Emerging Issue – Hydraulic Fracturing

Thursday, February 28, 2013, 8:30 a.m.

Charlie Kingdollar
Vice President
Gen Re
Stamford, Conn.

Charlie Kingdollar, vice president and emerging issues officer at General Reinsurance, leads the company’s emerging issues unit contained in the Treaty Marketing division of Gen Re. Charlie has been with the group for 29 years and is responsible for tracking and analyzing developments that create new or changing exposures, assessing their potential impact on the property/casualty insurance industry.

He regularly consults with clients on the impact of emerging issues and the underwriting actions insurers may wish to implement to address these exposures. Charlie reports these legal, scientific, and societal developments in a variety of Gen Re publications, including “Hazardous Times,” “Insurance Issues,” “Topics,” “Casualty Matters,” and “Pollution Rulings & Maps.”

Session Description:
Hydraulic fracturing is primarily seen as an issue in personal lines, but are there implications for commercial lines? In this session, Gen Re’s emerging issues expert, Charlie Kingdollar, will explore what hydraulic fracturing entails and how the exposure has changed. He will discuss the exposures arising from these operations and whether existing policy language adequately addresses these exposures.

Charlie will also discuss the increase in the number of natural gas, oil, and injection disposal wells cited on leased land and whether home owners, family farmers, and commercial farmers face liability arising from these operations.
Top Three Session Ideas
Tools or tips you learned from this session and can apply back at the office.

1. ____________________________________________________________

2. ____________________________________________________________

3. ____________________________________________________________
Emerging Issue – Hydraulic Fracturing

Session Outline

Overview

U.S. Shale Deposits

Natural Gas Drilling
- Fracking
- Producing Wells
- Wells Drilled
- Oil and Gas Enforcement Staff
- Things Can and Do Go Wrong
  - Allegations
  - Earthquakes
  - Studies
  - Pennsylvania
- Litigation Has Begun
  - Great Falls, Montana
  - Dimock Township, Pennsylvania
  - Pennsylvania
- Considerations
  - Setback Restrictions
  - Individual State Laws
  - Individual State Environmental Laws
- Coverage Issues
  - Business or Business Pursuits Exclusions
  - Definition of “Business” and Exceptions
  - Farmowners’ Policies
  - Applicability of Pollution Exclusions in Personal Lines Policies
- It’s Not Just Horizontal Natural Gas Wells

Deep Injection Disposal Wells

Conclusions

Questions & Answers
Natural Gas Drilling – U.S. Shale Deposits
Advancing technology makes natural gas in shale formation retrievable.

Injecting millions of gallons of water per well with:
- Proppants (sand, resin or ceramic beads)
- 50,000–1,000,000 gallons of fracking fluids
Fracking fluids

Ingredients

- Diesel fuel
- Hydrochloric acid
- Ethylene glycol
- Biocides
- Methanol
- Benzene, toluene and xylenes

Historically, gas well operators did not have to disclose ingredients of fracking fluid.

Congressional Report Round 750 chemicals

Exempt from Federal Safe Drinking Water Act as long as fluid does not contain diesel fuel.

Seven states now require some disclosure.

Reg's contain loopholes—states allow drillers not to disclose "proprietary" or "confidential" ingredients.
Natural Gas Drilling

Producing Wells – 2010

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Fracking

- n-Hexane
- Ethylene
- Benzene
- Tergitol NP-4
- Potassium chloride
- Trimethylbenzene
- Naphthalene
- Hazardous chemicals in fracking fluids used in one Colorado well in 2013 included:
Natural Gas Drilling

Explosions, blowouts, and fires

Contamination of ground and surface water

Earthquakes?

Toxic air emissions

Illnesses in people and livestock

Texas: Illness in people and livestock

Louisiana: Livestock deaths

Colorado: Methane contaminated dozens of water wells

Illinois: Methane migrated over 7 miles underground

Wyoming: Methane migrated over 28 mile

Colorado: Contamination of drinking water

Wyoming: EPA found 14 “contaminants of concern” in

11 wells

Allegations

Do gas wrong

Things can and...
Natural Gas Drilling

- Fracking "caused" cause of Wyoming aquifer contamination
  2012 - Independent Hydrologist

- Regulations make fracking safer - subsurface injections
  2012 - University of Buffalo

- Fracking chemicals contaminate Wyoming aquifer
  2011 - EPA

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- Natural Gas Drilling

- Proprietary and Confidential

- Natural Gas Drilling

- Proprietary and Confidential

- Natural Gas Drilling

Deep Injection disposal wells vs. fracking

+ University of Texas - Dozens of earthquakes magnitude 3 or less
+ Months in 2010 - several over 4.0 magnitude.
+ AR, TX, WV - magnitude under 3.1 - over 700 EQS in AR over 6 months
  - 50 in 2009, 87 in 2010 and 134 in 2011
  - 92 in 2004-2008

- Region experienced about 21 earthquakes per year from 1970-2000
- Increase has gotten steeper since 2009
- 2010 - fracking caused earthquakes - magnitude >3
- USGS

- Wrong and Do Go

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Natural Gas Drilling

- Fracking caused vertical fractures through layers of rock up to nearly 2,000 feet from the source.

- Air emissions from fracking may contribute to health problems for those living up to 1/4 mile.

2012 - University of Colorado

- Shale gas drilling "strongly implicated" in serious health problems with the most natural gas drilling activities.

2012 - University of Massachusetts

- Rise in breast cancer rates in 6 Texas counties.

2011 - CDC

- Rise in breast cancer rates in 6 Texas counties.

2012 - CDC

- Air emissions from fracking contribute to health problems for those living up to 1/4 mile.

- Force from drilling can take up to 6 years before natural balance of pressure is restored.

- Force from chemicals from the drill site.

2012 - U.S. Study by an independent hydrogeologist

- Fracking caused verticla fractures through layers of rock up to nearly 2,000 feet from the source.
Natural Gas Drilling

- Energy company fined $1.1M
- Contaminated with methane
  Drinking water wells of 16 families

- Hundreds of spills, leaks, seeps, overflows and blowouts
- Contaminated surface and ground water
- Contaminated water levels
- Some chemicals measure 200x safe drinking

- Barium, sodium, strontium and chloride
- Contaminants include: manganese, aluminum

- Energy company fined $1.1M
- Contaminated drinking water wells of 16 families

- Pennsylvania
  - Contaminants include: manganese, aluminum
  - Some chemicals measure 200x safe drinking
  - Drinking water wells of 16 families
  - Contaminated with methane

- Contaminated water levels
- Hundreds of spills, leaks, seeps, overflows and blowouts

- Marcellus Shale Drillers
- 1,500 violations in 2-1/2 years

- Pennsylvania
  - 92 companies
  - DEP PA: Drillers contaminated 14 water wells in Susquehanna County
  - PA: Hundreds of millions of gallons of brine/possibly radioactive wastewater dumped into state rivers

- Pennsylvania
  - DEP PA: Hundreds of spills over past 5 years by 92 companies

- Pennsylvania
  - 1,500 violations in 2-1/2 years

- Marcellus Shale Drillers
- Hundreds of spills, leaks, seeps, overflows and blowouts
- Contaminated water levels
- Some chemicals measure 200x safe drinking
- Drinking water wells of 16 families
- Contaminated with methane
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Natural Gas Drilling

Litigation Has Begun

Great Falls, Montana

One Family
- Livestock pond contaminated with drilling waste water
- Jury Awards: $437,000

Litigation filed on behalf of 19 families
- Alleging 8 poorly sealed wells caused explosions, drinking water contamination
- Diminution of property values
- Illnesses alleged include neurological disorders, gastrointestinal disorders, dermatological problems
- Settlement – $4.1M

- Exposure to heavy metals
- Illnesses alleged include neurological disorders, gastrointestinal disorders, dermatological problems
- Settlement – $4.1M
Natural Gas Drilling

Litigation

- Alleging drinking water contamination
- Settlement – $1.6M

Pennsylvania

Litigation

Has Begun

The following maps address state regulations for:

- Pit liner requirements.
- On-site fluid storage options; and
- Setback distances from water sources;
- Setback distances from buildings.

Considerations

Natural Gas Drilling
Mineral Rights Laws

Surface owners may not own mineral rights.

Surface owners may have little or no say in drilling operations.

Liability?

State Laws

Individual Considerations
Forced Pooling Laws May Assign Liability

**Considerations**

- TX
- PA
- MI
- OH

Proposed legislation - designated as an "operator" - contains no liability exemption
- MI

Desigated as a full working party
- MI

Also includes a direct cause of action allowing injured parties to bring suit directly against a liable party's insurer
- NY

NY App Ct interpreting Navigation Law, property owner would not be permitted "to evaluate liability by contractually limiting ... control of the premises."
- NY

Strict liability including for owners of property on which spill occurred
- NY

Forced pooling do not get remuneration
- TX

"Operator" - contains no liability exemption
- PA

Desigated a nonparticipating owner
- MI

Not liable for actions or conditions associated with drilling
- OH

Individual State Laws

- MI Designated a full working party - contains no liability exemption
- PA Proposed legislation - designated as an "operator" - contains no liability exemption
- TX Those forced pooled do not get remuneration
- OH

Forced pooling may assign liability
Natural Gas Drilling

Coverage Issues

- Coverage has become largely automated
- Few carriers still send out annual renewal apps
- HOS coverage has become largely automated

Business or Business Pursuits Exclusions

- "Conducted from an Insured's locations"
- "A business—"a business"
- "Whether or not the business is owned or operated by an Insured."

Emerging Issues

Business or Business Pursuits Exclusions

- Current forms—"a" business
- No application questions regarding well exposures
come into play

Definition of “business” and the listed exceptions will

limited to “an insured’s” business

What if some courts rule that these exclusions are

Business or Business Pursuits Exclusions

coverage

Issues

The insured’s profit motive

Continuity of operations, and

exclusions based upon two-pronged test:

Appellate Courts: CT, OK, TN and TX upheld

Exclusion applies only to the insured’s principal business

Appellate Courts: GA, MS and NC

Business or Business Pursuits Exclusions

coverage

Issues
Definition of "Business" and Exceptions

Coverage

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- Def. includes the phrase "enterprise or activity"
- Excl. reads—"a business engaged in by an insured"
- ISO's FOs—contains business pursuits exclusion:
  - "(1) One or more activities... for which no insured receives more than $2,000 in total compensation for the 12 months before the beginning of the policy period..."
Natural Gas Drilling

Fracking now being used to extract oil from unconventional reservoirs. It’s not just horizontal wells.

Some 90% of all oil and gas wells – including vertical wells – are fracked.

U.S. oil companies doubled the number of rigs in the U.S. over 1 year ago.

Fracking has allowed oil exploration companies to double the number of rigs in the U.S. over 1 year ago.

Personal Lines policies generally do not contain a pollution exclusion.

- Personal Umbrella policies generally do not contain a pollution exclusion.
- Farmowners’ policies generally contain a pollution exclusion.
- Most do not contain an exclusion under Section I.
- Party claims exclusion under Section I, which should bar first-party claims.

Coverage

Applicability of Pollution Exclusions in

Personal Lines Policies

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What's Put Deep Underground Stays Underground?

- Waste placed in deep injection wells get pushed back towards the surface through pressure and small fractures.
- Structural failures are routine.
- One study: waste moved up 1,400 feet over 23 years.
- Known leaks in CA, FL, OK, and LA.
- Drinking water wells have been contaminated.

How many on leased land?

- TX has the most with 52,000
- MO has 4,133
- AR has 1,387
- OH has 24,984

Over 150,000 in 32 states.
Natural Gas Drilling

Increasing push to lease land over shale beds

Conclusions

Potential toxic tort and pollution litigation / claims

Policy language interpretation

Personal lines carriers have generally not contemplated the exposure

Insurers may see requests to modify exclusions to allow some coverage under HO’s and FO’s policies

Increasing push to lease land over shale beds

Conclusions