

# City Might Be Dirty, but It's Solid Dirt

**By Ramona Smith**

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What are the chances of a great quake in the Quaker City?

Not very great, say experts who have studied the seismic activity on the East Coast.

Over the years, the Philadelphia area has had its share of geologic shakeups. The shocks were enough to light up police switchboards in April 1984, rattle dishes in the city three times in 1982 and 1983, and set off a series of aftershocks in the Northeast in March 1980.

But the occasional shaking in the Delaware Valley has amounted to mere quivers when measured against the deadly destruction Tuesday in California.

"I wouldn't envision a . . . 6.9 earthquake here," said Charles Merguerian, a structural geologist from Hofstra University in Hempstead, N.Y., who has studied the likelihood of East Coast quakes.

Then — like other Eastern earthquake experts — he hedged his bets.

"But it can happen," Merguerian said.

When the earth trembles in the Philadelphia area, the cause may lie in the neighborhood or far away.

Earthquakes in Charleston, S.C., in 1866, near Boston in 1755, and in northern New Jersey and southern New York state more recently have sent shock waves into eastern Pennsylvania.

Most local earth-shaking centers on geologic fault lines — breaks in the deep rock layer — that lie in the city's northern suburbs and along the Delaware River.

Most recent quakes have been below 3.7 on the Richter scale, and have clustered primarily along the Huntingdon Valley fault, which runs from the Delaware River below Trenton to Conshohocken, Montgomery County, crossing corners of Northeast Philadelphia and Chestnut Hill. This week's quake in San Francisco measured 6.9.

Unlike California, the Delaware Valley does not lie on the clashing edges of two vast geologic plates, says Stephen Phipps, a geology professor at the University of Pennsylvania. The nearest edges lie thousands of miles to the east in the Atlantic Ocean and thousands of miles to the west at the San Andreas fault, the source of this week's quake in San Francisco.

In active faults, great segments of rock move and press against one another with destructive force. But here, says Phipps, the faults are mere remnants of ancient geologic struggles.

Still, he said, there's a chance Eastern faults may be "potential targets for reactivation." Some geologists believe that recent tremors near Lancaster may stem from a reactivated fault.