APPENDIX G-3.
PALEONTOLOGICAL RECORDS SEARCH

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22 February 2022

Michael M. DeGiovine
ECORP Consulting, Inc.
3838 Camino Del Rio North, Suite 370
San Diego, CA 92108

RE: Paleontological Records Search – Piraeus and Plato Residential Development (ECORP Project 2022-023.01)

Dear Mr. DeGiovine:

This letter presents the results of a paleontological records search conducted for the Piraeus and Plato Residential Development project (Project), located in the City of Encinitas, San Diego County, California. The Project site is located along the east side of Interstate (I-) 5 and straddles Sky Loft Road. The site is bordered to the west by Piraeus Street, to the south by Plato Place, to the east by undeveloped land and residential development, and to the north by La Costa Avenue (Figure 1).

Methods

A review of published geological maps covering the Project site and surrounding area was conducted to determine the specific geologic units underlying the Project site. Each geologic unit was subsequently assigned a paleontological resource sensitivity (Deméré and Walsh, 1993). In addition, a search of the paleontological collection records housed at the San Diego Natural History Museum (SDNHM) was conducted in order to determine if any documented fossil collection localities occur at the Project site or within the immediate surrounding area.

Results

Published geological reports (e.g., Kennedy and Tan, 2007) covering the Project area indicate that the proposed Project has the potential to impact Quaternary very old paralic deposits (broadly equivalent to the Lindavista Formation) and the Santiago Formation. These geologic units and their paleontological sensitivity are summarized below.

The SDNHM has 17 recorded fossil localities that lie within one mile of the Project site, none of which occur within the boundaries of the Project site. Nine of these localities are from the Santiago Formation, and are described in greater detail below. A map (Figure 1) and list (Appendix A) of the fossil localities are attached at the end of this report.

Quaternary very old paralic deposits (Lindavista Formation) – Marine and/or non-marine terrace deposits of the early to middle Pleistocene-age (approximately 1.5 to 0.5 million years old) Lindavista Formation partially underlie the southeastern portion of the Project site, and are broadly equivalent to Quaternary very old paralic deposits mapped by Kennedy and Tan (2007). The SDNHM does not have any recorded fossil collection localities from the Lindavista Formation within a one-mile radius of the Project site. Elsewhere in San Diego County, the Lindavista Formation has produced remains of nearshore marine invertebrates (e.g., clams, scallops, snails, barnacles, and sand dollars), as well as sparse remains of marine vertebrates (e.g., sharks and baleen whales). Fossils have primarily

been recovered from localities in Tierrasanta and Mira Mesa where the Lindavista Formation is assigned a high paleontological sensitivity; elsewhere in San Diego County, including in the vicinity of the Project site, the Lindavista Formation is assigned a moderate paleontological sensitivity.

Santiago Formation – The middle Eocene-age (approximately 49 to 40 million years old) Santiago Formation underlies nearly the entire Project site. The Santiago Formation has been divided into three informal members in the Encinitas-Carlsbad-Vista area of San Diego County (Wilson, 1972). The SDNHM has nine recorded fossil localities from the Santiago Formation within a one-mile radius of the Project site, which are from marine and estuarine deposits of members "B" and "C." These localities produced trace fossil burrows and fossil impressions or remains of marine and estuarine invertebrates (e.g., snails, clams, mussels, oysters, scaphopods, and the extinct cephalopod *Cymatoceras* sp.) and the eagle ray *Myliobatis* sp. The Santiago Formation has produced significant terrestrial fossil vertebrate localities in northern San Diego County, along with assemblages of marine and estuarine mollusks, and is considered to have a high paleontological sensitivity.

Summary and Recommendations

The high paleontological sensitivity of the Santiago Formation in the City of Encinitas (Deméré and Walsh, 1993) and the presence of documented fossil collection localities from this geologic unit in the vicinity of the Project site, along with the moderate paleontological sensitivity of Quaternary very old paralic deposits (the Lindavista Formation), suggests the potential for construction of the proposed Project to result in impacts to paleontological resources. Any proposed excavation activities that extend deep enough to encounter previously undisturbed deposits of these geologic units (i.e., below the depth of any previously imported artificial fill or disturbed sediments present within the Project site) have the potential to impact the paleontological resources preserved therein. If such excavations are required for Project construction, implementation of a complete paleontological resource mitigation program during ground-disturbing activities is recommended.

The fossil collection locality information contained within this paleontological records search should be considered private and is the sole property of the San Diego Natural History Museum. Any use or reprocessing of information contained within this document beyond the scope of the Piraeus and Plato Residential Development project is prohibited.

If you have any questions concerning these findings please feel free to contact me at 619-255-0264 or kmccomas@sdnhm.org.

Sincerely,

Katie McComas, M.S.
Paleontological Report Writer & GIS Specialist
San Diego Natural History Museum

Enc: Figure 1: Project map with one-mile radius buffer, showing SDNHM fossil localities
Appendix A: List of SDNHM fossil localities

Literature Cited

Deméré, T.A., and S.L. Walsh. 1993. Paleontological Resources, County of San Diego. Unpublished technical report prepared for the San Diego County Department of Public Works: 1–68.

Kennedy, M.P., and Tan, S.S. 2007. Geologic Map of the Oceanside 30' x 60' Quadrangle, California. California Geological Survey, Regional Geologic Map Series 1:100,000 scale, map no. 2.

San Diego Natural History Museum (SDNHM), unpublished paleontological collections data.

Wilson, K.L. 1972. Eocene and related geology of a portion of the San Luis Rey and Encinitas quadrangles, San Diego County, California. Unpublished Master's Thesis, University of California, Riverside.

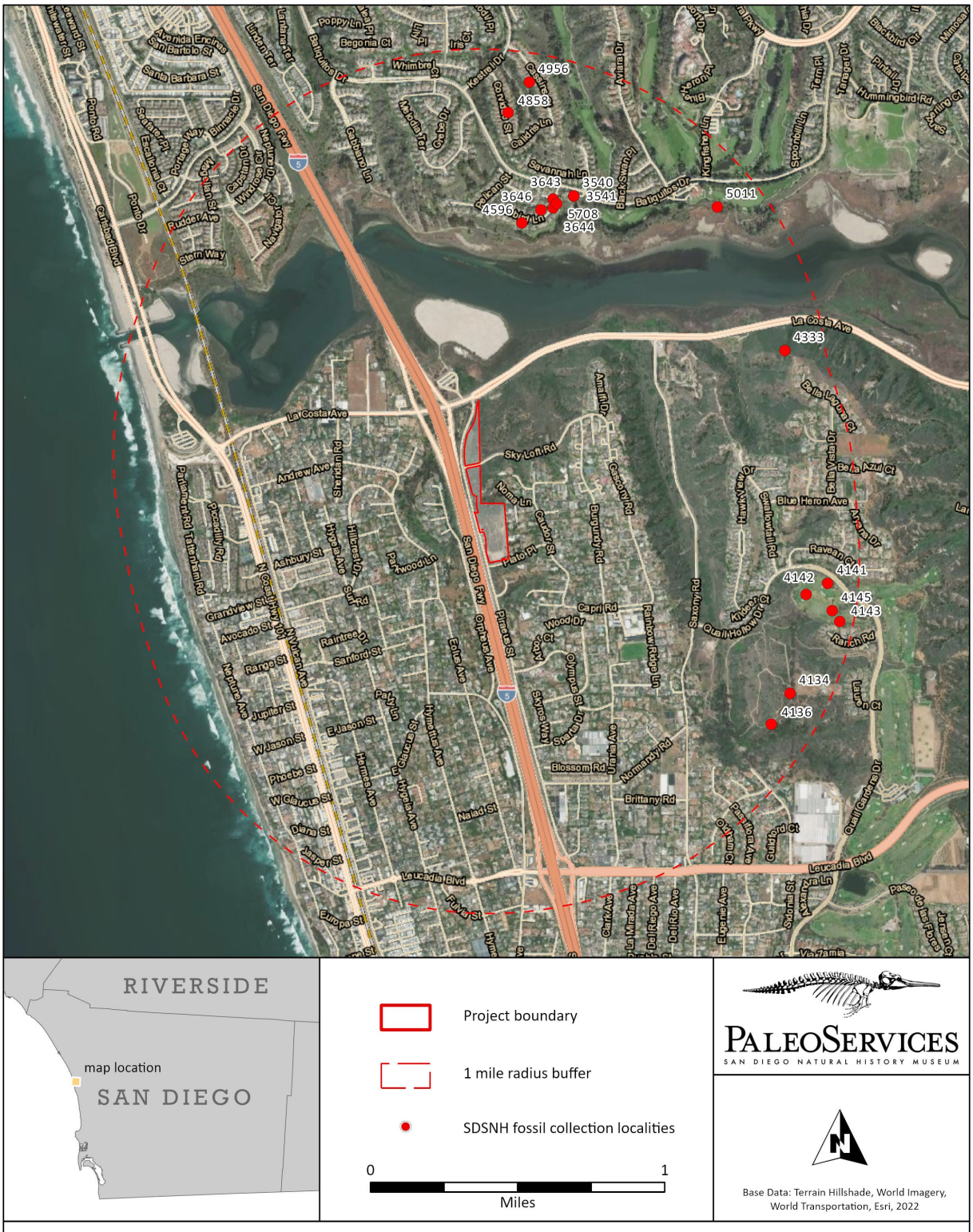

Figure 1: Records Search Map, Piraeus and Plato Residential Development, City of Encinitas, San Diego County, California

Appendix A: Locality List
San Diego Natural History Museum
Department of Paleontology

Locality Number	Locality Name	Location	Elevation (feet)	Geologic Unit	Era	Period	Epoch
4596	Aviara - Phase II - Site 9	City of Carlsbad, San Diego County, California	34	Bay Point Formation	Cenozoic	Quaternary	late Pleistocene
5011	Batiquitos Lagoon	City of San Diego, San Diego County, California	21	Bay Point Formation	Cenozoic	Quaternary	Pleistocene
3540	Aviara - Phase II	City of Carlsbad, San Diego County, California	50	Bay Point Formation, unnamed marine deposit	Cenozoic	Quaternary	Pleistocene
3541	Aviara - Phase II	City of Carlsbad, San Diego County, California	52	Bay Point Formation, unnamed marine deposit	Cenozoic	Quaternary	Pleistocene
3643	Aviara - Pleistocene, Bed II	City of Carlsbad, San Diego County, California	59	Bay Point Formation, unnamed marine deposit	Cenozoic	Quaternary	Pleistocene
3644	Aviara - Pleistocene, Bed I	City of Carlsbad, San Diego County, California	54	Bay Point Formation, unnamed marine deposit	Cenozoic	Quaternary	Pleistocene
3646	Aviara - Pleistocene, Bed III	City of Carlsbad, San Diego County, California	68	Bay Point Formation, unnamed marine deposit	Cenozoic	Quaternary	Pleistocene
4956	Aviara - Phase II - Site 153	City of Carlsbad, San Diego County, California	183	Santiago Formation member B	Cenozoic	Paleogene	middle Eocene
4858	Aviara - Phase II - Site 168 - Red Beds	City of Carlsbad, San Diego County, California	173	Santiago Formation member B ?	Cenozoic	Paleogene	middle Eocene
4333	Leucadia Highlands	City of Encinitas, San Diego County, California	280	Santiago Formation member C	Cenozoic	Paleogene	middle Eocene
4136	Encinitas Ranch #5	City of Encinitas, San Diego County, California	265	Santiago Formation member C, gritstone A	Cenozoic	Paleogene	Eocene
4145	Encinitas Ranch #14	City of Encinitas, San Diego County, California	265	Santiago Formation member C, gritstone A	Cenozoic	Paleogene	Eocene
4141	Encinitas Ranch #10	City of Encinitas, San Diego County, California	310	Santiago Formation member C, gritstone C	Cenozoic	Paleogene	Eocene
4134	Encinitas Ranch #3	City of Encinitas, San Diego County, California	270	Santiago Formation member C, siltstone A	Cenozoic	Paleogene	Eocene
4142	Encinitas Ranch #11	City of Encinitas, San Diego County, California	270	Santiago Formation member C, siltstone A	Cenozoic	Paleogene	Eocene
4143	Encinitas Ranch #12	City of Encinitas, San Diego County, California	285	Santiago Formation member C, siltstone A	Cenozoic	Paleogene	Eocene
5708	Aviara - Phase II - Site 160	City of Carlsbad, San Diego County, California	67	Delmar Formation	Cenozoic	Paleogene	middle Eocene

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