INJECTION WELLS & INDUCED EARTHQUAKES
7,535 M2.5+ SINCE 2011

HIGH-PRESSURE INJECTION WELLS
Growing evidence points to the relationship between induced seismicity and injecting high volume hydraulic fracturing (HVHF) oil and gas extraction waste into class II injection wells.

Notable 2016 Oklahoma Earthquakes
- Sept. 3rd: A 5.8 magnitude earthquake in Pawnee was the most violent example of induced seismicity activity in U.S. history.
- Nov. 1st: A 4.5 magnitude earthquake led the U.S. EPA to restrict the use of injection wells within a 10 mile radius of Pawnee.
- Nov. 6th: A 5.0 magnitude earthquake shook ground only a mile west of the Cushing Hub, one of the largest commercial crude oil storage facilities in North America.

INCREASING FREQUENCY
The USGS reports an exponential rise in induced seismic events since 2011. Man-made earthquakes will continue to increase in frequency given that:
- Freshwater demand for fracking is rising all over the country
- The amount of waste increases in tandem with freshwater demand
- The industry is using more water to explore the periphery of primary shale plays and in less productive secondary plays

INJECTION VOLUMES MATTER
The EPA estimates that more than 2 billion gallons of wastewater are injected in the United States every day. Kansas and Oklahoma account for nearly 20% of this volume based on FracTracker analysis. A significant induced seismicity accident in such a high-risk region would disrupt fuel supplies, threatening national security, and cripple our economy.

KANSAS
- 41 billion gallons of injected waste from 2011-2015
- 4,555 high-pressure injection wells
- 347 million gallons of waste injected into a single well

OKLAHOMA
- 410 billion gallons of injected waste from 2011-2015
- 10,927 high-pressure injection wells
- 4 million gallons of waste injected into a single well

For more information on Class II injection wells, as well as maps and analysis on other oil & gas related activity visit www.fractracker.org.