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Illinois Set to Regulate Shale Oil and Gas

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On June 17, 2013, Illinois P.A. 98-0022 (the Act), consisting of the Hydraulic Fracturing Regulatory Act (225 ILCS 732/1-1 *et seq*. (2013)) (HFRA) and the Illinois Hydraulic Fracturing Tax Act (35 ILCS 450/2-5 *et seq*. (2013)) (HF Tax Act), became law.[1] The Act, which was the result of months of negotiations among industry and some environmental groups, had been stalled since March 2013 after a last-minute amendment added a licensing regime that would have favored water-well drilling contractors, who happen to be largely unionized. That impasse was resolved when the objectionable well-licensing regime was replaced by a local workforce credit against HF Tax Act liability.[2]

The Act is a defeat for those environmental and community groups that favored a moratorium on horizontal hydraulic fracturing in Illinois until the U.S. Environmental Protection Agency (EPA) completed its ongoing study of fracturing's potential to affect groundwater resources.[3] HFRA's supporters tout it as the United States' most comprehensive and rigorous hydraulic fracturing regulation, and claim it sets the "best practices standard" for environmental, health and safety regulation.

Why It Matters

Illinois has a long history of producing oil. In the 1950s, Illinois was one of the top oil-producing states. Now, Illinois ranks 15th in oil production and 26th in natural gas production. That could change with horizontal hydraulic fracturing, which is a technology developed specifically to recover oil and gas resources that previously were undevelopable with conventional drilling techniques. More than one-third of Illinois overlays the New Albany Shale formation, a source rock that the U.S. Energy Information Administration estimates contains up to 11 trillion cubic feet of natural gas—the vast majority recoverable only by horizontal hydraulic fracturing.[4]

Shale is typically found in narrow (50 to 300 feet) horizontal formations located deeper than conventional oil reserves, which makes conventional vertical drilling impractical and inefficient. With horizontal drilling, the exploration company drills several thousand feet vertically to the source rock formation, then turns the drill horizontally within the source rock. A horizontal or lateral drill hole is then made, which can extend several thousand feet. Perforated liners are inserted into sections of this lateral drill hole and packed with explosive charges that, when detonated, create fractures in the surrounding rock formation. Hydraulic "fracturing fluid" (consisting of water, proprietary chemical additives and a proppant such as sand) is then injected, under great pressure, into the wellbore. The additives act as a lubricant to move the proppant into the fractures, where it "props" them open. Once the proppant is in place, the fracturing fluid is withdrawn from the well (flowback), and either oil or gas can then move from the source rock through the wellbore to the surface.

Many contend that horizontal hydraulic fracturing technology poses unique environmental, health and safety risks, the scope (and even in some cases, the existence) of which is hotly debated:

- Unless the wellbore is properly encased, fracturing fluid may affect shallow groundwater aquifers through which the wellbore passes.
- Natural gas can escape to the surface from naturally occurring fissures instead of the wellbore, contributing methane, a potential greenhouse gas, to the atmosphere.
- The escaping natural gas may find its way into groundwater aquifers, including potentially shallow drinking water sources.
- Horizontal hydraulic fracturing uses substantial volumes of water, taxing strained water supplies in the drought-affected western states.[5]

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[1] Originally enrolled as HR 2615, PA 98-0022 was later enrolled as SB 1715 and was passed by the General Assembly on May 29, 2013. Governor Pat Quinn signed the Act on June 17, 2013.
[2] This *White Paper* highlights the HFRA. A forthcoming *On The Subject* will address the HF Tax Act.
[3] Originally scheduled for completion in 2014, the EPA recently announced that the results of its study are likely to be delayed until 2016 (http://www.ohio.com/news/epa-study-on-fracking-threat-to-water-will-take-years-1.407046).
[4] http://www.eia.gov/analysis/studies/usshalegas/ (July 11, 2011).
[5] For example, Chesapeake Energy is said to average 5.5 million gallons of water per well in the Marcellus Shale (http://www4.nau.edu/itep/conferences/docs/TLF12/Superfund/Wed_830_Frack_Dewers.pdf).

- After the fracturing fluid is withdrawn, the flowback must be properly disposed of, but municipal water treatment systems are not designed to handle the flowback contaminants—so absent recycling and reuse, the flowback must be re-injected into the ground, into a geologically safe formation.

- Before that reinjection, the flowback is stored on the surface, often in an open pond, which, if not properly constructed and maintained, could leak and affect surface or subsurface resources.

- There is concern that the fracturing and flowback disposal in injection wells can increase the likelihood of potentially harmful seismic activity.

Hydraulic Fracturing Regulatory Act

PERMITTING

According to the Natural Resources Defense Council, before the HFRA was passed, obtaining a permit from the Department of Natural Resources (DNR) Division of Oil and Gas for horizontal hydraulic fracturing was no more difficult than applying for a dog license.[6] With the HFRA, Illinois' shale oil and gas industry's regulatory environment went from "speed bump" to "full body scan."

Now, no one can "drill, deepen or convert" a conventional well where "high-volume horizontal hydraulic fracturing operations are planned or occurring" without a permit issued by the DNR.[7] To be able to apply for that permit, the operator must be registered with the DNR. The registration form is not available yet (it is due within 90 days after the enactment of the HFRA). The registrant must disclose the identity of the applicant's corporate parents and affiliates, as well as any history of federal or state law violation (or equivalent) within the previous five years occurring at any well site that used hydraulic fracturing, and must show proof of liability insurance with a limit of no less than $5 million.

Once registered, the applicant must submit to the DNR all of the items enumerated in HFRA Section 1-35(b), including the following:

- Plat showing (a) the distance of the proposed well site to any residence, place of worship, school, hospital, licensed nursing home, existing water well or spring used for human or livestock consumption (none of the above can be within 500 feet of the proposed well site); any perennial stream, river, or natural or artificial body of water (300 feet); nature preserve (750 feet); or public water supply intake (1,500 feet), and (b) all known previous wellbores within 750 feet of any part of the planned horizontal wellbore

- Well drilling plan, including the water quality monitoring required under Section 1-80

- Chemical disclosure report identifying each fracturing fluid component and proppant, including the total anticipated volume of water to be used (Section 1-25(d) prohibits the use of diesel in injecting)

- Freshwater withdrawal and management plan

- Flowback management plan, including handling, storage, transportation and disposal (Section 1-25(c) prohibits the discharge of fracturing fluid, produced water, BTEX, diesel or petroleum distillates into fresh water)

- Well site safety plan

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[6] http://switchboard.nrdc.org/blogs/aalexander/wake-up_call_new_evidence_that.html. Because the DNR's prior regulation of hydraulic fracturing has been very limited, there is no record of the number of wells in Illinois that have used hydraulic fracturing. According to the Illinois Oil and Gas Association, most exploration companies have been waiting for the legislation picture to clear before committing the significant capital required to develop and operate a horizontal hydraulic fracturing well. According to the NRDC, its Freedom of Information Act request to the DNR turned up at least one well site using horizontal hydraulic fracturing (in Wayne County).

[7] 225 ILCS 732/1-30(a) (2013). "High-volume horizontal hydraulic fracturing operations" means the pressurized application of more than 80,000 gallons per stage or more than 300,000 gallons total of hydraulic fracturing fluid and proppant to initiate or propagate fractures in a geologic formation to enhance extraction or production of oil or gas. 225 ILCS 732/1-5 (2013).

- Containment plan
- Casing and cementing plan
- Traffic management plan
- Names of real property owners within 1,500 feet of the well site and draft public notice required under Section 1-40
- Where the proposed well site is within the limits of any city, village or incorporated town, the certified "official consent" from such municipal authorities
- Any other information that the DNR may, by rule, require
- Bond executed by a surety in the amount of $50,000 per permit application (or a blanket $500,000 bond for all permits)
- Non-refundable fee of $13,500 per permit application

The DNR has 60 days from receipt of the permit application to approve, approve with conditions or reject. Within five days after receipt of the permit application, the DNR must post the application, along with a notice of public comment period, on its website. The applicant must also send paper notice to record owners and publish notice in local newspapers. The public comment period begins seven days after the DNR receives the application and lasts 30 days, unless extended by the DNR. During the public comment period, any person, governmental agency or county board "having an interest that is or may be adversely affected" may file written objections and demand a public hearing. The DNR must conduct a public hearing unless it determines that the requesting party has no interest that may be adversely affected or that the request is frivolous. Section 1-50 sets the requirements for the public hearing. Following the public hearing, the DNR can issue an HFRA permit only if the record of decision demonstrates each of the eight findings listed in Section 1-53(a), including the following:

- The proposed hydraulic fracturing operations will be conducted in a manner that will protect the public health and safety and prevent pollution or diminution of any water source.
- The applicant or any parent, subsidiary or affiliate thereof has not failed to abate a violation of the HFRA or the Illinois Oil and Gas Act.
- The Class II injection wells to be used for disposal of the flowback comply with all applicable requirements for mechanical integrity testing, including that the well has been tested within the previous five years.

The DNR's decision on the permit is a final administrative decision under the Administrative Review Law and is subject to judicial review.

Although some commentators have criticized the HFRA for not granting the affected communities authority to regulate (or ban) horizontal hydraulic fracturing, Section 1-55 requires every HFRA permittee to comply with "all other applicable local, State and federal laws, rules, and regulations in effect at the time the permit is issued,"[8] and Section 1-120 provides that compliance with the HFRA does not relieve the permittee of the responsibility to comply with "the Illinois Oil and Gas Act, the Illinois Environmental Protection Act and other applicable federal, state, and local laws."[9] Also, prior to the Act's adoption, the Illinois Department of Commerce and Economic Opportunity reported to the General Assembly that the Act is not intended to pre-empt municipalities' home rule authority. Thus, HFRA permittees should still review and assess municipal and county laws as part of their well site feasibility analysis.[10]

[8] 225 ILCS 732/1-55 (2013).
[9] 225 ILCS 732 1/120 (2013).
[10] Prior to the enactment of the Act, at least five counties lying within the New Albany Shale formation (Hardin, Jackson, Johnson, Pope and Union) had officially supported proposed moratorium legislation, which the General Assembly in turn rejected in favor of the HFRA. It is unclear whether those counties will now exercise their power under the County Code to regulate (or prevent) hydraulic fracturing operations permitted by the DNR.

The HFRA permittee also must comply with all plans submitted under Section 1-35, in addition to the permit condition of compliance with laws. No HFRA permit can be transferred or modified without DNR approval. If the DNR determines that a proposed modification is a significant deviation from the original application and permit, or presents a serious risk to public health, life, property, aquatic life or wildlife, the permittee is subject to the same public notice, comment and hearing as the original permit application.

An HFRA permit is subject to suspension or revocation by the DNR for any of the six causes in Section 1-60(a), including two that have no direct connection to the permitted well site: (a) the permittee "is using fraudulent, coercive, or dishonest practices, or demonstrating incompetence, untrustworthiness, or financial irresponsibility in the conduct of business in this State or elsewhere," or (b) the permittee has a horizontal hydraulic fracturing permit (or its equivalent) revoked in any other state, province, district or territory for incurring a material or major violation or using fraudulent or dishonest practices.

HFRA Will Affect Every Aspect of Shale Oil and Gas Exploration and Production

The HFRA imposes detailed performance standards and obligations for virtually every aspect of the development and operation of a shale oil or gas well, including the following:

- The HFRA imposes procedures for repairing publicly owned roads, if such repair is to be undertaken by the permittee or other private party, but it does not require that the permittee be responsible for public road improvements or repairs necessitated by its activities.

- The HFRA imposes well drilling and casing construction requirements in accordance with the current industry standards published by the American Petroleum Institute. At any point where the wellbore passes through areas of fresh water, it must be isolated by casing (a concrete liner surrounding the wellbore).

- The permittee must pressure test the casing prior to proceeding with drilling, and after all casings have been installed, the permittee must run a formation pressure test. All test results must be recorded and maintained by the permittee, and the records must be available for DNR review.

- The permittee must plug any previously unplugged well located within 750 feet of any part of the horizontal wellbore that penetrates within 400 vertical feet of the formation that will be stimulated as part of the horizontal hydraulic fracturing operations.

- Prior to commencing any horizontal hydraulic fracturing operations on a well, the permittee must have an independent testing firm conduct baseline water quality sampling of all water sources within 1,500 feet of the well site. The report, done to prevailing professional engineering standards and as provided in Section 1-80(b), must be submitted to the DNR (or if the water source is wholly privately owned, to that owner). The DNR must post the report results within seven days after receipt of the report. The permittee must repeat the water quality testing six, 18 and 30 months after completion of the horizontal hydraulic fracturing operations. Opponents to the HFRA say the post-hydraulic fracturing operation testing should continue beyond 30 months.

- At no time during the fracturing operation can the actual pressure exceed the formation test pressure. Nor can the actual pressure exerted on all treating equipment exceed 95 percent of the working pressure rating of the weakest component.

- All fracturing additives, fracturing fluid, flowback and produced water[11] must be stored in aboveground tanks that are closed, watertight and corrosion resistant, until transported off-site for disposal or recycling (flowback and produced water may be treated and recycled for use in hydraulic fracturing fluid). A permittee can use a temporary reserve pit for flowback only in the event of a lack of tank storage capacity due to higher-than-expected volume or rate. Fracturing fluids and flowback contained in storage tanks must be removed from the well site within 60 days after the completion of hydraulic fracturing treatment. Flowback in a temporary reserve pit must be removed from the well site (or to an aboveground tank) within seven days.

[11] Produced water is "water, regardless of chloride and total dissolved solids content, that is produced in conjunction with oil or gas production or natural gas storage operations, but does not include [flowback]." 225 ILCS 732/1-5 (2013).

- Before flowback is removed from the well site, it must be tested for an array of contaminants, including radioactive material, and the results must be provided to the DNR and the Illinois Environmental Protection Agency (IEPA). Flowback can only be disposed of by injection into a Class II injection well that is below interface between fresh water and naturally occurring Class IV groundwater.[12] Fracturing fluids and flowback can only be transported by liquid oilfield waste haulers permitted by the DNR under Section 8c of the Oil and Gas Act. Produced water may be disposed of by injection in a permitted enhanced oil recovery operation.

- Section 1-75(e) provides standards for managing oil and gas produced during the flowback and production phases so that there is no direct release to the atmosphere, unless it is technically infeasible or economically unreasonable, in which case the permittee may use a combustion device as long as its use meets the requirements of Section 1-75(e). A permittee that is permitted to use a combustion device during the production phase must record and report to the DNR annually the amount of gas flared or vented from each HFRA well.[13]

- Within 60 days after completing horizontal hydraulic fracturing operations, the permittee must file a completion report with the DNR. This report must include a detailed chemical disclosure identifying each chemical and proppant used in the fracturing fluid. The completion report is public information and must be posted on the DNR's website.

- If the permittee furnishes a chemical disclosure report required under Sections 1-35, 1-75 or 1-77 under a claim of trade secret, the DNR will post redacted copies of the filings on its website, and the permittee claiming trade secret protection must furnish the DNR with a justification for the claim within five days after making the claim. The DNR will honor that claim if it determines the information has competitive value and has not become a matter of general public knowledge. Denial of trade secret protection is appealable under the Administrative Review Law; denial of access to the unredacted information gives that party the right to file a request for review by a public access counselor, or injunctive or declaratory relief under the Freedom of Information Act. Until that process results in a final, non-appealable order, the DNR must maintain the confidentiality of the chemical disclosure information under a claim of trade secret.

- Within six months of completion of horizontal hydraulic fracturing operations, the permittee must commence restoration of the surface of the land, except for the well site and production facility, to its pre-drilling condition. Restoration must be completed within 12 months. Unless contractually agreed otherwise with the surface owner and the permittee, within six months after plugging the final well on the well site, the permittee must begin to restore the well site and production facility area to its pre-drilling condition, again to be completed within 12 months;

HFRA Enforcement: Presumption of Contamination; Criminal and Civil Liability and Private Causes of Action

Section 1-85 establishes a rebuttable presumption (for purposes of liability under state law) that any increase in contamination of a water source located within 1,500 feet of a horizontal hydraulic fracturing operation, and occurring during or within 30 months after the completion of those operations, was caused by the horizontal hydraulic fracturing operation. The presumption can be rebutted only by the permittee affirmatively proving, by clear and convincing evidence, that the water source is not within 1,500 feet of the well site, the contamination occurred more than 30 months after the operations ended, or the contamination occurred as a result of an identifiable cause other than the horizontal hydraulic fracturing operations. In this respect, the pre-drilling baseline water testing required under Section 1-80 is likely to be extremely important to rebutting this presumption.

Any person "who has reason to believe they have incurred pollution or diminution of a water source" as a result of hydraulic fracturing operations may request that the DNR investigate.[14] The DNR must start its investigation within 30 days after the request is made, and must make a reasonable effort to reach a determination within 180 days after the request. If sampling or other test results indicate concentrations that exceed the water quality standards or criteria referenced in Section 1-5, the DNR must order the permittee to supply temporary or permanent replacement of the water source, in addition to any other penalty

[12] Produced water may be disposed of by injection in a permitted enhanced oil recovery operation. Hydraulic fracturing flowback and produced water may be treated and recycled for use in hydraulic fracturing fluid for high-volume horizontal hydraulic fracturing operations.
[13] Beginning in January 2015, federal regulations put in place under the Clean Air Act will require all operators of high-volume natural gas wells to install "Green Completion" technology at the well head to capture fugitive methane emissions that might otherwise be vented or flared to the atmosphere.
[14] 225 ILCS 732/1-83(a) (2013).

available under law. Any replacement water must meet or exceed the quality of the original water source based on the baseline test results. The IEPA has the authority and obligation to prosecute violations of Section 12 of the Illinois Environmental Protection Act and its surface water or groundwater regulations.

Knowingly violating the HFRA is a Class A misdemeanor, punishable by a fine not to exceed $10,000 for each day of violation (and civil violation of the HFRA is subject to civil penalty not to exceed $50,000 and an additional civil penalty not to exceed $10,000 for each day), except that knowing violation of Section 1-25(c) (injecting or discharging fracturing fluid, produced water, BTEX, diesel or petroleum distillates into fresh water); Section 1-25(d) (injecting diesel); Section 1-30(a) (drill, deepen or convert a well where horizontal hydraulic fracturing operations are planned without a HFRA permit); or Section 1-75(c)(9) (discharge of fracturing fluid, flowback or produced water into any surface water or water drainage way) is a Class 4 felony subject to a fine not to exceed $25,000 for each day of violation (and civil penalties not to exceed $100,000 for the violation and additional penalty of $20,000 for each day the violation continues). Repeated violations are a Class 3 felony with fines not to exceed $50,000 for each day of violation. A person who knowingly makes a false report of pollution, diminution or water pollution attributable to horizontal hydraulic fracturing operations that results in an investigation by the DNR or the IEPA shall be liable for a civil penalty not to exceed $1,000 for the violation.

Any person having an interest that is or may be adversely affected by an alleged HFRA violation may, after giving 60 days written notice, commence a civil action to compel compliance with the HFRA against either any governmental instrumentality or agency, or any other person alleged to be in violation of the HFRA or any rule, order or permit issued under it. Any person having an interest that is or may be adversely affected may, after giving 60 days written notice to the DNR, commence a civil action against the DNR where there is an alleged failure by the DNR to perform any non-discretionary act or duty under the HFRA. The court may award litigation costs (including attorneys' and expert witness fees) to any party. Any person who has suffered personal or property damage because of an alleged violation of any rule, order or permit issued under the HFRA may bring a civil action for damages (including reasonable attorneys' and expert witness fees). The venue of such action is in the county where the relevant horizontal hydraulic fracturing operations occurred.

What Is Next?

While the Act is effective now, the DNR must promulgate rules to administer and enforce the HFRA (expected to occur within 90 days after enactment) and must put staff in place to handle the regulatory burden (expected to take at least six months). The Illinois Oil and Gas Association expects little to no HFRA permitting until 2014.

Any legislation as comprehensive as the HFRA will produce its share of issues and controversies. The Act is almost certain to be challenged, in whole or part, by various non-governmental organizations and interest groups in litigation that could drag on for months or years. But assuming that the HFRA withstands such judicial review, myriad other legal issues are likely to surface as a result of the legislation.

For example, well operators have been lawfully conducting hydraulic fracturing operations in Illinois prior to the HFRA. To what extent (if any) are these operators now subject to the HFRA? "[D]rilling, deepening or converting a well where horizontal hydraulic fracturing operations are planned or occurring"[15] are the predicates that trigger coverage under HFRA. A pre-HFRA permittee whose well had fully completed horizontal hydraulic fracturing treatment prior to HFRA should not be subject to the HFRA (and the production from those wells should not be subject to tax under the HF Tax Act). If, however, that pre-HFRA operator wanted either to treat that same well again or to drill a new well (or convert a vertical well into a horizontal well) at the same (or new) well site, and that well would receive horizontal hydraulic fracturing treatment, then the HFRA should apply to that well.

The Illinois Department of Commerce and Economic Opportunity's position that HFRA is not intended to pre-empt municipalities' home rule authority all but invites local towns and municipalities to place their own limits on hydraulic fracturing. Indeed, ample precedent exists for such "home rule" local regulation. In New York, where hydraulic fracturing regulations remain in regulatory limbo, more than 100 towns and municipalities have pre-emptively moved to ban hydraulic fracturing by amending their local zoning ordinances to prohibit the process. Legal challenges to these local bans have failed at the trial and appellate court level, and ultimately may be subject to review by New York's highest court. Similar local "home rule" efforts have been undertaken in Colorado, Ohio and West Virginia, and are likely to appear in Illinois.

[15] 225 ILCS 732/1-20 (2013).

The Impact of the Act

The Act exposes a bitter division between environmental and community groups on hydraulic fracturing, with some favoring a moratorium on the highly regulated HFRA regime until the release of the much anticipated EPA study on hydraulic fracturing and groundwater contamination. With the EPA's recent announcement pushing back that study's release until 2016, it appears that Illinois made the right decision to proceed, cautiously, with the HFRA, which could live up to the claim of establishing "best practices" for shale oil and gas exploration and production. Now the DNR must adopt and rigorously enforce regulations consistent with the HFRA, while allowing qualified operators to responsibly explore for and extract oil and gas from Illinois shale formations.

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