

Managing Risk in the Marcellus Shale: What are the Liabilities, and How Can I Avoid Them?

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The webinar will begin promptly at 12 pm

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***Managing Risk in the
Marcellus Shale:
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Roughly 200 tanker trucks deliver water for the fracturing process.

A pumper truck injects a mix of sand, water and chemicals into the well.

Natural gas flows out of well.

Recovered water is stored in open pits, then taken to a treatment plant.

Storage tanks

Natural gas is piped to market.

0 Feet

Water table

Well

1,000

Hydraulic Fracturing

Hydraulic fracturing, or "fracing," involves the injection of more than a million gallons of water, sand and chemicals at high pressure down and across into horizontally drilled wells as far as 10,000 feet below the surface. The pressurized mixture causes the rock layer, in this case the Marcellus Shale, to crack. These fissures are held open by the sand particles so that natural gas from the shale can flow up the well.

2,000

3,000

4,000

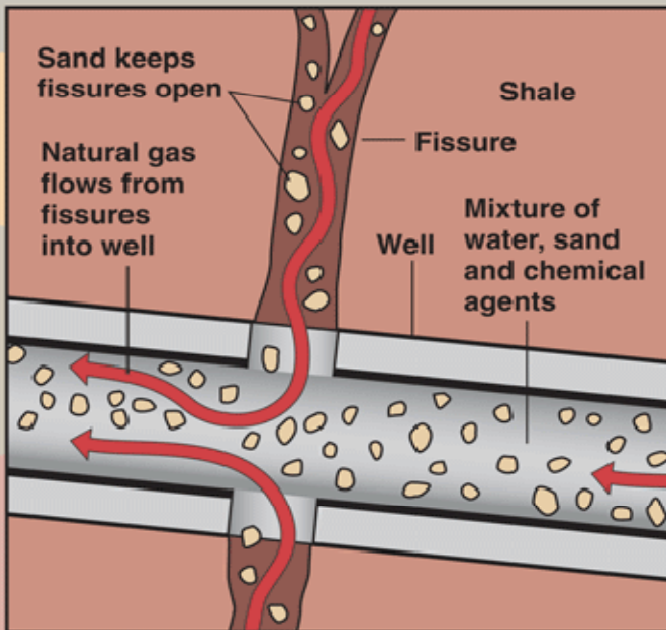
5,000

6,000

7,000

Well turns horizontal

Marcellus Shale



Fissures

The shale is fractured by the pressure inside the well.

■ ■ *Reasons for Disputes*



- More aggressive extraction
- New players in the field
- Need for more infrastructure

■ ■ *Energy Development*



How does gas trapped in rock underground become an energy source?

- Lease mineral rights
- Hire workers
- Drilling preparation
- Wells are ‘fracked’
- Gas is extracted
- Gas is transported
- Gas is sold and distributed

■ ■ *Leasing Disputes*



- ‘Bid rigging’ class action claims
- Surface use beyond acceptable scope
- Lease expiration due to alleged failure to timely develop

■ ■ *Construction Liability*



- Engineering liability for improper project design
- Product liability

■ ■ *Industry Standards*



American Petroleum Institute

<http://publications.api.org/>

- Safety & Fire Protection
- Exploration & Production
- Refinery Equipment
- Pipeline Operations
- Petroleum Measurement
- Marketing

■ ■ *What is 'Deliberate Intent' in WV?*



- Specific unsafe working condition which presented a high degree of risk and a strong probability of serious injury or death
- Employer had actual knowledge of the unsafe working condition
- Unsafe working condition was violation of safety statute, rule or regulation or industry safety standard
- Employer intentionally exposed employee to unsafe working condition
- Employee suffered serious compensable injury or death

■ ■ *Deliberate Intent*



Claims associated with building and fracking wells:

- Failure to follow proper standards
- Failure to properly train employees on handling of caustic fluids
- Failure to properly train/protect employees concerning frac fluids

■ ■ *Casualty Claims*



Explosions: An ever present risk around natural gas

- Implementation of/compliance with company policies to minimize risk of explosion
- First responder plans in place
- Transportation incidents

■ ■ *Toxic Torts: Water Contamination*



- Groundwater contamination with fracking fluids due to insufficient well bore casing
- Surface/Stream contamination with 'waste materials' due to breach of impoundment ponds (claims by surface owners)
- Groundwater contamination with methane due to insufficient well bore casing

■ ■ *Methane in Water*



Can methane 'migrate' from shale wells to ground water?

- Duke University Study, April 2011
- Parker County, TX (Barnett Shale wells):
 - EPA
 - Railroad Commission of Texas

■ ■ *Is Methane Harmful?*



- Flammable (explosive) range 5-15%
- Evaporates quickly, good ventilation is key
- No long term health problems associated with exposure
- Not suspected of causing cancer



Mid-Stream Liability: Development of infrastructure

- Pipeline easements and coal rights on same tract
- Validity of old easements and pipelines

■ ■ *Conclusion*



- Compliance with industry standards
- Insurance coverage
- Defense/indemnification agreements
- Documentation





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Thank you for participating!

Please join us for the next Energy Webinar, June 22nd

Details will be emailed to you soon!



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