Updated Nomenclature for Plio-Pleistocene Formations in the Onshore Ventura Basin, Los Angeles and Santa Barbara 30′ × 60′ Quadrangles*

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Abstract

The Plio-Pleistocene bedrock nomenclature of the onshore Ventura basin and associated San Fernando Valley embayment was re-evaluated from a basin-wide perspective during preparation of the Preliminary Geologic Map of the Los Angeles 30′×60′ Quadrangle, which was recently updated by the California Geological Survey and issued in July of 2014 as part of the STATEMAP project. The nomenclature adopted for this map will likely be extended to the eastern half of the Santa Barbara 30′×60′ Quadrangle in a future update. Strata of this age have a complex history of nomenclature: conflicting terminologies have developed due to a combination of complex depositional conditions (such as facies changes and local unconformities near the basin margins, and the time-transgressive nature of contacts due to westward migration of the paleoshoreline during basin infilling), and inconsistent methodologies used to define formations (such as the use of fauna rather than lithology, the use of formation names defined in other basins, and differing techniques used in surface mapping vs. subsurface exploration for oil). The basic stratigraphic sequence is regressive, ranging up section from bathyal hemipelagic and submarine fan turbidite deposits to granular shallow marine, local transitional/paralic, and granular continental deposits. The definitions of the marine Pico Fm. and Towsley Fm. and the nonmarine Saugus Fm. published by Winterer and Durham (1962) for the type sections in the eastern Ventura basin are adopted and extended to the western portion of the basin. Marine strata formerly assigned by some workers to the Saugus Fm. in the southern Santa Susana Mountains are reassigned as an informal member of the upper Pico Fm. Strata formerly assigned to the San Pedro Fm. near South Mountain are reassigned to the Saugus Fm., if nonmarine, or to the Las Posas Fm. if marine. The informally defined term Mudpit shale member of the upper Pico Fm. is adopted in preference to Santa Barbara Fm. for strata west of Fillmore. The term “Repetto” is defined by Repettia microfauna rather than lithology and is therefore considered a biozone rather than a formation. The Sunshine Ranch and Camarillo members of the Saugus Fm. are adopted, and the terms Elsmere Canyon delta-plain facies of the Saugus Fm. and Grimes Canyon deltaic facies of the Pico Fm. are also informally defined. The formational terms Santa Barbara, San Pedro, and Fernando are excluded to areas outside of the Ventura basin.
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