at the fault have shown about thirty inches (75 cm) of fault movement since 1933. Triangulation surveys by the U. S. Coast and Geodetic Survey in 1932 and 1959 show that the movement is local to the fault area without regional deformation. Geodetic leveling in 1957, 1961 and 1964 shows that there is currently active subsidence of about 0.1 foot per year in the fault area, with a discontinuity in subsidence at the fault. In addition, the subsidence data indicate two other discontinuities north of the Buena Vista fault, and an active south over north thrust fault was found on one of these. It appears that the current fault movement is due to the subsidence, which may be due to withdrawal of petroleum in the area. A dynamic model of the partial collapse of a tectonically active, oil-bearing anticline can be constructed. The fault slippage rate appears to follow the rate of oil withdrawal with an eleven year time lag.

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RELATIONSHIPS BETWEEN EARTH STRAIN AND GEOTHERMAL ACTIVITY

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The very extensive records that have been kept for the past two decades on the performance of Old Faithful Geyser make it possible to establish some definite relationships between local earth strain and geothermal activity. One of these, a relationship between the occurrence of major earthquakes and the average interval between eruptions, has already been published. More recent study indicates also that the average interval is related to the occurrence of smaller intensity V and higher, local earthquakes. An episode typically consists of a steady decrease in average interval beginning 8 to 12 days before an earthquake. The earthquake is then followed by a steady rise which lasts for a few days. Earth tides and average interval also appear to be related, the average interval in some years, especially earthquake free years, exhibiting a 14 day period with the longer interval occurring at the times of full and new moon. Unfortunately, the data do not allow observation of a diurnal effect if it is present.

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FAULT CREEP SLIPPAGE IN THE STREET GRIDS OF HOLLISTER AND HAYWARD, CALIFORNIA

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In Hollister and Hayward, California, active slippage on the Calaveras and Hayward faults shows as offsets within the city street grids. The street gridwork allows the active fault traces to be mapped in great detail. The fault pattern in Hayward consists of several distinct overlapping fault traces within a fault zone about 500 feet across. The fault traces apparently do not interconnect but overlap in an en echelon pattern. Dated curbs suggest an average slippage rate of 7 mm/yr since 1913. In Hollister, there