

Appendix F

Paleontological Resources Review Memorandum

MEMORANDUM

To: Kevin Rice, Patriot Development Partners
From: Sarah Siren, M.S., GISP, Senior Paleontologist
Subject: Paleontological Resources Review – Perris and Morgan Warehouse Project
Date: 8/4/20
cc: Collin Ramsey and Michael Williams, Dudek
Attachment(s): Appendix A: Project Location Map
Appendix B: Field Photographs
Appendix C: Paleontological Records Search Results (*confidential*)

Dudek is providing this memo after completing a review of the potential for impacts to paleontological resources during construction activities for the Perris and Morgan Warehouse Project (project) located in the City of Perris, California (Appendices A and B).

The project area is mapped as being underlain by Holocene (less than approximately 11,700 years old) surficial Quaternary alluvium (map unit Qa) sourced from hills composed of igneous bedrock occurring to the west, according to published, surficial geological mapping at a 1:24,000 scale (Dibblee and Minch 2003). Pleistocene (approximately 2.58 million to 11,700 years old) alluvial deposits are mapped at the surface in the hills west of the project area (Dibblee and Minch, 2003; McLeod, 2020). The younger alluvial deposits have a low paleontological resource sensitivity at the surface and at shallow depths; however, older, Pleistocene age, Quaternary alluvial deposits presumably underlie the younger alluvial deposits. Pleistocene or “Ice-Age” alluvial deposits have produced scientifically significant vertebrates in the region and have a high paleontological resource sensitivity (McLeod, 2020 – Confidential Appendix C).

The County of Riverside General Plan Paleontological Sensitivity map was also reviewed for relative sensitivity. The County of Riverside General Plan Paleontological Sensitivity map indicates high sensitivity in this area (RCIT, 2020). The high sensitivity (County of Riverside, High B) is mapped within the extent of the project area. This sensitivity classification is based on geologic units with the potential to encounter paleontological resources at depths of 4 feet or greater below the surface.

Scientifically significant paleontological resources have been recovered from correlative Pleistocene old alluvial deposits elsewhere in Riverside County and include recorded fossil collecting localities. These localities have yielded fossils of terrestrial mammals (e.g., mammoths, mastodons, ground sloths, dire wolves, sabre-toothed cats, large and small horses, large and small camels, and bison), in addition to plant macro-and micro-fossils and microvertebrate fossils (Jefferson 1991a, 1991b; Reynolds and Reynolds 1991; Scott and Cox 2008; Springer et al. 2009, 2010; Scott 2010).

Older Quaternary alluvial deposits, characteristically reddish-brown in color, have been known to produce Ice-Age mammals in the project vicinity and throughout Riverside County, as confirmed by the records search results

obtained from the Natural History Museum of Los Angeles County (LACM or museum) (McLeod 2020). According to the museum, their closest fossil locality is LACM 5168, which produced a fossil specimen of horse (*Equus*), south of the project area, around Railroad Canyon Reservoir. Further south-southwest of the project area, localities LACM (CIT) 572 and LACM 6059 yielded specimens of fossil horse (*Equus*) and camel (*Camelops hesternus*). A third locality, LACM 4540 from the gravel pits west of Jack Rabbit trail and east – northeast of the project area, yielded the remains of an extinct horse, *Equus* (McLeod, 2020).

Pedestrian surveys of the project area were conducted on June 12 and 17, 2020 by Dudek staff. The focus of the survey on the 17th was to determine whether paleontological resources are present on the ground surface and field check the published geological mapping and records search results. No paleontological resources were observed during the survey. Although portions of the surface of the project area were obscured by vegetation, good exposures of the mapped Quaternary alluvial deposits were also observed (Attachment B).

No paleontological resources were identified within the project area as a result of the institutional records search or desktop geological review. However, intact paleontological resources may be present below the original layer of younger, Holocene age alluvial deposits. Given the proximity of past fossil discoveries in the surrounding area and the underlying older Pleistocene age deposits, the project area is highly sensitive for supporting paleontological resources at depth.

In the event that intact paleontological resources are located on the project area, ground-disturbing activities associated with construction of the project, such as grading during site preparation and trenching for utilities, have the potential to destroy a unique paleontological resource or site. Without mitigation, the potential damage to paleontological resources during construction would be a potentially significant impact. However, upon implementation of MM-GEO-1, impacts would be reduced to below a level of significance. Impacts of the proposed project are considered less than significant with mitigation incorporated during construction.

MM-GEO-1 Paleontological Resources. Prior to the issuance of grading permits, the Project proponent/developer shall submit to and receive approval from the City, a Paleontological Resource Impact Mitigation Monitoring Program (PRIMMP). The PRIMMP shall include the provision for a qualified professional paleontologist (or his or her trained paleontological representative) to be on-site for any Project-related excavations that exceed three (3) feet below the pre-grade surface. Selection of the paleontologist shall be subject to the approval of the City of Perris Planning Manager and no grading activities shall occur at the Project site or within the off-site Project improvement areas until the paleontologist has been approved by the City.

Monitoring shall be restricted to undisturbed subsurface areas of older Quaternary alluvium. The approved paleontologist shall be prepared to quickly salvage fossils as they are unearthed to avoid construction delays. The paleontologist shall also remove samples of sediments which are likely to contain the remains of small fossil invertebrates and vertebrates. The paleontologist shall have the power to temporarily halt or divert grading equipment to allow for removal of abundant or large specimens.

Collected samples of sediments shall be washed to recover small invertebrate and vertebrate fossils. Recovered specimens shall be prepared so that they can be identified and permanently

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preserved. Specimens shall be identified and curated and placed into an accredited repository (such as the Western Science Center or the Riverside Metropolitan Museum) with permanent curation and retrievable storage.

A report of findings, including an itemized inventory of recovered specimens, shall be prepared upon completion of the steps outlined above. The report shall include a discussion of the significance of all recovered specimens. The report and inventory, when submitted to the City of Perris Planning Division, will signify completion of the program to mitigate impacts to paleontological resources.

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

Sincerely,



Sarah A. Siren, M.S., GISP

Senior Paleontologist, Dudek

Enc. Appendix A: Project Location Map; Appendix B: Field Photographs; Appendix C: Paleontological Records Search Results Letter (*confidential*)

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Attachment A

Project Location Map



Attachment B

Field Photographs

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Photograph 1: Overview looking south from northern project area (Perris Boulevard is to the left). (Photograph taken by K. Kaiser).



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Photograph 2: Overview looking west, with Morgan Street visible to the right. (Photograph taken by K. Kaiser).





Attachment C

Paleontological Records Search Results

(confidential)