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RB INYOKERN DATA CENTER

Application for Small Power Plant Exemption (SPPE)

Inyokern, Kern County, California

Docket Number - 26-SPPE-01

Supporting Document Appendix C

Subsection(s):

- Paleontological Resources Report

PALEOSERVICES
SAN DIEGO NATURAL HISTORY MUSEUM

Paleontological Resources Technical Report

Inyokern Data Center Study
Inyokern, Kern County, California

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Executive Summary

This technical report provides a paleontological resources assessment for the proposed Inyokern Data Center Study project (Project) site, located in the census-designated place of Inyokern in unincorporated northeastern Kern County, California. The purpose of this report is to identify and summarize any paleontological resources that occur in the vicinity of the Project site, identify Project elements (if any) that may negatively impact paleontological resources, and provide, if necessary, recommendations to reduce any potential negative impacts to less than significant levels. The report includes the results of institutional records searches conducted at the Natural History Museum of Los Angeles County (NHMLA), the San Bernardino County Museum (SBCM), and the San Diego Natural History Museum (SDNHM).

The Project proposes to develop an approximately 50-acre site with a 24/7 continuously operational 99 megawatt (MW) Tier III hyperscale data center and associated infrastructure, including a new substation that interconnects to the Inyokern Substation (operated by Southern California Edison [SCE]) to the east of the data center facility. The data center would be approximately 238,000 square feet, single-story, with a maximum 30 feet height and would eventually contain six modular data suites. The proposed Project site is located between United States Route 395 (US 395) to the east, North Brown Road to the west, and Inyokern Road (State Route 178 [SR 178]) to the south. The existing SCE substation and aboveground transmission lines are located south of SR 178.

Located within Indian Wells Valley, the Project site lies in the southwestern portion of the Basin and Range geomorphic province, and is entirely underlain at the surface by Holocene-age alluvial deposits that were derived from regional erosion of the nearby southern Sierra Nevada. Presumably, the Holocene-age deposits transition in the subsurface into older, Pleistocene-age deposits. Because the nearest surface exposures of Pleistocene-age alluvial deposits occur approximately 2.5 miles from the Project site, the depth of this transition is here conservatively estimated to occur at five feet or more below ground surface (bgs).

Based on the results of the paleontological record searches and literature review, fossils have not been documented from either Holocene- or Pleistocene-age alluvial deposits within a five-mile radius of the Project site. However, fossils are known from Pleistocene-age alluvial deposits exposed elsewhere in Central California, and from Pleistocene-age lacustrine deposits that occur elsewhere in Indian Wells Valley. These Pleistocene lacustrine deposits have yielded diverse fossil remains of terrestrial vertebrates, including extinct horse, mammoth, camel, llama, bison, and saber-toothed cat.

Following the paleontological potential criteria developed by the Society of Vertebrate Paleontology, the Quaternary alluvial fan deposits underlying the Project site are assigned a low paleontological potential at depths of less than five feet bgs (where they are assumed to be Holocene in age) and high paleontological potential at depths greater than five feet bgs (where older sedimentary deposits of Pleistocene age are assumed to be present). Unfortunately, there is no site-specific geotechnical information available to determine the subsurface conditions at the Project site.

Project-related earthwork that would disturb deposits with a high paleontological potential (i.e., earthwork extending greater than five feet bgs) are assumed to have the potential to result in impacts to paleontological resources unless mitigated. In contrast, Project-related earthwork extending less than five feet bgs is not anticipated to impact paleontological resources.

It is anticipated that certain Project components will require excavation extending more than five feet bgs, including, but not limited to: mass grading of the data center facility, new substation, and BESS site; earthwork within the SCE substation; augering for an on-site groundwater well; excavation of pole foundations for the gen-tie line; excavation of at least one stormwater retention basin; and trenching for subgrade utilities and/or telecommunication lines. Implementation of a paleontological mitigation program, in the form of paleontological monitoring, is recommended for earthwork that will impact previously undisturbed Pleistocene-age alluvial deposits, as outlined in the provided mitigation measures. Implementation of the paleontological mitigation program will reduce Project-related impacts to paleontological resources to a level that is less than significant.

Contents

1.0 Introduction

This technical report provides a paleontological resources assessment for the proposed Inyokern Data Center Study project (Project) site, located on private undeveloped land in the census-designated place of Inyokern in unincorporated northeastern Kern County, California (Figure 1).

1.1 Project Description

The Project proposes to develop an approximately 50-acre site with a 24/7 continuously operational 99 megawatt (MW) Tier III hyperscale data center and associated infrastructure, including a new substation that interconnects to the Inyokern Substation (operated by Southern California Edison [SCE]) to the east of the data center facility. The data center would be approximately 238,000 square feet, single-story, with a maximum 30-foot height and would eventually contain six modular data suites. The proposed Project is located between United States Route 395 (US 395) to the east, North Brown Road to the west, and Inyokern Road (State Route 178 [SR 178]) to the south. The existing SCE substation and aboveground transmission lines are located south of SR 178.

Proposed Project components include a Tier III data center facility, generators, battery energy storage system (BESS), cooling towers, water storage infrastructure, generation tie-line, and associated offsite utility upgrades, as applicable.

1.2 Scope of Work

The Project is located in an area underlain by native sedimentary deposits. For this reason, a paleontological resource assessment was conducted in order to determine whether construction of the Project has the potential to negatively impact paleontological resources. This technical report is intended to summarize existing paleontological resource data within the Project site, discuss the significance of these resources, evaluate potential Project-related impacts to paleontological resources, and suggest mitigation measures to reduce potential impacts to paleontological resources to less than significant levels, as needed. The assessment also includes the results of a literature review of relevant geological and paleontological reports and institutional records searches of the paleontological collections at the Natural History Museum of Los Angeles County (NHMLA), the San Bernardino County Museum (SBCM), and the San Diego Natural History Museum (SDNHM). This technical report was prepared by Zev Brook, Katie M. McComas, and Thomas A. Deméré of the Department of PaleoServices, SDNHM.

1.3 Definition of Paleontological Resources

As defined here, paleontological resources (i.e., fossils) are the buried remains and/or traces of prehistoric organisms (i.e., animals, plants, and microbes). Body fossils such as bones, teeth, shells, leaves, and wood, as well as trace fossils such as tracks, trails, burrows, and footprints, are found in the geologic units/formations within which they were originally buried. The primary factor determining whether an object is a fossil or not is not how the organic remain or trace is preserved (e.g., “petrified”), but rather the age of the organic remain or trace. Although typically it is assumed that fossils must be older than ~11,700 years (i.e., the generally accepted end of the last glacial period of the Pleistocene Epoch), organic remains older than recorded human history and/or older than middle Holocene (about 5,000 radiocarbon years) can also be considered to represent fossils (Society of Vertebrate Paleontology [SVP]; SVP, 2010).

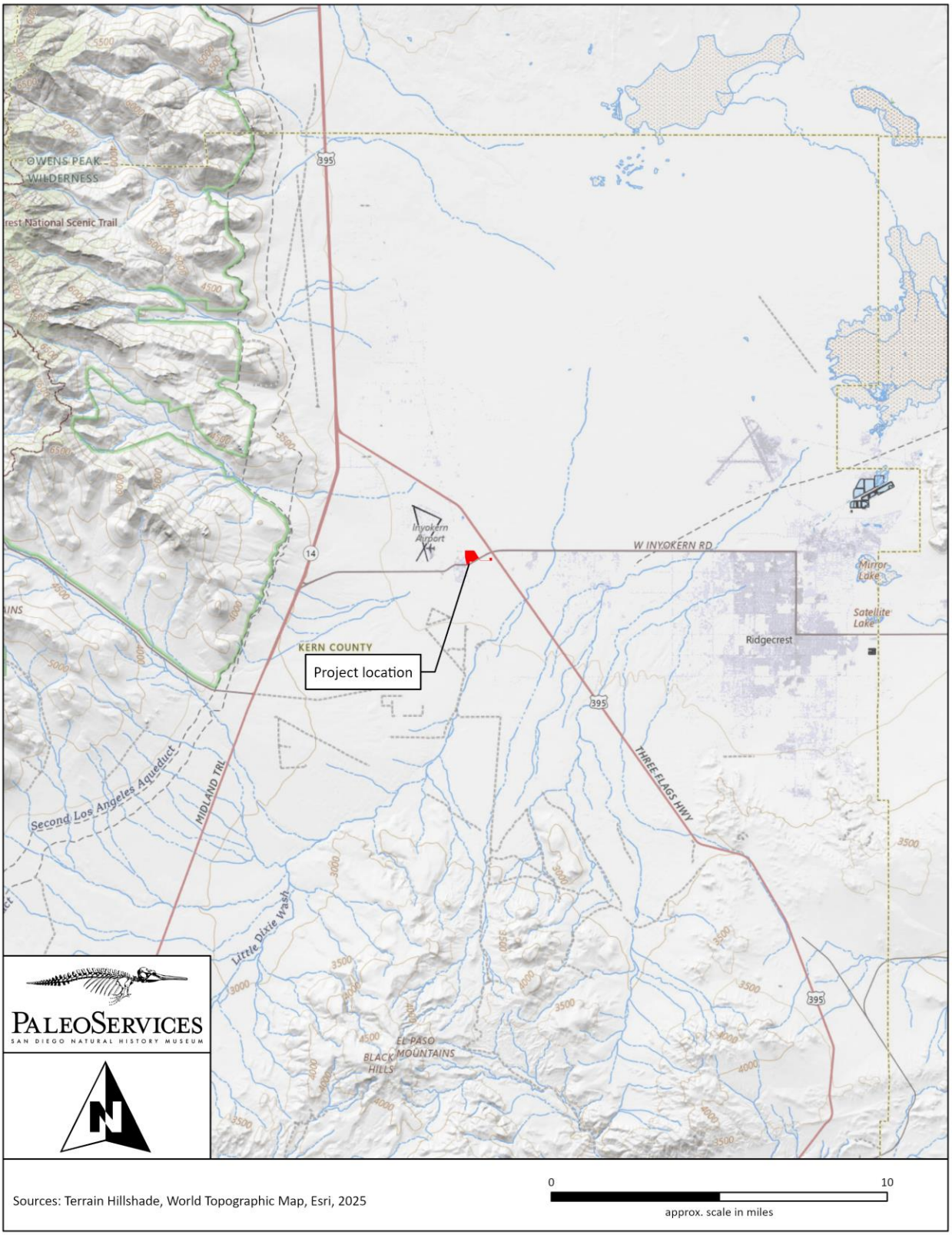

Figure 1. Project index map, Inyokern, Kern County, California.

Fossils are considered important scientific and educational resources because they serve as direct and indirect evidence of prehistoric life and are used to understand the history of life on Earth, the nature of past environments and climates, the membership and structure of ancient ecosystems, and the pattern and process of organic evolution and extinction. In addition, fossils are considered to be non-renewable resources because typically the organisms they represent no longer exist. Thus, once destroyed, a particular fossil can never be replaced.

Finally, paleontological resources can be thought of as including not only the actual fossil remains and traces, but also the fossil collection localities and the geologic units containing those localities. The locality includes both the geographic and stratigraphic context of fossils—the place on the earth and stratum (deposited during a particular time in Earth's history) from which the fossils were collected. Localities themselves may persist for decades, in the case of a fossil-bearing outcrop that is protected from natural or human impacts, or may be temporarily exposed and ultimately destroyed, as is the case for fossil-bearing strata uncovered by erosion or construction. Localities are documented with a set of coordinates and a measured stratigraphic section tied to elevation detailing the lithology of the fossil-bearing stratum as well as that of overlying and underlying strata. This information provides essential context for any future scientific study and educational use of the recovered fossils.

1.3.1 Definition of Significant Paleontological Resources

SVP has defined significant paleontological resources as consisting of "fossils and fossiliferous deposits[…]consisting of identifiable vertebrate fossils, large or small, uncommon invertebrate, plant, and trace fossils, and other data that provide taphonomic, taxonomic, phylogenetic, paleoecologic, stratigraphic, and/or biochronologic information" (SVP, 2010).

Additional scientific significance criteria recommended by SVP (2025), as proposed by Scott and Springer (2003), are outlined below. If one or more of the following criteria are met, fossils may be considered scientifically significant:

- The fossils provide data on the evolutionary relationships and developmental trends among organisms, both living and extinct.
- The fossils provide data useful in determining the age(s) of the rock unit or sedimentary stratum, including data important in determining the depositional history of the region and the timing of geologic events therein.
- The fossils provide data regarding the development of biological communities or interaction between paleobotanical and paleozoological biotas.
- The fossils demonstrate unusual or spectacular circumstances in the history of life.
- The fossils are in short supply and/or in danger of being depleted or destroyed by the elements, vandalism, or commercial exploitation, and are not found in other geographic locations.

1.4 Regulatory Framework

Paleontological resources are considered scientifically and educationally significant nonrenewable resources, and as such they are protected under state (e.g., California Environmental Quality Act [CEQA]; Public Resources Code) and local (Kern County) laws, ordinances, and regulations, outlined below.

1.4.1 State

The **California Environmental Quality Act (CEQA, Public Resources Code Section 21000 *et seq.*)** protects paleontological resources on both state and private lands in California. This act requires the identification of environmental impacts of a proposed project, the determination of significance of the

impacts, and the identification of alternative and/or mitigation measures to reduce adverse environmental impacts. The Guidelines for the Implementation of CEQA (Title 14, Chapter 3, California Code of Regulations: 15000 *et seq*.) outlines these necessary procedures for complying with CEQA. Paleontological resources are specifically included as a question in the CEQA Environmental Checklist (Section 15023, Appendix G): "Will the proposed project directly or indirectly destroy a unique paleontological resource or site or unique geologic feature."

Most CEQA lead agencies follow the definitions and guidelines provided by SVP (2010, 2025), which are in line with industry standards (e.g., Murphey et al., 2019). SVP (2025) provides criteria for determining the significance of paleontological resources and for appropriate measures to minimize impacts to paleontological resources. As advised by SVP (2010), impacts to paleontological resources can be minimized to a level below the threshold of significance through: 1.) the permanent preservation of a fossil locality and its contained fossil resources); or 2.) the implementation of a paleontological mitigation program that would reduce any adverse impacts to a level below the threshold of significance through the salvage and permanent storage of any salvaged fossils in an established scientific institution.

Other state requirements for paleontological resource management are included in **Section 5097.5 of the Public Resources Code (Chapter 1.7)**. This statute prohibits the removal of any paleontological site or feature without permission of the jurisdictional agency, defines the removal of paleontological sites or features as a misdemeanor, and requires reasonable mitigation of adverse impacts to paleontological resources resulting from development.

1.4.2 Local: Kern County

The **2009 Kern County General Plan** addresses paleontological resources in Chapter 1 (Land Use/Conservation/Open Space Element), Section 1.10 (General Provisions), Subsection 1.10.3 (Archaeological, Paleontological, Cultural, and Historical Preservation). The below policy and implementation measure apply to paleontological resources.

- **Policy 25**: The County will promote the preservation of cultural and historic resources which provide ties with the past and constitute a heritage value to residents and visitors.
    - **Implementation Measure M**: In areas of known paleontological resources, the County should address the preservation of these resources, where feasible.

2.0 Methods

2.1 Paleontological Records Search and Literature Review

In compliance with Appendix B (g)(16)(C), paleontological records searches were conducted by the NHMLA and SBCM to identify known fossil collection localities in the vicinity of the Project site. An internal paleontological records search was also conducted at the SDNHM. No field survey was conducted because surface deposits are Holocene in age and records searches did not indicate surface fossil sensitivity.

In addition, a literature review was conducted to gain a greater understanding of the geologic history of the area surrounding the Project site, as well as to determine the types of fossils that specific geologic units underlying the Project site have produced. The review included examination of relevant published geologic maps and reports, peer-reviewed papers, and other relevant literature (e.g., field trip guidebooks, unpublished theses and dissertations, archived paleontological mitigation reports). This

approach was followed in recognition of the direct relationship between paleontological resources and the geologic units within which they are found. Knowing the geologic history of a particular area and the fossil productivity of geologic units that occur in that area, it is possible to predict where fossils may or may not be encountered. Understanding the broader fossil content of a geologic unit is important for outlining the types of fossils that may occur within the geologic unit and confidently assigning a paleontological potential rating.

2.2 Paleontological Resource Assessment Criteria

The Society of Vertebrate Paleontology (SVP, 2010, 2025) has developed mitigation guidelines for paleontological resources that were developed with input from a variety of federal and state land management agencies and conform with established industry professional standards (Murphey et al., 2019). These guidelines recognize that paleontological resources are considered to include not only actual fossil remains and traces, but also the fossil collecting localities and the geologic units containing those fossils and localities, and thus are designed to evaluate the paleontological potential (or paleontological resource sensitivity) of individual geologic units within a project area. Paleontological potential is determined based on the existence of known fossil localities within a given geologic unit, and/or the potential for future fossil discoveries, given the age and depositional environment of a particular geologic unit. This procedure assigns ranks to units based on the relative abundance of vertebrate fossils or scientifically significant invertebrate or plant fossils (SVP, 2010, 2025).

The paleontological resource potential ratings designed by SVP (2025) are utilized in this report. Specific criteria for each paleontological resource potential rating are outlined below.

2.2.1 Very High Potential

Highly fossiliferous geologic units that consistently and predictably preserve scientifically significant fossils.

Management concern is very high. Paleontological resource impact evaluations and field surveys by a professional mitigation paleontologist are typically recommended prior to the proposed activity and full-time monitoring may be recommended during ground-disturbing activities in previously undisturbed geologic units, depending on the type and amount of disturbance. Scientifically significant fossils should be collected or avoided by the proposed project.

2.2.2 High Potential

Highly fossiliferous geologic units that preserve scientifically significant fossils, but their concentrations vary and are less predictable than Very High Potential.

Management concern is high. Paleontological resource impact evaluations and field surveys by a professional mitigation paleontologist are typically recommended prior to the proposed activity and full-time or part-time monitoring may be recommended during ground-disturbing activities in previously undisturbed geologic units, depending on the type and amount of disturbance. Scientifically significant fossils should be collected or avoided by the proposed project.

2.2.3 Moderate Potential

Fossiliferous geologic units that are often marine in origin and in which fossils may be common, but scientifically significant fossils are isolated or sparse.

Management concern is moderate. Paleontological resource impact evaluations are recommended. Based on the results, field surveys by a professional mitigation paleontologist may be recommended prior to the proposed activity and full- or part-time monitoring may be recommended during ground-

disturbing activities in previously undisturbed geologic units, depending on the type and amount of disturbance. Scientifically significant fossils should be collected or avoided by the proposed project.

2.2.4 Low Potential

Geologic units that are not likely to preserve fossils, including sedimentary deposits that are generally younger than 11,700 years before present, older sedimentary units that only rarely preserve fossils, or units that exhibit physical and chemical alteration (diagenetic changes) that make fossil preservation unlikely.

Management concern is generally low. Paleontological resource impact evaluations, surveys, and monitoring are not typically recommended except in rare situations in which isolated scientifically significant fossils are known to be present in the study area.

2.2.5 Very Low Potential

Geologic units that are not likely to contain recognizable fossils including Precambrian units and units that are igneous or metamorphic, excluding air-fall and reworked volcanic ash.

Management concerns are very low. Impact mitigation is unlikely to be recommended except in rare circumstances.

2.2.6 Unknown Potential

Geologic units that cannot be assigned an informed designation. This includes units that have not been subject to prior field surveys but that contain lithologies or preserve depositional settings that are known to be conducive to fossil preservation, units that have not been published in the scientific literature, and units in which reports of fossils have not been verified.

Management concern is medium to high until a provisional designation is made. Lacking other information, field surveys (entire study area or portion thereof for testing) are normally recommended, especially prior to authorizing a ground-disturbing activity. Based on the survey results, monitoring may be recommended during ground-disturbing activities in previously undisturbed geologic units. Any scientifically significant fossils that are discovered should be collected or avoided by the project.

2.2.7 Ice or Snow

Mapped geographic areas where underlying geology is obscured by ice or snow. Predictive potential for fossils is low, but when these areas appear on geologic maps or in GIS data, they may be useful for developing mitigation strategies or management recommendations for a larger analysis area that extends beyond the ice or snow.

Although fossils may be preserved in glacial ice, management concerns are generally low, and impact mitigation is only recommended where fossils are known or may be present such as at the foot of a melting glacier.

2.2.8 Water

Mapped geographic area where underlying geology is obscured by water. No predictive potential for fossils, but when these areas appear on geologic maps or in GIS data, they may be useful for developing mitigation strategies or management recommendations for a larger analysis area that extends beyond the water or in projects in which the water is being drained. May need to consider the designation of the underlying geologic units.

Management concerns are usually negligible or not applicable. Impact mitigation is unlikely to be necessary except in rare circumstances such as along the waterline (or shore).

2.3 Paleontological Impact Analysis

Direct impacts to paleontological resources occur when earthwork operations cut into the geologic units within which fossils are buried and physically destroy the fossil remains. As such, only those earthwork operations that will disturb potentially fossil-bearing geologic units have the potential to significantly impact paleontological resources. As described above, potentially fossil-bearing geologic units are those rated with a very high, high, or moderate potential. Taking a conservative approach, geologic units with an unknown potential are also considered to be potentially fossil-bearing until proven otherwise. Although impact avoidance is possible through relocation of a proposed action, paleontological monitoring during construction is typically recommended to reduce any negative impacts to paleontological resources to less than significant levels.

The purpose of the impact analysis is to determine which (if any) of the proposed Project-related earthwork activities may disturb potentially fossil-bearing geologic units, and where and at what depths these potential impacts will occur. The paleontological impact analysis involved analysis of available Project documents and comparison with geological and paleontological data gathered during the records searches and literature review.

3.0 Results

3.1 Results of the Records Search and Literature Review

3.1.1 Project Geology

Geologic setting: The Project site is located in the southern end of Indian Wells Valley, in the southwestern portion of the Basin and Range geomorphic province. Basin and Range geomorphology is characterized by north-south trending fault-bounded horst (mountain range) and graben (valley) structures, with Indian Wells Valley being an example of the latter. Indian Wells Valley is bounded by the southern Sierra Nevada to the west, the El Paso Mountains to the south, the Spangler Hills to the southeast (thus separating it from Searles Valley), and the Coso Range and Argus Mountains to the north and northeast. Indian Wells Valley is a broad endorheic (terminal) basin, with playas marking the former presence of China Lake. During the latest Pleistocene, which was considerably wetter than the present, China Lake was formed when Owens Lake (in Owens Valley) overflowed from Sierran melt waters and flowed south into Indian Wells Valley. At times, pluvial China Lake would overflow, sending water east to fill pluvial Searles Lake. At extremely high water levels, the two lakes even coalesced into a single large lake (Smith, 2009). The Inyokern portion of Indian Wells Valley appears not to have been subject to lake inundation during the Pleistocene, as it occurs at elevations above the assumed maximum pluvial lake shoreline. Instead, from the Pleistocene through the present, sediments that eroded out of the surrounding highlands have been transported downstream to form extensive coalesced alluvial fans near the mountain fronts, with finer-grained fluvial and lacustrine deposits farther out on the valley floor. This alluvial complex chiefly consists of sediments derived from weathering and erosion of granitic rocks from the eastern flank of the Sierra Nevada (Dutcher and Moyle, 1973).

Project-specific geology: As mapped by Dibblee and Minch (2008a), the entirety of the Project site is underlain at the surface by alluvial gravel and sand of Holocene age (Figure 2). These alluvial deposits are generally derived from erosion of the surrounding highlands, particularly the eastern slopes of the Sierra Nevada.

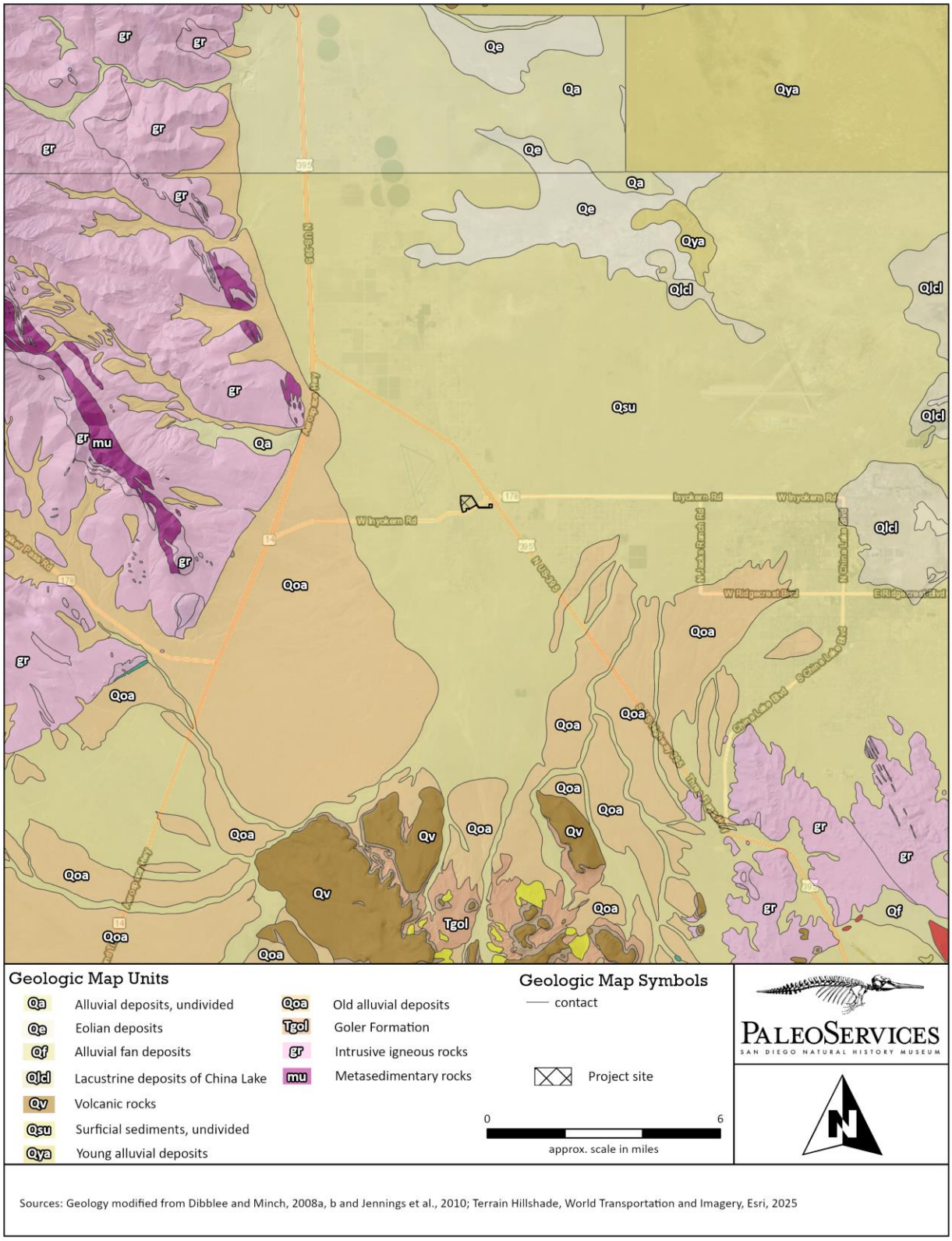

Figure 2. Geologic map of the Project site and vicinity, Inyokern, Kern County, California.

Presumably, the Holocene-age deposits transition in the subsurface into older, Pleistocene-age sedimentary deposits. The total depth of Quaternary alluvial deposits in Indian Wells Valley is estimated at 2,000 feet, but the thickness of Holocene-age deposits specifically is unknown (Dutcher and Moyle, 1973). Elsewhere in central California, Holocene alluvial veneers can be as thin as one foot (Dibblee, 1999) or considerably thicker. Because the nearest mapped surface exposures of Pleistocene-age alluvial deposits occur approximately 2.5 miles to the southeast of the Project site, the thickness of Holocene sediments and the depth below ground surface (bgs) of the transition to older Pleistocene sediments is unknow. For the purposes of this report, this temporal transition is conservatively estimated to occur at five feet or more bgs across the Project site and within the one-mile study area. Unfortunately, the site-specific geotechnical investigation did not include exploratory augering, which could provide information for determining the subsurface conditions at the Project site.

3.1.2 Project Paleontology

No known paleontological localities are documented within one mile of the Project site based on institutional records searches. A records search of the paleontological collections housed at the NHMLA documented a total of 16 fossil localities from Indian Wells Valley (Appendix A). All of these fossil localities are associated with Pleistocene sediments of pluvial China Lake and serve as the basis for recognizing the China Lake Rancholabrean faunule (Fortsch, 1978). These documented localities occur between 11 and 17 miles to the northeast of the Project site. The late Pleistocene-age China Lake Rancholabrean faunule , which was recovered from the grounds of the Naval Ordinance Test Station near Ridgecrest, yielded 11 species of birds, including coots, cranes, cormorants, ducks, geese, grebes, and swans, as well as 11 species of mammals, including extinct horse, mammoth, camel, llama, bison, deer, and saber-toothed cat (Fortsch, 1978). The age of the assemblage is estimated at approximately 18,600 years old based on a radiocarbon sample of mammoth ivory (Kurtén and Anderson, 1980). A records search of the paleontological collections at the SBCM also only returned fossil localities from the China Lake Rancholabrean faunule , with the nearest localities located approximately eight to nine miles to the northeast of the Project site (Appendix B). These localities yielded remains of mammoth, camel, and unidentified mammals. A records search of the paleontological collections at the SDNHM found no fossil collection localities from similar Holocene- or Pleistocene-age alluvial deposits located within a five-mile radius of the Project site or Indian Wells Valley as a whole. However, the SDNHM does have several fossil localities from a similar geologic setting in the vicinity of the Rosamond Dry Lakebed in the Antelope Valley of the western Mojave Desert; these localities were recovered at depths of only two to four feet bgs in sediments associated with the shoreline of pluvial Lake Thompson, and produced late Pleistocene-age fossil remains of a Columbian mammoth (*Mammuthus columbi*), isolated teeth of rodents (*Dipodomys* sp., *Thomomys* sp., and *Microtus* sp.) and shells of the freshwater snail *Planorbella* sp. and the freshwater pea clam *Euglesa* sp.

In Indian Wells Valley, Quaternary vertebrate fossils have been reported in the literature only from lacustrine sediments, such as the China Lake Rancholabrean faunule discussed above (Fortsch, 1978: Jefferson, 1991b). Similar fossils are known from Pleistocene-age alluvial sediments in other inland valleys of California (e.g., Fay and Thiessen, 1993; Jefferson, 1991a,b; Reynolds, 1990; Reynolds and Reynolds, 1991; Scott and Cox, 2008; Springer et al., 2009, 2010), indicating the potential for the recovery of additional fossils from similar deposits in Indian Wells Valley.

3.2 Results of the Paleontological Resource Assessment

Within the Project site and a one-mile radius, mapped geologic units include Holocene alluvial deposits and inferred Pleistocene alluvial deposits. Following the SVP (2025) resource assessment criteria as outlined in Section 2.2, the Holocene-age alluvial deposits occurring at the surface and to an unknown

depth at the Project site are assigned a low paleontological potential based on their relatively young age (less than about 11,700 years old) and the lack of known, scientifically significant paleontological resources from similar Holocene-age deposits in Indian Wells Valley. As mentioned, however, the Holocene-age alluvial deposits likely transition to older, Pleistocene-age deposits in the subsurface, at a depth that is here conservatively estimated to be as shallow as five feet bgs. Pleistocene-age alluvial deposits are assigned an high paleontological potential based on the recovery of significant vertebrate fossils from similar deposits in other inland valleys of California and at China Lake.

Because the transitional contact between the Holocene-age and Pleistocene-age sedimentary deposits may be as shallow as five feet bgs, the sedimentary deposits underlying the Project site are specifically assigned a low paleontological potential from 0 to 5 feet bgs where they are assumed to be Holocene in age and a high paleontological potential at depths greater than five feet bgs where they are assumed to be Pleistocene in age (Figure 3).

3.3 Results of the Paleontological Impact Analysis

As discussed above, published geologic mapping reports that the Project site and immediately surrounding area are underlain by Holocene-age alluvial deposits (assigned a low paleontological potential) at the surface. However, it is assumed that these Holocene deposits are underlain by Pleistocene-age alluvial deposits (assigned a high paleontological potential) at a depth that is conservatively estimated to be as shallow as five feet bgs. Any impacts to paleontological resources are only likely to occur during excavations at the Project site that will disturb alluvial deposits of Pleistocene-age. Therefore, only excavations that will extend greater than about five feet bgs are here considered to have the potential to impact paleontological resources (Figure 3).

Specific construction details about the extent and dimensions of earthwork that will eventually take place within the Project site have not been finalized at this time. Therefore, only a general impact analysis, using the five-foot bgs depth threshold described above, can be completed. Prior to the start of earthwork, the Project Paleontologist shall review final grading and utility plans to confirm monitoring locations and depth thresholds in accordance with MM PALEO-1 and MM PALEO-2.

Project components that will presumably require some degree of earthwork extending more than five feet bgs include, but are not limited to the following:

- mass grading of the data center facility, new substation, and BESS site, which may extend up to 10 feet bgs;
- grading within the SCE substation, which may extend up to 10 feet bgs;
- augering for an on-site groundwater well;
- excavation of pole foundations for the gen-tie line, which typically extends at least thirty feet bgs;
- excavation of at least one stormwater retention basin, which may extend up to 10 feet bgs; and
- trenching for subgrade utilities and/or telecommunications, which typically extends six to seven feet bgs.

Figure 3. Paleontological resource potential map of the Project site, Inyokern, Kern County, California.

Mass grading, excavation for foundations and basins, and trenching can all be feasibly mitigated for impacts to paleontological resources by monitoring earthwork operations. However, augering for the on-site groundwater well may not be feasible to mitigate for paleontological resources, depending on the diameter of the hole and the augering method used. In general, small-diameter augering using a drill bit measuring less than approximately 18 inches in diameter that produces only chips of rock is unlikely to produce identifiable macrofossil remains. Additional project components that are not anticipated to require excavation impacting previously undisturbed deposits include placement of fill materials. Cumulative impacts to paleontological resources are not anticipated because significant fossils are rare, nonrenewable, and mitigation measures require salvage and curation, thereby preserving scientific value even if discovered.

4.0 Recommendations

For the Project, paleontological monitoring shall be implemented for earthwork activities that are anticipated to directly impact paleontologically sensitive geologic units (i.e., Pleistocene-age alluvial deposits), which are anticipated to be present at depths of more than five feet bgs. If the initial results of monitoring indicate that only Holocene-age alluvial deposits are being impacted at this, and greater, depths, monitoring may be scaled back to spot checks or may focus solely on earthwork extending more than 10 feet bgs, at the discretion of the qualified Project Paleontologist (see below). The following mitigation measures are provided to reduce potential project-related impacts to paleontological resources to less than significant levels. Adopting the measures outlined below will reduce impacts to paleontological resources resulting from project-related ground disturbance to less than significant levels.

4.1 Recommended Mitigation Measures

The mitigation measures below are formulated in accordance with industry standards (e.g., SVP, 2010, 2025; Murphey et al., 2019).

MM PALEO-1: Prior to the start of earthwork, a qualified Project Paleontologist shall be retained to oversee the paleontological mitigation program and a professional repository shall be designated to receive any recovered fossils. The Project Paleontologist shall have an advanced academic degree (M.A., M.S., or Ph.D.) with an emphasis in paleontology and will have proven knowledge of local paleontology and geology, as well as at least two years of demonstrated professional experience with paleontological mitigation procedures and techniques at the level of field supervisor, under the direct supervision of a qualified Project Paleontologist. The repository shall be a recognized paleontological specimen repository (e.g., an American Alliance of Museums-accredited museum or university) with a permanent curator and be capable of storing fossils in a facility with adequate security against theft, loss, damage, fire, pests, and adverse climate conditions (e.g., the Natural History Museum of Los Angeles County, the San Bernardino County Museum, the San Diego Natural History Museum, or the University of California Museum of Paleontology).

MM PALEO-2: The Project Paleontologist or designated Field Monitor shall attend appropriate pre-construction meetings, provide Worker Environmental Awareness Program (WEAP) training, and attend other relevant meetings or conference calls (e.g., daily tailboards) in order to consult with project manager(s) and/or any excavation contractors concerning excavation schedules, paleontological field techniques, and safety issues. Field Monitors

will have academic training (B.A. or B.S.) with an emphasis in paleontology or demonstrated equivalent experience (minimum of two years of cumulative professional or nonprofessional work in laboratory, preparation, curation, or field work related to paleontology and documented self-taught knowledge of the discipline of paleontology). The Field Monitor, under the supervision of the Project Paleontologist, shall be on-site on a full-time basis to inspect mitigable excavations extending more than five feet below ground surface (bgs). If the initial results of monitoring indicate that only Holocene-age alluvial deposits are being impacted at this, and greater, depths, monitoring may be scaled back to spot checks or may focus solely on earthwork extending more than 10 feet bgs, at the discretion of the qualified Project Paleontologist. Because of the potential for the recovery of microvertebrate fossil remains (e.g., isolated teeth of small mammals) from Pleistocene-age older alluvium, collection and test washing of bulk sedimentary matrix samples shall be implemented as a monitoring technique. The Field Monitor shall take appropriate field notes and photographs to collect and document stratigraphic and paleontological data.

MM PALEO-3: If fossils are discovered, they shall be salvaged by the Field Monitor. In most cases this fossil salvage can be completed in a short period of time (e.g., minutes to hours). In the event that fossils are unearthed during a period when a Field Monitor is not on site (an inadvertent discovery), earthwork within the vicinity of the discovery site shall temporarily halt and the Project Paleontologist contacted to evaluate the significance of the discovery. If the discovery is determined to be significant, the fossils shall be salvaged by the Field Monitor. Salvaged fossil remains shall be cleaned, repaired, sorted, identified, and cataloged as part of the mitigation program. Fossil preparation may also include screen washing of bulk sedimentary matrix samples for microvertebrate fossil recovery or other laboratory analyses, if applicable. Fossil preparation and curation activities may be conducted at the laboratory of the contracted Project Paleontologist (if so equipped) and/or at the designated fossil repository and shall follow the standards of the designated repository. Prepared fossils, along with copies of all pertinent field notes, photos, and maps, shall be donated to the designated repository. Curation of the fossils shall be accompanied by financial support from the project owner for initial specimen storage (e.g., purchase of storage cabinets, storage drawers, and curatorial supplies).

MM PALEO-4: A final summary report shall be completed upon completion of ground-disturbing activities that outlines the results of the mitigation program. This report will include discussions of the methods used, stratigraphic section(s) exposed, and significance of recovered fossils (if any). If fossils are recovered, it will include repository accession numbers and curation confirmation. This report shall be submitted to the lead agency, California Energy Commission, and the designated repository (if fossils are recovered).

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Appendix A: Results of NHMLA Paleontological Records Search

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

tel 213.763.DINO
www.nhm.org

Research & Collections

e-mail: paleorecords@nhm.org

September 28, 2025

San Diego Natural History Museum
Department of PaleoServices
Attn: Katie McComas

re: Paleontological resources records search for the Inyokern Data Center Project

Dear Katie:

I have conducted a search of our paleontology collection records for the proposed development at the Inyokern Data Center project area as outlined on the portion of the Inyokern USGS topographic quadrangle map that you sent to me via e-mail on September 25, 2025. We do not have fossil localities that have been recorded or georeferenced directly within the proposed project area, but we do have fossil localities nearby from similar sedimentary deposits that may occur in the proposed project area, either at the surface or at depth.

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

Locality Number	Location	Formation	Taxa	Depth
LACM VP 1543, 3659, 6178, 5151 - 5157, 7013, 7262, CIT 266; LACM IP 148, 442, 2563	China Lake	Lacustrine beds (Pleistocene)	Over 900 vertebrate specimens including mammoth (*Mammuthus);* camel family (*Camelops, Tanupolama, Hemiauchenia);* bison (*Bison);* cats (Felidae, *Smilodon*), dogs (Canidae, *Canis dirus, C. latrans*), horses (Equidae, *Equus*), deer (Cervidae, *Odocoileus*), rodent (*Microtus*), sheep (*Ovis*); tortoise? (Testudinata); birds (Aves, *Branta, Oxyura, Aythya, Anas, Grus, Phalacrocorax, Aquila, Haliaeetus, Cygnus, Fulica, Aechmophorus*); amphibians (*Anura*), fish (Osteichthyes, Teleosti), and other uncatalogued vertebrates and invertebrates (primarily mollusks).	Surface and shallow subsurface
LACM VP 3721	Goler Gulch	Unknown unit (Pleistocene)	Horse (*Equus conversidens*)	Surface

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

This records search is limited to the records of the NHMLA. It is not intended as a paleontological assessment of the project for the purposes of California Environmental Quality

Act (CEQA) or National Environmental Policy Act (NEPA). Potentially fossil-bearing units are present in the project area, either at the surface or in the subsurface. As such, NHMLA recommends that a paleontological assessment be conducted by a paleontologist meeting Federal (43 Code of Federal Regulations Part 49.110) or Society of Vertebrate Paleontology standards for compliance with applicable regulations, such as CEQA or NEPA.

Sincerely,

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

Appendix B: Results of SBCM Paleontological Records Search

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www.SBCounty.gov

SAN BERNARDINO COUNTY

Museum
Division of Earth Science

David Myers
Director

Scott Kottkamp
Curator of Earth Science

November 7th, 2025

San Diego Natural History Museum
Attn: Katie McComas
1788 El Prado
San Diego, CA 92101

PALEONTOLOGY RECORDS REVIEW for proposed site of Inyokern Data Center Project, Inyokern, Kern County, California

Dear Ms. McComas,

The Division of Earth Science of the San Bernardino County Museum (SBCM) has completed a record search for the above-named project in Kern County, California. The proposed project site (Inyokern Data Center) is in the census-designated place of Inyokern, California as shown on the United States Geological Survey (USGS) 7.5-minute Inyokern, California quadrangle.

Geologic mapping of that region done by Dibblee and Minch (2008) indicates that most of the project area is located atop Holocene age alluvial sediment (Qa). Qa is unlikely to be fossiliferous given its young age, but may yield subfossils or shallowly overlie older units of higher paleontological sensitivity. Such older units include Pleistocene age alluvial (Qoa) and lacustrine sediments (Qol). Local Qol has a high paleontological sensitivity – vertebrate fossils have been reported and collected from equivalent units of Qol found on China Lake Naval Air Weapons Station immediately to the northeast of the project site. Other institutions with records of paleontological resources at China Lake Naval Weapons Station include the Natural History Museum of Los Angeles (NHMLA) and the Maturango Museum in Ridgecrest. Vertebrate remains collected or reported from localities in and around China Lake itself represent a wide Pleistocene fossil assemblage including †*Mammuthus columbi*, †*Smilodon* sp., †*Camelops hesternus*,

†*Hemiauchenia* sp., *Equus* sp., *Odocoileus* sp., *Bison* sp., assorted aquatic invertebrates, rodents, and plants.

For this review, I conducted a search of the Regional Paleontological Locality Inventory (RPLI) at the SBCM. The results of this search indicate that no paleontological resources have been discovered within the proposed project site nor within a 1-mile radius of its perimeter. The closest SBCM localities are situated within China Lake Naval Air Base, which covers a large area northeast of the project site. Though even the nearest of these localities is more than 8 miles away from the project site, the fossiliferous lacustrine sediments they occur within (Qol) are regionally widespread at and below the surface. Please note that SBCM anthropological and cultural resource localities also occur within the boundaries of China Lake Naval Air Weapons Station North Range, but these localities will not be detailed in this paleontological record search. Furthermore, in addition to SBCM localities, excavations by other institutions have found significant vertebrate paleontological resources in and around China dry lake (e.g., LACM 3659, 7013, and 7262).

The nearest locality, SBCM 1.56.1, is approximately 8 miles northeast of the project site in a deposit of Qol centered on a playa in the Charlie 10 survey area. Several scattered and fragmental proximal femurs of unidentified vertebrates were observed at this locality. The locality designation number for this site may be changed in the future, as the current number corresponds to San Bernardino County, but the locality is in Kern County. The next closest localities are SBCM 6.5.3 – 6, SBCM 6.5.8, and SBCM 6.5.10, all approximately 9 miles east-northeast of the project area. A †*Mammuthus columbi* tusk, Proboscidean indet. innominate, †*Camelops hesternus* ribs, and Mammalia indet. bone fragments were observed at these localities, exposed at the surface in a green bed of Qol.

This records search covers only the paleontological records of the San Bernardino County Museum. 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.

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

Sincerely,

Scott Kottkamp

Scott Kottkamp, Curator of Earth Science
Division of Earth Science
San Bernardino County Museum

Literature Cited

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Available at: https://ngmdb.usgs.gov/Prodesc/proddesc_86859.htm (accessed 11/7/2025)