



**Submitted to:**

**Rafik Albert  
E|P|D Solutions, Inc.  
Irvine, California**

## **PALEONTOLOGICAL RESOURCES ASSESSMENT**

# **Iris Park Project**

**City of Moreno Valley, Riverside County, California**



**PHASE I PALEONTOLOGICAL RESOURCES ASSESSMENT  
IRIS PARK PROJECT  
CITY OF MORENO VALLEY, RIVERSIDE COUNTY, CALIFORNIA**

**Prepared for:**

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**March 2020**

**Type of Study:** Paleontological resources assessment

**Paleontological Localities within Area of Potential Impact:** None

**Project Location:** USGS 7.5' Topographic Quadrangle Sunnymead, Section 29 of Township 3 South, Range 3 West  
APN:312-020-025

**Project Area:** approximately 10.8 acres

**Date of Field Survey:** March 6, 2020

**Key Words:** Paleontology, CEQA, Riverside, RCLIS, Negative Survey, High B Sensitivity, Qvof, Qyf

## MANAGEMENT SUMMARY

Passco Pacifica LLC (Proponent) proposes the construction of a residential development project (Project), located in the City of Moreno Valley in Riverside County, California. Material Culture Consulting, Inc. (MCC) was retained by the E|P|D solutions, Inc. to conduct a Phase I paleontological resource investigation of the Project Area in accordance with the California Environmental Quality Act (CEQA). This assessment included a fossil locality search, an examination of geologic maps and paleontological literature, and a pedestrian field survey.

No significant paleontological resources were identified within the Project Area during the fossil locality search or the field survey. The Riverside County Land Information System (RCLIS) GIS data reveals all of the Project Area lies within an area mapped as High B sensitivity. High B sensitivity indicates that excavation has the potential to impact paleontological resources in this area at a depth at or below 5 feet. Excavation during the course of the Project may reach paleontologically sensitive deposits, and, as a result, could impact paleontological resources. Therefore, MCC recommends the following procedures:

- A trained and qualified paleontological monitor shall perform full-time monitoring of any excavations on the Project that have the potential to impact paleontological resources in undisturbed High B sensitivity native sediments, at or below 5 feet in depth. The monitor will have the ability to redirect construction activities to ensure avoidance of adverse impacts to paleontological resources.
- The project paleontologist may re-evaluate the necessity for paleontological monitoring after examination of the affected sediments during excavation, with approval from County and Client representatives.
- Any potentially significant fossils observed shall be collected and recorded in conjunction with best management practices and Society of Vertebrate Paleontology (SVP) professional standards.
- Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.
- A report documenting the results of the monitoring, including any salvage activities and the significance of any fossils, will be prepared and submitted to the appropriate County personnel.

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## INTRODUCTION

Passco Pacifica LLC (Proponent) proposes the construction of a residential development project (Project), located in the City of Moreno Valley in Riverside County, California. Material Culture Consulting, Inc. (MCC) was retained by the E|P|D solutions, Inc. to conduct a Phase I paleontological investigation of the Project Area. This paleontological resource assessment was conducted in compliance with the California Environmental Quality Act (CEQA), Public Resources Code (13 PRC) 2100, (14 CAC) 15000, Appendix G, Section J, (PRC) 2100-21177, Appendix G, (PRC) 5097.5 and guidelines set forth by the County of Riverside. According to these regulations and guidelines, if development of a Project has the potential to result in significant impacts to paleontological resources, a plan must be developed to mitigate those impacts to a level which is less than a significant. This investigation included a fossil locality search, and a pedestrian field survey. The following report identifies the potential for encountering paleontological resources during development of this Project and provides recommendations on how to mitigate impacts to those resources.

### PROJECT LOCATION AND DESCRIPTION

The Project is located in the City of Moreno Valley, Riverside County, California (Figure 1). The Project Area is bound by a commercial complex and Perris Boulevard to the west; a commercial complex, a vacant lot and Red Maple Lane to the south; residential properties to the east; and Iris Avenue to the north (Figures 2 and 3). Specifically, the proposed Project is located in Section 29, within Township 3 South, Range 3 West on the U.S. Geological Survey (USGS) Sunnymead 7.5' topographic quadrangle (San Bernardino Baseline and Meridian) (Figure 2). The 10.8-acre Project Area encompasses one parcel, APN 312-020-025. The Project Area is currently a vacant lot. The proposed Project would develop the area into 84 single-family detached home lots. Approximately seven acres will be utilized for the construction of the homes, with a 100-foot wide easement area designated on the west-southwestern boundary, encompassing approximately three acres. The development would include small outdoor recreational areas and stormwater management facilities. The area north of the easement will be landscaped and include a pedestrian trail.

### PROJECT PERSONNEL

Jennifer Kelly, M.S., a Qualified Riverside County Paleontologist, served as the Principal Investigator for the study. Ms. Kelly conducted the paleontological resource literature and map reviews, oversaw the field study, and oversaw preparation of this report. Ms. Kelly has a M.Sc. in Geology from California State University, Long Beach. Ms. Kelly has over ten years of experience in environmental and paleontological compliance in California (See Appendix A).

Sonia Sifuentes, M.Sc., co-authored this report. Julia Carvajal, M.A., managed the field survey and all GIS support for the project and report. Zachary White, B.A., MCC archaeologist and cross-trained paleontologist, conducted the pedestrian survey. Yahaira Gonzales, B.A. co-authored this report.

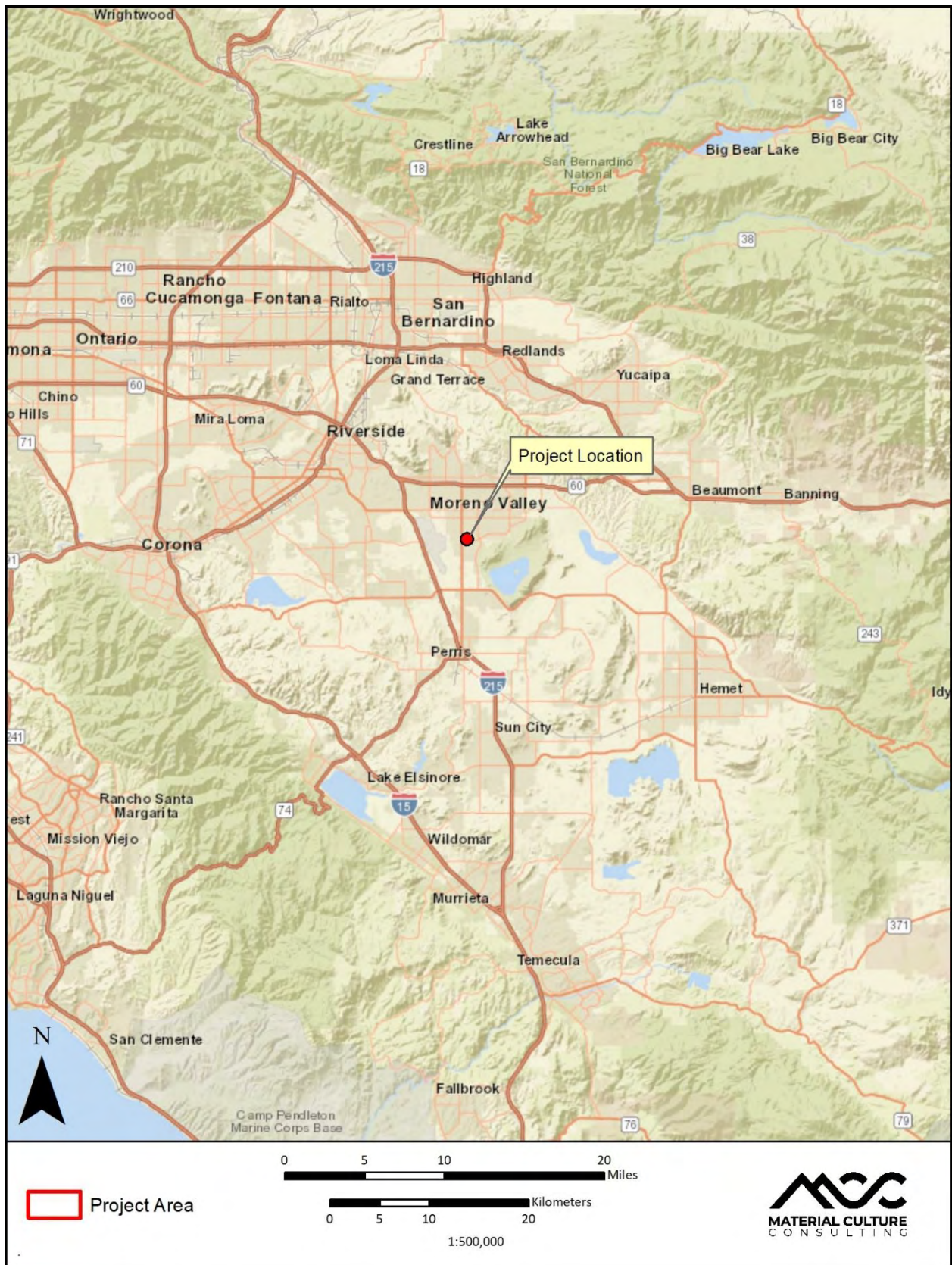


Figure 1. Iris Park Project Vicinity (1:500,000)

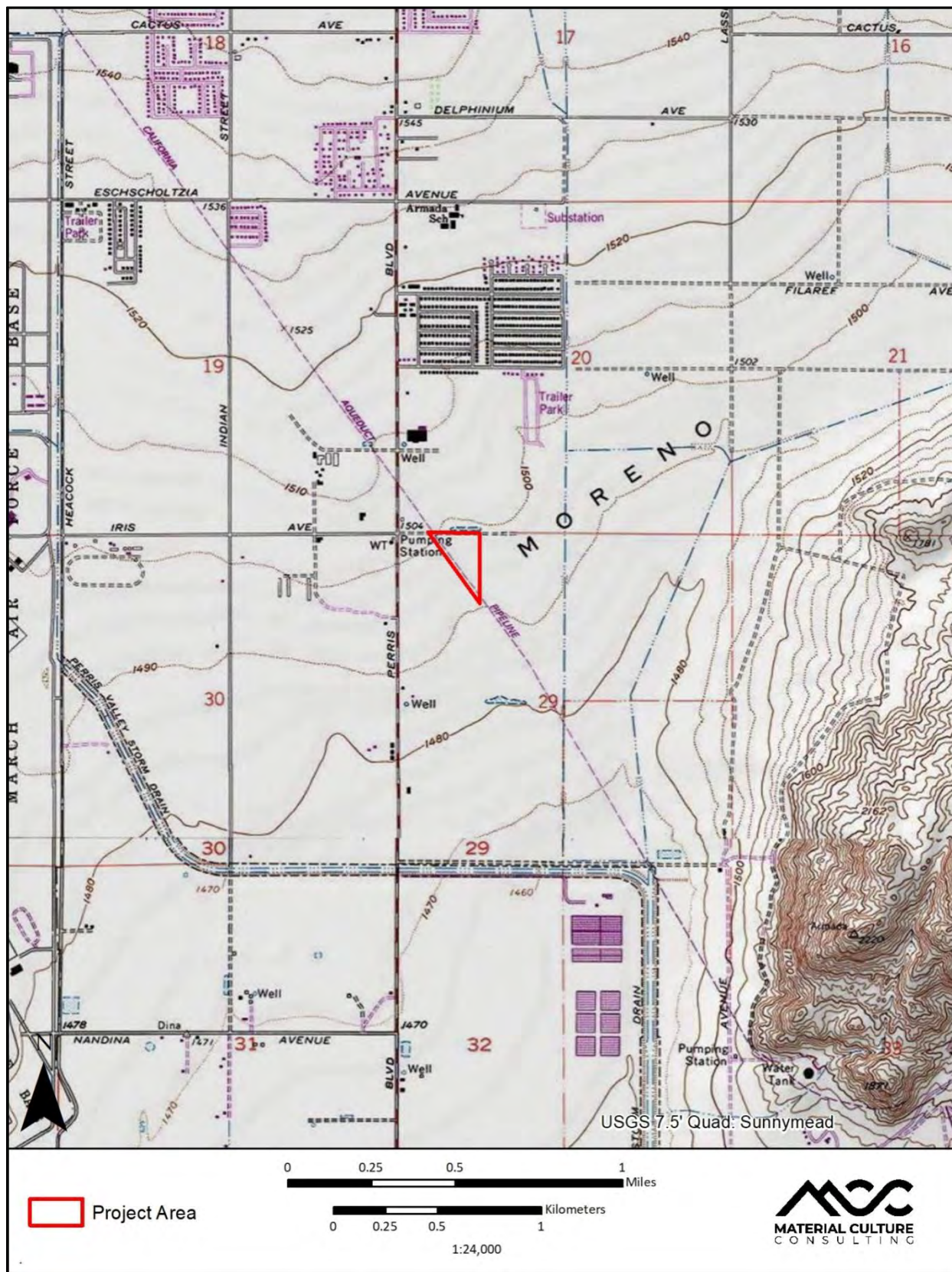


Figure 2. Iris Park Project Area (1:24,000, as depicted on Sunnymead USGS 7.5 Minute Quadrangle)



Figure 3. Iris Park Project Area (1:4,000, as depicted on aerial photograph)

## ENVIRONMENTAL SETTING

Riverside County is situated within the Peninsular Ranges Geologic Province. The Project Area is located within the city limits of Moreno Valley in northwestern Riverside County. The Project is bounded by a commercial complex and Perris Boulevard to the west, a commercial complex, a vacant lot and Red Maple Lane to the south, residential properties to the east, and Iris Avenue to the north. The Project Area is located within a relatively flat valley, with elevations averaging approximately 456 m (1496 ft.) above mean sea level (AMSL). Vegetation in much of the area has been altered by historical and modern development, with introduced species of flora, including annual grasses, weeds, and sunflowers observed. Perris Reservoir and Russell Mountains are located approximately 2.59 miles southeast of the Project Area. Moreno Valley area enjoys a mild Mediterranean climate characterized by warm, dry summers and cool, moist winters.

### GEOLOGICAL CONTEXT

Riverside County is situated within the Peninsular Ranges Geologic Province, a northwest-southeast oriented complex of blocks separated by similarly trending faults (Norris and Webb 1978). Most geological formations found within this area are comprised the Southern California Batholith, a great mass of igneous basement rocks. The Project Area also lies within the Central Perris Block (Kenney 1999). The Perris Block is a structurally stable, internally cohesive mass of crustal rocks bounded on the east by the San Jacinto fault zone, bounded on the west by the Elsinore and Chino fault zones, and on the north by the Cucamonga fault zone (Norris and Webb, 1976; Morton and Matti, 1989), and on the south by a series of sedimentary basins (Morton and Matti 1989). This structural block is believed to have been active since Pliocene time (Woodford et al 1971). The entire Project Area is mapped as Quaternary alluvium (Q) by Jennings, Strand, and Rogers (1977) (Figure 4). Morton and Matti (2001) mapped the Project Area lying mainly within very old alluvial fan deposits (Qvof<sub>a</sub>) with in young alluvial arenaceous fan deposits (Qyf<sub>a</sub>) directly west of the Project Area (Figure 5).

*Young Quaternary alluvial fan deposits (arenaceous) (Qyf<sub>a</sub>)* are Holocene to late Pleistocene-aged alluvial fan deposit that is derived from geologically diverse sediment units. The sediments are mainly gray-hued, slightly consolidated sand (Morton and Matti 2001).

*Very Old Alluvial fan deposits (Qvof<sub>a</sub>)* are early Pleistocene deposits consisting of mostly well-dissected, well-indurated, reddish-brown sand deposits with minor gravel (Morton and Matti 2001). These deposits are commonly flanking bedrock areas and can contain duripans and locally silcretes (Morton and Matti 2001). Quaternary very old alluvial fan deposits have the potential to produce scientifically important fossils of land mammals, invertebrates, and plants in this area, and have been assigned a high sensitivity ranking within the County of Riverside. Notably, the excavations for the Diamond Valley Lake in Hemet produced exceptional specimens of Pleistocene animals including mammoths, horses, camels, and bison in units similar to these.

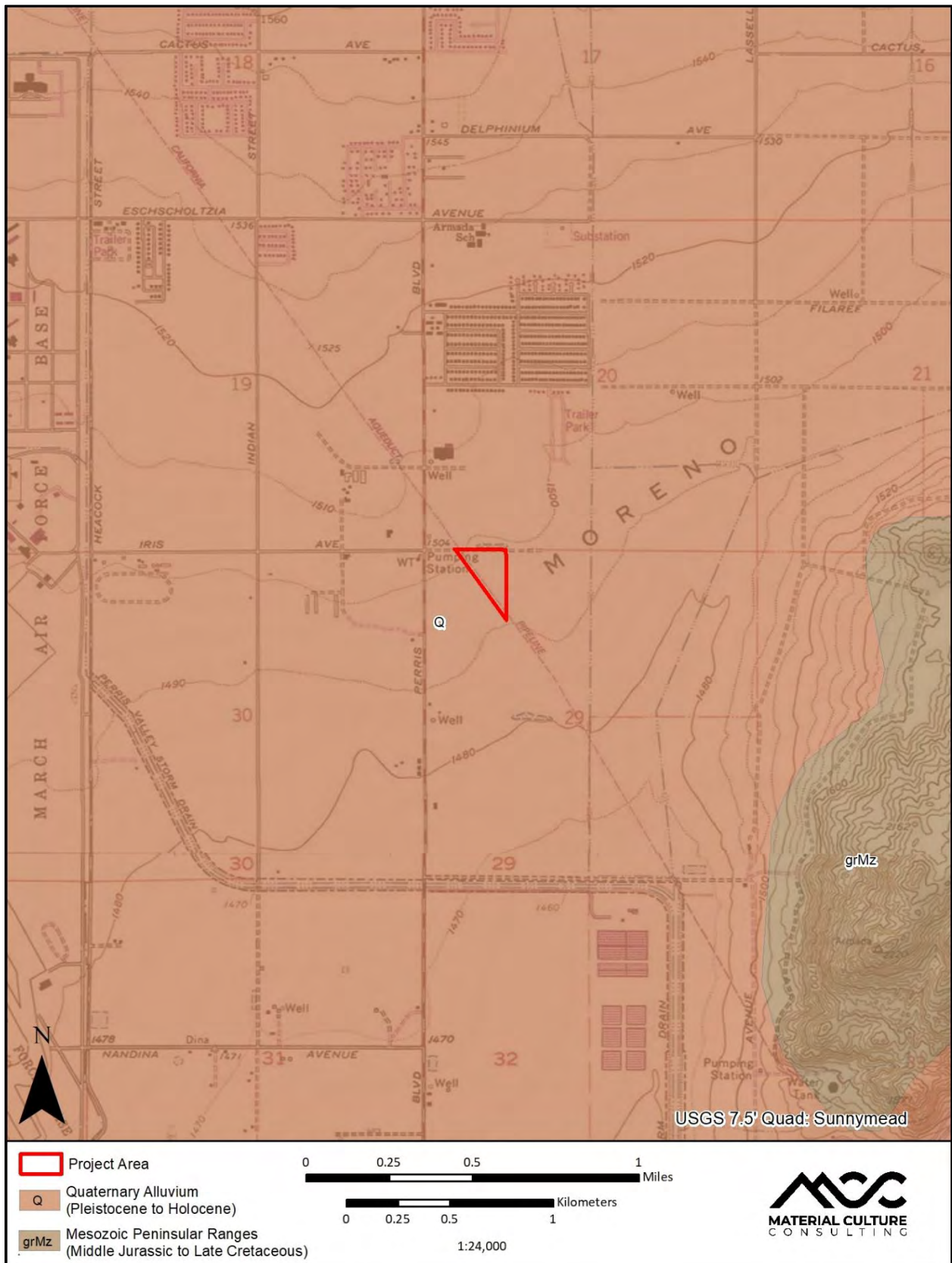


Figure 4. EPD Iris Park Project Geologic Map 1 (from Jennings, Strand, and Rogers 1977)

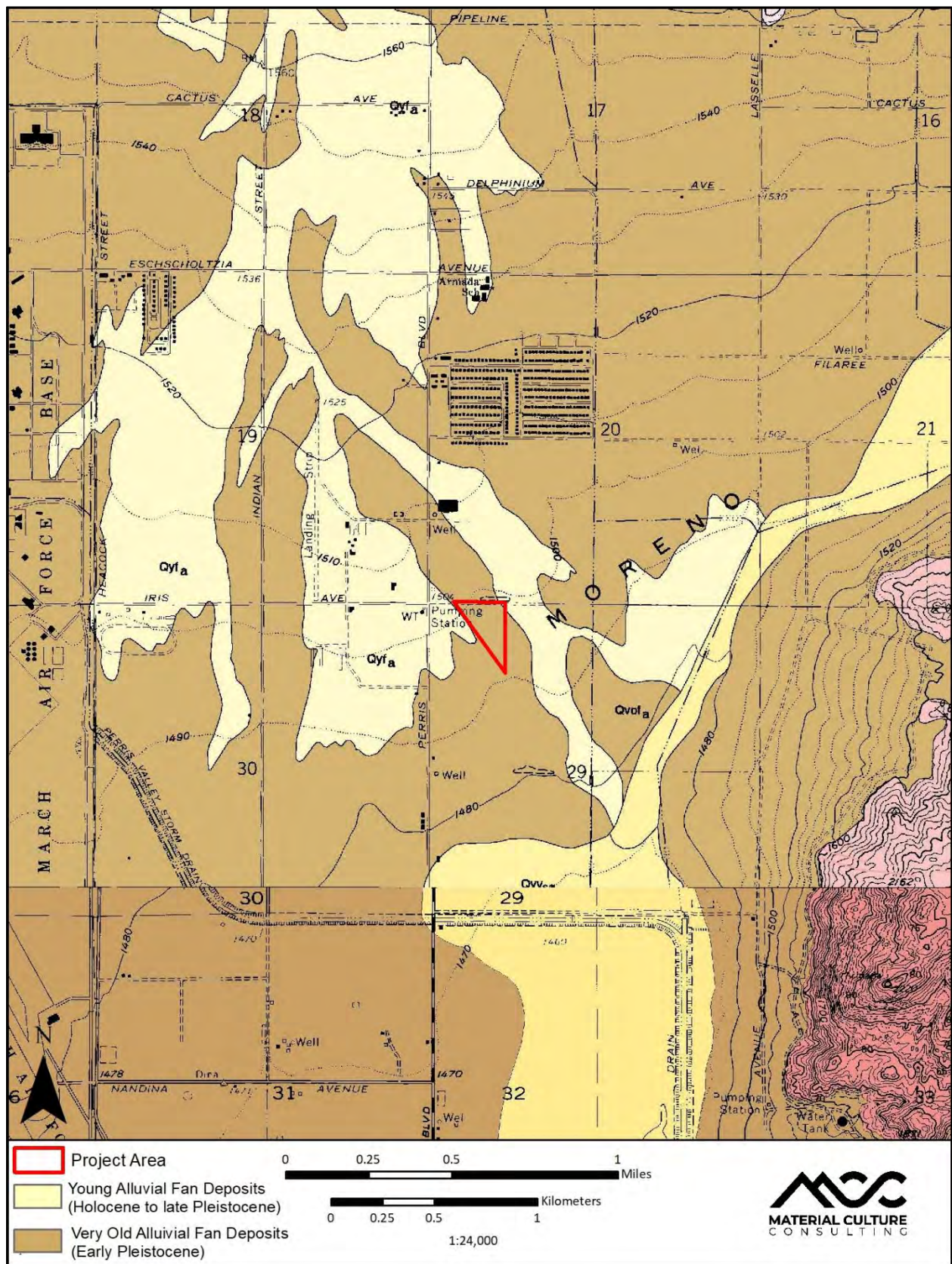


Figure 5. EPD Iris Park Project Geologic Map 2 (from Morton and Matti 2001).

## RESEARCH DESIGN

The paleontological resources assessment was conducted according to CEQA, Public Resources Code (13 PRC) 2100, (14 CAC) 15000, Appendix G, Section J, (PRC) 2100-21177, Appendix G, (PRC) 5097.5. The paleontological resources assessment was conducted to evaluate the potential existence of resources that would require a preparation of a monitoring plan and monitoring activities, in order to reduce impacts to a less than significant level. Guidelines set forth by Riverside County were consulted to ensure that all local and state requirements were met.

The Riverside County Land Information System (RCLIS) overlay map defines what significant impact on paleontological resources consists of, and requires monitoring of, activities within designated High sensitivity areas (both High A and B) that may affect these resources. Areas with a "High Potential" for paleontological resources include sedimentary rock units with a high potential for containing significant non-renewable paleontological resources and are rock units within which vertebrate or significant invertebrate fossils have been determined to be present or likely to be present. These units include, but are not limited to, sedimentary formations which contain significant non-renewable paleontological resources anywhere within their geographical extent, and sedimentary rock units temporally or lithologically suitable for the preservation of fossils. High sensitivity includes not only the potential for yielding abundant vertebrate fossils, but also for production of a few significant fossils that may provide new and significant (taxonomic, phylogenetic, ecologic, and/or stratigraphic) data. High sensitivity areas are mapped as either "High A" or "High B."

The *Moreno Valley General Plan's* (2006) Conservation Element Programs 7-6 states "in areas where archaeological or paleontological resources are known or reasonably expected to exist, based upon the citywide survey conducted by the UCR Archaeological Research Unit, incorporate the recommendations and determinations of that report to reduce potential impacts to levels of insignificance". Additionally, the *Environmental Impact Report for City of Moreno Valley General Plan* (P&D Consultants 2006) has one mitigation measure concerning paleontological resources:

- MM-1. Prior to the approval of a project, the City will assess potential impacts to significant historic, prehistoric archeological, and paleontological resources, including impacts to human remains, pursuant to Section 15064.5 of the California Environmental Quality Act Guidelines. If significant impacts are identified, the City will require the project to be modified to avoid the impacts or require measures to mitigate the impacts. Mitigation may involve monitoring, resource recovery, documentation or other measures.

Paleontological resources (fossils) are the remains of prehistoric life. These remains can be bones, teeth, shells, wood or leaves, or trace fossils (including burrows and trackways). The Society for Vertebrate Paleontology (SVP) generally considers any resource greater than 5,000 years old to be a fossil (SVP 2010). Fossils are evidence of ancient life, and as such provide an invaluable window into the past. Fossils are considered non-renewable resources and in California, impacts to paleontological resources must be considered pursuant to CEQA requirements for environmental reviews.

## **METHODS**

### **LITERATURE AND MAP REVIEW AND LOCALITY SEARCH**

The literature review included an examination of geologic maps of the Project Area and a review of relevant geological and paleontological literature to determine which geologic units are present within the Project Area and whether fossils have been recovered from those geologic units elsewhere in the region. As geologic units may extend over large geographic areas and contain similar lithologies and fossils, the literature review includes areas well beyond the Project Area. The results of this literature review include an overview of the geology of the Project Areas and a discussion of the paleontological sensitivity (or potential) of the geologic units within the Project Area. The County of Riverside also provides a paleontological resource sensitivity map for the entire county (RCLIS). This map was consulted by MCC staff on March 4, 2020.

The purpose of a locality search is to establish the status and extent of previously recorded paleontological resources within and adjacent to the study area for a given project. In February 2020, a locality search was conducted through the Natural History Museum of Los Angeles County (LACM) of Los Angeles (Appendix B). This search identified any vertebrate localities in the LACM records that exist near the Project Area in the same or similar deposits.

### **PALEONTOLOGICAL RESOURCES SURVEY METHODS**

The survey stage is a necessary component of a project's environmental assessment phase to verify the exact location of each identified paleontological resource, the condition or integrity of the resource, and provides invaluable information on the type of sediment present within the Project Area, which informs the assessment of paleontological sensitivity. On March 6, 2020, MCC qualified archaeologist and cross-trained paleontologist Zachary White conducted a pedestrian survey of the Project Area. Special attention was paid to any graded areas and to rodent burrows that offered a better view of the underlying sediment. The purpose of a field survey is to note the sediments in the Project Area, relocate any known paleontological localities, and identify any unrecorded paleontological resources exposed on the surface. In this way, impacts to existing, unrecorded paleontological material may be mitigated prior to the beginning of ground-disturbing activities and portions of the Project Area that are more likely to contain paleontological resources may be identified.

## RESULTS

### LAMC LOCALITY SEARCH AND LITERATURE REVIEW RESEARCH

The record search results from the LACM (McLeod 2020, Appendix B) do not indicate any fossil localities have been found directly within the Project Area, nor within a 1-mile radius. The surficial deposits of younger Quaternary alluvium mapped within the Project Area derived primarily from alluvial fan deposits from the more elevated terrain to the north (McLeod 2020). While these deposits are unlikely to contain significant fossil vertebrates within the uppermost layers, they may be underlain by older Quaternary deposits that do contain significant vertebrate fossils. The closest vertebrate fossil locality from similar older Quaternary deposits is LACM 4540, located approximately 9.5 miles east-southeast of the Project Area around Jack Rabbit Trail in the eastern side of the San Jacinto Valley. This locality produced a fossil specimen of horse (*Equus*) (McLeod 2020). Additional literature was consulted, including The University of California Museum of Paleontology (UCMP)'s Miocene Mammal Mapping Project (MioMap). The database results indicate no fossil localities are within a 1-mile radius of the Project; however, there are a number of localities in the same general area as LACM 4540, approximately 9.5 miles east-southeast of the Project (Carrasco et al. 2005). The RCLIS map indicates that the Project Area has a high potential (High B) to produce paleontological resources during ground disturbing activities (Figure 6).

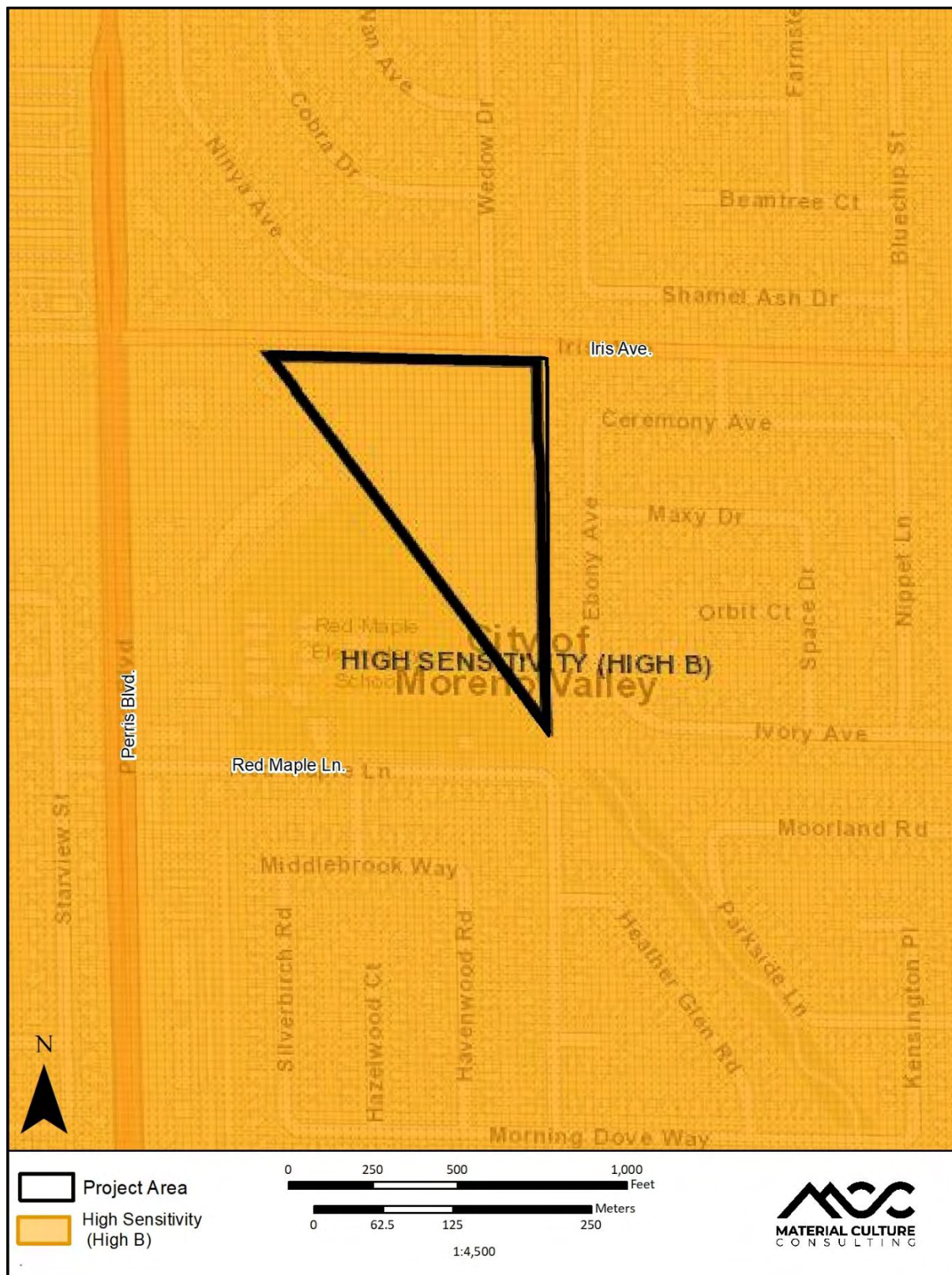


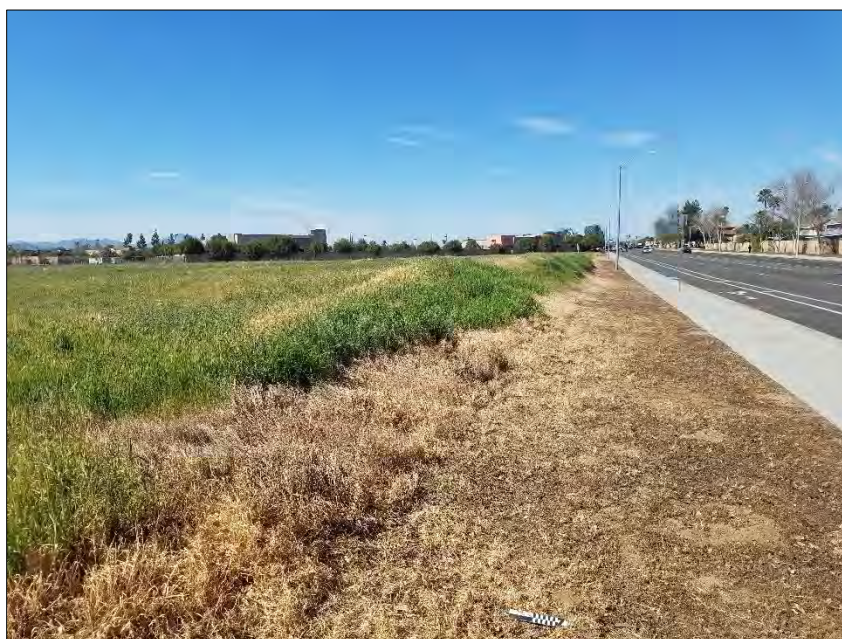
Figure 6. Paleontological Sensitivity (from RCLIS, orange indicates High B Sensitivity)

## FIELD SURVEY RESULTS

During the course of fieldwork, survey conditions were fair (see Figures 7 through 13). Ground visibility in the entire Project Area was fair, ranging from less than 10 to 80% due to prior ground disturbance and overgrown vegetation within the Project Area. Disturbances within the Project Area include vehicular activity and modern dumping of concrete and brick remnants. The visual observation of sediment throughout the site does align with the geologic mapping of Quaternary alluvium, with light brown, fine grain sandy loam noted, with sub-rounded pebbles with high sphericity inclusions observed (see Figures 12 and 13). No paleontological resources were observed during the fieldwork survey.



**Figure 7.** Overview of Project Area from northwestern corner, view towards east



**Figure 8.** Overview of Project Area from northern corner, view towards west



**Figure 9.** Representative photo of concrete and brick dumping observed within Project Area, view towards west



**Figure 10.** Overview of vehicular road within Project Area, view southeast



**Figure 11.** Overview of Project Area from southern boundary, view towards northwest



**Figure 12.** Representative photo of alluvial soils observed in Project Area



Figure 13. Representative photo of alluvial soils observed in Project Area

## CONCLUSIONS AND RECOMMENDATIONS

MCC conducted a Phase I paleontological resource assessment of the Project Area that included a fossil locality records search and an intensive pedestrian survey covering all 10.8 acres. No significant paleontological resources were identified within the Project Area during the locality search or field survey. The uppermost layers of soil within the Project Area are of recently disturbed Quaternary alluvium that is unlikely to contain significant fossil vertebrates. However, LACM notes that significant fossils have been found within similar alluvial mapped units, and that any excavations that extend deeper and into older and finer-grained Quaternary deposits may encounter significant fossil vertebrate remains. In addition, the Project Area is mapped in RCLIS as High B is based on geologic formations or mapped rock units that are known to contain (or have the correct age and depositional conditions to contain) significant paleontological resources at a depth below 5 feet.

## RECOMMENDED MITIGATION

Based on the results of the Phase I paleontological resource assessment, the proposed Area is considered to have high sensitivity for the potential to impact paleontological resources during construction activities at or below 5 feet in undisturbed sedimentary deposits. MCC recommends preparation of a Paleontological Resource Management Plan (PRMP) prior to construction excavation, in order to mitigate any potential impact to non-renewable fossil resources to a less-than-significant level. It is recommended that a professional paleontologist be hired to oversee monitoring and the preparation of a PRMP. At a minimum, the PRMP should include the following items:

- A trained and qualified paleontological monitor should perform full-time monitoring of any excavations on the Project that have the potential to impact paleontological resources in undisturbed native sediments below 5 feet in depth. The monitor will have the ability to redirect construction activities to ensure avoidance of adverse impacts to paleontological resources.
- The Project paleontologist may re-evaluate the necessity for paleontological monitoring after examination of the affected sediments during excavation, with approval from the City and Client representatives.
- Any potentially significant fossils observed shall be collected and recorded in conjunction with best management practices and SVP professional standards.
- Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.
- A report documenting the results of the monitoring, including any salvage activities and the significance of any fossils, will be prepared and submitted to the appropriate City personnel.

**CERTIFICATION: I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this report, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief.**

**Date:** March 27, 2020

**Signature:**



**Name:** Jennifer Kelly, MSc., Geology  
Riverside County Qualified Paleontologist

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Appendix A:  
Qualifications

Jennifer Kelly, M.Sc.  
Paleontological Principal Investigator and Project  
Manager



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Jennifer Kelly has experience in all aspects of paleontology. She has extensive experience with monitoring, salvage, fieldwork, project management, and report writing, as well as volunteer experience from the La Brea Tar Pits/Page Museum and the Cooper Center of Orange County (Paleontology department) and field experience as a Staff Geologist for Leighton Geotechnical. Her expertise is Geology, and she has her M.S. in Geological Sciences, emphasis in Geochemistry.

Jennifer has taught lab courses in paleontology and general geology, and also assisted with field mapping classes. Jennifer is HAZWOPER 40-hour certified and a registered Orange County paleontologist. She has authored and co-authored more than 100 paleontological compliance documents, including PRMPs, EIR, EIS, PEA, treatment plans, final monitoring reports, survey reports, and other compliance documents, in compliance with NEPA, CEQA, Caltrans and city and county laws, ordinances, regulations, and statutes.

#### Education

- 2012 M.Sc. in Geology, California State University, Long Beach, California
- 2005 B.S., Geology (preliminary work for entry to M.S. Geology Program), California State University, Long Beach
- 2004 B.A., Theater Arts, California State University, Long Beach

#### Certifications and Training

- 40 Hour Certification for HAZWOPER training under 29 CFR 1910.120, CA (2013 – 2014)
- Orange County Certified Paleontologist
- San Diego County Certified Paleontologist

#### Recent Professional Experience in California

***Paleontological Principal Investigator and Project Manager, Harvill Industrial Project, City of Jurupa Valley, Riverside County, California (2017-present).*** Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation for this project, and prepared the Paleontological Resources Impact Mitigation Plan (PRIMP). Kelly also oversees the paleontological monitoring program for this Project. This project is ongoing and is scheduled to be complete in 2020.

***Paleontological Principal Investigator and Project Manager, Rider Commerce Center Project, Unincorporated Riverside County, California (2018-present).*** Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation for this project, and prepared the Paleontological Resources Impact Mitigation Plan (PRIMP). Kelly also oversees the paleontological monitoring program for this Project. This project is ongoing and is scheduled to be complete in 2020.

***Paleontological Principal Investigator and Project Manager, Ontario Ranch Logistic Center, City of Ontario, County of San Bernardino, California (2018-present)*** Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation for this project, and authored the PRIMP for this project. Kelly also oversees the paleontological monitoring program for this Project. This project

is ongoing and is scheduled to be complete in 2021.

***Paleontological Principal Investigator and Project Manager, Saddleback College, City of Mission Viejo, Orange County (2018-present)*** Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation for this project, prepared the Paleontological Resources Impact Mitigation Plan (PRIMP), and oversaw the paleontological monitoring program detailed in the PRIMP. Kelly is currently co-authoring the final paleontological mitigation report This project is in the final stages and is scheduled to be completed 2020.

#### **Private Development Sector Experience**

***Paleontological Principal Investigator and Project Manager, Proposed Alta Vista Specific Plan Project, SC Development, City of Placentia, Orange County (2017)***. Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

***Paleontological Principal Investigator and Project Manager, Magnolia Tank Farm Project, SLF-HB Magnolia, LLC, City of Huntington Beach, Orange County (2017)***. Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

***Paleontological Principal Investigator and Project Manager, Santa Fe Springs Apartment Project, Clearwater Communities, City of Whittier, Los Angeles County (2017)***. Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

***Paleontological Principal Investigator and Project Manager, Rider Business Center Project, Capstone Advisor, Unincorporated Riverside County (2017)***. Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

***Paleontological Principal Investigator and Project Manager, Los Olivos French Valley Project, Newland Homes LLC, Unincorporated Riverside County (2017)***. Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

***Paleontological Principal Investigator and Project Manager, Veteran's Village Community Development Project, UHC LLC, Cathedral City, Riverside County (2017)***. Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

***Paleontological Principal Investigator and Project Manager, Colony Commerce East Project, CapRock Partners, City of Ontario, San Bernardino County (2016)***. Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

***Paleontological Principal Investigator and Project Manager, Jurupa Valley Medical Clinic Project, Boureston Company, City of Jurupa Valley, Riverside County (2016)***. Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

#### **Renewable Energy Sector Experience**

***Paleontological Principal Investigator and Project Manager, California Department of Corrections and***

**Rehabilitation Ventura Youth Correctional Facility Solar Project, Ecoplexus, Inc, City of Camarillo, Ventura County (2017).** Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

**Paleontological Principal Investigator and Project Manager, Anderson-Devil's Den Solar Project, Forefront Power, Lost Hills, Kern County (2017).** Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

**Paleontological Principal Investigator and Project Manager, Anderson-Coalinga 1-1109 Solar Project, Forefront Power, Ora, Unincorporated Fresno County (2017).** Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

**Paleontological Principal Investigator and Project Manager, Anderson-Coalinga 2 Solar Project, Forefront Power, City of Coalinga, Fresno County (2017).** Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

**Paleontological Principal Investigator and Project Manager, Anderson-Derrick Solar Project, Forefront Power, City of Coalinga, Fresno County (2017).** Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

**Paleontological Principal Investigator and Project Manager, Anderson-Dulgarian Solar Project, Forefront Power, Lost Hills, Kern County (2017).** Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

**Paleontological Principal Investigator and Project Manager, Anderson-Gates Solar Project, Forefront Power, City of Coalinga, Fresno County (2017).** Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

**Paleontological Principal Investigator and Project Manager, Mahal Property Solar Project, Forefront Power, City of Selma, Fresno County (2017).** Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

**Paleontological Principal Investigator and Project Manager, Rector Reservoir Solar Facility Project, Forefront Power, Napa Valley, Napa County (2017).** Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

**Paleontological Principal Investigator and Project Manager, California Men's Colony Solar Facility Project, Forefront Power, San Luis Obispo, San Luis Obispo County (2017).** Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

**Paleontological Principal Investigator and Project Manager, California Department of Corrections and Rehabilitation California Institute for Women Solar Project, Ecoplexus, Inc, City of Corona, San Bernardino County (2017).** Ms. Kelly coordinated all surveying, preparation of compliance and environmental documentation relating to Paleontological resources for this project.

#### **Utility Sector Experience**

**Paleontological Project Manager, Cadiz Ground Water Project, San Bernardino County, California**

**(2012-2013).** Ms. Kelly conducted all research and data collection for the Cadiz Groundwater Conservation and Storage Project for completion of a DEIR section on paleontological resources. Based on the results of the analysis, Kelly prepared the mitigation measures which were designed to reduce potential adverse impacts to paleontological resources.

***Paleontological Project Manager, Manzana Wind Express Project, Kern County, California (2012-2015).***

Ms. Kelly prepared the Paleontological Mitigation Monitoring Resource Plan, which allowed her to develop a key role in presenting environmental training programs to construction workers and other environmental compliance monitors. She also authored the final paleontological monitoring report. The Project's construction consisted of the installation more than 300 wind energy turbines, aligned along approximately 26 rows, on the 6,275-acre proposed site. The Manzana Wind Energy Project site was found to have the potential for scientifically significant paleontological resources that could be impacted by construction-related ground disturbance. She co-authored the final paleontological mitigation report in compliance with CEQA and Kern County guidelines.

***Paleontological Project Manager, Pacific Wind Express Project, Kern County, California (2008-2009).***

Ms. Kelly prepared the Paleontological Mitigation Monitoring Resource Plan, which allowed her to develop a key role in presenting environmental training programs to construction workers and other environmental compliance monitors. She co-authored the final paleontological mitigation report.

***Paleontological Project Manager, Tehachapi Renewable Transmission Project (TRTP), Southern California Edison (SCE), Kern County, Los Angeles County, San Bernardino County (2009-2015).***

Ms. Kelly conducted and led surveys along this project's right of way. She was also in charge of scheduling monitoring crews during grading in areas of paleontological sensitivity, managing and reviewing log sheets, and tracking data that is incorporated to final reports. Ms. Kelly played a valuable role with scheduling for the project's needs. She monitored, surveyed, and reported on all paleontological facets of this project as the Lead Paleontological Monitor for segment 3B, which was located near Rosamond, and for segments 4-11 which extended into Los Angeles and San Bernardino Counties. She authored more than 10 of the compliance reports for this project. She also performed monitoring on every segment of this Project.

***Paleontological Project Manager, SCE, Valley South Subtransmission Line Project, Riverside County, California (2007-2010).*** Ms. Kelly managed scheduling and provided oversight for coordination of all surveying, preparation of compliance and environmental documentation for this project, including three proposed alternatives, and co-wrote the final PEA and survey reports, utilizing CEQA and Riverside County paleontological guidelines.

***Paleontological Project Manager, SCE, San Joaquin Cross Valley Loop Project, Tulare County, California (2010-2013).*** Ms. Kelly assisted with coordination of all surveying, preparation of compliance and environmental documentation for this project, and co-authored the final Paleontological Monitoring Plan for this project.

***Paleontological Project Manager, SCE, Devore Substation Project, San Bernardino County, California (2010-2012).*** Ms. Kelly prepared the compliance and environmental documents for this project, including paleontological inventory and geological map research.

***Paleontological Project Manager, El Casco System-Transmission Line, SCE, throughout Riverside County (2011-2014).*** Ms. Kelly performed paleontological monitoring. Her duties included salvaging small and large fossils, screen washing and sorting fossils. She aided in the processing of microfossils collected from bulk sampling of fossil bearing sediment, and documenting stratigraphic locations of fossil bearing units. This project was in compliance with both CEQA and under the jurisdiction of the CPUC.

***Paleontological Project Manager, South of Kramer Project, SCE, Hesperia to Barstow, San Bernardino, County (2009-2016).*** Ms. Kelly provided project management and compliance surveying, which included surveying from Hesperia to Barstow, CA for a Proponent's Environmental Assessment (PEA). All portions of the Proposed Project were located within San Bernardino County, California. Kelly co-authored the final survey report for this Project. A BLM Permit was authorized for the survey.

***Paleontological Project Manager, OC Access Road Grading, SCE, Orange and Riverside County (2010-2011).*** Ms. Kelly assisted in documentation for the cultural resources portion, which include information regarding the location and condition of archaeological and paleontological sites recorded at or near the access roads, and recommends impact avoidance measures for future years in implementing the Protocol for 73 known archaeological sites. This required extensive coordination with Orange County Fire Authority grading department, SCE's Operations and Maintenance (O&M), and Orange County Parks. Trimble units were used for the documentation before and after grading of access roads. Communication played a key role when strategizing which locations were being graded where and when. The company came in under budget because of Kelly's efficiency and ability to coordinate and schedule.

***Paleontological Project Manager, West of Devers Transmission Line Project, SCE, Riverside County, California (2009-2016).*** Ms. Kelly provided all project management and paleontological related services. This included proper BLM authorization and permitting to conduct surveying and a research design for field reconnaissance related to PEA, EIS/EIR documentation for the proposed transmission line. She assisted with managing documentation with laws relating to paleontological resources, among which are CEQA and NEPA compliance.

***Paleontological Project Manager, Pacific Gas and Electric (PG&E), Line 300A/MP 147.7 and 180.8 Projects, San Bernardino County, California (2005-2006).*** Kelly prepared the mitigation recommendations and a paleontological inventory report for this project. She also was responsible for scheduling surveys on BLM and United States Marine Corps lands.

***Paleontological Project Manager, PG&E, Jefferson to Stanford No. 2 60 kV Feasibility Project, San Mateo County, California (2012-2014).*** Kelly assisted with the preparation of the paleontological resources review and paleontological inventory report (PIR) and Proponent's Environmental Assessment (PEA) for this project. Several potential routes were assessed for this project, and the feasibility and paleontological potential was determined for this project. The report and PIR were prepared according to CEQA guidelines.

***Paleontological Project Manager, Camp Pendleton Project, SDG&E, throughout San Diego and Orange Counties (2013-2017).*** Kelly provided on-call paleontological services for this project. She was a key facet in report production and research which enabled her firm to perform all survey and monitoring work required on Camp Pendleton for CEQA/NEPA check list assessments requested from SDG&E. Kelly was cleared from the Department of Defense in order to conduct work on the base. Site assessments and monitoring include all work related to: future location of power poles and towers, water control features, trenching and subsurface excavations, access roads, grading impacts to develop substations and other facilities, work pads, staging yards, and gas pipelines.

Appendix B:  
LACM Locality Search Results

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

tel 213.763.DINO  
www.nhm.org



Vertebrate Paleontology Section  
Telephone: (213) 763-3325

e-mail: [smcleod@nhm.org](mailto:smcleod@nhm.org)

19 February 2020

Material Culture Consulting  
2701-B North Towne Avenue  
Pomona, CA 91767

Attn: Julia Carvajal, Archaeologist & GIS Specialist

re: Paleontological resources for the proposed Iris Park Project, in the City of Moreno Valley, Riverside County, project area

Dear Julia:

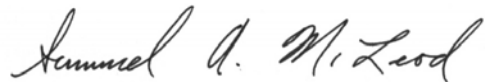
I have conducted a thorough check of our paleontology collection records for the locality and specimen data for proposed Iris Park Project, in the City of Moreno Valley, Riverside County, project area as outlined on the portion of the Sunnymead USGS topographic quadrangle map that you sent to me via e-mail on 4 February 2020. We do not have any vertebrate fossil localities that lie directly within the proposed project area boundaries, but we do have localities somewhat nearby from sedimentary deposits similar to those that probably occur at depth in the proposed project area.

Surface deposits in the entire proposed project area consist of younger Quaternary Alluvium, derived as alluvial fan deposits from the more elevated terrain to the north. These sedimentary deposits typically do not contain significant vertebrate fossils, at least in the uppermost layers, but they may be underlain by older Quaternary deposits that do contain significant vertebrate fossils. Our closest vertebrate fossil locality from somewhat similar deposits is LACM 4540, from the gravel pits just west of Jack Rabbit Trail east-southeast of the proposed project area on the eastern side of the San Jacinto Valley, that produced a specimen of fossil horse, *Equus*.

Shallow excavations in younger Quaternary Alluvium in the proposed project area are unlikely to uncover significant vertebrate fossil remains. Deeper excavations in the proposed project area that extend down into older Quaternary deposits, however, may well encounter significant vertebrate fossils. Any substantial excavations in the proposed project area, therefore, should be monitored closely to quickly and professionally recover any fossil remains discovered while not impeding development. Also, sediment samples should be collected and processed to determine the small fossil potential in the proposed project area. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

A handwritten signature in cursive script that reads "Samuel A. McLeod". The signature is written in black ink and is positioned above the typed name.

Samuel A. McLeod, Ph.D.  
Vertebrate Paleontology

enclosure: invoice