

From the horse's mouth, what really happens during hydraulic fracturing:

#### MICROSEISMIC IMAGING REVEALS FRACTURE BEHAVIOR

From research paper "Fracs Tracked Using Microseismic Images  
9/18/03, revised 12/17/08

Authors: S.C. Maxwell and T.I. Urbancic, ESG International, Kingston, Ontario, Canada. N. Steinsberger, Devon Energy, Fort Worth, Texas and R. Zinno, Schlumberger, Houston, Texas.

"Hydraulic fracture geometries are difficult to predict. Even in environments with relatively simple fracture geometries, hydraulic fractures can grow asymmetrically, **have variable confinement across geologic horizons**, and change orientation. In naturally fractured reservoirs, such as the Barnett Shale, hydraulically created fracture patterns become amazingly complex as the injected slurry preferentially opens the pre-existing fracture network.

"The microseismic imaging project undertaken by Devon Energy in its Barnett Shale field to monitor fracture growth during hydraulic stimulation revealed a **complexity of interplay between the hydraulic and natural fractures previously unimagined.**"

From Schlumberger's publication "Oilfield Review," Winter 2005/2006  
Article "The Source For Hydraulic Fracture Characterization, p.46.

"While it is possible to have a good understanding of existing natural fracture systems, our ability to determine hydraulic fracture geometry and characteristics has been limited. Geologic discontinuities such as fractures and faults can dominate fracture geometry in a way that makes predicting hydraulic fracture behavior difficult. Clearly, the exploration and production (E&P) industry still has much to learn about hydraulic fractures."

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From: [www.un-naturalgas.org](http://www.un-naturalgas.org)

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