Fracking and the Environment— State Law Compendium (August 2014)

Overview of Fracking in 6 States With Highest Number of Fracking Wells

Texas is the top oil-producing state in the country, and also has the most hydraulically fractured wells. In creating this state law compendium, we compiled the most recent regulations and laws addressing hydraulic fracturing, or "fracking," in the 5 states after Texas that have the highest number of fracking wells. Based on the increased development of fracking wells in these states, many have passed recent regulations and laws to address the potential environmental impact of fracking. Many of these states are also beginning to see more lawsuits related to alleged water and environmental contamination from these fracking wells. This compendium will provide the readers an overview of recent case law, regulations, and statutes for these states pertaining to fracking.

States Addressed in this Compendium and Number of Fracking Wells in each State:

1. Texas (33,753)
2. Colorado (18,168)
3. Pennsylvania (6,651)
4. North Dakota (5,166)
5. Arkansas (4,910)
6. West Virginia (3,265)

The Compendium Covers the Following Topics:

A. Property rights: surface rights and mineral rights.

B. Causes of action asserted by plaintiffs in recent cases pertaining to fracking.

C. Recent cases related to fracking.

D. State regulatory scheme, recent regulations, and recent legislation.

E. Standards for expert testimony in toxic tort cases.

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TEXAS

A. Property rights: surface rights and mineral rights.

Absent an agreement to the contrary, the mineral rights go with the surface rights at the time of conveyance. However, as a separate interest, they can be severed from the surface estate in one of two ways: the landowner sells the minerals and retains the surface, or more commonly, the landowner sells the surface and retains the minerals. For fracking operations, it is important to note that the state owns surface water, but the landowner generally owns groundwater as a mineral under his estate.

B. Causes of action asserted by plaintiffs in recent cases pertaining to fracking.

Plaintiffs have brought causes of action in fracking-related litigation for trespass, subsurface trespass, nuisance, fraud, anti-trust, premises liability, water use restriction violations, surface water violations, contract, assault, intentional infliction of emotional distress, medical monitoring, negligence, and strict liability (abnormally dangerous activity).

C. Recent cases related to fracking.

1. Nuisance

- *Parr v. Aruba Petroleum* - On April 22, 2014, Plaintiffs Lisa Parr, Robert "Bob" Parr, and their daughter Emma, won a $3M verdict from a Dallas County jury for intentional private nuisance against Aruba Petroleum, Inc. Plaintiffs alleged that Aruba Petroleum's natural gas drilling operations near their 40 acre Wise County ranch caused them to suffer headaches, bloody noses, and other illnesses. The significance of this case is that it is the first verdict against an oil and gas operator for drilling natural gas wells in close proximity to residential areas.

2. Water Contamination

- *Scoma v. Chesapeake Energy Corp.* - In the Northern District of Texas, landowners brought an action against several companies alleging that the drilling waste stored on-site and disposal wells had contaminated their water. The case was voluntarily dismissed with prejudice after settlement.

- *Lipsky v. Durant, Carter, Coleman LLC* - When a husband and wife alleged that fracking had caused contamination of their water well supply (the flammable sink water case), Defendants Range Production Co. and Range Resources Corp. counterclaimed against the couple alleging that Plaintiffs and an environmental consultant conspired to harm Range's reputation by using false and misleading data to attempt to persuade the EPA to get involved. The 2nd Court of Appeals remanded the case to the state court for reconsideration.

3. Trespass

- *Key Operating & Equipment, Inc. v. Hegar* - The Texas Supreme Court heard oral argument in February 2014 regarding a property owner's trespass claim who alleged that a company drilling a well on an adjacent property made improper use of a roadway on their land to reach the well. A portion of the mineral estate underlying the property on which the roadway was located was subject to a pooling agreement that was signed after the mineral rights were severed from the surface estate. The Appellate Court had held that since the pooling agreement was not a part of Plaintiff's title, then the pooling agreement did not authorize the company to use the road to reach the well on another property.

- *Environmental Processing Systems L.C. v. FPL Farming Ltd*. - On January 7, 2014, the Texas Supreme Court heard oral arguments in a trespass claim by a rice farmer against a disposal company. The rice farmer alleged that subsurface migration of wastewater from an underground injection well constituted a trespass. The Appellate Court had held that for the issue of consent, the burden of proof was on the disposal company; not the owner. The issue before the Court is whether a subsurface trespass claim should require a showing of harm/interference with the use of the property.

4. Antitrust

    - *Cherry Canyon Resources, L.P. v. Halliburton* - Plaintiffs filed a class action alleging that Halliburton, Schlumberger, and Baker Hughes conspired to restrain free trade in the market for fracking pressure pumping in the United States. Plaintiff alleged that the defendants controlled 60% of the pressure pumping service market in North America. The lawsuit was commenced after the DOJ-Antitrust Division confirmed that it was investigating anti-competitive practices in the pressure pumping services market.

D. State regulatory scheme, recent regulations, and recent legislation.

1. Texas Commission on Environmental Quality (TCEQ)

    a. TCEQ's goal is to provide clean air, clean water, and safe management of waste for Texas.
    b. In 2013, TCEQ issued 2,182 administrative orders for violating TCEQ regulations with over $12.4 million to be paid as penalties. TCEQ collected $540,000 in penalties in 2013. There were also 43 civil judicial orders issued through representation by the Texas Office of the Attorney General resulting in over $10.8 million to be paid in penalties.

2. Texas Railroad Commission (TRRC)

    a. The Oil and Gas Division of the Railroad Commission of Texas regulates all drilling activities in the State of Texas and has enforcement power to punish violations of regulations.
    b. The RRC also has the ability to assess financial penalties for violating RRC rules. In 2014, 1,056 alleged oil and gas violations were sent to the Office of General Counsel Enforcement, and they assessed $1,701,641.24 in penalties.
    c. However, the RRC struggles to keep up with demand. In 2009, more than 80,000 reports for violations of "state rules" were made, but only 4% resulted in enforcement actions.

3. Texas Water Code – Chapter 36 of the Texas Water code allows use of potable groundwater for oil and gas exploration, and it is exempt from any permit or regulatory requirements.

    a. Oil and gas operators are allowed to use as much groundwater as they want, even though it is in scarce supply.

b. Brackish water that is non-potable, but found deeper in the ground, is not in scarce supply. Despite this fact, it is largely not used by the oil and gas industry.
c. Operators are required to obtain a permit from the Texas Railroad Commission to drill a water well and report how much water they are using, but only if they use brackish water.

4. H.B. 3328—Disclosure of Fracking Chemicals

a. In 2011, Governor Perry signed legislation amending Chapter 91 of the Natural Resources Code.
b. The amendment requires the Texas Railroad Commission to issue rules on fracking. The fracking operators must complete forms detailing (1) the total amount of water used in their operations; and (2) each chemical ingredient used in the operations.
c. Those forms are then posted to a publically available internet website. However, operators can withhold certain information as a "trade secret," but allows persons to challenge it any time within 2 years.

E. Standards for expert testimony in toxic tort cases.

1. In toxic tort cases in Texas, a Plaintiff must show both general and specific causation. *Merrell Dow Pharmaceuticals, Inc. v. Havner*, 953 S.W.2d 706, 715 (Tex. 1997).

2. General causation is whether the allegedly offensive substance is capable of causing a particular injury or condition in the general population.

3. Specific causation is whether that substance caused a particular individual's injury.

4. In the absence of direct scientific proof of causation, "claimants may attempt to demonstrate that exposure to the substance at issue increases the risk of their particular injury. The finder of fact is then asked to infer that because the risk is demonstrably greater in the general population due to exposure to the substance, the claimant's injury was more likely than not caused by that substance." *Havner*, 953 S.W.2d at 715.

5. According to the Texas Supreme Court, an opinion on causation "should be premised on three preliminary assessments. First, the expert should analyze whether the disease can be related to chemical exposure by a biologically plausible theory. Second, the expert should examine if the plaintiff was exposed to the chemical in a manner that can lead to absorption into the body. Third, the expert should offer an

opinion as to whether the dose to which the plaintiff was exposed is sufficient to cause the disease." *Borg-Warner Corp. v. Flores*, 232 S.W.3d 765, 771 (Tex. 2007)).

6. The Plaintiff must produce "Defendant-specific evidence relating to the approximate dose to which the plaintiff was exposed, coupled with the evidence the dose was a substantial factor in causing" the plaintiff's symptoms. *Borg-Warner*, 232 S.W.3d at 773.

COLORADO

A. Property rights: surface rights and mineral rights.

Colorado land owners may sever the mineral rights of their land from the surface rights.

B. Causes of action asserted by plaintiffs in recent cases pertaining to fracking.

Plaintiffs have brought causes of action in fracking-related litigation for negligence per se, common law negligence, nuisance, strict liability, trespass, and medical monitoring trust funds.

C. Recent cases related to fracking.

1. Expert Testimony and Prima Facie Causation—In *Strudley v. Aantero Resources Corp.*, 2011 CV 2219 (Colo. D. Ct. Denver County, May 9, 2012), Plaintiffs alleged causes of action for negligence per se, common law negligence, nuisance, strict liability, trespass, and medical monitoring trust funds. Plaintiffs claimed that operator's fracking activities had leaked chemicals into their drinking water and caused the Plaintiffs' health problems. Defendants requested that the court issue a "Lone Pine" discovery control order requesting that Plaintiffs make a showing of causation early in the case. Lone Pine orders require Plaintiffs to make a prima facie showing of exposure, injury, and specific causation by providing expert affidavits. The Judge agreed. Plaintiffs argued for more time to complete discovery, but Defendants countered that no further discovery was needed because the Colorado Oil and Gas Conservation Commission had investigated Plaintiffs' claims and found no contamination from the gas operations. The Judge ruled that Plaintiffs failed to prove through data or expert analysis that there was a causal connection between Plaintiffs' injuries and Plaintiffs' exposure to Defendants' drilling activities and dismissed Plaintiffs' claims.

2. On appeal, the Colorado Court of Appeals reversed the Lone Pine Order and dismissal order. The Court found that a trial court may not require a showing of a prima facie case before allowing discovery on matters central to a plaintiff's claims.

3. On April 7, 2014, the Colorado Supreme Court agreed to review the Appeals Court's decision. The Court will address whether or not a district court can enter into a modified case management order requiring plaintiffs to produce evidence essential to their claims after initial disclosures but before further discovery. The Court will then address whether or not the district court acted within its discretion in entering and enforcing such an order.

D. State regulatory scheme, recent regulations, and recent legislation.

1. The Colorado Oil and Gas Conservation Commission regulates drilling-related activities in the state. The mission of the Commission is to foster the responsible development of Colorado's oil and gas natural resources.

2. On January 9, 2013, the Commission passed some of the strictest rules in the country to limit the impact of drilling near homes and other occupied buildings. These new rules went into effect on August 1, 2013. Some of the provisions include stricter guidelines for operators if they propose to drill within 1,000 feet of an occupied structure. The rules also prohibit operators from drilling within 1,000 feet of buildings housing larger numbers of people, such as schools, nursing homes and hospitals, without a hearing before the Commission. Texas Railroad Commission (TRRC).

3. In November 2014, competing laws were set to go to the Colorado voters pertaining to set back provisions and other issues regarding fracking. In order to avoid a conflict of laws on the ballot, Governor John Hickenlooper reached a compromise with both sides of the fracking issue by forming an 18-member commission that will recommend legislation for 2015 to resolve conflicts between the oil and gas industry and environmental groups. The conflicting provisions have now been removed from the November 2014 ballot.

E. Standards for expert testimony in toxic tort cases.

In Colorado, Plaintiffs must establish general and specific causation in toxic tort cases. Plaintiffs must establish the standards for what constitutes a dangerous level of contaminants in drinking water, and whether there is a causal link between the contaminants and Plaintiffs' injuries.

PENNSYLVANIA

A. Property rights: surface rights and mineral rights.

In Pennsylvania, the mineral rights are sold separately from surface rights.

B. Causes of action asserted by plaintiffs in recent cases pertaining to fracking.

Plaintiffs have brought causes of action in fracking-related litigation for negligence, private nuisance, strict liability, trespass, and medical monitoring trust fund.

C. Recent cases related to fracking.

1. Water Contamination

    - In two recent cases, Plaintiffs sued the owners and operators of wells alleging that Defendants' fracking activities contaminated their water supply well, exposing them to hazardous chemicals that have caused them to be ill. Plaintiffs brought causes of action for negligence, private nuisance, strict liability, trespass, and medical monitoring trust fund. Plaintiffs accused Defendants of failing to prevent and/or contain releases and migration of hazardous chemicals into their water supply. Plaintiffs sought costs for remediation of the hazardous substances and compensatory damages for medical costs. The cases were stayed pending arbitration. *See Otis v Chesapeake Appalachia, LLC, Chesapeake Energy Corporation, and Nomac Drilling, LLC,* No. 3:11-cv-00115-ARC (M.D. Pa. (Scranton), Jan 19, 2011; and *Bidlack v Chesapeake Appalachia, LLC, Chesapeake Energy Corporation, and Nomac Drilling, LLC,* No. 3:11-cv-00115-ARC (M.D. Pa. (Scranton), Jan 19, 2011.

2. Striking down Act 13—set-back and waiver provisions

    - On December 19, 2013, the Pennsylvania Supreme Court struck down large portions of a recent Pennsylvania law known as "Act 13" that was enacted by the legislature to facilitate and increase fracking operations in the state.

- In *Robinson Twp., Washington Cnty., v. Com.*, 83 A.3d 901, 981-985 (Pa. 2013), the Pennsylvania Supreme Court found that portions of the law, including the requirement that municipal zoning ordinances be amended to include oil and gas operations in all zoning districts and the provision that allowed local municipalities to waive setback requirements, violated the Environmental Rights Amendment of the Pennsylvania State Constitution.

D. State regulatory scheme, recent regulations, and legislation.

1. Pennsylvania's Department of Environmental Protection regulates drilling in the Marcellus Shale formation. The Department also is responsible for enforcing Pennsylvania's Oil and Gas Act, as well as state regulations on drinking water quality, air quality, and environmental health of rivers and streams. The Department has a $135 million dollar state budget with $215 million from the federal government.

2. The Bureau of Oil and Gas Management, within the Department, employs 80 well inspectors who carried out about 5,000 inspections in 2012.

3. In July 2014, the Department of Environmental Protection issued a much-anticipated report that documents 209 cases where oil and gas operations negatively impacted water supplies since late 2007. Many critics of fracking hope that this report will prompt the Pennsylvania legislature to implement harsher regulations on drilling.

4. In Pennsylvania, the Department of Health's Bureau of Epidemiology logs complaints related to natural gas development in a database. The Bureau follows up with people who file complaints and conducts a follow up investigation. The Department has logged 51 complaints since 2011, which is three years after fracking began on the Marcellus Shale.

E. Standards for expert testimony in toxic tort cases.

1. The Superior Court of Pennsylvania issued a ruling in December 2013 that experts in toxic tort liability cases must prove specific causation. *Snizavich v. Rohm and Haas Co.*, No. 1383 EDA 2012, 2013 Pa. Super. LEXIS 3192 (Pa. Super. Ct. Dec. 6, 2013).

2. In this case, the decedent was employed as a contractor at Rohm and Haas' facility in Spring House, Pennsylvania for 13 years where he worked on air conditioning and refrigeration units and was allegedly exposed to various

chemicals. He later died of brain cancer. Decedent's wife filed suit against her husband's former employer alleging that his cancer and death and been caused by his exposure to chemicals at work.

3. Defendant moved to strike the report of Plaintiff's expert Dr. Milby for failing to meet the requirements of expert testimony. The Court agreed that Dr. Milby failed to establish specific causation that decedent's injuries were caused by exposure to Defendant's product.

4. The ruling affirms that Plaintiffs in toxic tort cases "must proffer expert testimony with a sufficiently scientific basis, applied to the facts of the case, to establish the requisite causal link between the alleged injury and exposure to the defendant's product." This may be difficult for certain plaintiffs like Ms. Snizavich, since the scientific and medical literature has not found a conclusive nexus between a given product and the alleged injury.

NORTH DAKOTA

A. Property rights: surface rights and mineral rights.

North Dakota recognizes separate property interests for surface estates and mineral estates. Importantly, mineral estates are dominant to surface estates. *See Hunt Oil Co. v. Kerbaugh*, 283 N.W.2d 131, 135 (N.D. 1979). Specifically, the holder of a mineral estate has the right to use the surface property to the extent that is "reasonably necessary to explore, develop, and transport the minerals." *Id.*

B. Causes of action asserted by plaintiffs in recent cases pertaining to fracking.

Plaintiffs have brought causes of action in fracking-related litigation for breach of mineral-estate lease contracts, negligence, fraud, and violations of truth-in lending.

C. Recent cases related to fracking.

1. Loss of Royalties for Flaring

    - North Dakota struggles with capturing all the natural gas produced by the fracking wells, because the state has not constructed enough pipelines to transport the gas. If the operator cannot transport it, then the operator has to burn off the natural gas they can't capture and ship to market. According to state data collected by the Wall Street Journal, in April 2014, operators had to burn 10.3 billion cubic feet of natural gas, valued at $50 million.

    - *Hanson v. Hunt Oil Co.*, 2014 WL 791906 (D.N.D.) is one of several suits brought by North Dakota mineral-rights holders for lost royalty payments resulting from gas operators' flaring practices. This suit was removed to federal court in February 2014, and subsequently dismissed on May 14, 2014 by U.S. District Judge Daniel Hovland on the basis of lack of Federal-Court jurisdiction. A similar lawsuit is pending in Mountrail County District Court. *Vogel v. Marathon Oil Company*, No. 31-2013-CV-00163.

2. Mineral Rights Dispute

    - *Two Shields v. Wilkinson*, No. 4:12-CV-00160 (D.N.D.). Native-American Reservations in North Dakota brought a class-action suit against Och-Ziff Capital Management LLC and Schlumberger Ltd. in mineral-rights dispute. The oil-company defendants purchased the mineral rights from the Reservations in 2007 for $14 million, and sold them for $949 million less than two years later. In the suit, the plaintiffs allege fraud and violations of truth-in lending against the defendants.

D. State regulatory scheme, recent regulations, and recent legislation.

1. The North Dakota Industrial Commission (NDIC) maintains the authority to oversee and permit hydraulic fracturing.

2. In 2011, North Dakota designated fracking as an acceptable means of oil and gas recovery. *See* N.D. Cent. Code § 38-08-25. There are regulations for mining companies to monitor and report their fracking activities. *See* N.D. Admin. Code 43-02-05-12.

3. The Commission has the authority to issue fines and sanctions against operators and owners for rule violations. However, according to one website, the Commission seldom enforces the rules. The Commission has issued less than 50 disciplinary actions for all types of drilling violations, including spills, from 2009-2012.

4. However, as of August of 2014, the NDIC was proceeding against a Wyoming-based trucking company for allegedly improper disposal of fracking wastewater in Williams County. *See* N.D. Department of Mineral Resources, *Trucking firm facing major fines for illegally dumping saltwater*, The Bakken, April 16, 2014.

5. The Health Department also has authority to take actions against companies that pollute water sources, but it has only taken one action against an oil company during the period of 2009-2012. The Health Department cited Continental Resources for oil and brine spills that turned two streams into "toxic dumps." The Department fined Continental around $350,000, but Continental ended up only paying $35,000 in fines after a settlement with the state.

E. Standards for expert testimony in toxic tort cases.

1. In both North Dakota state court and the U.S. District of North Dakota, the qualification of a witness as an expert is a discretionary decision for the trial court.

E.g., Langness v. Fencil Urethane Sys., Inc., 667 N.W.2d 596, 601 (N.D. 2003); *Bonner v. ISP Technologies, Inc.*, 259 F.3d 924, 928 (8th Cir. 2001).

2. North Dakota Rule of Evidence 702 mimics the Federal Rule and outlines the necessary conditions for an expert witness: "[i]f scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise." In Federal Court, expert testimony is subject to the standards set forth in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 594-95 (1993). North Dakota state court has drawn from *Daubert* for analysis of expert testimony, but has not explicitly adopted the *Daubert* principles for admissibility of expert testimony. *State v. Hernandez*, 707 N.W.2d 449, 453 (N.D. 2005).

3. Although not explicitly required in all toxic-tort cases, expert testimony is required if the issue is "beyond the area of common knowledge or lay comprehension." *Leno v. Ehli*, 339 N.W.2d 92, 99 (N.D. 1983). Expert testimony is required for showing causation if the causal relationship at issue "is not a matter within the common knowledge or comprehension of a lay person." *Perius v. Nodak Mut. Ins. Co.*, 782 N.W.2d 355, 360 (N.D. 2010).

ARKANSAS

A. Property rights: surface rights and mineral rights.

Mineral rights are sold separately. "The owner of a mineral estate has the right to reasonable use of the surface for developing minerals, and the mineral estate is described as the dominant estate, while the surface estate is depicted as the subservient estate. *DeSoto Gathering Co., LLC v. Smallwood*, 2010 Ark. 5 at *6. The mineral estate can be severed from the surface by either a grant or reservation; absent a severance, a deed conveys both estates. See generally *Peterson v. Simpson*, 286 Ark. 177 (1985).

B. Causes of action asserted by plaintiffs in recent cases pertaining to fracking.

Plaintiffs have brought causes of action in fracking-related litigation for nuisance, trespass, negligence, strict liability, RICO, civil conspiracy, contract-based claims, and unjust enrichment. *See Hill v. Southwestern Energy Co.*, 2013 WL 5423847 (2013 E.D. Ark.) and *Tucker v. Southwestern Energy Co.*, 2012 WL 528253 (2012 E.D. Ark.).

C. Recent cases related to fracking.

1. Class Actions and Individual Actions for Water Contamination

- *Ginardi v. Frontier Gas Services*, LLC, No. 11-CV-0420 (E.D. Ark., filed May 17, 2011--Plaintiffs filed a class action on behalf of all residents within one mile of any natural gas compressor or transmission station owned by defendants. The complaint alleges that defendants' operations pollute nearby groundwater and soil. The complaint alleges causes of action for strict liability, nuisance, trespass, and negligence. The court denied plaintiffs' motion for class certification.

- *Tucker, Berry v. Southwestern Energy Co.*, 11-CV-0044 (E.D. Ark., filed May 17, 2011)--Two class actions were filed on behalf of all residents living within three miles of any bore holes, wellheads, or other gas operations by defendant company. The cases were consolidated on July 22, 2011. Plaintiffs

allege that their water wells and groundwater are contaminated with alpha methyl styrene or have emitted methane and hydrogen sulfide. The complaint alleges causes of action for strict liability, nuisance, trespass, and negligence. The court granted the defendants' motion for a more definite statement, holding that the plaintiffs must plead facts to give the companies adequate notice of what and how each driller supposedly harmed them. After the parties reached a settlement, the court issued a judgment dismissing claims against defendants Chesapeake Energy, BHP Billiton Striking down Act 13—set back and waiver provisions.

- *Scoggin v. Cudd Pumping Services*, Inc. No. 11-CV-00678 (E.D. Ark. filed Sept. 12, 2011)—this action was commenced by a grandmother on behalf of her minor grandchildren who resided with her and who were allegedly exposed to "noxious and poisonous carcinogenic matter and compounds" as a result of their home's proximity to hydraulic fracturing operations. Plaintiffs alleged strict liability, nuisance, trespass, and negligence claims and sought compensatory and punitive damages as well as establishment of a medical monitoring fund. Plaintiffs and defendants filed a stipulation to dismiss the action without prejudice.

2. Nuisance

- *Ramsey, et al. v. Desoto Gathering Company*, LLC, Case No. 23CV-14-258, was filed in the Circuit Court of Faulkner County, Arkansas for the 20th Judicial District, just two days after a $3 million verdict in Dallas, Texas for nuisance damages arising from the drilling activities of a natural gas company.

- Eight families who live near compressor stations operated by the Company sued alleging the emissions of "huge amounts of methane and hydrogen sulfide, as well as other flammable, malodorous and noxious gases, chemicals and compounds, directly into the air." They also allege that the compressor stations "are injuriously loud and produce harmful levels of noise and toxic emissions" and that they have been harmed by the noise, vibration, odor and pollution.

- Stating causes of action for strict liability and negligence, each of seven families seeks $3 million for compensatory damages and $5 million in punitive damages (with one family seeking $8 million and $12 million, respectively, claiming exacerbation of the husband's post-traumatic stress disorder diagnosed by the Department of Veterans Affairs) for discomfort resulting from the company's activities and for personal injuries resulting from the noise and vibration of the compressor stations.

D. State regulatory scheme, recent regulations, and recent legislation.

1. The Arkansas Oil and Gas Commission regulates oil and gas matters, prevents waste, encourages conservation. It also protects correlative rights of ownership associated with the production of oil, natural gas, and brine, while protecting the environment during the production process through the regulation and enforcement of the laws of the State of Arkansas.

2. The AOGC issues permits and regulates well spacing and offset requirements. The Pollution Control and Ecology Commission covers all other regulation regarding operations, including pollution restrictions and permits. While the PCE issues the regulation, the enforcement is handled by the Arkansas Department of Environmental Quality.

3. Arkansas, like several other states, allows leasing of mineral rights for gas development through voluntary integration of rights on separate tracts, but in cases where the separate tracts or interests cannot be voluntarily integrated, drilling unit owners can apply to the AOGC for compulsory integration for shared production and to avoid waste from drilling unnecessary wells. 2012 Ark. Code Ann. §15-72-302-303. The standard drilling unit is a section (640 acres).

4. In July of 2011, Arkansas regulators permanently shut four disposal wells in the Fayetteville Shale after an outbreak of earthquakes near the town of Guy, including one that measured 4.7 on the Richter scale. This year, the state Oil and Gas Commission adopted rules requiring drillers to provide information on the structural geology of well sites and to position wells away from known faults, according to Lawrence Bengal, commission director.

5. Since July 2011, numerous bills have been introduced to regulate fracking but they have largely been withdrawn because Arkansas citizens have largely embraced the fracking boom.

    - House Bill1396 (withdrawn) would have required public disclosure of Fracking chemicals.
    - HB 1392 (withdrawn) would have created a program for annual inspection of gas wells to analyze the effects of the chemicals used.
    - HB 1395 (withdrawn) aimed to protect air quality in the vicinity of natural gas drilling fields.

E. Standards for expert testimony in toxic tort cases.

1. Ark. R. Evid. 702 states that if scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education, may testify thereto in the form of an opinion or otherwise.

2. Arkansas has adopted the standard set forth by the US Supreme Court in *Daubert* for expert witness testimony. See *Farm Bureau Mut. Ins. Co. of Arkansas, Inc. v. Foote*, 341 Ark. 105, 116 (2000):

> The Court concluded that a key consideration is whether the scientific theory or technique can be or has been tested. Other considerations include whether the theory or technique has been subjected to peer review and publication, the potential rate of error, and the existence and maintenance of standards controlling the technique's operation. Additionally, the Court recognized that general acceptance in the scientific community can have a bearing on the inquiry. The Court emphasized that the inquiry envisioned by Federal Rule of Evidence 702, which is identical to our Rule 702, is a flexible one: Its overarching subject is the scientific validity-and thus the evidentiary relevance and reliability-of the principles that underlie a proposed submission. The focus, of course, must be solely on principles and methodology, not on the conclusions that they generate.

3. Under the *Chavers* test used in Arkansas, a Plaintiff in a toxic-tort case must prove the following elements: (1) plaintiff was exposed to a toxic product spread by defendants; (2) with sufficient frequency and regularity; (3) in proximity to where plaintiff actually worked, lived, or went to school; (4) such that it is probable that exposure to the product caused plaintiff's injuries. *Chavers v. General Motors Corp.*, 79 S.W.3d 361, 368 (Ark. 2002).

WEST VIRGINIA

A. Property rights: surface rights and mineral rights.

Absent an agreement to the contrary, when a landowner sells their property in West Virginia, the mineral rights are sold separately. This general rule can be freely modified in the contract to sever the surface from the mineral rights. Unfortunately for most West Virginians, the mineral rights (especially in the South rather than the North) were severed from the surface estate decades ago due to coal mining and other operations.

B. Causes of action asserted by plaintiffs in recent cases pertaining to fracking.

Plaintiffs have brought causes of action in fracking-related litigation for nuisance, trespass, waste, fraud, misrepresentation, strict liability, negligence, medical monitoring, and breach of implied duties.

C. Recent cases related to fracking.

1. Water Contamination

    - *Hagy v. Equitable Prod. Co.*, 541 Fed. Appx. 316, 318 (4th Cir. 2013) - Drilling company obtained summary judgment despite plaintiffs' allegation that the company's fracking caused their water to be contaminated. Applying state law, the Fourth Circuit upheld the decision based upon (1) language of release agreements executed between the parties, and (2) a lack of any evidence presented by plaintiffs of causal connection between alleged wrongful conduct of defendants and plaintiffs' claimed damages.

2. Burden on Surface Property

    - *Whiteman v. Chesapeake Appalachia, LLC*, 729 F.3d 381, 394 (4th Cir. 2013)- Chesapeake's creation of drill waste pits was ruled to be reasonably necessary for recovery of natural gas and did not impose a substantial burden on the plaintiffs' surface property. Creation of the pits

was consistent with Chesapeake's rights under its lease, was a practice common to natural gas wells in West Virginia, and was consistent with requirements of applicable rules and regulations for the protection of the environment.

- *Martin v. Hamblet*, 230 W. Va. 183, 192, 737 S.E.2d 80, 89 (2012)- Surface owners have no statutorily-defined right to seek judicial review with respect to a permit issued by the West Virginia Department of Environmental Protection (WVDEP).

3. Bans on Fracking

- Local Municipalities Cannot Ban Fracking--*Northeast Natural Energy, LLC v. City of Morgantown*, No. 11-C-411 (Cir. Ct. Monongalia Cnty., Aug. 12, 2011)- The City of Morgantown had enacted a ban on hydraulic fracturing, but in litigation challenging the ban, a state court held that WVDEP had exclusive jurisdiction to regulate oil and gas extraction in the state. The court further held that WVDEP's rules authorizing hydraulic fracturing preempted Morgantown's local ordinance prohibiting fracking. This preemption would seem to apply to all municipal ordinances prohibiting fracking.

- No Fracking in State Parks Unless Hold Prior Permit---*Cabot Oil & Gas Corp. v. Huffman*, 227 W. Va. 109, 118, 705 S.E.2d 806, 815 (2010)-W. Va. Code § 20-5-2(b)(8) (2008), The Court barred the exploitation of minerals in state parks, but did not bar the issuance of permits to conduct drilling in a state park where a deed had been drafted and the terms agreed upon before such statutes were enacted.

D. State regulatory scheme, recent regulations, and legislation.

1. The West Virginia Department of Environmental Protection's Office of Oil and Gas is responsible for monitoring and regulating all actions related to the exploration, drilling, storage and production of oil and natural gas. It maintains records on all active and inactive wells. It manages the Abandoned Well Plugging and Reclamation Program. It ensures surface/groundwater is protected from oil and gas activities.

2. In 2012, West Virginia introduced the Horizontal Well Act. The West Virginia legislature approved the bill on Dec. 14 of 2012 at the conclusion of a four-day special session. The House passed the bill by a vote of 92-5. The Senate then passed it unanimously. Gov. Earl Ray Tomblin, a Democrat, signed it into law on Dec. 22. The law applies to any horizontal well other than coal bed methane that disturbs three acres or more of surface land or exceeds use of 10,000 gallons of

water in any 30-day period. Under the Act, operators are required to:

a. publish a legal advertisement prior to applying for a permit;
b. declare the components of the hydraulic fracturing fluids;
c. reclaim the well site after operations are complete;
d. pay $10,000 for an initial well and $5,000 for each additional well on the same site;
e. develop a water management plan; and
f. locate wells at least 100 feet from any lake or perennial stream, 250 feet from an existing water well, 650 feet from an occupied dwelling, and 1,000 feet from any public water supply intake. W. Va. Code § 22-6A-1 *et. seq.*

3. West Virginia's House Bill 2403 (which failed) would have required gas well operators to submit information to the Office of Oil and Gas—such as anticipated withdrawal, type of water source, planned management of wastewater, lists of additives, and more—if water withdrawals for fracturing or stimulating gas production exceed 210,000 gallons a month.

4. West Virginia's Senate Bill 474 (pending) would allow landfills to accept unlimited amounts of solid waste from hydraulic fracturing, creating an exception to the current rules restricting landfill intake to 10,000 or 30,000 tons a month, depending on the landfill classification. Most recently (February 3, 2014) the legislation was known as Senate Bill 474.

5. The minimum amount for royalties is statutorily set at one-eighth. W. Va. Code § 22-21-17(g) (2009).

E. Standards for expert testimony in toxic tort cases.

West Virginia Rule of Evidence 702 contains three major requirements: (1) the witness must be an expert; (2) the expert must testify to scientific, technical or specialized knowledge; and (3) the expert testimony must assist the trier of fact. In determining who is an expert, a circuit court should conduct a two-step inquiry. First, a circuit court must determine whether the proposed expert meets the minimal educational or experiential qualifications is in a field that is relevant to the subject under investigation which will assist the trier of fact. Second, a circuit court must determine that the expert's area of expertise covers the particular opinion as to which the expert seeks to testify. *Perrine v. E. I. du Pont de Nemours & Co.*, 225 W.Va. 482, 694 S.E.2d 815, 868-69 (2010).