

144 Years and Counting: The Discovery, Development, and Ongoing Operations at the Brea-Olinda Oil Field

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Abstract

The Brea-Olinda oil field is southern California's oldest continuously operating field and is remarkably active in 2024, 144 years after obtaining first production in 1880 from the upper Miocene Puente Formation. With 25 years of production history and three established areas, as recorded in the USGS Bulletin 305 (1907), the esteemed Ralph Arnold, from his own work and that of the late George Eldridge' 1905 field work, noted the field's structural complexity, "the force which produced [the structures] has most severely manifested itself, the folds being sharp and numerous, and the strata badly crushed." Production peaked in 1953, notably 73 years after discovery, when the field was dominated by the majors of the day: Union Oil of California, Shell, Mobil, Getty, and independents Brea Canyon Oil Co., and Santa Fe's operating arm, Chanslor-Western Oil & Drilling. Today, the field is primarily operated by Bridge Energy, LLC. (70% leasehold), with four smaller operators making up the other 30%. Today's production is approximately 2500 BOPD and 1750 MCFPD, with future plans of optimizing water injection and gas processing. Over the decades virtually all of the enhanced oil recovery methods have been used in various areas of the field – water flood, cyclic steam, steamflood, and fireflood. Union even used their Stearns lease to store natural gas and excess Santa Fe Springs oil production in 1929-1930. The extreme dual-heterogeneity of structure and reservoir, driven by the dip-slip Whittier Fault Zone and the Miocene-Pliocene deepwater depositional systems, respectively, have set the stage for an extended production life.