



February 2, 2024

Jeremy Krout
EPD Solutions, Inc.
3333 Michelson Drive, Suite 500
Irvine, California 92612

Subject: Paleontological Records Search for the Paleontological Assessment for the NW Telegraph & Santa Fe Springs Project: (Parcel 1: 12400 Hawkins Street), City of Santa Fe Springs, Los Angeles County, California (APN 8005-015-051)

Dear Mr. Krout:

Introduction and Location

A paleontological resource assessment has been completed for the SW Telegraph & Santa Fe Springs Project, located at 12400 Hawkins Street, north of Telegraph Road and between Norwalk Boulevard and Santa Fe Springs Road in Santa Fe Springs, Los Angeles County, California (Figure 1, attached). The 26.77-acre project consists of one parcel, identified as Assessor's Parcel Number (APN) 8005-015-051. On the U.S. Geological Survey (USGS) 1:24,000-scale (7.5-minute) *Whittier, California* topographic quadrangle map, the project is located in an unsectioned area of Township 3 South, Range 11 West of the San Bernardino Baseline and Meridian (Figure 2, attached). The property is currently used as an active oil field with six pumpjacks and is being proposed for redevelopment.

The NW Telegraph & Santa Fe Springs Project Parcel ("Parcel 1") is one of five properties that comprise the 82.47-acre NWC Telegraph SFS Project. Paleontological assessments for the four other properties of the project (SE Telegraph & SFS [Parcel 3: 12600 Telegraph Road]; S. Telegraph & Freeman [Parcels 4 and 5: 12720 & 12820 Telegraph Road]; NEC Freeman Avenue & Telegraph Road [Parcel 6]; and Romandel [Parcels 7 to 10: 10125, 10035, 10045 Romandel Avenue and 12725 Telegraph Road]) are reported under their own cover.

As the lead agency, the City of Santa Fe Springs has required the preparation of a paleontological assessment to evaluate the project's potential to yield paleontological resources. The paleontological assessment of the project included a review of paleontological literature and fossil locality records for a previous project in the area, a review of the underlying geology, and recommendations to mitigate impacts to potential paleontological resources, if necessary.

Regulatory Setting

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

City of Santa Fe Springs

Recently, the City of Santa Fe Springs completed an Environmental Impact Report (EIR) that addresses paleontological resources (“Impact GEO-6,” City of Santa Fe Springs 2021:4.7–14). The EIR found that the city is “located within an extensive alluvial plain and geological analysis does not reveal the presence of, or potential for, unique geological features” since the city’s topography “is relatively flat and contains predominantly younger alluvial deposits from geologically recent [Holocene] flood plain deposits.” Due to the presence of Holocene-aged deposits, the EIR determined that “the likelihood of finding palaeontologic materials is negligible.” The EIR concluded (City of Santa Fe Springs 2021:4.7–15):

Because of the low potential for paleontological discovery, the existing General Plan and the proposed GPTZCU [(General Plan and Targeted Zoning Code Update] do not contain any goals, policies, or implementation programs relative to paleontological resources. With implementation of the City’s existing development review process, potential impacts related to paleontological resources from future development within the Planning Area will remain at less than significant levels.

Nevertheless, the EIR recognizes that significant paleontological resources, as vertebrate fossils, are known to be present in alluvial deposits of Pleistocene age. The EIR’s analysis of paleontological resources concluded “The City’s development review process would require research and technical analysis to determine if a site contains identified or possible paleontological or unique geologic resources” (City of Santa Fe Springs 2021:4.7–15).

Geology

The project is located within the Central Basin of the larger Los Angeles Basin, a large structural sedimentary basin bounded and cut through by several active fault systems in the Los Angeles metropolitan area (Hillhouse et al. 2002). The San Gabriel River is less than two miles to the west (see Figure 1, attached). As mapped by Saucedo (1999), the project is underlain by silty, Pleistocene-aged, old alluvial fan and valley deposits (dark yellow area labeled as “Qofs” on Figure 3, attached). Yerkes (1972) assigned an age of upper Pleistocene and questionably Holocene to these alluvial deposits, describing them as reddish-brown consolidated gravel, sand, and silt. Similarly, Dibblee (2001) mapped the surficial sediments at the parcel as elevated and dissected Pleistocene alluvial deposits consisting of sand and gravel.

The project lies within an oil-producing region, known as the Santa Fe Springs Oil Field (Yerkes 1972; Dibblee 2001). The axis of the oil field is approximately located by the dotted line passing through the project on Figure 3 (attached). The dotted line symbolizes the apex of an anticlinal fold affecting the geologic formations (oil source rocks, oil reservoirs, and cap rocks) buried beneath the cover of Pleistocene deposits. On the attached Figures 2 and 3, open circles represent oil wells.

Paleontological Resources

Definition

Paleontological resources are the remains of prehistoric life that have been preserved in geologic strata. These remains are called fossils and include bones, shells, teeth, and plant remains (including their impressions, casts, and molds) in the sedimentary matrix, as well as trace fossils such as footprints and burrows. Fossils are considered older than 5,000 years of age (Society of Vertebrate Paleontology 2010) but may include younger remains (subfossils) when viewed in the context of local extinction of the organism or habitat, for example. Fossils are considered a nonrenewable resource under state and local guidelines.

Fossil Locality Search

A paleontological locality records search was performed for the NW Telegraph & Santa Fe Springs Project, covering the five properties, by the Los Angeles County Museum of Natural History (LACM; Bell 2024 [Appendix B]). The nearest fossil locality held by the LACM is approximately three miles east-southeast of Parcel 1 (LACM locality [loc.] 3347) and consists of the bone(s) from a Pleistocene-aged horse from lake deposits of the La Habra Formation, from just two feet below the surface. Two to three miles farther southeast, the bones of several Pleistocene-aged mammal species were recovered from the La Habra Formation at Coyote Creek (LACM locs. 4185-4201). North of those localities, the remains of a Pleistocene mammoth were collected during construction of the Imperial Highway just east of the Los Angeles County-Orange County Line in unnamed deposits (LACM loc. 3538). Bell (2024) lists two other Pleistocene localities several miles away from the project.

The localities listed by Bell (2024) summarized above were cross-referenced for the accuracy of their physical locations and geologic context. The location of the horse specimen from LACM loc. 3347 plots within Pleistocene old alluvial deposits, as mapped by Yerkes (1972), Saucedo (1999), and Dibblee (2001), and not within the La Habra Formation, as Bell (2024) indicates. The source of the La Habra designation is probably from Jefferson (1991) and may be his erroneous interpretation of Yerkes's map that shows very small outcrops, with symbols, of the La Habra Formation nearby. Conversely, Jefferson (1991) lists the La Habra Formation as the unit bearing the mammoth bone at LACM loc. 3538, and not as unknown Pleistocene deposits listed by Bell (2024).

A review of published and unpublished literature was conducted for potential paleontological resources that are known in the vicinity of the project. Miller (1971), Jefferson

(1991), and Howard (1936) report on a locality southeast of the project along the Imperial Highway just east of the Los Angeles County line, yielding turkey, mastodon, ground sloth, deer, and horse remains of Pleistocene age (LACM loc. 1052). This locality, from a depth of 40 feet, is attributed to the Pleistocene La Habra Formation by Jefferson (1991). Based on descriptions of the location, this locality may be associated with LACM loc. 3538 discussed above. The La Mirada fossil site discussed by Miller (1971:47) is likely the same as, or related to, LACM locs. 4185-4201. The fossil remains of a mammoth were found at Biola University in 2002, about four miles southeast of the project (Goosen 2023), in the same deposits as mapped at the project by Saucedo (1999).

Paleontological Sensitivity

Overview

The degree of paleontological sensitivity of any particular area is based on a number of factors, including the documented presence of fossiliferous resources on a site or in nearby areas, the presence of documented fossils within a particular geologic formation or lithostratigraphic unit, and whether or not the original depositional environment of the sediments is one that might have been conducive to the accumulation of organic remains that may have become fossilized over time. Holocene alluvium is generally considered to be geologically too young to contain significant nonrenewable paleontological resources (*i.e.*, fossils) and thus is typically assigned a low paleontological sensitivity. Pleistocene (more than 11,700-year-old) alluvial and alluvial fan deposits in the Los Angeles Basin, however, often yield important Ice Age terrestrial vertebrate fossils such as extinct rodents, mammoths, mastodons, giant ground sloths, extinct species of horse, bison, camel, saber-toothed cats, and others (Jefferson 1991). These Pleistocene sediments are thus accorded a high paleontological resource sensitivity.

Professional Standards

The Society of Vertebrate Paleontology (2010) has drafted guidelines that include four categories of paleontological sensitivity for geologic units (formations) that might be impacted by a proposed project, as listed below:

- **High Potential:** Rock units from which vertebrate or significant invertebrate, plant, or trace fossils have been recovered.
- **Undetermined Potential:** Rock units for which little information is available concerning their paleontological content, geologic age, and depositional environment, and that further study is needed to determine the potential of the rock unit.
- **Low Potential:** Rock units that are poorly represented by fossil specimens in institutional collections or based on a general scientific consensus that only preserve fossils in rare circumstances.
- **No Potential:** Rock units that have no potential to contain significant paleontological resources, such as high-grade metamorphic rocks and plutonic igneous rocks.

Using these criteria, based on the presence of nearby significant fossil localities, the young alluvial fan deposits may be considered to have an undetermined to high potential to yield paleontological resources.

City of Santa Fe Springs Assessment

As outlined above, the City of Santa Fe Springs did not recognize the presence of Pleistocene-aged deposits mapped at the surface within the city limits, but only those of Holocene age. From these findings, they concluded there would be a low potential to adversely impact significant paleontological resources, and therefore did not outline “any goals, policies, or implementation programs relative to paleontological resources” (City of Santa Fe Springs 2021:4.7–15). However, geologic mapping of the *Whittier* Quadrangle clearly demonstrates the presence of Pleistocene old alluvial deposits occurring at the surface within city limits (Yerkes 1972; Saucedo 1999; Dibblee 2001). The City of Santa Fe Springs does recognize that Pleistocene (old) alluvial deposits may yield significant paleontological resources, and allows their planning department to review a technical analysis of a project’s paleontological potential.

Conclusions and Recommendations

Potentially fossiliferous Pleistocene-aged old alluvial deposits are mapped at the project. While the nearest known fossil locality is about three miles away, significant Pleistocene fossil-bearing alluvial deposits in the greater Los Angeles Basin are well documented (Miller 1971; Jefferson 1991). The probability that significant fossils may be present at the project and adversely impacted is rated as undetermined to high. Therefore, it is recommended that paleontological monitoring be implemented during mass grading and excavation activities in undisturbed alluvial deposits in order to mitigate any adverse impacts (loss or destruction) to potential nonrenewable paleontological resources. Full-time monitoring of undisturbed alluvial deposits during excavation or grading activities at the project is recommended starting at five feet below the surface. The following guidelines should be followed to reduce ongoing adverse impacts to paleontological resources to a level below significant and will follow the City of Santa Fe Springs’s guidelines and the recommendations of the Society of Vertebrate Paleontology (2010).

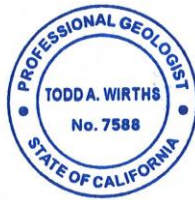
1. All mitigation programs should be performed by a qualified professional (project) paleontologist, defined as an individual with a master’s or doctorate degree in paleontology or geology who has proven experience in paleontology and who is knowledgeable in professional paleontological procedures and techniques. Fieldwork may be conducted by a qualified paleontological monitor, defined as an individual who has experience in the collection and salvage of fossil materials. The paleontological monitor shall always work under the direction of a qualified paleontologist.
2. Prior to the issuance of a grading permit, the project owner or developer shall provide written verification to the lead agency stating that a professional paleontologist has been retained to implement the monitoring program.

3. Prior to initiation of any grading, drilling, and/or excavation activities, a preconstruction meeting will be held and attended by the project paleontologist, representatives of the grading contractor and subcontractors, the project owner or developer, and a representative of the lead agency. The nature of potential paleontological resources shall be discussed, as well as the protocol to be implemented following the discovery of any fossiliferous materials.
4. Monitoring of mass grading and excavation activities shall be performed by a qualified paleontologist or paleontological monitor. Starting at five feet below the surface, monitoring will be conducted full-time in areas of grading or excavation in undisturbed soils. If paleontological resources are discovered, the area of the discovery should be cordoned off and a qualified, project-level paleontologist should be consulted to determine the significance of the finds.
5. Monitoring may be reduced if the potentially fossiliferous units are not present in the subsurface or, if present, are determined by qualified paleontological personnel upon exposure and examination to have a low potential to contain or yield fossil resources.
6. Paleontological monitors will be equipped to salvage fossils as they are unearthed to avoid construction delays and to remove samples of sediments that are likely to contain the remains of small fossil invertebrates and vertebrates. The monitor must be empowered to temporarily halt or divert equipment to allow for the removal of abundant or large specimens in a timely manner.
7. Paleontological salvage during trenching and boring activities is typically from the generated spoils and does not delay the trenching or drilling activities. Fossils will be collected and placed in cardboard flats or plastic buckets and identified by field number, collector, and date collected. Notes will be taken on the map location and stratigraphy of the discovery site, and the discovery site will be photographed before it is vacated and the fossils are moved to a safe place.
8. In accordance with the “Microfossil Salvage” section of the Society of Vertebrate Paleontology guidelines (2010:7), bulk sampling and screening of fine-grained sedimentary deposits (including carbonate-rich paleosols) must be performed if the deposits are identified to possess indications of producing fossil “microvertebrates” to test the feasibility of the deposit to yield fossil bones and teeth.
9. Recovered specimens will be prepared to a point of identification and permanent preservation.
10. All fossils must be deposited in an accredited institution (university or museum) that maintains collections of paleontological materials. All costs of the paleontological monitoring and mitigation program, including any one-time charges by the receiving institution, are the responsibility of the developer. Typically, the Los Angeles County Museum of Natural History is the preferred repository for fossils found in Los Angeles County.

11. A final monitoring and mitigation report of findings and significance will be prepared, including lists of all fossils recovered and necessary maps and graphics to accurately record their original location(s). A letter documenting receipt and acceptance of all fossil collections by the receiving institution must be included in the final report. The report, when submitted to and accepted by the appropriate lead agency (*e.g.*, the City of Santa Fe Springs), will signify satisfactory completion of the project program to mitigate impacts to any nonrenewable paleontological resources.

If you have any questions or require further information, please contact me.

Sincerely,



Todd Wirths, M.S., P.G. No. 7588
Senior Paleontologist, California Professional Geologist

Attachments: Figures 1, 2, and 3; Museum Paleontological Record Search Letter

References

- Bell, A. 2024. Paleontological resources for the NWC Telegraph SFS Project (BFSA Project No. 23-365). Letter prepared for BFSA Environmental Services, Poway, California, by the Los Angeles County Museum of Natural History, Los Angeles, California.
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- Dibblee, T.W., Jr. 2001. Geologic map of the Whittier and La Habra quadrangles (western Puente Hills), Los Angeles and Orange Counties, California. Dibblee Foundation Map #DF-74, Dibblee Geological Foundation, Santa Barbara Museum of Natural History.
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- Society of Vertebrate Paleontology. 2010. Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources; by the SVP Impact Mitigation Guidelines Revision Committee: Electronic document, https://vertpaleo.org/wp-content/uploads/2021/01/SVP_Impact_Mitigation_Guidelines-1.pdf.

Yerkes, R.F. 1972. Geology and Oil Resources of the Western Puente Hills Area, Southern California: U.S. Geological Survey Professional Paper 420-C, 63 p.

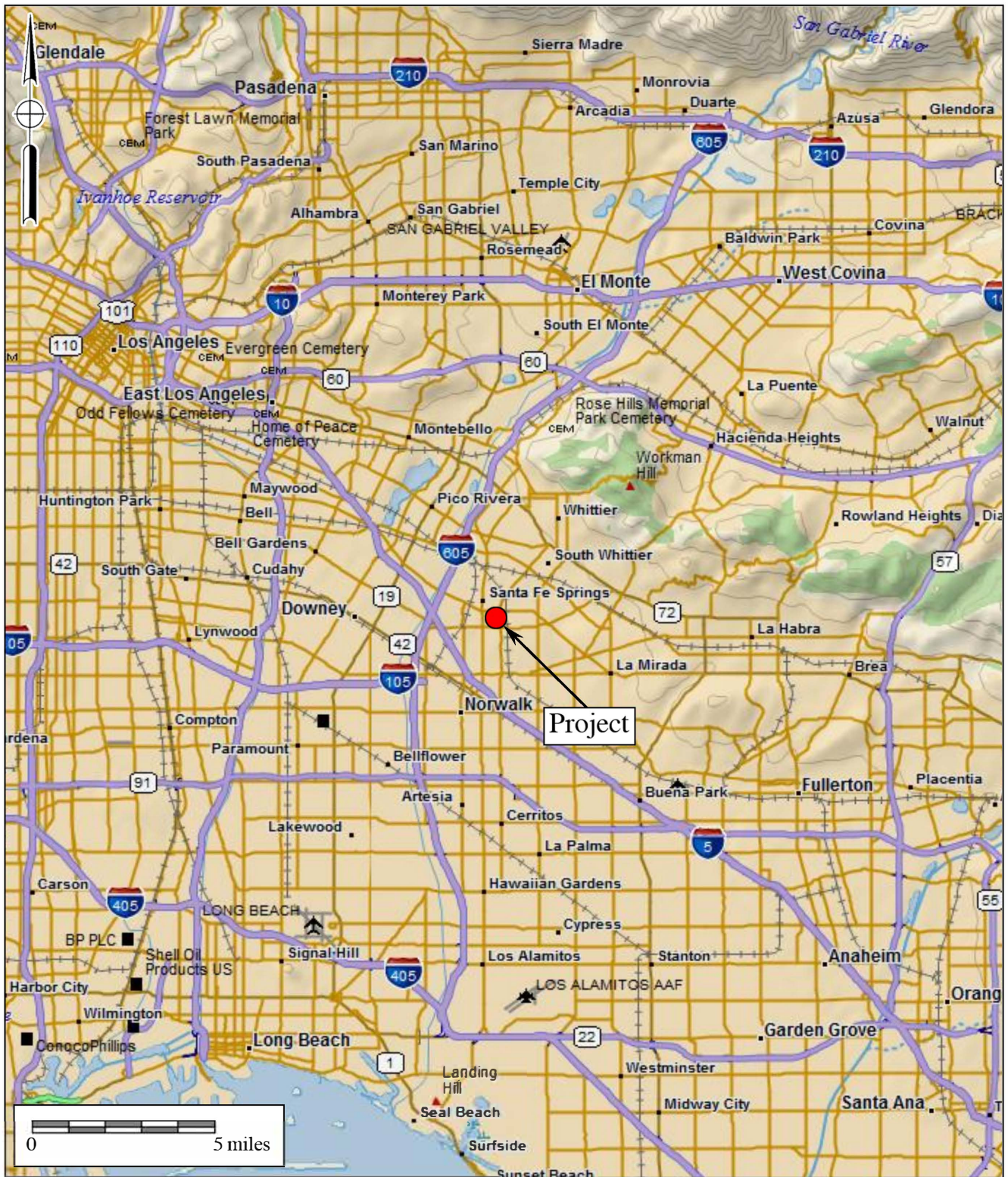
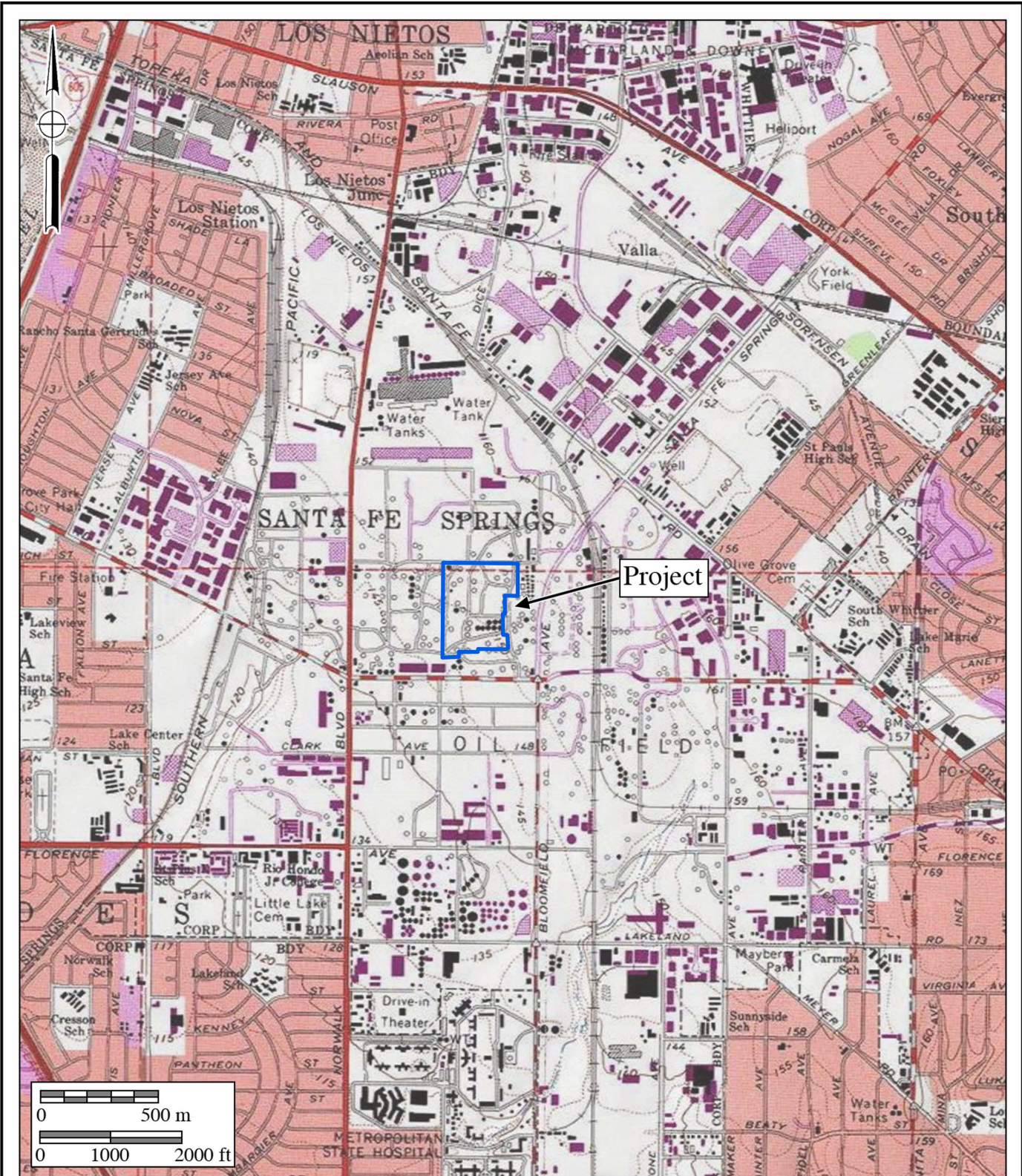


Figure 1
General Location Map

NW Telegraph & Santa Fe Springs Project
 DeLorme (1:250,000 series)



BfSA Environmental Services
 A Perennial Company



Project

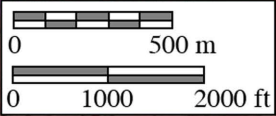


Figure 2

Project Location Map

NW Telegraph & Santa Fe Springs Project
 USGS Whittier Quadrangle (7.5-minute series)

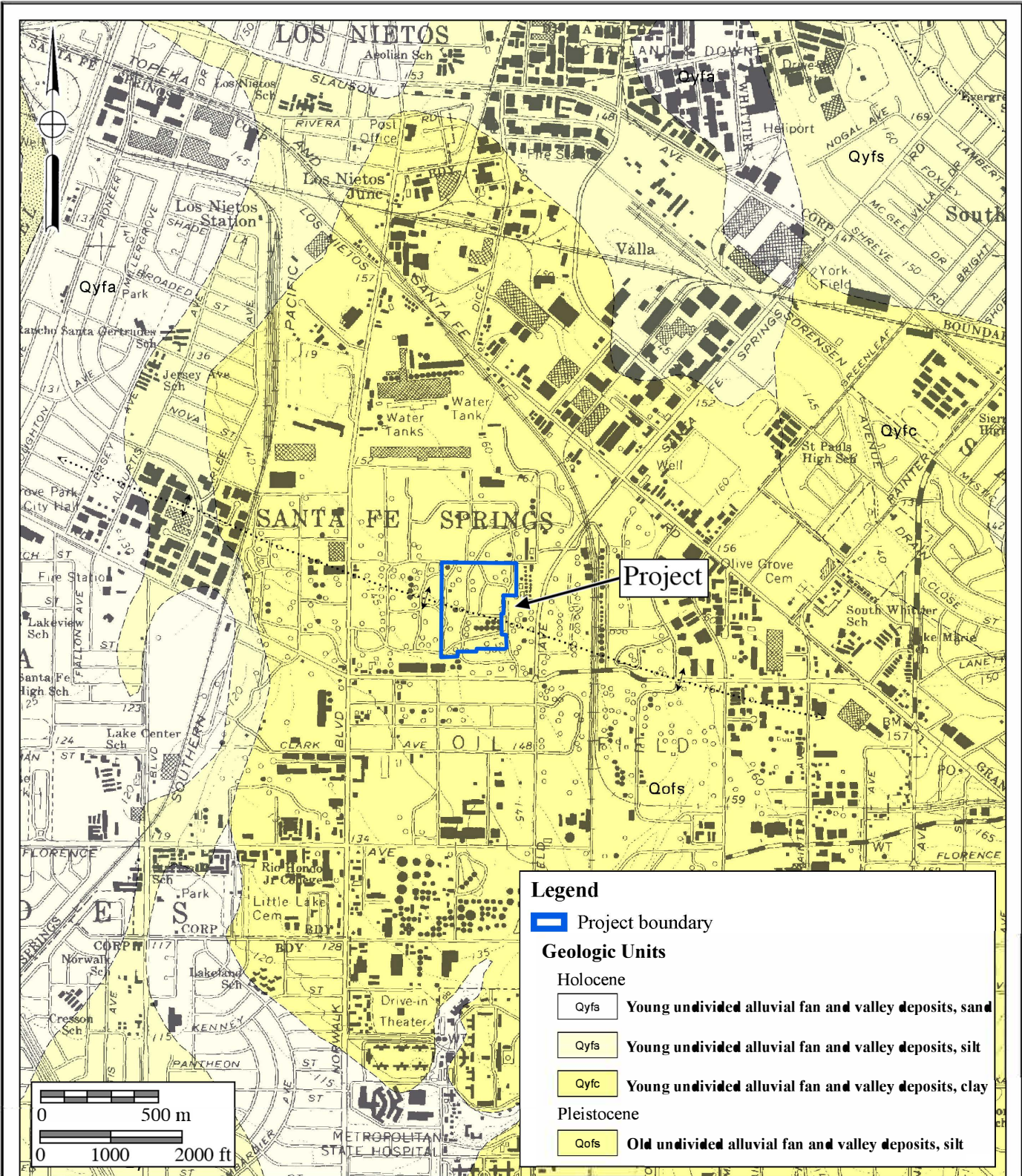


Figure 3

Geologic Map

NW Telegraph & Santa Fe Springs Project

Geology after Saucedo (1990)

Natural History Museum
of Los Angeles County
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Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

Research & Collections

e-mail: paleorecords@nhm.org

January 14, 2024

BFSA Environmental Services

Attn: Todd Wirths

re: Paleontological resources for the NWC Telegraph SFS Project (BFSA Project No. 23-365)

Dear Todd:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for proposed development at the NWC Telegraph SFS Project area as outlined on the portion of the Whittier USGS topographic quadrangle map that you sent to me via e-mail on January 9, 2024. We do not have any fossil localities that lie directly within the proposed project area, but we do have fossil localities nearby from the same 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 3347	11204 Bluefield; Whittier	La Habra Formation (lacustrine silt with caliche and plant detritus)	Horse (<i>Equus</i>)	2 feet bgs
LACM VP 4185-4201	Coyote Creek, adjacent to Ralph B Clark Regional Park in West Coyote Hills	La Habra Formation (Pleistocene; sandy silt shot through with caliche)	Bison (<i>Bison</i>), camel (<i>Camelops</i>), horse (<i>Equus</i>), mammoth (<i>Mammuthus</i>), mastodon (<i>Mamut</i>), elephant clade (Proboscidea), dire wolf (<i>Canis dirus</i>), Coyote (<i>C. latrans</i>), deer (<i>Odocoileus</i>), dwarf pronghorn (<i>Capromeryx</i>), unidentified artiodactyl; sea duck (<i>Chendytes</i>)	Surface, in creek bed
LACM VP 3538	Roadbed of Imperial Highway approximately 2200 feet west of Beach Boulevard; La Habra;	Unknown formation (Pleistocene)	Mammoth (<i>Mammuthus</i>)	Unknown, collected during road construction

Locality Number	Location	Formation	Taxa	Depth
	California			
LACM VP 7702	Intersection of 26th St and Atlantic Blvd, Bell Gardens	Unknown formation (Pleistocene; silt)	Fish (<i>Gasterosteus</i>); Snake (Colubridae), Rodents (<i>Thomomys</i> , <i>Microtus</i> , <i>Reithrodontomys</i>); Rabbit (<i>Sylvilagus</i>)	30 feet bgs
LACM VP 3382	NE of the intersection of Artesia Blvd and Williams Ave., Compton	Unknown formation (Pleistocene; brown clay silt)	Mammoth (<i>Mammuthus</i>)	5 feet bgs

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

This records search covers only the records of the NHMLA. It is not intended as a paleontological assessment of the project area for the purposes of CEQA or 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 full paleontological assessment of the project area be conducted by a paleontologist meeting Bureau of Land Management or Society of Vertebrate Paleontology standards.

Sincerely,



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

enclosure: invoice