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Fracking Boom Would Increase California's Earthquake Danger, Report Finds

Hundreds of Oil Wastewater Wells Near Active Faults and Major Cities Already Raising Quake Risk for Millions of Californians

SAN FRANCISCO— Oil companies are increasing California's earthquake risk by injecting billions of gallons of oil and gas wastewater a year into hundreds of disposal wells near active faults around Los Angeles, Bakersfield and other major cities, according to a new report from Earthworks, the Center for Biological Diversity and Clean Water Action.

A boom in hydraulic fracturing ("fracking") in California would worsen the danger of earthquakes, the report finds, by greatly increasing oil wastewater production and underground injection. Extracting the Monterey Shale's oil could produce almost 9 trillion gallons of contaminated wastewater, the report estimates. That could expose California to a surge in damaging earthquakes like those seen in Oklahoma, Texas, and other states experiencing rapidly increased fracking and wastewater production.

[On Shaky Ground: Fracking, Acidizing, and Increased Earthquake Risk in California](#) finds that millions of Californians live in areas threatened by oil industry-induced earthquakes. Academic research and government experts conclude that wastewater injection can reduce faults' natural friction and trigger earthquakes.

State officials have not examined whether past earthquakes were triggered by fracking or disposal wells, and existing and proposed regulations do not adequately address the risk. Because of research and knowledge gaps and inadequate monitoring, state officials cannot protect Californians from induced quakes.

"This isn't rocket science. We've known for decades that wastewater injection increases earthquake risk," said Earthworks' Oil and Gas Accountability Project California Organizer Jhon Arbelaez. He continued, "Since Gov. Brown resolutely refuses to learn from other communities' experience with fracking across the country, our only option to protect California families is to prevent fracking altogether."

"An oil fracking boom in California could raise the risk of devastating earthquakes in some of our biggest cities," said report coauthor Shaye Wolf, Ph.D., of the Center for Biological Diversity. "State officials are ignoring the problem, but as risky new oil production techniques spread, we could see trillions of gallons of wastewater shot into the ground near active faults. We need to nip this danger in the bud by halting fracking and acidizing."

“The risk of seismic impacts is yet another illustration that the massive wastestream resulting from oil production threatens California's drinking water and public safety,” said report coauthor Andrew Grinberg of Clean Water Action. “While threats to water, air and health have been well-documented, our emerging understanding of the risk of induced seismicity is yet another reason for a time-out on fracking. The findings in this report continue this troubling trend: the more we learn about California's oil industry, the more cause we find for alarm.”

The *On Shaky Ground* report’s key findings:

- **A majority of California’s active oil industry wastewater injection wells are near recently active faults:**

Distance of California’s Active/New Wastewater Wells to Recently Active Faults	
<i>Number of active/new wells (percent)</i>	<i>Distance to recently active fault</i>
87 wells (6%)	Within 1 mile
350 wells (23%)	Within 5 miles
834 wells (54%)	Within 10 miles

- **Millions of Californians are at risk for induced earthquakes:** The oil industry operates hundreds of wastewater injection wells very close to active faults and near major California population centers, such as Los Angeles and Bakersfield.
- **Research and monitoring are dangerously inadequate:** The increased earthquake risk from California’s existing wastewater injection wells or fracked wells is unstudied. And state oil regulators require no seismic monitoring near wastewater injection wells.
- **Regulations don’t protect Californians:** Due to significant knowledge gaps, California’s Division of Oil, Gas, and Geothermal Resources cannot safely regulate the earthquake risk from oil and gas production and wastewater disposal.
- **Other states have seen surges in wastewater-induced earthquakes:** Areas outside California where fracking and underground wastewater disposal have proliferated have suffered as much as a 10-fold increase in quake activity.
- **Halting fracking is the best solution:** Given the earthquake risk linked to wastewater disposal, as well as unconventional oil production’s other environmental risks, the best way to protect Californians is to halt hydraulic fracturing, acidizing, and other dangerous oil and gas recovery techniques.

The full *On Shaky Ground* report — which features maps of faults, fracked and acidized wells, and wastewater disposal wells — is available at www.ShakyGround.org.

For 25 years, Earthworks has been protecting communities and the environment from the impacts of irresponsible mineral and energy development.

The Center for Biological Diversity is a national, nonprofit conservation organization with more than 675,000 members and online activists dedicated to the protection of endangered species and wild places.

Clean Water Action is a one million member organization of diverse people and groups joined together to protect our environment, health, economic well-being and community quality of life.