DUKE CRM

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November 13, 2023

Nan Huang
MetaCapital Management
4141 South Nogales St., Suite C 102
West Covina, CA 92792

Subject: Cultural and Paleontological Resources Assessment for the 17.2-Acre Project, City of Adelanto, County of San Bernardino, California (Project Number C-0512)

Dear Mr. Huang:

At the request of MetaCapital Management (CLIENT), Duke Cultural Resources Management, LLC (DUKE CRM) has prepared a cultural and paleontological resources assessment for the development of the 17.2-Acre Development (Project), in the City of Adelanto, San Bernardino County, California. The Project is approximately 17.2-acres in size. The City of Adelanto (CITY) is the lead agency for the California Environmental Quality Act (CEQA.

The Project is located within Assessor's Parcel Numbers (APNs) 0459-124-36 and -37. The Project is located in Section 29, Township 6 North, Range 5 West, as shown on the USGS *Adelanto, Calif.* 7.5 quadrangle maps (see Attachment 1 for Project Maps). The Project will construct 86-one-story single-family homes with a maximum depth of excavation of approximately six (6) feet. This report includes the result of our research and field survey for cultural and paleontological resources.

Research
DUKE CRM conducted a records search at the South Central Coastal Information Center (SCCIC) on October 2, 2023. The SCCIC located at the California State University, Fullerton is part of the California Historical Resources Information System (CHRIS). The records search included a review of all recorded cultural resources within a ½-mile radius of the Project, as well as a review of known cultural resource survey and excavation reports.

The records search identified five (5) cultural resources within ½ mile of the Project (Table 1). Each of these resources are historic in age and none are recorded within the Project area. Resource P-36-061260, a historic can isolate, is the closest of these resources, located approximately 2,135 feet northeast of the Project.

Table 1: Cultural Resources within ½ mile of the Project

Resource No.	Resource Type	Description	NRHP Eligible	Distance (ft.) and Direction
P-36-010316	Historic Built Environment	SCE Bishop Creek Tower Line	2S2	2,240 east
P-36-061257	Historic	Refuse Deposit	Unknown	2,625 southeast
P-36-061258	Historic	Historic Can Isolate	Unknown	2,235 east
P-36-061259	Historic	Abandoned Billboard Posts	Unknown	2,155 east
P-36-061260	Historic	Historic Can Isolate	Unknown	2,135 northeast

2S2: Individually determined eligible for NR by consensus through Section 106 process. Listed in the CR.

Additionally, the SCCIC identified nine (9) cultural reports within ½ mile of the Project. Of these reports, two (2) cultural reports covered the Project area (Table 2). Both of these studies were part covered large areas and neither observed any cultural resources within the Project area.

Table 2: Cultural Resource Reports within the Project

Report No.	Year	Report Title	Authors
SB-00782	1979	Shamrock Organics Yucca Harvest, Lanfair Valley Section 5, Survey and Assessment of Non-Renewable Resources	San Bernardino County Museum Association
SB-02731	1993	National Register Eligibility Determinations for Historic Resources Along the Proposed AT&T Lightguide System, Victorville to Bakersfield, CA	Michael E. Macko, Jeanne D. Binning, David D. Earle, and Paul E. Langenwalter

An inquiry to the Native American Heritage Commission (NAHC) was submitted to ascertain the presence of known sacred sites, Native American cultural resources within the boundaries of the proposed Project. The NAHC search pof the Sacred Land Files on November 9, 2023was negative for tribal resource within or adjacent to the Project.

DUKE CRM conducted a review of online historical aerial photographs and historic USGS quadrangle maps utilizing UCSB FrameFinder, historicaerials.com, and USGS Historical Topographic Map Explorer. The 1952 and 1957 historic aerial shows that there were some agricultural plots to the north of the Project area. The development of the surrounding area can first be seen in 1968 and growing until 1994 where it remains relatively unchanged to the present day. There is no evidence that there has been any disturbances or development within the Project area since the earliest historic aerial, i.e., 1952, aside from a north-south graded road through the center of the Project and use of the eastern halves of the Project for an ATV track (historicaerials.com; accessed October 26, 2023).

Paleontological Resources

On September 12, 2023, DUKE CRM requested that the San Bernardino County Museum (SBCM) perform a paleontological records search for known fossil localities within and in the vicinity of the Project. The SBCM record search, dated November 9, 2023, identified a single paleontological resource within one (1) mile of the Project, SBCM 1.115.8. The locality was discovered 0.43 miles east-northeast of the Project site, during paleontological monitoring of the construction of the SCE Kramer-Adelanto Transmission Line. "Extremely fragmentary" medium and large size permineralized bone material was recovered from auguring operations for the Project. Due to the nature of the construction method used, exact depth of the paleontological resources prior to disturbance cannot be determined (Attachment B, Paleontological Record Search).

DUKE CRM performed a search of the online University of California Museum of Paleontology collections, the San Diego Natural History Museum (the "Nat"), and other published literature for nearby (within three [3] miles) fossil localities in similar deposits. These searches produced no localities nearby which have produced paleontological remains.

The geologic units underlying the Project area are mapped as alluvial deposits (*Qa*) consisting of unconsolidated sand, silt, and gravel from the early Holocene epoch. Holocene-age deposits are generally assigned a low paleontological sensitivity, as their young age prevents the preservation of significant paleontological material as Pleistocene taxa are extinct during deposition. However, Holocene deposits often transition with depth into older, high sensitivity Pleistocene-age deposits, i.e.,

Qoa, with the potential to preserve extinct taxa. In Adelanto, where the proposed Project is situated, the fossiliferous Pleistocene alluvial deposits (*Qoa*) can be encountered as shallow as three (3) feet below the ground surface. Additionally, the interface between Holocene alluvium and the underlying Pleistocene alluvium may not demonstrate a lithology change making this transition difficult to recognize. Hundreds of Pleistocene sites have been recorded, in units underlying Holocene alluvium, throughout the inland valleys of southern California, especially at Domenigoni Reservoir near Hemet, California (Pajak III et. al. 1996, Dibblee and Minch 2008, Kottkamp 2023).

Survey

Alex Bulato, B.A., Archaeologist at DUKE CRM and Brian Kussman, B.A., Paleontologist at DUKE CRM, conducted an intensive pedestrian survey of the Project on October 19, 2023 with parallel transects spaced no greater than 15 meters apart. The survey covered the entirety of the 17.2-acres in the area of the proposed Project (see Attachment A, Aerial Map). Soils consist of aridosols derived from granitic basement rocks, recreation ramps, not contemporaneous with the heavy equipment cuts, on east end of property, somewhat toward the north portion of the quadrant. Ground visibility is approximately 70 to 80 percent. Vegetation consisted of creosote scrub with sparse Joshua trees, with a mean elevation of approximately 2,890 ft. above sea level. Five (5) glass fragments and one (1) historic-era ceramic fragment were observed in the central eastern portion of the Project. Fragments may be historic in age; however, the fragments were too small to confirm. No additional cultural resources and no paleontological resources were observed as a result of the field survey.

Conclusions

DUKE CRM assessed the proposed Project for impacts to cultural resources according to CEQA. The SCCIC nor the field survey identified any verifiable cultural resources within the Project area. Therefore, as a result of negative findings during the field survey and heavy disturbances throughout the Project area, our assessment is that the Project has a low potential to impact cultural resources. Therefore, no mitigation is recommended for cultural resources.

DUKE CRM assessed the proposed Project for impacts to paleontological resources according to CEQA. Research and pedestrian survey did not identify paleontological resources on the surface of the Project boundaries.

Based on published data, the Project is considered to have a high sensitivity for paleontological resources at depths exceeding three (3) feet. This would result in potentially significant impacts to paleontological resources according to CEQA. Therefore, paleontological construction monitoring is recommended during ground disturbance within the Project. This, along with appropriate recording and recovery efforts, will mitigate the potential impact to a level of less than significant for the purposes of CEQA (SVP, 1995; Scott and Springer, 2003).

Paleontological Monitoring

A paleontological monitor shall be present during ground disturbing activities below three (3) feet in depth within the Project. The monitor shall work under the direct supervision of a qualified paleontologist (B.S./B.A. in geology, or related discipline with an emphasis in paleontology and demonstrated competence in paleontological research, fieldwork, reporting, and curation).

1. The qualified paleontologist shall be on-site at the pre-construction meeting to discuss monitoring protocols.

2. The paleontological monitor shall be present full-time during initial ground disturbance below 3 feet in depth within the Project, including but not limited to grading, trenching, utilities, and off-site easements. If, after excavation begins, the qualified paleontologist determines that the sediments are not likely to produce fossil resources, monitoring efforts shall be reduced.
3. The monitor shall be empowered to temporarily halt or redirect grading efforts if paleontological resources are discovered.
4. In the event of a paleontological discovery the monitor shall flag the area and notify the construction crew immediately. No further disturbance in the flagged area shall occur until the qualified paleontologist has cleared the area.
5. In consultation with the qualified paleontologist, the monitor shall quickly assess the nature and significance of the find. If the specimen is not significant it shall be quickly mapped, documented, removed, and the area cleared.
6. If the discovery is significant the qualified paleontologist shall notify the MetaCapital Management (CLIENT) and City of Adelanto immediately.
7. In consultation with the MetaCapital Management (CLIENT) and City of Adelanto, the qualified paleontologist shall develop a plan of mitigation which will likely include full-time monitoring, salvage excavation, scientific removal of the find, removal of sediment from around the specimen (in the laboratory), research to identify and categorize the find, curation of the find in a local qualified repository, and preparation of a report summarizing the find.

Thank you for contacting DUKE CRM on this Project. If you have any questions or comments, you can contact me at (951) 760-2265, or by e-mail at morganbeigle@dukecrm.com.

Sincerely,

DUKE CULTURAL RESOURCES MANAGEMENT, LLC

Morgan Beigle M.A., RPA
Archaeologist

Brian Kussman, B.A.
Paleontologist

Attachments
A: Project Maps
B: Paleontological Record Search
C: Field Survey Photographs

REFERENCES CITED

Kottkamp, S. (SBCM)
2023 Paleontology Records Review for the proposed site of C-0512 Adelanto project, Adelanto, California.

Morton, D.M., and F.K. Miller
2006 Geologic Map of the San Bernardino and Santa Ana 30' x 60' Quadrangles.

Pajak III, A.F., Scott, E., and C.J. Bell
1996 A review of the biostratigraphy of Pliocene and Pleistocene sediments in the Elsinore Fault Zone, Riverside County, California. In Bell, C.J., and S.S. Sumida, eds., The uses of vertebrate fossils in biostratigraphic correlation: *PaleoBios*, v. 17, no. 2-4, p. 27-48.

Scott, E., and K.B. Springer
2003 CEQA and Fossil Preservation in California. *The Environmental Monitor*.

Society of Vertebrate Paleontology (SVP)
1995 Best Practice Guidelines for Repositing and Disseminating Contextual Data Associated with Vertebrate Fossils: *Society of Vertebrate Paleontology*, 6 p.

ATTACHMENT A

PROJECT MAPS

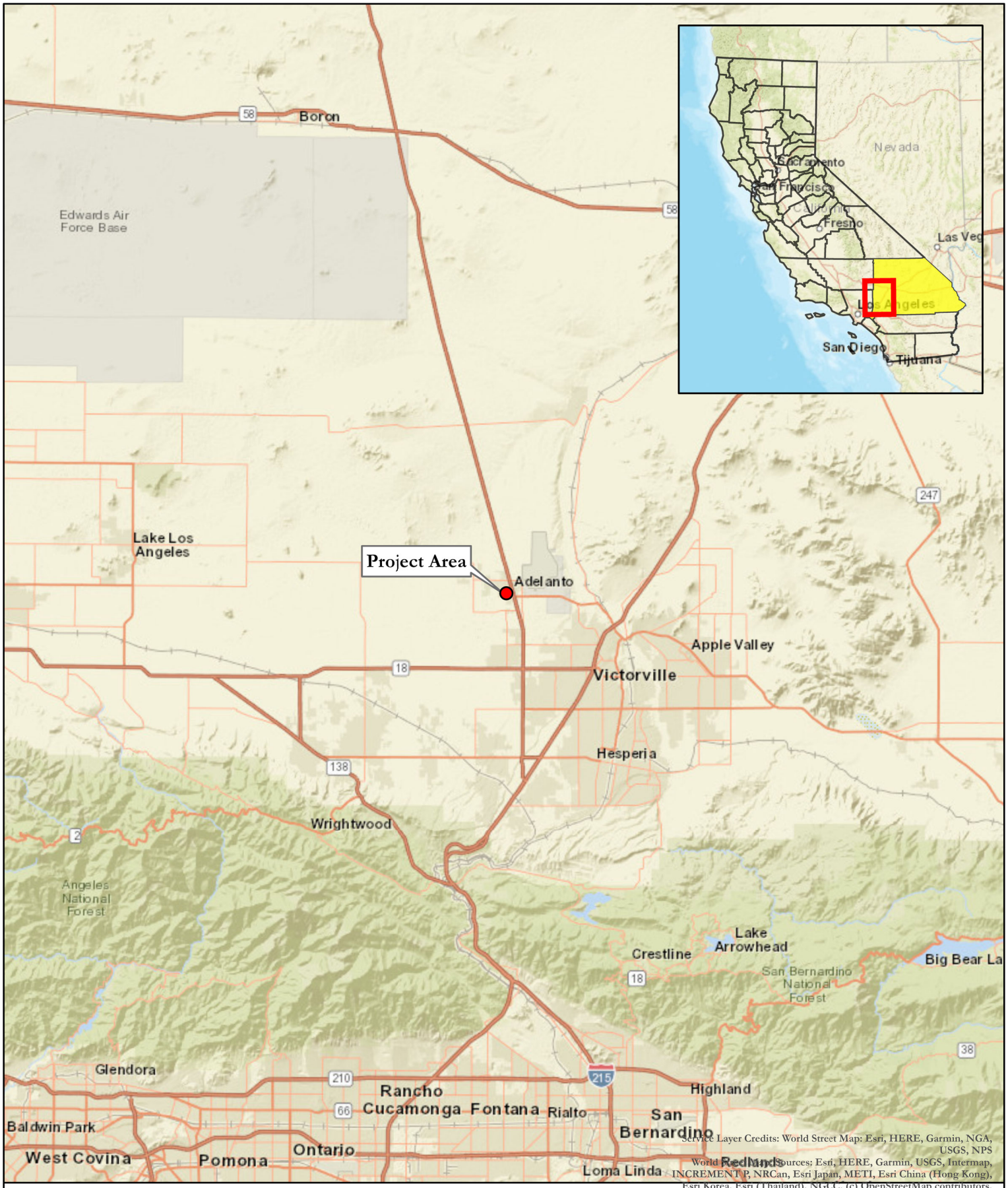

Figure 1. Project Vicinity
APNs 0459-124-36 and -37 (C-0512)

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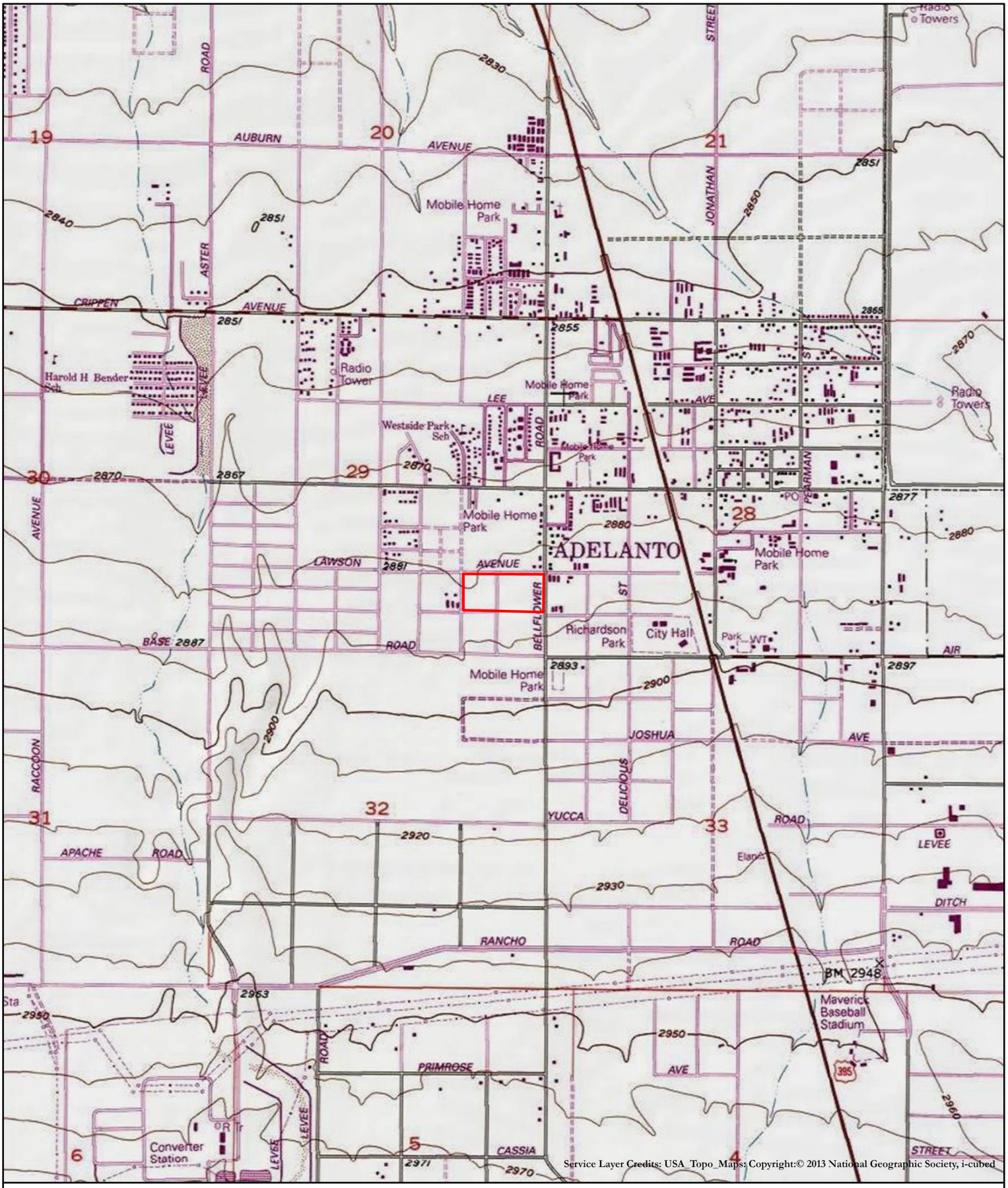

Figure 2. Project Location
APNs 0459-124-36 and -37 (C-0512)

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Adelanto, Calif USGS 7.5-minute quadrangle
T6N, R5W, Section 29
Date of Map: 1968 / Photo Revised: 1980

Project Area

0 0.25 0.5 Miles
0 0.25 0.5 Kilometers
1:24,000
N

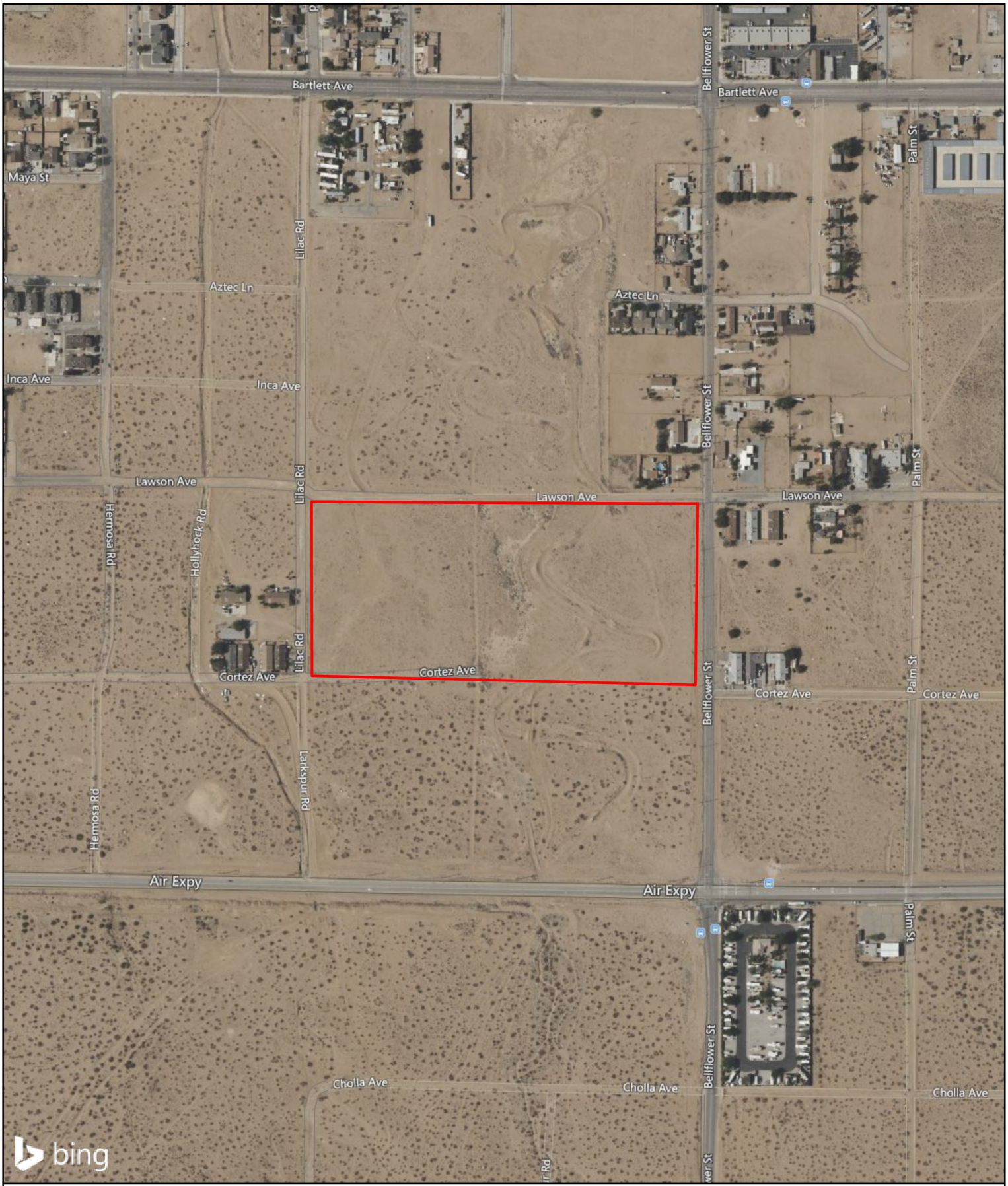

Figure 3. Project Aerial Photo
APNs 0459-124-36 and -37 (C-0512)

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Project Area

0 200 400 Feet

1:5,000

N

ATTACHMENT B

PALEONTOLOGICAL RECORDS SEARCH

2024 Orange Tree Lane, Redlands, California 92374 | Phone: 909.798.8608
www.SBCounty.gov

SAN BERNARDINO COUNTY

Museum
Division of Earth Science

Scott Kottkamp
Curator of Earth Science

November 9th, 2023

Duke CRM
Attn: Brian Kussman
18 Technology Dr., Ste 103
Irvine, CA 92618

PALEONTOLOGY RECORDS REVIEW for proposed site of C-0512 Adelanto project, Adelanto, California

Dear Mr. Kussman,

The Division of Earth Science of the San Bernardino County Museum (SBCM) has completed a record search for the above-named project in San Bernardino County, California. The proposed project site (Adelanto APNs 0429-124-36 and -37) is in the city of Adelanto, California as shown on the United States Geological Survey (USGS) 7.5-minute Adelanto, California quadrangle.

Geologic mapping of that region done by Dibblee and Minch (2008) indicates the entire project area is located atop recent alluvial surficial deposits of Holocene age (Qa). These sediments are comprised of unconsolidated mixed sand, silt, and gravel, often covered by soil. These deposits are unlikely to be fossiliferous themselves, but directly overlie ~1.8 million to ~11,700 year old Pleistocene alluvial deposits (Qoa) that are.

Where exposed at the surface east of the project site, near the banks of the Mojave River, Qoa is composed mostly of tan to light red weakly indurated sand. However, the composition, color, and depth of Qoa varies vertically and laterally, especially when found in the subsurface. Green-grey silt or clay are common, and the contact between Qa and Qoa in Adelanto lies as little as 3 feet below the surface. Such older alluvial deposits have been found to be highly fossiliferous in the local area, yielding the remains of †*Mammuthus columbi*, †*Paramylodon harlani*, *Equus*

sp., †*Hemiauchenia* sp., †*Camelops hesternus*, *Lepus* sp., *Sylvilagus* sp., *Thomomys* sp., *Dipodomys* sp., *Perognathus* sp., *Vulpes* sp., *Phrynosoma* sp., and *Crotalus* sp. among other taxa (Scott 2012). Rancholabrean age fossils can be distinguished from Irvingtonian ones via both biostratigraphy and degree of digenetic alteration – the youngest Rancholabrean specimens are subfossils and degree of diagenetic alteration generally scales with age. In the Adelanto region, Qoa in turn unconformably overlies the Miocene age Tropico Group, which is also fossiliferous (Dames and Moor, Inc. 1995). Below the Tropico Group are igneous and metamorphic units of Jurassic or older age – unlike the Tropico Group, these units are exposed at the surface in nearby mountains (Dibblee and Minch 2008).

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. A single locality, SBCM 1.115.8, is located 0.43 miles east-northeast of the project site at TRS (Township Range Section) 6N 5W 28, NE ¼ SE ¼ NW ¼ NE ¼ SW ¼, or 34°34’42”N 117°24’44”W. SBCM 1.115.8 was uncovered as part of paleontological monitoring during construction of the SCE Kramer-Adelanto Transmission line. Monitors found extremely fragmentary permineralized bone from medium to large sized mammals within the spoils pile produced by augering. As such, the exact original depth below surface at which the fossils originated is unknown, but the pits dug for the transmission towers were bored up to 14 ft deep into Qoa overlain by a thin veneer of Qa.

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

Literature Cited

Dibblee, T.W., and Minch, J.A. 2008. Geologic map of the Shadow Mountains and Victorville 15 minute quadrangles, San Bernardino and Los Angeles Counties, California. Dibblee Geological Foundation. Dibblee Foundation Map DF-387. Scale 1:62,500.
Available at: https://ngmdb.usgs.gov/Prodesc/proddesc_84197.htm (accessed 9 November 2023).

Dames and Moore, Inc. 1995. Mead/McCullough-Victorville/Adelanto Transmission Project, Paleontological Resources Post-Construction Compliance Report. By Dames and Moore, Inc., for Los Angeles Department of Water and Power.

Scott, E. 2012. Paleontology Literature and Records Review, Adelanto Wastewater Treatment Plant Project, City of Adelanto, San Bernardino County, California. By San Bernardino County Museum, for Applied Earthworks Inc.

ATTACHMENT C

FIELD SURVEY PHOTOGRAPHS

Site overview. Vite to north.

Site overview. View to northeast.

Site overview. Vite to east.

Site overview. Vite to southeast.

Site overview. Vite to south.

Site overview. Vite to southwest.

Site overview. Vite to west.

Site overview. View to northwest.

Closeup of exposed sediment. Plan view.

Observed glass fragments. Plan view.

Heavy equipment cut. View to east.

Heavy equipment cut. View to east.