Environmental and Safety Issues Associated with Shale Gas Production

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Disclaimer

• This slide set is provided for informational purposes only. Nothing herein constitutes the provision of legal advice or services.
Water Quantity

- Up to 4-5 million gallons of water per lateral (estimates vary)
- Multiple wells and laterals per well pad
- Refracting each lateral as many as 8 times over the well life

Potential Contaminants to Water

- Fracturing fluid chemicals
- Dissolved chemicals from the deposit in the return fluid
- Salts
- Particulates (sediment)
Ground Water Quality

• Sources of contamination
  – defective well casings that allow fluid to leak into groundwater bearing strata
  – surface storage of waste fluid, and attendant seepage and spills, that can contaminate groundwater through infiltration
  – Transport and other accidents that result in spills and leaks

Ground Water Quality

• Sources of contamination (continued)
  – illegal dumping into surface waters (groundwater can be contaminated as a result because of its hydrological connection to surface water)
  – incomplete treatment of the waste at treatment plants, discharge to surface waters and reintroduction to groundwater through a hydrological connection
  – failed injection wells, where that is the disposal method
Surface Water Quality

- surface storage of waste fluid, and attendant seepage and spills, that can contaminate groundwater through infiltration
- Transport and other accidents that result in spills and leaks
- illegal dumping into surface waters (groundwater can be contaminated as a result because of its hydrological connection to surface water)
- incomplete treatment of the waste at treatment plants, discharge to surface waters and reintroduction to groundwater through a hydrological connection
- Runoff (chemicals, spilled oil & fuel, & sediment)

Waste fluid disposal

- Methods
  - Recycling
  - Injection
  - Treatment
  - Evaporation
  - Storage
  - Illegal dumping
Well Owner Protections

- Private right of action (HB 242)
  - Limited to contracts signed after effective date
  - Prior well condition (baseline)
  - Proof of causation
- No fault compensation fund?

Land

- Destruction of vegetation
- Archaeological/historic sites
- Critical habitat
- Erosion
Emergency Response

• Emergency responder training
• Staffing
• Equipment
• Access to information held as trade secrets

Traffic/Crime

• Need for additional law enforcement personnel & training
• Additional road maintenance & traffic control devices
Air Quality

- Fugitive methane (7-8 percent)
  - Can be reduced
- Dust/particulates
- Mobile sources

Methane Migration

- Sources
  - Defective well casings or piping
- Explosion hazard
- Health hazard in drinking water – none known
Noise

• Traffic
• Processing units and compressors
• Construction

USDA Programs

• Is leased land included in USDA conservation programs?
  – Any incompatibilities?
• Existing conservation easements