

The **SCIENCE** on Fracking and **EARTHQUAKES**

GET THE **FACTS**

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“While hydraulic fracturing works by making thousands of extremely small ‘microearthquakes,’ they are, with just a few exceptions, too small to be felt; none have been large enough to cause structural damage.” [U.S. Geological Survey, 2015](#)



“The studies in Texas also indicate that hydraulic fracturing is not likely the source of the earthquakes.” [New York Department of Environmental Conservation Proposal/Report, 2011](#)



“Fluid injected in the process of hydraulic fracturing will not likely cause earthquakes of concern. In contrast, disposal of produced water by underground injection could cause felt or damaging earthquakes. To date, there have been no reported cases of induced seismicity associated with produced water injection in California.” [California Council on Science and Technology Study, 2015](#)



“Before-during-and-after measurements of vibration and seismicity, including analysis of data from the permanently installed California Institute of Technology accelerometer at the Baldwin Hills, indicates that the high-volume hydraulic fracturing and high-rate gravel packs had no detectable effects on vibration, and did not induce seismicity (earthquakes).”

[Inglewood Oil Field \(CA\) Study, 2012](#)



“In the United States, fracking is not causing most of the induced earthquakes. Wastewater disposal is the primary cause of the recent increase in earthquakes in the central United States.”

[U.S. Geological Survey, 2015](#)



“The process of hydraulic fracturing a well as presently implemented for shale gas recovery does not pose a high risk for inducing felt seismic events.”

[National Academy of Sciences Induced Seismicity Potential in Energy Technologies Report, 2012](#)



“Before-and-after studies of high-volume hydraulic fracturing and high-rate gravel packing at the Inglewood Oil Field showed no detectable effect on ground movement or subsidence.”

[Inglewood Oil Field \(CA\) Study, 2012](#)

WHAT THEY ARE SAYING



“The energy released by one of these tiny microseismic events is equivalent to the energy of a gallon of milk hitting the floor after falling off a kitchen counter. Needless to say, these events pose no danger to the public.”

- Dr. Mark Zoback, Stanford University, 2012



“While speculation has run rampant that this recent seismic activity in Irving is the result of oil and gas operations in the area, there is no evidence at this time to indicate any connection.”

- Dr. Craig Pearson, Seismologist, Texas Railroad Commission, 2015



“We’re not talking at all about fracking. In fact, it’s been driving us crazy, frankly, that people keep using it in the press.”

- Dr. Matthew Hornbach, Southern Methodist University



“Although the message that these earthquakes are induced by fluid injection [not fracking] related to oil and gas production has been communicated clearly, there remains confusion in the popular press beyond this basic level of understanding.”

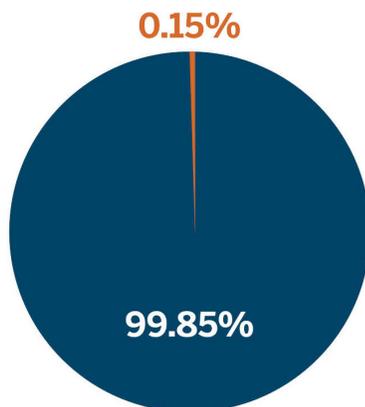
- Dr. Justin Rubinstein, Research Geophysicist and Deputy Chief, USGS Induced Seismicity Project, 2015



“We know that researchers agree that hydraulic fracturing isn’t the cause of the major earthquakes in Oklahoma.”

- Dana Murphy, Oklahoma Corporation Commission

Percentage of U.S. Injection Wells Potentially Linked to Induced Seismicity



Percentage of U.S. Disposal Wells Potentially Linked to Induced Seismicity

