

silver, gold, and copper ore are found in mineralized zones in the Goodsprings dolomite. Building stone has been quarried from the Aztec sandstone and limestone from the Monte Cristo limestone. A nominal water supply, sufficient for domestic use, is available at Valley Wells Station, Windmill, Clark Mountain Station, the Mountain Pass Mine, and Wheaton Springs.

(5) GEOLOGY AND OIL IN VENTURA BASIN EAST OF SAN GABRIEL FAULT  
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The discovery in August, 1957, of a small commercial oil field in the Ventura Basin east of the San Gabriel-Palomas Canyon fault trend has led the industry to increased interest and a flurry of exploratory activity in this area. The sedimentary rocks of the region, also a topographic basin, are bounded on the north, east, and south by mountainous masses of pre-Tertiary igneous and metamorphic rocks. On the west the area is delineated by the San Gabriel-Palomas Canyon fault trend beyond which, to the west, lies the main part of the Ventura Basin.

The oldest rocks of the sedimentary sequence are Paleocene marine clastics exposed against the northern basement mass. Unconformably overlying the Paleocene strata is the fluvialite Oligocene Vasquez formation. Above the Vasquez with unconformable relation the Mint Canyon group of fluvialite and lacustrine origin was deposited during early to late Miocene time. A subsequent invasion of the sea from the west led to the deposition of the Modelo(?) (Castaic formation). In outcrop the Modelo(?) unconformably overlies the Mint Canyon, while along the southwest edge of the area subsurface evidence suggests interfingering with the Mint Canyon. To the north, the Modelo(?) section grades to the overlying basal part of the Ridge Basin group. Following a period of erosion, the southwest part of the area was encroached upon by Pliocene seas to deposit the Pico formation. At the edges of this Pico sea there were contemporaneously deposited the fluvialite sediments of the Saugus formation. Later in Pliocene time the sea retreated westward and the non-marine Saugus rocks blanketed the area. Prominent post-Saugus Pleistocene to recent terrace deposits are found along the main drainages and the intervening ridges.

The part of the area occupied by sediments is a broad westerly plunging syncline which has several smaller folds superimposed upon its flanks. Nearly all the anticlines plunge west or northwest with areas of critical east closure rare and insignificant. Faulting is most prominent in the pre-Miocene formations and is developed in a northeast-southwest system between the San Andreas and San Gabriel major faults. The San Gabriel-Palomas Canyon fault trend involves beds as young as Pliocene and, during a part of the Miocene, it appears to have acted as a barrier or sill to deposition.

Approximately 125 wildcat wells have been drilled in the 132 square miles of area covered by the Mint Canyon-Modelo(?) -Saugus outcrops. Of the above, 50 wells tested only the Mint Canyon formation; 50 wells tested primarily the Modelo(?) strata; and 25 wells were tests of the Pico-Saugus section. To date, one small field (Tapia) has established commercial production in the area. This field is a stratigraphic trap in as and of that part of the Saugus beds equivalent to the downdip Pico formation. Sub-commercial production has been obtained from the Modelo(?) in the Elizabeth Lake Canyon area and on the eastern edge of the Honor Rancho field. A small amount of oil has recently been obtained from Mint Canyon beds in the Bouquet Canyon area, and this formation has also demonstrated low-volume gas in several locales.

(6) GEOLOGY OF CORONA SOUTH QUADRANGLE  
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The Corona South Quadrangle lies in the northern part of the Peninsular Ranges. It contains the northwest end of the Elsinore trough which marks the trace of the Elsinore fault zone and trends northwestward across the center of the quadrangle. The Chino fault diverges north-northwestward from its apparent junction with the Elsinore fault near the eastern margin of the quadrangle.

The oldest rocks, those of the Triassic Bedford Canyon formation, are meta-sedimentary in character, and occur mainly in the Santa Ana Mountains southwest of the Elsinore fault. Here they have been intruded by late Mesozoic plutonic rocks of the Southern California batholith and in a few places are unconformably overlain by Jurassic(?) volcanic rocks. Northeast of the Elsinore fault is a succession of sedimentary rocks, several thousand feet thick, which includes rocks of Upper Cretaceous through Quaternary age. These units are of types found on the west in the Los Angeles Basin.

The dominant structural features are the Elsinore and Chino zones of high-angle reverse dip-separation faults and a synclinal trough which extends from the Puente-Chino Hills southeastward beyond Corona and lies nearly parallel with and northeast of the Elsinore fault. The surface distribution of Cretaceous sedimentary rocks indicates a probable minimum vertical displacement of 1,500 feet along the Elsinore fault southwest of Corona, whereas on the southeast a displacement of more than 5,000 feet is suggested by the difference in elevation of the basement complex on opposite sides of the fault. In post-Pliocene time, and perhaps throughout their history, the Elsinore and Chino fault zones have had an apparent high-angle reverse sense of movement. Large lateral displacement is not demonstrated in the mapped area. In the Corona area the Elsinore trough is probably a faulted syncline.

Mining operations, especially for clay, crushed and broken stone, and glass sand, have been