

**Subsurface Structure and Convergence Rates Across  
Active Fold-Thrust Belt of  
Northern Los Angeles Basin, California**

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**Investigations**

This project began March 1. The long-range objective is to work out the subsurface structural geology of the fold-thrust belt at the northern margin of the Los Angeles basin from Santa Monica to downtown Los Angeles. During the first year, we will focus on the Beverly Hills, East Beverly Hills, Cheviot Hills, and San Vicente oil fields and extend the study south to the northern edge of the Inglewood oil field. This area should contain evidence for the northern continuation of the Newport-Inglewood fault, a possible segment boundary of the fold-thrust belt.

The project is receiving additional support from the Southern California Earthquake Center, which permits us to have four people (Gary Huftile, Cheryl Hummon, Craig Schneider, Bob Yeats) on the project rather than two. We have begun to construct structure contour maps on correlatable horizons, which will lead to retrodeformable cross sections, one through Culver City, Cheviot Hills, and Beverly Hills fields, and one through East Beverly Hills, San Vicente, and Sherman oil fields. Craig Schneider will focus on structures affecting the Miocene sequence, and Cheryl Hummon will concentrate on the longer wavelength structures affecting Pliocene-Quaternary strata.

In addition, a residual gravity map has been<sup>n</sup> acquired from A. Griscom (see Jachens and Griscom, 1985). The residual gravity will be modeled as an independent test of retrodeformable cross sections that are being constructed by us and by others to work out convergence rates and provide a geological framework for distribution of instrumentally-located earthquakes.

Most of the wells are directionally drilled from town lots zoned for industrial use, and bottom-hole locations are commonly hundreds of meters from the surface location. To deal with this problem, Margaret Mumford is constructing a well base map at a scale of 1:6000 to show the map projection of the directionally-drilled wells. This well base map will be made available to all investigators through the Southern California Earthquake Center. We now have collected about 400 of the approximately 2000 wells to be used in the study. These well files will also be curated for public use through the

Southern California Earthquake Center.

Reference Cited

Jachens, R. C., and Griscom, A., 1985, An isostatic residual gravity map of California--A residual map for interpretation of anomalies from intracrustal sources, in Hinze, W. J., ed., The utility of regional gravity and magnetic anomaly maps: Soc. Expl. Geophys., Tulsa, Oklahoma, p. 347-360.