP Banning Industrial, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2020 Paleontological Assessment for the Ortega Plaza Project, Lake Elsinore, Riverside County. Prepared for Empire Design Group. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2020 Paleontological Resource Record Search Update for the Green River Ranch III Project, Green River Ranch Specific Plan SP00-001, City of Corona, California. Prepared for Western Realco. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2020 Paleontological Assessment for the Cypress/Slover Industrial Center Project, City of Fontana, San Bernardino County, California. Prepared for T&B Planning, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2020 Paleontological Monitoring Report for the Imperial Landfill Expansion Project (Phase VI, Segment C-2), Imperial County, California. Prepared for Republic Services, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2021 Paleontological Assessment for the Manitou Court Logistics Center Project, City of Jurupa Valley, Riverside County, California. Prepared for Link Industrial. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2021 Paleontological Resource Impact Mitigation Program for the Del Oro (Tract 36852) Project, Menifee, Riverside County. Prepared for D.R. Horton. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2021 Paleontological Assessment for the Alessandro Corporate Center Project (Planning Case PR-2020-000519), City of Riverside, Riverside County, California. Prepared for OZI Alessandro, LLC. Report on file at Brian F. Smith and Associates, Inc., Poway, California.
- 2021 Paleontological Monitoring Report for the Boardwalk Project, La Jolla, City of San Diego. Prepared for Project Management Advisors, Inc. Report on file at Brian F. Smith and Associates, Inc., Poway, California.

APPENDIX B

Fossil Locality Search Report



Brain F. Smith and Associates, Inc. Todd Wirths 14010 Poway Road, Suite A Poway, CA 92064 June 24, 2021

Dear Mr. Wirths,

This letter presents the results of a record search conducted for the Edgemont Commerce Center Project in the city of Moreno Valley, Riverside County, California. The project site is located south of Bay Avenue, west of Day Street, north of Alessandro Avenue and east of Interstate 215 in Section 10 of Township 3 South and Range 4 West on the *Riverside East, CA* USGS 7.5 minute topographic quadrangles.

The geologic unit underlying the project area is mapped entirely as very old alluvial fan deposits dating to the early Pleistocene epoch (Morton et al., 2002). Pleistocene alluvial units are considered to be of high paleontological sensitivity. The Western Science Center does not have localities within the project area or a one mile radius, but does have numerous localities throughout the region in similarly mapped sediments. Southern California Pleistocene units are well known to produce fossil localities and specimen including those associated with mammoth (*Mammuthus columbi*), mastodon (*Mammut pacificus*) sabertooth cats (*Smilodon fatalis*), ancient horse (*Equus sp.*) and many other Pleistocene megafauna and microfauna.

Any fossils recovered from the Edgemont Commerce Center Project area would be scientifically significant. Excavation activity associated with development of the area has the potential to impact the paleontologically sensitive early Pleistocene units and it is the recommendation of the Western Science Center that a paleontological resource mitigation plan be put in place to monitor, salvage, and curate any recovered fossils associated with the current study area.

If you have any questions, or would like further information, please feel free to contact me at dradford@westerncentermuseum.org

Sincerely,

Darla Radford Collections Manager