

THE FACTS BEHIND THE FRACKING – HOW IT IMPACTS REALTORS®

1. The “Science” Behind Fracking
 - A. What is Fracking? – Fracking is a slang term for hydraulic fracturing which is a process used for the extraction of natural gas from deep underground shale formations. In order to access the gas, well operations create or increase existing fractures in the underground shale formation by first drilling a deep vertical bore in the shale and then extending a horizontal shaft or “leg” from the bottom of the vertical shaft using “directional drilling.” Once a well is drilled, operators pump a mixture of water, sand and chemicals into the well, at high pressures, in order to create fractures. The fracturing allows the gas to flow to the surface, along with the fracturing fluid, where the gas is collected and the fluid disposed of or reused. *Hydraulic Fracturing: Fact Sheet*, CHESAPEAKE ENERGY (May 2012).
 - B. Is Fracking New? – The short answer is “No” – fracking was first used in 1940. However, fracking has become much more common in the United States in recent years as the use of natural gas for energy increases. According to the Environmental Protection Agency (“EPA”), shale gas could comprise over 20% of the total United States’ gas supply by 2020. *Science in Action: Hydraulic Fracturing Research Study*, EPA.GOV (June 2010).
 - C. Fracking: Pros – The United States has vast reservoirs of natural gas that are commercial viable energy alternatives to “imported” energy sources. *Natural Gas Extraction – Hydraulic Fracturing*, EPA.GOV (February 2013). In Michigan, mineral lease sales auction in May 2010 alone, sales exceeded over \$178 million – the most lucrative sale in Michigan history at that time. *Deep Shale Natural Gas Production in Michigan*, Michigan Bar Journal (January 2011).

D. Fracking: Cons – Increased fracking has led to concerns over:

- 1) Stress on surface water and ground water supplies from withdrawal of large volumes of water used in drilling and hydraulic fracturing.¹
- 2) Contamination of underground sources of drinking water and surface waters resulting from spills, faulty well construction, or by other means.²
- 3) Adverse impacts from discharges into surface waters or from disposal into underground injection wells.³
- 4) Air pollution resulting from the release of volatile organic compounds, hazardous air pollutants, and greenhouse gases.

Natural Gas Extraction – Hydraulic Fracturing, EPA.GOV (February 2013). In turn, these concerns provide the foundation for concerns over property values and the economic viability of new construction. 2012-10 CONBRIEF-NL1 (October 2012).

E. Fracking Hot Spots – In the past, fracking was more prevalent in the western and central parts of the United States. More recently, however, fracking has spread east and is now a “going concern” in the mid-Atlantic and eastern Midwest regions. 2012-10 CONBRIEF-NL1 (October 2012). In Michigan, oil and gas fields are largely concentrated in the northern part of the Lower Peninsula; e.g., Antrim and Otsego counties. More recently, the Collingwood Shale formation is being drilled primarily in

¹ Millions of gallons of water are needed to fracture shale. Water used for fracturing fluids is acquired from surface water and groundwater in the surrounding area. The vast majority of this water cannot be returned into the water system because of the presence of chemical contaminants added in the fracturing process. *Science in Action: Hydraulic Fracturing Research Study*, EPA.GOV (June 2010).

² Not all fracturing fluids injected into the shale are recovered. Estimates of fluids recovered range from 15-80% of the volume injected. *Science in Action: Hydraulic Fracturing Research Study*, EPA.GOV (June 2010).

³ Obviously, some of the fracturing fluids injected at the site are recovered. Some companies reuse this “flowback” to hydraulically fracture more than one well. Other companies dispose of the fluids after one use. Either way, at some point, the fluids are disposed of in one of several ways, one of which includes injecting them underground. *Science in Action: Hydraulic Fracturing Research Study*, EPA.GOV (June 2010).

Missaukee County. *Deep Shale Natural Gas Production in Michigan*, Michigan Bar Journal (January 2011).

2. Federal Studies and Legislation

- A. EPA Study – Numerous studies on safe methodologies for the process of fracking, as well as its potential risks, such as groundwater contamination, have been conducted and published by private entities and universities. See, for example, *Hydraulic Fracturing: Fact Sheet*, CHESAPEAKE ENERGY (May 2012). However, the largest, ongoing investigation/study was, and continues to be, conducted by the EPA. Beginning in 2004, the EPA began releasing final and interim report of its continuing investigation of the environmental impact caused by hydraulic fracturing. In 2004, the EPA determined that coalbed methane hydraulic fracturing posed little or no threat to drinking water. *Evaluation of Impacts to Underground Sources of Drinking Water by Hydraulic Fracturing of Coalbed Methane Reservoirs*, EPA 816-R-04-003 (2004). On October 8, 2009, Congress approved \$1.9 million for the EPA to reopen the 2004 hydraulic fracturing study, HR 2996, Conference Report for the Department of the Interior, Environment and Related Agencies Appropriations Act, 2010, 111th Congress (2009). In its latest report on the progress of its study, the EPA outlines actions taken (and to be taken) to protect against known risks such as providing a national standard for methods for the safe disposal of wastewater from hydraulic fracturing activities at treatment facilities. Currently, no comprehensive national standard exists resulting in some wastewater being transported to publicly owned treatment plants or private centralized waste treatment facilities, many of which are not properly equipped to treat this type of wastewater. *Natural Gas Extraction – Hydraulic Fracturing*, EPA.GOV (February 2013).
- B. Clean Air Act – The EPA administers the Clean Air Act regulations for oil and gas production, including regulations on reporting greenhouse gas emissions. Effective August 23, 2012, the EPA regulations under the Clean Air Act prohibit the release of various chemicals into the air during the hydraulic fracturing process. 77 Fed. Reg. 159 (August 16, 2012); 42 USC §7411.
- C. The Safe Drinking Water Act (“SDWA”) – The federal SDWA, enacted in 1974, and related Underground Injection Control (“UIC”) rules prohibit

the underground injection or subsurface placement of fluids by well injection that endangers underground drinking water resources. Prior to 1997, the EPA did not apply the UIC rules to hydraulic fracturing because the principal function of fracturing is resource recovery and not the placement of fluids underground. In 1997, the United States Court of Appeals, Eleventh Circuit, found that hydraulic fracturing activities constituted “underground injection” such that the EPA was required to regulate these activities under the SDWA and the UIC rules. *Legal Environmental Assistance Foundation, Inc v United States Environmental Protection Agency*, 118 F3d 1467 (11th Cir, 1997). Subsequently, however, Congress amended the SWDA by passing The Energy Policy Act of 2005 which excluded hydraulic fracturing (except when diesel fuel is used) for oil, gas or geothermal production from regulation under SWDA and the UIC program. 42 USC 300h(d)(1); commonly referred to as the “Halliburton Loophole.” Thus, the regulation of hydraulic fracturing fluids is done by the individual states.

D. The Fracturing Responsibility and Awareness of Chemicals Act (the “FRAC Act”) – The FRAC Act is a legislative proposal in the United States Congress which would eliminate the “Halliburton Loophole” and make hydraulic fracturing a federally regulated activity under the SWDA. The proposed act was first proposed in 2009 and would require operators of wells to disclose the chemical additives used in the fracturing fluid. The proposed act is opposed by the gas and drilling industries and the Independent Petroleum Association of America. The 2009 version of the FRAC Act died in committee. Since 2009, the FRAC Act has been introduced in the 111th and 112th Congress but was not passed. GovTrack.us.

3. State Regulation – Absent federal laws, states individually have to deal with the majority of concerns raised by fracking; namely: (1) massive water usage necessary for the process to function properly; (2) the handling and disposal of the return flow water/chemicals; and (3) water supply contamination caused by well blowouts due to negligent drilling operations. The states have approached these concerns in a variety of ways.

A. Regulating the Process – Some states regulate the fracking process “from cradle to grave,” imposing regulatory oversight on the entire process. Most recently, for example, in February 2013, the Illinois Legislature

introduced a bill for the Illinois Hydraulic Fracturing Regulatory Act, touted as the “strongest measure nationwide” for regulating hydraulic fracturing. The Illinois law, if passed, would cover everything from pre-drilling water testing, to air quality, through the disposal of contaminated “flowback.” Illinois HB 2615. At least one state, Vermont, has simply banned hydraulic fracturing altogether, Vermont 2012 Session Laws No. 152, H464 (May 16, 2012), while the state of New York has imposed a moratorium on fracking. *Wisner v Enervest Operating, LLC*, 803 F Supp 2d 109 (ND NY, 2011). Other states, including Michigan, regulate the process of hydraulic fracturing through the mandatory disclosure of, among other things, the chemicals/additives used, volume of flowback water and volume of withdrawn and used for fracturing operations.

- B. Creating Liability – Another way in which the states regulate hydraulic fracturing is to create liability for the owners/operators of wells and the companies that transport and dispose of hazardous materials through the passage of statutes, rules and regulations.
- 1) Use of Existing Law – Many states, such as Michigan, have simply used their existing environmental laws to impose a standard of care upon well operations and hazardous material disposal companies such that, if the owners or operators are proven to have violated the law in their operations, they can be held liable for remediation costs, etc. See, for example, relevant parts of Michigan’s Natural Resource and Environmental Protection Act (“NREPA”), MCL 324.62501, *et seq* (governing Mineral Wells) and MCL 324.20126 and the common law of nuisance, trespass and negligence.
 - 2) Presumptive Liability – In other states, new laws have been created which are specific to fracking and, “up the ante” for owners and operators in terms of potential liability by creating a presumption that, in the case of water contamination, in and around a fracking well, the owner/operator is legally responsible. In Pennsylvania and West Virginia, for example, owners and operators are presumed legally responsible for water contamination if such contamination occurs within a certain distance (*e.g.*, 1,500 feet in West Virginia) of a wellhead and within a certain time-frame (*e.g.*, 6 months or 1 year in Pennsylvania, depending on the

distance). W Va Code §22-6A-18(b) (2011); An Act Amending Title 58 (Oil & Gas) HB 1950, §3218(c) (Pa 2012). In states with “Presumptive Liability” standards, owners and operators have defenses available to them such as showing that the pollution occurred before the drilling or that the drilling did not cause the contamination. W Va Code §22-6A-18(c)(1-5) (2011); An Act Amending Title 58 (Oil & Gas) HB 1950, §3218(d) (Pa 2012). North Carolina is one of the more recent states to pass “Presumptive Liability” Legislation – doing so in 2012 over the veto of its governor. NCGSA, §113-389 *et seq.*

- 3) Strict Liability – A step above “Presumptive Liability” is Strict Liability. In the case of strict liability, owners and operators of fracking wells simply *are* liable for the cleanup of groundwater contamination caused by fracking. Advocates of strict liability point out that because fracking companies say the process of fracking is safe, any contamination then would necessarily result from operating error and, thus, any contamination should result in strict liability for the drillers. See, for example, *Fiorentino v Cabot Oil & Gas Corp*, 750 F Supp 2d 506 (MD Pa 2010). Other advocates point to the gravity of permanent water contamination and the hazardous nature of pumping poisonous chemicals into the soil. *Brush v Sw Energy Prod Co*, 763 F Supp 2d 702 (MD Pa 2011). To date, it appears that no state has passed legislation imposing strict liability on hydraulic fracturing facility owners or operators.

C. Michigan

- 1) Disclosure Laws – The predominant statute regulating oil and gas production in Michigan is part 625 of NREPA. MCL 324.62501, *et seq.* In addition, specific regulatory requirements are contained in rules administered by the Supervisor of Mineral Wells. Mich Admin Code, R 324.101 – R 324.1301. In general, these Rules articulate a permitting and reporting process which requires well owners/operators to provide certain information prior to drilling such as proposed well location, well depth, pumping rate and frequency. Once a permit to drill is issued, the owner/operator must continue to provide certain information to the Office of

Geologic Survey such as water level, pressures recorded during fracturing operations, chemicals used and total volume of flowback water. However, much of this information is protected from disclosure to the public by certain confidentiality provisions in NREPA and the Rules. MCL 324.62509(5); Mich Admin Code R 324.416(3). Further, while the Supervisor is empowered to hold a hearing to “receive evidence pertaining to the need or desirability of an action or an order by the Supervisor . . . upon receipt of a petition filed by an owner, producer, lessee, lessor or other person interested in the matter proposed for hearing,” Mich Admin Code, R 324.1201, it appears that only owners or operators are given the right to appeal the decision of the Supervisor. MCL 324.62504.

- 2) Liability Laws – Michigan’s NREPA and the common law of negligence, trespass and nuisance all appear to be bases upon which owners and operators of fracking wells could be held liable for any contamination they cause. These laws, however, do not impose either strict or presumptive liability for hydraulic fracturing operations.
- 3) Proposed Legislation – In June 2011, legislation was proposed in the Michigan House of Representatives to amend NREPA to make Michigan a “Presumptive Liability” state with respect to hydraulic fracturing. The text of the proposed statute is:

The people of the State of Michigan enact:

Sec. 20126b. (1) If groundwater in the vicinity of a well used for hydraulic fracturing is determined to contain 1 or more hazardous substances that were injected into that well while conducting hydraulic fracturing, there is a rebuttable presumption that the person conducting the hydraulic fracturing is liable under section 20126 for the contamination present in the groundwater.

(2) As used in this section, “hydraulic fracturing” means fluid-driven fracturing of rock for the purpose of stimulating natural gas or oil production.

Michigan, House Bill No. 4736 (June 14, 2011). Notably, the proposed Michigan statute, unlike similar laws in West Virginia and Pennsylvania discussed above, does not set a distance range for which drilling companies will be liable, instead, using the rather vague standard of “in the vicinity.” And, unlike other legislation, there is no time-frame limitation for liability in the proposed Michigan version. No action was taken on Michigan’s proposed “fracking law” and it has not been reintroduced.

- 4) The Great Lakes – You may recall from the discussion above that the process of fracking requires large quantities (millions of gallons) of water. Michigan is unique as compared to most states in that it has access to the waters of the Great Lakes. However, even the waters of the Great Lakes have limits. Therefore, Michigan’s NREPA includes the Great Lakes Preservation Act (the “GLPA”) which, in general, regulates diversions of water from the Great Lakes. MCL 324.32701, *et seq.* In addition, Michigan is one of the eight state members of the Great Lakes – St. Lawrence River Basin Water Resources Compact (the “Compact”). The Compact also seeks to regulate the diversion of the Great Lakes water and set responsible standards for water use and conservation within the basin. However, currently, the withdrawal of water for gas exploration and production is exempt under the GLPA and Michigan Legislation implementing the Compact, MCL 324.32727 and 324.32730. Instead, the State of Michigan provides oversight of the withdrawal of large amounts of water through its environmental departments and has indicated that it will not approve a withdrawal of water for fracking if it is likely to impact negatively on ground or surface water. *Deep Shale Natural Gas Production In Michigan*, Michigan Bar Journal, January 2011.

4. Local Regulation

- A. Michigan – It is not likely that the process of fracking in Michigan will be regulated at the local level through ordinances. As previously indicated, the regulation of gas wells is within the exclusive jurisdiction of the Supervisor of Wells. And, by statute, local units of government are forbidden from enacting or enforcing ordinances that regulate the withdrawal of large quantities of water. MCL 324.32726. However, these

laws do not appear to impact upon a Michigan municipality's ability to regulate fracking operations through its zoning ordinance. As a general proposition, in Michigan, zoning ordinances that regulate/limit an owner's use of his/her property to extract natural resources, are constitutional if they are reasonable. *Kyser v Kasson Twp*, 486 Mich 514 (2010). In *Kyser*, the Michigan Supreme Court upheld the Township's establishment of a gravel mining district through its zoning ordinance, the affect of which was to deny plaintiff property owner the use of her property as a gravel mine. There is no Michigan case involving the attempted regulation of fracking via zoning ordinance.

- B. Other States – In Pennsylvania, the legislature enacted a statute that limited the power of local jurisdictions to impose restrictions on fracturing through the use of zoning ordinances, including limits or conditions on operating hours, the heights of structures associated with drilling, and the lighting and noise levels relating to fracturing (along with oil) operations. However, that statute was declared a violation of due process rights by the Court in *Robinson Twp v Commonwealth*, 52 A3d 463 (Pa Commw Ct 2012).

5. Liability – Case Law

- A. Water Contamination – The vast majority of cases involving fracking operations have to do with alleged water contamination. The cases typically involve tort claims such as negligence, trespass and nuisance. In some cases, plaintiffs have asked the court to order the defendant well owner/operator to provide medical monitoring. In all cases, the plaintiff claims that the owner/operator of gas wells contaminated their drinking water with hazardous chemicals used in the fracking process, causing them to get sick.

- 1) The Hurdles of Causation – Many cases involving claims against fracking operations never make it to trial because the plaintiff is unable to demonstrate that the defendant *caused* the contamination. For example, in *Hagy v Equitable Production Co*, 2012 WL 2562856 (SD WV, June 29, 2012), plaintiff property owners sued defendant gas drilling operator for nuisance, negligence, trespass, strict liability and medical monitoring. Specifically, plaintiff claimed that the fracturing operator negligently cemented and tracked the shale/gas wells. Plaintiffs claimed that the drilling

operator's equipment failed and that, as a result, the well-bore was not properly sealed with cement before pressurized tracking fluids were pumped into the ground. In July 2008, plaintiffs began to notice particles in their water. Later that year, their water quality declined and tests performed on the water showed an increase in levels of iron and manganese. Defendant drilling operator brought a motion for summary judgment which the Federal District Court granted. The District Court found that plaintiffs failed to demonstrate facts to support the claim that defendant's wrongful acts caused the harm to them. The Court stated: "The Plaintiffs have failed to advance a clear theory – let alone provide concrete evidence – connecting this specific Defendant to the harm they claim to have suffered. . . . The Plaintiffs have offered mere speculation in the place of evidence to connect any alleged wrongful conduct with the harm they claim to have suffered." *Hagy*, at *5.

Similarly, in *Harris v Devon Energy Production Co*, 2012 WL 6082415 (5th Cir, Dec 7, 2012), Doug and Diana Harris sued Devon Energy Production Co alleging that Devon's oil and gas drilling activities near their home contaminated their well water. The allegations were based on the presence of the gray sediment in their groundwater and tests that allegedly showed elevated levels of various metals that the Harrises argued are commonly used in drilling mud. During the course of the lawsuit, subsequent testing showed that any contamination had apparently dissipated. The Harrises nonetheless claimed that their lawsuit was justified because testing showed contamination at the time the lawsuit was filed. In the end, however, the Harrises could not prove that it was Devon's activity that *caused* the contamination and the lawsuit was dismissed.

In *Tucker v Southwestern Energy Co*, 2012 WL 528253 (ED AK, Feb 17, 2012). The Tuckers, and their neighbors, the Berrys, sued Southwestern Energy, claiming that its fracking activities contaminated their well water and their air. Plaintiffs brought claims for nuisance, trespass, negligence and strict liability and sought both substantial damages and injunctive relief in the form of monitoring. Southwestern Energy filed a motion to dismiss the

complaint or, alternatively, for a more definite statement of the claims. The facts supporting Plaintiffs' claims were: (1) Defendant has frack wells within one mile of their property; (2) their well water used to be fine; (3) their well water started smelling bad; (4) recent tests revealed alpha methylstyrene, a poisonous chemical sometimes used in fracking fluid; (5) ponds on adjoining property were contaminated with methane and hydrogen sulfide; and (6) photographic evidence of flames shooting from "some kind of box that apparently capped the water well." The court denied Defendant's motion to dismiss but granted Defendant's motion for a more definite statement and ordered Plaintiffs to file amended complaints which provide "particular facts about particular tracking operations by particular fracking companies using particular substances that allegedly caused the Berrys' air problems and the Tuckers' water problems. General statements about the many dangerous substances used in fracking, and conclusory statements about the migration of those substances will not suffice." *Tucker, at* *2. The final disposition of this case is unknown. It is likely that following the court's ruling on Defendant's motions, the case settled.

- 2) Pennsylvania – The Impact of Presumptive Liability – in *Roth v Cabot Oil & Gas Club*, 213 WL 358176 (Middle Dist Pa, Jan 30, 2013), the Roths sued the drilling company for, among other things, negligence, nuisance, strict liability and trespass. Plaintiffs claimed that the fracking fluids used by Defendant and discharged into the ground and groundwater, included diesel fuel, lubricating agents, barite, gels, pesticides, defilming agents, gas, oil, brine, heavy metals and radioactive substances. These "fracking fluids," Plaintiffs claimed, contaminated their water supply. Plaintiffs claimed that the presence of these contaminants was the result of Defendant's improper drilling techniques as well as deficient and ineffective well casings and waste disposal pits. Defendant filed a motion to dismiss which the court granted, in part, and denied, in part. Of particular relevance, the court denied the Defendant's motion as to the Plaintiffs' negligence claims, finding that Defendant had a duty to conduct its drilling operations in accordance with Pennsylvania law and that Plaintiffs had alleged facts sufficient to infer that Defendant failed to meet this

obligation. The court also found that Plaintiffs had adequately demonstrated the element of causation, stating:

Pennsylvania law presumes that ‘a well operator is responsible for pollution of a water supply if . . . (i) the water supply is within 1,000 feet of an oil or gas well; and (ii) the pollution occurred within six months after completion of drilling or alteration of the oil or gas well.’ 59 PA CONS STAT §3218(c)(1).

* * *

The temporal and physical proximity of the Defendants’ actions to the Plaintiffs’ harm, in addition to the lack of contemporaneous and alternative sources of the contamination, permit the reasonable inference that the Defendants were responsible for that harm.

Roth, at *9. Obviously, the causation element is significantly easier to prove in states with Presumptive Liability law.

- B. Disclosure of Fracking – Despite the now fairly widespread occurrence of fracking in the United States, there does not appear to be published case law in which a real estate broker or agent was found liable for disclosure issues relating to fracking. The lack of case law may stem from the fact that the presence of wells in the area is generally readily observable and, thus, a condition upon which buyers have actual or constructive notice. The absence of case law may also be due to the provisions of Seller’s Disclosure Laws such as Michigan’s which place the burden on the seller to disclose problems potentially caused by fracking such as the presence of any “substances, materials or products that may be an environmental hazard.” MCL 565.957. Either way, or perhaps for a number of other reasons, the “litigation front” on the issue of fracking disclosure is currently quiet and will, hopefully, remain that way.

6. Conclusions

A. Buyers' Agents – counsel clients to:

- 1) Drive around the area and look for drilling operations
- 2) Test the water
- 3) Ask the Sellers and the Neighbors

B. Sellers' Agents

- 1) Amend Sellers' Disclosure Law – particularly question 8 under “Other Items” to state:

Other Items: Are you aware of any of the following:

* * *

8. Farm or farm operation in the vicinity; or proximity to a landfill, airport, shooting range, **drilling operation**, etc?

- 2) Disclose if you know
- 3) Do not provide inaccurate or incomplete information