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August 24, 2022 12919

Mr. Tony Pauker
Brookfield Properties
733 8th Avenue
San Diego, CA 92101

Subject: Paleontological Resources Inventory Report for the Otay Ranch Town Center Redevelopment Project, City of Chula Vista, San Diego County, California

Dear Mr. Pauker:

This letter documents the results of the paleontological resources inventory in support of the Otay Ranch Town Center Redevelopment project (project). The project includes changes to existing entitlements to allow mixed-use/residential development on a portion of a 87.25-acre site (Assessor's Parcel Numbers 643-061-02, 04, 05, 08, and 11), including 840 residential units, in the eastern portion of the City of Chula Vista (City), within the Otay Ranch General Development Plan (GDP) Area (Figure 1) (Figures are provided at the end of this memorandum). More specifically, the site is located immediately east of State Route 125 (SR-125) between Birch Road and Olympic Parkway. The site is within the Sectional Planning Area (SPA) known as the Freeway Commercial SPA. The City of Chula Vista (City) is the lead agency responsible for compliance with the California Environmental Quality Act (CEQA).

In accordance with CEQA, the County of San Diego, and the Society of Vertebrate Paleontology (SVP 2010) guidelines, Dudek performed a paleontological resources inventory for the project. The inventory consisted of a San Diego Natural History Museum (SDNHM) paleontological records search and a review of geological mapping and geological and paleontological literature, The SDNHM reported one fossil locality within the project site and 25 fossil localities within a one-half (0.5) mile radius buffer from the same geological unit that underlies the project site. Since the project site is currently developed, no survey for paleontological resources was conducted.

Even though the project site has been developed, there is a potential to encounter intact subsurface paleontological resources below the level of previous ground disturbance and artificial fill. As such, a paleontological monitoring program, which includes the preparation and implementation of a Paleontological Resources Impact Mitigation Program (PRIMP), is necessary to reduce impacts to any potential paleontological resources onsite.

1 Project Location

Otay Ranch lies within the East Planning Area of the City of Chula Vista. The East Planning Area is bordered by Interstate 805 (I-805) to the west, San Miguel Mountain and SR-54 to the north, the Otay Reservoir and the Jamul foothills to the east, and the Otay River Valley to the south (Figure 1). The SPA Plan is located in the northeastern portion of the Otay Valley Parcel of the 22,899-acre Otay Ranch GDP project area. The project site, which comprises the northwestern portion of FC-1, is located immediately east of SR-125, west of Eastlake Parkway, between Ring Road, and Birch Road.

2 Project Description

The project includes residential and mixed-use/residential in the northwest quadrant of FC-1 by introducing 840 residential units within the Town Center site. The northwest portion of the FC-1 site (approximately 14.77 acres) would be rezoned to Mixed-Use/Residential (MU/R). The SPA Amendment would also reduce existing commercial entitlements on the entirety of the FC-1 site from 960,000 square feet to 816,000 square feet.

FC-1 is 87.25 acres and is currently developed with commercial uses known as the Otay Ranch Town Center (Town Center) (Figure 1). Existing land uses at the Otay Ranch Town Center are primarily commercial in nature including retail, food and beverage, entertainment, and community-serving land uses.

3 Paleontological Resources

Paleontological resources are the remains or traces of plants and animals that are preserved in earth's crust, and per the Society of Vertebrate Paleontology ([SVP] 2010) guidelines, are older than written history or older than approximately 5,500 years. They are limited, nonrenewable resources of scientific and educational value, which are afforded protection under state laws and regulations. This analysis also complies with guidelines and significance criteria specified by SVP (2010). Table 1 provides definitions for high, moderate, low, marginal, and no paleontological resource potential, or sensitivity, as set forth in and in agreement with the County of San Diego's (2009) Guidelines for Determining Significance: Paleontological Resources.

Table 1. Paleontological Resources Sensitivity Criteria

Resource Sensitivity/Potential	Definition
High	High resource potential and high sensitivity are assigned to geologic formations known to contain paleontological localities with rare, well preserved, critical fossil materials for stratigraphic or paleoenvironmental interpretation, and fossils providing important information about the paleoclimatic, paleobiological and/or evolutionary history (phylogeny) of animal and plant groups. In general, formations with high resource potential are considered to have the highest potential to produce unique invertebrate fossil assemblages or unique vertebrate fossil remains and are, therefore, highly sensitive.
Moderate	Moderate resource potential and moderate sensitivity are assigned to geologic formations known to contain paleontological localities. These geologic formations are judged to have a strong, but often unproven, potential for producing unique fossil remains (Deméré and Walsh 1993).
Low	Low resource potential and low sensitivity are assigned to geologic formations that, based on their relatively young age and/or high-energy depositional history, are judged unlikely to produce unique fossil remains. Low resource potential formations rarely produce fossil remains of scientific significance and are considered to have low sensitivity. However, when fossils are found in these formations, they are often very significant additions to our geologic understanding of the area.

Marginal	Marginal resource potential and marginal sensitivity are assigned to geologic formations that are composed either of volcaniclastic (derived from volcanic sources) or metasedimentary rocks, but that nevertheless have a limited probability for producing fossils from certain formations at localized outcrops. Volcaniclastic rock can contain organisms that were fossilized by being covered by ash, dust, mud, or other debris from volcanoes. Sedimentary rocks that have been metamorphosed by heat and/or pressure caused by volcanoes or plutons are called metasedimentary. If the sedimentary rocks had paleontological resources within them, those resources may have survived the metamorphism and still be identifiable within the metasedimentary rock, but since the probability of this occurring is so limited, these formations are considered marginally sensitive.
No Sensitivity	No resource potential is assigned to geologic formations that are composed entirely of volcanic or plutonic igneous rock, such as basalt or granite, and therefore do not have any potential for producing fossil remains. These formations have no paleontological resource potential, i.e., they are not sensitive.

Source: County of San Diego 2009.

4 Regulatory Framework

4.1 California Environmental Quality Act

The CEQA Guidelines require that all private and public activities not specifically exempted be evaluated against the potential for environmental damage, including effects to paleontological resources. Paleontological resources, which are limited, nonrenewable resources of scientific, cultural, and educational value, are recognized as part of the environment under these state guidelines. This study satisfies project requirements in accordance with CEQA (13 PRC [Public Resources Code], 21000 et seq.).

Paleontological resources are explicitly afforded protection by CEQA, specifically in Section VII(f) of CEQA Guidelines Appendix G, the "Environmental Checklist Form," which addresses the potential for adverse impacts to "unique paleontological resource[s] or site[s] or … unique geological feature[s]." This provision covers fossils of signal importance – remains of species or genera new to science, for example, or fossils exhibiting features not previously recognized for a given animal group – as well as localities that yield fossils significant in their abundance, diversity, preservation, and so forth.

4.2 PRC Section 5097.5

The PRC Section 5097.5 (Stats 1965, c 1136, p. 2792) regulates removal of paleontological resources from state lands, defines unauthorized removal of fossil resources as a misdemeanor, and requires mitigation of disturbed sites.

4.3 City of Chula Vista Regulations

4.3.1 City of Chula Vista's General Plan

The environmental chapter of the City of Chula Vista General Plan (Chapter 9, Section 3.1.10) specifically addresses potential impacts to non-renewable paleontological resources and outlines policies to mitigate negative impacts (City of Chula Vista 2005). The objective and policies protecting paleontological resources are outlined below:

Objective E-10: Protect important paleontological resources and support and encourage public education and awareness of such resources.

Policy E-10.1: Continue to assess and mitigate the potential impacts of private development and public facilities and infrastructure to paleontological resources in accordance with the California Environmental Quality Act.

Policy E-10.2: Support and encourage public education and awareness of local paleontological resources, including the establishment of museums and educational opportunities accessible to the public.

5 Methods

5.1 Geological Map and Literature Review

Published geological maps (Kennedy 1975; Kennedy and Tan 2008) and published and unpublished reports were reviewed to identify geological units on the site and determine their paleontological sensitivity.

5.2 Paleontological Records Search

A paleontological records search request was sent to the SDNHM on July 20, 2022. The purpose of the museum records search is to determine whether there are any known fossil localities in or near the project site, identify the sensitivity of geological units present within the project site, and aide in determining whether a paleontological mitigation program is warranted to avoid or minimize potential adverse effects of construction on paleontological resources.

6 Results

6.1 Geological Map Review, Literature Review, and Records Search

The project site lies within the Peninsular Ranges Geomorphic Province (California Geological Survey, 2002). This province extends from the tip of the Baja California Peninsula to the Transverse Ranges (the San Gabriel and San Bernardino Mountains) and includes the Los Angeles Basin, offshore islands (Santa Catalina, Santa Barbara, San Nicholas, and San Clemente), and continental shelf. The eastern boundary is the Colorado Desert Geomorphic Province (California Geological Survey 2002; Morton and Miller 2006). The ancestral Peninsular Ranges were

formed by uplift of plutonic igneous rock resulting from the subduction of the Farallon Plate underneath the North American Plate during the latter portion of the Mesozoic era (approximately 125 to 90 million years ago [mya]) (Abbott 1999).

According to surficial geological mapping at a 1:100,000 scale and the results of a paleontological records search conducted by the SDNHM (Confidential Appendix A), the project site is underlain by the late Oligocene (approximately 28 - 23 mya) Otay Formation (map unit To) (Todd et al. 2004; Cohen et al. 2022).

The paleontological records search results letter from the SDNHM was received on July 28, 2022. The SDNHM reported one fossil locality from within the boundaries of the project site, and 25 fossil localities within a one-half mile radius of the project from the same geological unit mapped within the project site. Several of the fossil localities located outside of the project site boundaries are within 500 meters (~less than one third of a mile) of the project site boundaries (Confidential Appendix A). The following paragraphs summarize the paleontological records search results and geological unit present within the project site.

6.1.1 Otay Formation

First named by Artim and Pinckney (1973) for alluvial- and fluvial-derived continental sedimentary rocks cropping out in southwestern San Diego County, the late Oligocene Otay Formation consists of three informal members as assigned by Deméré and Walsh (1991). The basal member, the “conglomerate member” or “fanglomerate member”, which is not known to commonly yield fossils and is assigned moderate paleontological sensitivity, is composed of subangular to subrounded boulders and cobbles in a gritstone matrix (Deméré and Walsh 1991; Confidential Appendix A). The gritstone member overlies the conglomerate member and is known to yield significant paleontological resources but not abundantly. The gritstone member is also assigned moderate paleontological sensitivity (Deméré and Walsh 1991; Confidential Appendix A). The upper sandstone-claystone member of the Otay Formation has produced many significant paleontological resources and is assigned high paleontological sensitivity (Deméré and Walsh 1991; Confidential Appendix A).

The SDNHM reported 26 fossil localities within the 0.5-mile radius buffer zone for the project site. Of these localities, one (SDNHM 5593) was discovered in the southwestern portion of the project site and yielded ostracods and freshwater pulmonate snails (Confidential Appendix A). Other nearby localities, some of which are located within 500 meters of the project site, produced fossil terrestrial vertebrates, including cranial bones, postcranial bones, teeth, and impressions of plants, fragmentary pulmonate snails and eggshells, turtles, lizards, birds, and small and large mammals (Confidential Appendix A). The SDNHM suggested assigning all members of the Otay Formation high paleontological sensitivity since available geological mapping does not subdivide the formation into members.

7 Summary and Management Recommendations

Dudek’s review of records search data, geological mapping, geological and paleontological literature revealed the project site has high paleontological sensitivity and there is one existing fossil locality within the project site and several within approximately 500 meters of it. Given the high potential for the Otay Formation to produce paleontological resources during grading for site preparation, trenching for utilities, and augering, a qualified paleontologist should be retained for the project who meets or exceeds the qualifications set forth in the SVP (2010)

guidelines. The qualified paleontologist shall prepare and adopt a PRIMP prior to the commencement of project-related earthmoving activities. Implementation of a paleontological mitigation program would reduce any potential impacts to below a level of significance for paleontological resources.

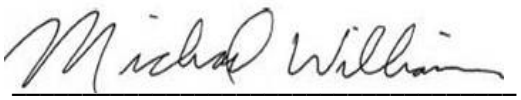
Prior to the issuance of grading permits, the applicant shall provide written confirmation to the City of Chula Vista that a qualified paleontologist has prepared a PRIMP and has been retained to carry out the PRIMP. A qualified paleontologist is defined as an individual with an MS or PhD in paleontology or geology who is familiar with paleontological procedures and techniques and has expertise in local geology, stratigraphy, and biostratigraphy. The PRIMP shall be consistent with the SVP (2010) guidelines and contain the following components:

- Introduction to the project, including project location, description grading activities with the potential to impact paleontological resources, and underlying geologic units.
- Description of the relevant laws, ordinances, regulations, and standards pertinent to the project and potential paleontological resources.
- Requirements for the qualified paleontologist to attend the pre-construction meeting and provide worker environmental awareness training at the pre-construction meeting as well as at the jobsite the day grading is to be initiated. In addition, the qualified paleontologist shall inform the grading contractor and City Resident Engineer of the paleontological monitoring program methodologies.
- Identification of where paleontological monitoring of excavations impacting the Otay Formation is required within the project site based on construction plans and/or geotechnical reports.
- Procedures for adequate paleontological monitoring (including necessary monitoring equipment), methods for treating fossil discoveries, fossil recovery procedures, and sediment sampling for microvertebrate fossils, including the following requirements:
    - A paleontological monitor shall be on site at all times during the original cutting of previously undisturbed sediments of highly sensitive geologic units (the Otay Formation) to inspect cuts for contained fossils. (A paleontological monitor is defined as an individual who has experience in the collection and salvage of fossil materials.) The paleontological monitor shall work under the direction of a qualified paleontologist.
    - Paleontological monitoring is not required in areas underlain by artificial fill unless grading activities are anticipated to extend beneath the veneer of fill and impact underlying Otay Formation deposits.
    - If fossils are discovered, the qualified paleontologist and/or paleontological monitor shall recover them. The paleontologist (or paleontological monitor) shall be allowed to temporarily direct, divert, or halt grading within 50 feet of the resource to allow recovery of fossil remains. Because of the potential for the recovery of small fossil remains, it may be necessary in certain instances, and at the discretion of the qualified paleontologist, to set up a screen-washing operation on the project site. Alternatively, sediment samples can be collected and processed off-site.
- Paleontological reporting, and collections management:
    - Prepared fossils along with copies of all pertinent field notes, photos, maps, and the final paleontological monitoring report discussed below shall be deposited in a scientific institution with paleontological collections such as the San Diego Natural History Museum within 90 days of completion of monitoring unless the City and the qualified paleontologist determine the extent of fossils recovered will require more preparation, stabilization, and/or curatorial time. Any curation costs shall be paid for by the applicant.

- A final paleontological monitoring report shall be completed. This report shall include discussions of the methods used, stratigraphy exposed, fossils collected, and significance of recovered fossils, and shall be submitted to the designated scientific institution within 90 days of the completion of monitoring unless the City and the qualified paleontologist determine the extent of fossils recovered will require more preparation, stabilization, and/or curatorial time.

Should you have any questions relating to this report and its findings please contact Michael Williams (mwilliams@dudek.com) or Sarah Siren (ssiren@dudek.com).

Sincerely,



Michael Williams, Ph.D.
Senior Paleontologist

Att.: *Figure 1, Regional Location Map*
Appendix A, Confidential SDNHM Paleontological Records Search Results

cc: *Sarah Siren, Alexandra Martini, Dudek*

References

Abbott, P.L., 1999. The Rise and Fall of San Diego: 150 Million Years of History Recorded in Sedimentary Rocks. San Diego, California: Sunbelt Publications.

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SVP (Society of Vertebrate Paleontology). 2010. *Standard Procedures for the Assessment and Mitigation of Adverse Impacts to Paleontological Resources*. https://vertpaleo.org/Membership/Member-Resources/SVP_Impact_Mitigation_Guidelines.aspx.

Todd, V.R., Alvarez, R.M., and Techni Graphic Systems, Inc., 2004, Preliminary geologic map of the El Cajon 30' X 60' quadrangle, southern California: U.S. Geological Survey, Open-File Report OF-2004-1361, scale 1:100,000.

SOURCE: Bing Maps 2022

DUDEK

0 500 1,000 Feet

FIGURE 1

Project Location

Otay Ranch Town Center Redevelopment Project

Appendix A

SDNHM Records Search Results (Confidential)

28 July 2022

Michael Williams
Dudek
605 Third Street
Encinitas, CA 92024

RE: Paleontological Records Search – Otay Ranch Town Center Redevelopment

Dear Dr. Williams:

This letter presents the results of a paleontological records search conducted for the Otay Ranch Town Center Redevelopment project (Project), located in the City of Chula Vista, San Diego County, California. The Project site is located at the current Otay Ranch Town Center and is bordered to north by Transit Guideway, to the east by Eastlake Parkway, to the south by Birch Road, and to the west by northbound State Route (SR) 125 (South Bay Freeway).

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., Todd, 2004) covering the Project area indicate that the proposed Project has the potential to impact the late Oligocene-age Otay Formation. This geologic unit and its paleontological sensitivity are summarized below.

The SDNHM has a total of 26 recorded fossil localities that lie within a half mile of the Project site, all of which are from the Otay Formation and are discussed in greater detail below. Several of these localities lay in close proximity to the Project site (within 500 feet), and one (SDSNH Locality 5593) lies within the Project boundaries. A map (Figure 1) and list (Appendix A) of the fossil localities are attached at the end of this report.

Otay Formation – Fluvial deposits of the late Oligocene-age (approximately 29 million years old) Otay Formation underlie the entire Project site. The SDNHM has 26 recorded fossil localities from the Otay Formation within a half-mile radius of the Project site, one of which (SDSNH Locality 5593) is located in the southwestern portion of the Project site. The locality was discovered in a 2-foot thick, purple, massive claystone at an elevation of 597 feet above sea level during mass grading for the McMillin Otay Ranch Village 12 development, and produced internal and external molds of shells of pulmonate freshwater snails and ostracods. The remaining 25 localities produced fossil teeth, jaws, and postcranial elements of terrestrial vertebrates (e.g., turtles, lizards, marsupials, squirrels, mice, gophers, hedgehog, camelids, the small deer-like artiodactyl *Hypertragulus*, and the oreodont *Sespia californica*);

bird bones, egg shells, and tracks; pulmonate snail shell fragments; and stem and leaf impressions of flowering plants. The upper sandstone-mudstone unit of the Otay Formation has been assigned a high paleontological sensitivity, while the lower fanglomerate and gritstone units have produced vertebrate fossils at only a few localities and have been assigned a moderate paleontological sensitivity. However, as these units are undifferentiated on existing geologic maps of the Project area, the entire formation should be treated as having a high paleontological sensitivity.

Summary and Recommendations

The high paleontological sensitivity of the Otay Formation (Deméré and Walsh, 1993), as well as the presence of fossil collection localities within the boundaries of and in close proximity to the Project site, 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 this geologic unit (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 excavation is required for Project construction, implementation of a complete paleontological resource mitigation program during ground-disturbing activities is recommended. The mitigation program must include, at a minimum, measures for construction monitoring, fossil salvage and data recovery, laboratory preparation and curation of the fossils at an appropriate regional repository, and production of a final paleontological mitigation report.

The fossil collection locality information contained within this paleontological record 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 Otay Ranch Town Center Redevelopment project is prohibited.

If you have any questions concerning these findings please feel free to contact me at kmueller@sdnhm.org.

Sincerely,

Kirstin Mueller
Assistant Report Writer
San Diego Natural History Museum

Enc: Figure 1: Project map
Appendix A: List of SDSNH fossil localities in the vicinity of the Project

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.

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

Todd, V.R. 2004. Preliminary Geologic Map of the El Cajon 30' x 60' Quadrangle, Southern California. U.S. Geological Survey, Open-File Report 2004-1361.

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

Locality Number	Locality Name	Location	Elevation (feet)	Geologic Unit	Era	Period	Epoch
4846	Winding Walk (Otay Ranch Village 11)	City of Chula Vista, San Diego County, California	625	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
4933	Eastlake Parkway Extension	City of Chula Vista, San Diego County, California	611	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
5412	Winding Walk Phase 2 - micro site	City of Chula Vista, San Diego County, California	644	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
5413	Winding Walk Phase 2 - misc vert site	City of Chula Vista, San Diego County, California	635	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
5414	Winding Walk Phase 2 - Bird Trackways	City of Chula Vista, San Diego County, California	623	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
5593	McMillin Otay Ranch Village 12	City of Chula Vista, San Diego County, California	597	Otay Formation	Cenozoic	Paleogene	late Oligocene
5594	McMillin Otay Ranch Village 12	City of Chula Vista, San Diego County, California	625	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
5595	McMillin Otay Ranch Village 12	City of Chula Vista, San Diego County, California	622	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
5734	Winding Walk Phase III	City of Chula Vista, San Diego County, California	623	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
5735	Winding Walk Phase III - Bird Egg Hill	City of Chula Vista, San Diego County, California	618	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
5736	Winding Walk Phase III	City of Chula Vista, San Diego County, California	611	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
5737	Winding Walk Phase III	City of Chula Vista, San Diego County, California	594	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
5739	Winding Walk Phase III - Bird Egg Hill	City of Chula Vista, San Diego County, California	625	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
5743	Winding Walk Phase III	City of Chula Vista, San Diego County, California	597	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
6838	Millenia at Otay Ranch	City of Chula Vista, San Diego County, California	601	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
6839	Millenia at Otay Ranch - Camel Site	City of Chula Vista, San Diego County, California	602	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
6840	Millenia at Otay Ranch	City of Chula Vista, San Diego County, California	609	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
6841	Millenia at Otay Ranch	City of Chula Vista, San Diego County, California	611	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
6842	Millenia at Otay Ranch	City of Chula Vista, San Diego County, California	625	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
7386	Millenia at Otay Ranch	City of Chula Vista, San Diego County, California	609	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
7392	Millenia Phase 2	City of Chula Vista, San Diego County, California	604	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
7589	Millenia Lot 2 Sudberry	City of Chula Vista, San Diego County, California	600	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
7935	Suwerte at Otay Ranch	City of Chula Vista, San Diego County, California	613	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
7936	Suwerte at Otay Ranch	City of Chula Vista, San Diego County, California	615	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
7937	Pinnacle at Millenia	City of Chula Vista, San Diego County, California	595	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene
7938	Pinnacle at Millenia	City of Chula Vista, San Diego County, California	604	Otay Formation, sandstone-mudstone member	Cenozoic	Paleogene	late Oligocene