

MEMORANDUM

To: Matt Shell, Acquisitions Associate
From: Sarah Siren, MSc and Michael Williams, PhD, Dudek
Subject: Paleontological Resources Review – Pacific Palmdale Center Project
Date: 2/10/25
cc: Brian Grattidge, Dudek
Attachment(s): A. Figures 1 & 2 Project Location Maps, B. Confidential Paleontological Resources Records Search Results Letter

Dudek is providing this memorandum (memo) after completing a desktop review of the potential for impacts to paleontological resources for the Pacific Palmdale Center Project (Project) located at the intersection of Division Street and Rancho Vista Boulevard in the City of Palmdale, California (Attachment A – Project Location Maps). The proposed Project would include a new industrial building, approximately 1,052,000± ft² in size, located in the central portion of the Project site (Southern California Geotechnical 2024). This memo was prepared by Sarah Siren, MSc and Michael Williams, PhD, who are qualified as Principal Investigators for Paleontology, in accordance with the California Environmental Quality Act (CEQA) guidelines and Society of Vertebrate Paleontology (SVP) standards (2010). Dudek's review included a paleontological records search through the Natural History Museum of Los Angeles County (NHMLA) to determine if any fossil localities are documented from within and nearby the Project site.

The Project site is located within the Mojave Desert Geomorphic Province, in the Antelope Valley area and is located east of State Route (SR-) 14 and west of the Palmdale Regional Airport. The Project site is generally underlain by Quaternary (Holocene; less than ~11,700 years old) alluvium with presumably Pleistocene (~11,700 – 2.58 million years old) alluvium underlying these deposits at depth (Hernandez 2009; Cohen et al. 2024)

Dudek requested a paleontological records search from the Natural History Museum of Los Angeles County (NHMLA) which reported no fossil localities from within the Project site; however, they have numerous nearby localities from the same sedimentary deposits that underlie the Project site. Fossil locality, LACM (Los Angeles County Museum) VP (Vertebrate Paleontology) 5942-5950 yielded the following taxa: kingsnake (*Lampropeltis*), unknown lizard (Lacertilia), leopard lizard (*Gambelia*), snake (Ophidia), gopher snake (*Pituophis*), rabbit (Lagomorpha), rodent (Rodentia), pocket gopher (*Thomomys*), pocket mouse (*Chaetodippos*), kangaroo rat (*Dipodomys*), and birds (Aves), from 0 to 9 feet below the ground surface (bgs) along Avenue S in Palmdale near Lake Los Angeles (NHMLA 2025). These localities were from an unnamed Holocene geological unit. LACM VP 7884 produced a fossil camel (*Camelops hesternus*) from an unknown Pleistocene formation east of Sierra Highway, between East Avenue H and East Avenue I in Lancaster from a depth of 4 feet bgs (NHMLA 2025). LACM VP 7853 yielded rabbit (*Sylvilagus*), camel (Camelidae), antelope squirrel (*Ammospermophilus*), kangaroo rat (*Dipodomys*), pocket mouse (*Perognathus*), pack rat (*Neotoma*), deer mouse (*Peromyscus*), vole (Microtinae), pocket gopher

(*Thomomys*), iguana (*Dipsosaurus*), spiny lizard (*Sceloporus*), side blotched lizard (*Uta*), three types of colubrid snakes (*Trimorphodon*, *Masticophis*, *Phyllorhynchus*), night lizard (*Xantusia*), western alligator lizard (*Elgaria*), toothy skinks (*Plestiodon*), whiptail lizard (*Aspidocelis*), spiny lizards (Phrynosomatidae), and smelt (Osmeridae) from a depth of 3 to 11 feet bgs from an unknown Pleistocene formation at the Lancaster landfill. A single camelid (*Hemiauchenia*) specimen was found at LACM VP 7891 from a depth of 21 feet bgs in an unknown Pleistocene formation near the California Aqueduct north of Willow Springs (NHMLA 2025).

Nearby in Rosamond, California, the Travertine development along CA-14 yielded a mammoth molar and associated dentary fragment, which are housed at the Buena Vista Museum of Natural History in Bakersfield, California. Prehistoric Lake Thompson, dates to the Pleistocene, and is thought to have occupied areas east and west of CA-14 in Rosamond, California, and possibly areas to the south in Lancaster, California. These lake deposits have been associated with the recovery of other Pleistocene, or “Ice Age” paleontological resources (Wilkerson et al. 2011).

Late Holocene age (<4,200 years ago), or recent alluvial deposits, have low paleontological resource sensitivity and do not require paleontological monitoring; however, middle Holocene (~ 4,200 – 8,200 years ago) and older sediments have high paleontological resource sensitivity and require paleontological monitoring. Younger alluvium was encountered “at the ground surface at all of the boring locations, extending to depths of 2.5 to 17± feet below existing site grades.” (Southern California Geotechnical 2024). According to the geotechnical investigation report (Southern California Geotechnical 2024), “...cuts and fills of up to 8± feet are expected to achieve the proposed site grades” and “...retaining walls and site walls should be overexcavated to a depth of 3 feet below foundation bearing grade...” Although shallow excavation depths are anticipated for the Project, Pleistocene age alluvium is also anticipated to be potentially impacted at relatively shallow depths (approximately 2.5 feet below the surface within some portions of the Project site).

Given the previously recorded fossil localities and the high sensitivity of the middle and early Holocene and Pleistocene age deposits, at an unknown depth below younger alluvium within the Project site, a monitoring program is recommended during grading within previously undisturbed middle to early Holocene and Pleistocene alluvium at depth within the Project site.

Dudek recommends implementation of Mitigation Measure (MM) GEO-1 to avoid impacts to subsurface paleontological resources. With implementation of MM-GEO-1, impacts of the proposed Project are considered less than significant.

MM-GEO-1 Paleontological Resources

Prior to commencement of any grading activity on site, the applicant shall retain a qualified paleontologist meeting the Society of Vertebrate Paleontology (SVP) (2010) guidelines. The paleontologist shall prepare a Paleontological Resources Impact Mitigation Program for the Project. The Paleontological Resources Impact Mitigation Program shall be consistent with the guidelines of the SVP (2010) and include the following elements at a minimum: project description, requirements for preconstruction worker environmental awareness training, frequency of monitoring, salvage protocols, reporting, and collections management. The qualified paleontologist or a qualified monitor meeting the SVP (2010) guidelines shall be on site during rough grading and other significant ground-disturbing activities below a depth of 5 feet below the existing ground surface in previously undisturbed older Holocene and Pleistocene-age deposits. If excavations below 5 feet are not impacting previously undisturbed deposits, as determined by the qualified

paleontologist, spot-check monitoring shall ensue. The paleontologist will re-evaluate the need for continued monitoring, and will determine whether to reduce monitoring, to spot-check, or to suspend monitoring altogether, as appropriate. No monitoring is required during excavations within artificial fill or previously disturbed alluvium.

In the event that paleontological resources (e.g., fossils) are unearthed during grading, the paleontological monitor shall temporarily halt and/or divert grading activity to allow recovery of the paleontological resources. The area of discovery shall be roped off with a 50-foot-radius buffer to document and collect the fossils. Once documentation and collection of the find is completed, the monitor shall remove the rope and allow grading to recommence in the area of the find. Any costs associated with laboratory processing of sediments and fossils and curation fees are the responsibility of the applicant.

If you have any questions regarding this memorandum, please feel free to contact me (760.846.9326 or ssiren@dudek.com).

Sincerely,



Sarah A. Siren, MSc
Paleontologist, Dudek

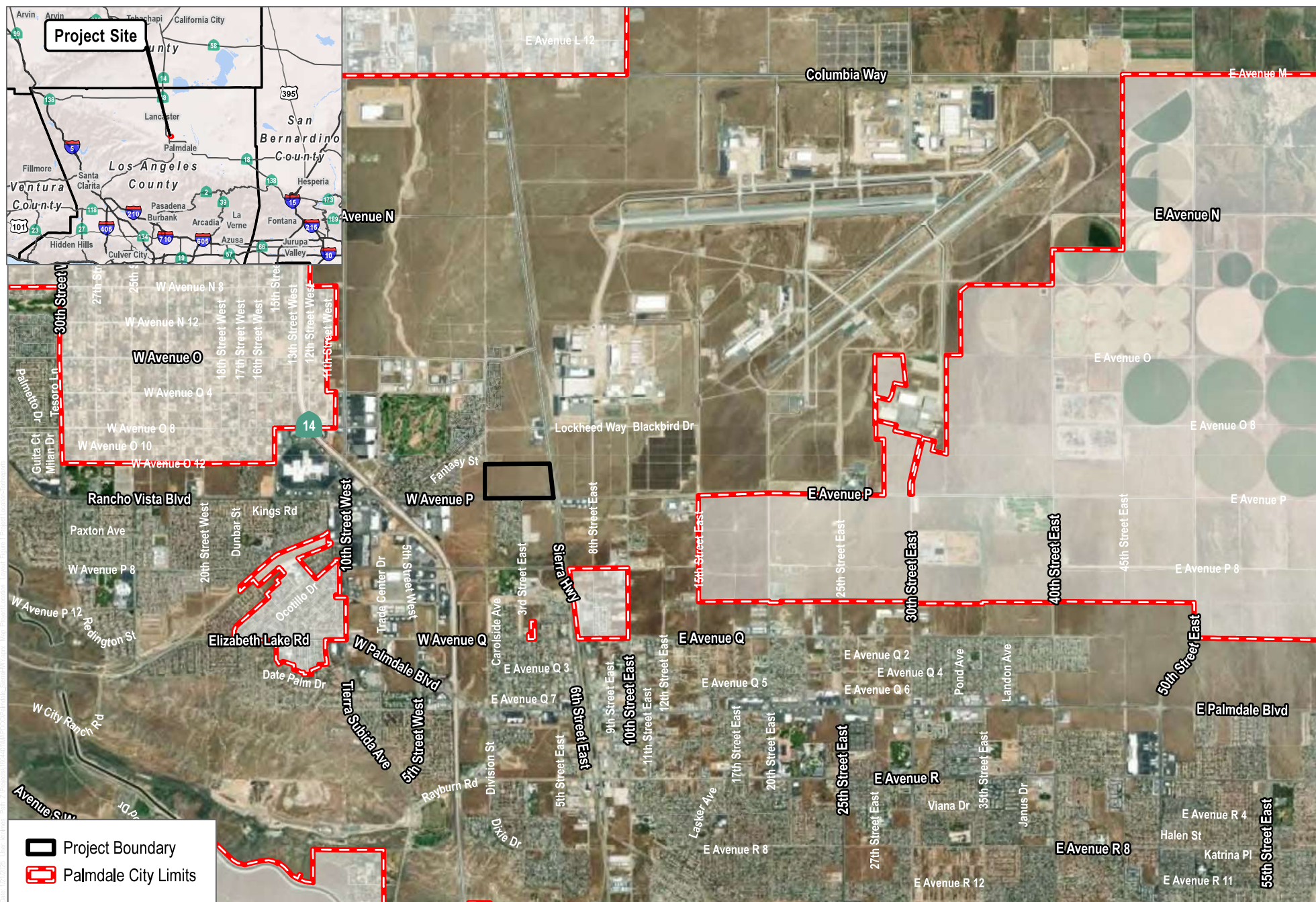
Att A- *Figures 1 & 2 Project Location Maps*
 B- *Confidential - Paleontological Resources Records Search Results Letter*

References Cited:

- Cohen, K.M., S.C. Finney, P.L. Gibbard, and J.-X. Fan. 2024. "The ICS International Chronostratigraphic Chart." Episodes 36: 199--204. 2013; Updated. Available at:
<http://www.stratigraphy.org/ICSchart/ChronostratChart2024-12.pdf>.
- Hernandez, J.L. 2009. "Preliminary Geologic Map of the Ritter Ridge 7.5' Quadrangle, Los Angeles County, California: A digital database" [map]. 1:24,000. Preliminary Geologic Maps PGM-09-02. California Geological Survey.
- NHMLA (Natural History Museum of Los Angeles County). 2025. (Confidential Attachment B). "Paleontological Record Search for the Palmdale Warehouse Project/Rancho Vista Blvd./Sierra Highway Project (PN 16044)." Unpublished records search results letter by A. Bell from the Natural History Museum of Los Angeles County, Los Angeles, California. Dated January 19, 2025.
- SVP (Society of Vertebrate Paleontology). 2010. "Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources." https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines.pdf.
- Southern California Geotechnical 2024. "Geotechnical Investigation, Proposed Industrial Building, NEC Rancho Vista Boulevard at Division Street, Palmdale, California." Prepared for Pacific Industrial. Dated February 28, 2024.
- Wilkerson, G.T., T. Elam, and R. Turner. 2011. "Lake Thompson Pleistocene Mammalian Fossil Assemblage, Rosamond." In The 2011 Desert Symposium Field Guide and Proceedings, edited by R.E. Reynolds. 2011, California State University Desert Studies Consortium, p. 88-90.

Attachment A

Figures 1 & 2 Project Location Maps



SOURCE: USGS 7.5 minute Series

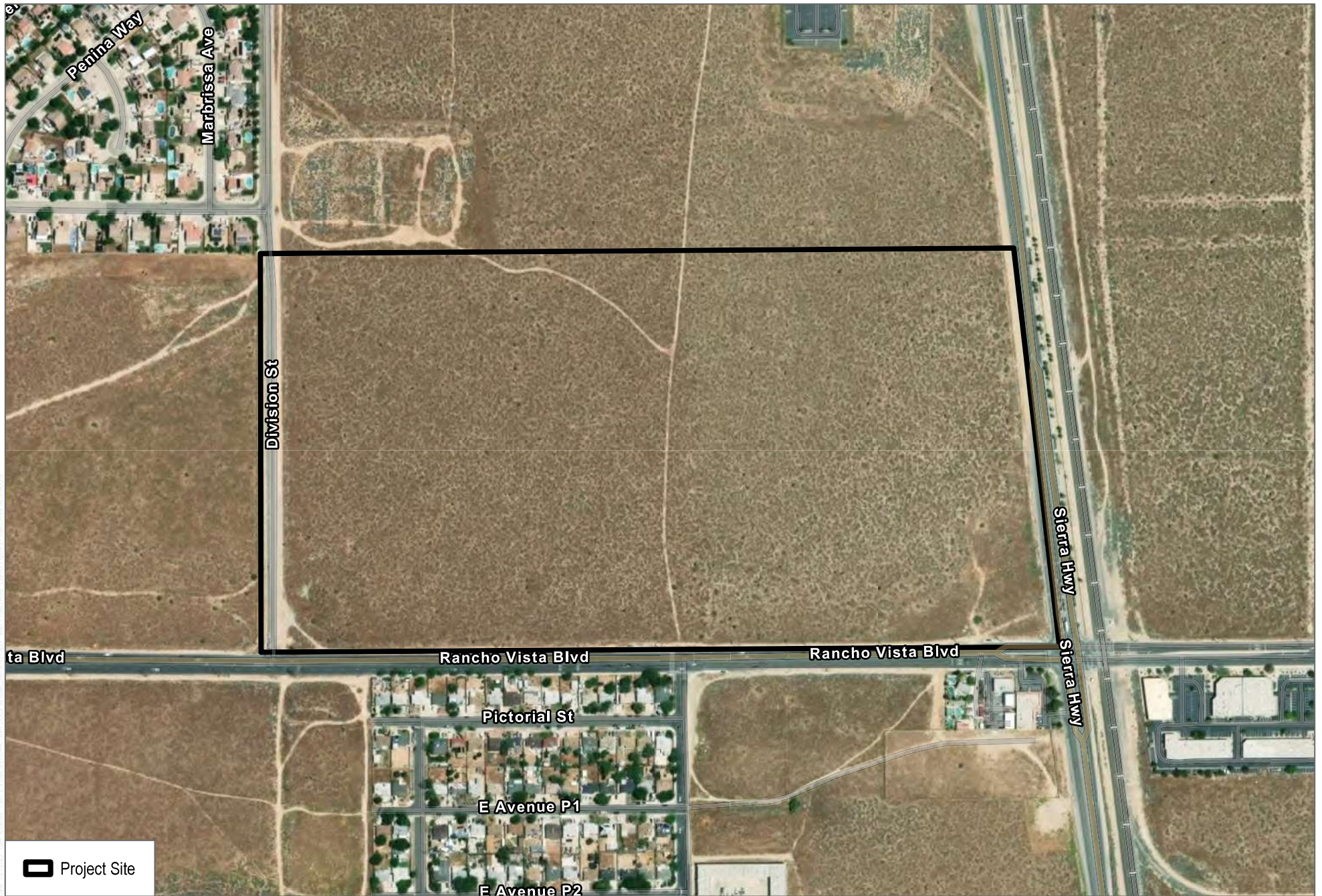
Ritter Ridge & Palmdale Quadrangle - Township 6N Range 12W Section 14 & 15



FIGURE 1

Project Location

Pacific Palmdale Center Project



SOURCE: World Imagery 2022

DUDEK



0 210 420 Feet

FIGURE 2
Project Site

Pacific Palmdale Center Project

Attachment B

(Confidential) Paleontological Resources Records
Search Results Letter