Point of View

The Marcellus Shale: A Game Changer for the New York Economy?

By Scott R. Kurkoski

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The New York gas rush hit its peak in 2008 but was reduced to a trickle when the Department of Environmental Conservation began to work on the draft Supplemental Generic Environmental Impact Statement (SGEIS). New Yorkers who wish to see these opportunities come to our state have waited for more than three years for the DEC to complete its work and have watched as opportunities left our state for Pennsylvania, Ohio and West Virginia. This article addresses the impacts of gas drilling in New York and responds to some of the issues raised by Elisabeth Radow in her article published in the November/December issue of the New York State Bar Association *Journal*, "Homeowners and Gas Drilling Leases: Boon or Bust?"

After recognizing the potential lying beneath the ground upon which they lived and worked, New York landowners formed landowner coalitions to educate themselves about natural gas development and to give themselves better negotiating power to ensure improved lease terms. Coalition leaders formed the Joint Landowners Coalition of New York, Inc. (JLCNY) in January 2010, a nonprofit organization whose mission is to foster, promote, advance and protect the common interest of the people as it pertains to natural gas development through education and best environmental practices. The JLCNY now represents 38 landowner coalitions, over 800,000 acres and approximately 70,000 New Yorkers who are in favor of responsible gas development in our state.

The JLCNY members and their families live and work in the communities where drilling will occur. Many farm their land, continuing the work started by generations before them. They serve as the best stewards of the land, protecting it for future generations. They also recognize that development of our natural gas resources will be a game changer for New York by creating jobs, economic development and the promise for a better tomorrow for thousands of New Yorkers.

Overview of Natural Gas Production in New York and Hydraulic Fracturing

Natural gas production is not a new phenomenon in New York. Indeed, our state has a long history regarding the safe and responsible development of our oil and gas resources. More than 75,000 oil and gas wells have been developed in New York since the late 1800s, about 14,000 of which are still active.[1] Of these wells, approximately 90% have been hydraulically fractured to stimulate greater production.

The natural gas production process is an inherently technical one that employs scores of trained professionals. Geologists, hydro geologists, engineers, archaeologists and many other professionals are fully engaged in every step of the process including seismic mapping, land surveying and, ultimately, site selection. These professionals conduct environmental reviews, ensure the integrity of the well and ultimately oversee development and production.

Before any drilling activity commences, a site is first seismically mapped to determine the composition and structure of the subsurface. Seismic mapping not only provides an understanding of the density and expected production of the shale below, but also allows operators to evaluate any natural or man-made channels that may exist below the subsurface. Then, surveyors, environmental engineers and other professionals conduct field reconnaissance to identify environmental concerns such as wetlands, wildlife, fauna and streams that must be considered onsite. A surveying plan, grading plan and stormwater management plan are filed with the DEC and water management and withdrawal permits are secured.

Only after each and every one of these steps is completed can the drilling, fracturing and production process commence. Generally, the drilling process takes three weeks to complete. Hydraulic fracturing averages three to five days. The tall rigs many associate with gas development are only used during the drilling phase. What remains after drilling is an area, approximately one acre in size, that contains what is known as a "Christmas tree" valve and some small tanks and apparatus used to separate flowback from natural gas before the gas is shipped to market.

> [T]he average size of a multi-well pad for the drilling and fracturing phase of operations at 3.5 acres. Average production pad size, after partial reclamation, is estimated at *1.5 acres for a multi-well pad*.[2]

The process of horizontal drilling allows an operator to develop 640-acre shale units all from a single well pad. The result is a dramatic reduction of surface disturbance as compared to multiple 40-acre sites using conventional vertical wells.

Some have expressed concerns about what will be produced from the drilling process. The Radow article states that radium, chemical toxins and other ingredients, will be held in mud-pits and pose "a cumulative threat to the state's complex matrix of aquifers." This statement is incorrect in many respects.

First, the SGEIS mandates the use of closed-loop drilling systems which greatly eliminate the opportunity for surface spills or surface contamination. These systems have been endorsed by natural gas critics like the Earthworks Oil and Gas Accountability Project for their ability to limit land disturbance from natural gas and significantly mitigate environmental impacts.[3]

Closed-loop drilling employs mechanical processes that directly channel all drill cuttings, drilling muds, fracturing fluids and other production by-products directly to self-contained systems. In New York these systems will be outfitted with additional secondary containment systems according to the SGEIS, to ensure that none of these by-products have the opportunity to interact with the natural environment.

Furthermore, the SGEIS clearly addresses concerns about radioactive materials. The DEC says in the executive summary and chapter five of the SGEIS:

> [B]ased on the analytical results from field-screening and gamma ray spectroscopy performed on samples of Marcellus Shale NORM [naturally occurring radioactive material] levels in cuttings are not significant because the levels are similar to those naturally encountered in the surrounding environment.[4]

> [T]he results [of gamma ray spectroscopy tests], which indicate levels of radioactivity that are essentially equal to background values, do not indicate an exposure concern for workers or the general public associated with Marcellus cuttings.[5]

Fracturing Fluid Additives

Additive Type	Main Compound(s)	Purpose	Common Use of Main Compound
Diluted Acid (15%)	Hydrochloric acid or muriatic acid	Help dissolve minerals and initiate cracks in the rock	Swimming pool chemical and cleaner
Biocide	Glutaraldehyde	Eliminates bacteria in the water that produce corrosive byproducts	Disinfectant; sterilize medical and dental equipment
Breaker	Ammonium persulfate	Allows a delayed break down of the gel polymer chains	Bleaching agent in detergent and hair cosmetics, manufacture of household plastics
Corrosion Inhibitor	N,n-dimethyl formamide	Prevents the corrosion of the pipe	Used in pharmaceuticals, acrylic fibers, plastics
Crosslinker	Borate salts	Maintains fluid viscosity as temperature increases	Laundry detergents, hand soaps, and cosmetics
Friction Reducer	Polyacrylamide Mineral oil	Minimizes friction between the fluid and the pipe	Water treatment, soil conditioner make-up remover, laxatives, and candy
Gel	Guar gum or hydroxyethyl cellulose	Thickens the water in order to suspend the sand	Cosmetics, toothpaste, sauces, baked goods, ice cream
Iron Control	Citric acid	Prevents precipitation of metal oxides	Food additive, flavoring in food and beverages; Lemon Juice ~7% Citric Acid
KCl	Potassium chloride	Creates a brine carrier fluid	Low sodium table salt substitute
Oxygen Scavenger	Ammonium bisulfite	Removes oxygen from the water to protect the pipe from corrosion	Cosmetics, food and beverage processing, water treatment
pH Adjusting Agent	Sodium or potassium carbonate	Maintains the effectiveness of other components, such as crosslinkers	Washing soda, detergents, soap, water softener, glass and ceramics
Proppant	Silica, quartz sand	Allows the fractures to remain open so the gas can escape	Drinking water filtration, play sand, concrete, brick mortar
Scale Inhibitor	Ethylene glycol	Prevents scale deposits in the pipe	Automotive antifreeze, household cleansers, and deicing agent
Surfactant	Isopropanol	Used to increase the viscosity of the fracture fluid	Glass cleaner, antiperspirant, and hair color

Note: The specific compounds used in a given fracturing operation will vary depending on company preference, source water quality and site-specific characteristics of the target formation. The compounds shown above are representative of the major compounds used in hydraulic fracturing of gas shales.

Commonly Used Fracturing Fluid Additives[7]

It is important to understand that hydraulic fracturing fluid is composed primarily of water and sand. These two elements compose approximately 99.5% of all fracturing fluid components with the remainder being chemical additives that accomplish two primary goals: to control the proliferation of bacteria development in the drilling process and to aid in the unrestricted movement of the fluid throughout the wellbore. Only a handful of additives are used in each fracturing fluid solution with the most common found in everyday products. A list of more common additives is included in the graphic above. Solutions for individual well sites can be found online at www.fracfocus.org. It is a myth that the composition of fracturing fluid is a "secret." The contents of fracturing fluid is known to state regulatory agencies, emergency responders and residential homeowners as well. Indeed, in the SGEIS New York has proposed some of the strictest disclosure rules in the nation:

> *The Department's regime exceeds the requirements of 22 of the 27 oil and gas producing states reviewed* and is on par with the five states currently leading the country on chemical disclosure. Additionally, the enhanced disclosure requirements are equivalent to the *proposed requirements of the federal Fracturing Awareness and Responsibility (FRAC) Act of 2011.*[6]

Another area of concern often raised is the potential for groundwater contamination through migration of fracturing fluids from the fractured formation to groundwater aquifers. This has not occurred in more than 60 years of utilizing this technology and is confirmed in studies conducted by the U.S. Environmental Protection Agency. The basic reason this is unlikely to occur is that literally thousands of feet separate shale rock strata from its groundwater aquifer counterpart. In between are thousands of feet of impermeable rock which require fracturing to stimulate release of gases and liquids. Given the extensive mapping of the subsurface conducted before development, this potential becomes even more remote.

The DEC reports in the Executive Summary of the SGEIS that

> [c]hapters 5 and 6 contain analyses that demonstrate that no significant adverse impact to water resources is likely to occur due to underground vertical migration of fracturing fluids through the shale formations. The developable shale formations are vertically separated from potential freshwater aquifers by at least 1,000 feet of sandstones and shales of moderate to low permeability. In fact, most of the bedrock formations above the Marcellus Shale are other shales. That shales must be hydraulically fractured to produce fluids is evidence that these types of rock formations do not readily transmit fluids. The high salinity of native water in the Marcellus and other Devonian shales is evidence that fluid has been trapped in the pore spaces for hundreds of millions of years, implying that there is no mechanism for discharge of fluids to other formations.[8]

In fact, we have hydraulically fractured over one million wells in this country and never had an incident

of groundwater contamination from the process of hydraulic fracturing. This is a fact confirmed by the U.S. Environmental Protection Agency,[9] the Groundwater Protection Council,[10] recent studies conducted by Pennsylvania State University,[11] the University of Texas[12] and regulators in 15 different U.S. states[13] as well as the current Administrator of the U.S. Environmental Protection Agency.[14]

Any discussion about the environmental impacts of high volume hydraulic fracturing has to include the experience in Dimock, Pennsylvania, wherein 18 families were affected by Marcellus drilling operations. The operations led to methane migration and a surface spill. While these are serious matters, high volume hydraulic fracturing operations had not begun when these families began to experience problems.

The operator and the Pennsylvania Department of Environmental Protection came to an agreement confirmed in a Consent Order and Settlement Agreement dated December 15, 2010. The operator took action and provided the affected families with water treatment systems and a financial settlement worth twice their property values. DEP's Consent Order also mandated the plugging of three natural gas wells that were deemed beyond repair.

I have discussed Dimock with experts like former Director of DEC's Department of Mineral Resources, Greg Sovas. Mr. Sovas says:

> Given that NY's Division of Mineral Resources has required redundant casing and cementing of wells since the 1980's, it is highly unlikely that the situation in Dimock or any of the other gas migration incidents in PA would have occurred in NY. Now the Division is proposing a third string of pipe in the SGEIS to ensure protection of the groundwater.

Oil and gas drilling and production are industrial operations; accidents can and do occur. However, the affected wells in Dimock represent less than 1% of all Marcellus wells drilled in Pennsylvania. New York's stricter rules and regulations give the state better tools to avert such problems. While we seek to better utilize renewable resources, many believe that natural gas has an advantage over the hazards of coal, oil and nuclear power.

Renewable energy may be in our future but the renewables simply cannot come close to satisfying our energy needs. Failing to embrace natural gas development simply maintains the status quo – air pollution from coal-fired power-plant emissions, environmental devastation from strip mining, risks of offshore oil drilling and the threat of a nuclear power plant accident. Given these options, most believe that natural gas is our best energy option.

What About the So-Called Halliburton Loophole?

Those opposed to drilling often cite "the Halliburton Loophole," a term popularized by the film *Gasland*, to generate fear about the oil and gas industry. Critics suggest that former Vice President Dick Cheney influenced Congress to create an exemption to the Safe Drinking Water Act (SDWA). The phrase mischaracterizes the facts behind the Energy Policy Act of 2005. Further, the inference that this "loophole" allows corporations to pollute is absurd, especially given New York's stringent laws and regulations.

What occurred in 2005 was anything but an exemption to the SDWA. In 1997, the 11th Circuit of the U.S. Court of Appeals reached a decision in a case, *LEAF v. EPA* (118 F.3d 1467), which overruled U.S. EPA's previous determination that hydraulic fracturing was not covered under the class II underground injection program. This was a decision that contradicted standard practice and existing case law as hydraulic fracturing had never in its nearly 65-year history been regulated under SDWA but rather very effectively by the states. In overruling the EPA, the court's decision temporarily altered the purpose and intent of the class II underground injection program and as a result hydraulic fracturing and other programs were adversely affected by uncertainty on how to proceed.

In response to the court's decision, Congress clarified its original intent in the 2005 energy bill which was supported by nearly three-quarters of the U.S. Senate,[15] including then-Sen. Barack Obama of Illinois. In the U.S. House of Representatives, 75 Democrats joined 200 Republicans in supporting the final bill.[16] Again, this decision did not "exempt" hydraulic fracturing from "decades-old environmental laws governing safe drinking water and clean air" as claimed by the Radow article and, as evidenced by the voting record, wasn't ushered through by Vice President Dick Cheney.

Natural Gas Production and Home Mortgages – Unintended Consequences?

One of the main narratives the Radow article advances is that natural gas production is fraught with pitfalls for residential homeowners, suggesting that signing a gas lease will cause homeowners to default on their residential loans. The Radow article ignores the fact that resi-

dential mortgage lending is being conducted in oil and gas producing states throughout our country. Lending on homes with oil and gas leases is not a new phenomenon.

In most mortgages, the borrower gives the lender rights in real property interests such as easements and appurtenances. But an oil and gas lease grants the lessee nothing more than the right to enter the lessor's land for the purpose of drilling for and extracting oil or gas and has been interpreted as a license, not an easement.[17]

Accordingly, the lien of most mortgages does not attach to an interest in an oil and gas lease.

The New York Mortgage-Single Family-Fannie Mae/Freddie Mac Uniform Instrument contains the following no transfer clause:

> Lender may require Immediate Payment in Full of all Sums Secured by this Security Instrument if all or any part of the Property, or if any right in the Property, is sold or transferred without Lender's prior written permission.

An oil and gas lease will not violate this no transfer clause because it is not a sale or transfer of a "right" in the property since an oil and gas lease, as a license, gives no right in real property.[18] Rather, the rights and interests created by an oil and gas lease are considered personal property in New York for all purposes except taxation.[19]

However, one should be cautious about mortgages which provide for a lien extending to all rights in the property. While less common, clauses such as the following will allow a lender to acquire an interest in an oil and gas lease:

> [A]ll right, title and interest of Borrower in and to the Mortgaged Premises, including without limitation: . . . all oil, gas, mineral, timber, sand, gravel, water, natural resources and other such rights . . . and all leases affecting the Mortgaged Premises, which leases and all rents, royalties, income and other payments and rights thereunder are hereby assigned to Lender during the term hereof, and the possession of such leases and proceeds therefrom shall be delivered to Lender upon its demand.

The Radow article states: "It is worth noting that Wells Fargo, one of Chesapeake's lenders, stands among national lenders that do not grant mortgage loans to homeowners with gas leases." Interestingly enough, when I contacted Wells Fargo they had a much different opinion on their company's policy. Jason Menke, Communications Consultant with Wells Fargo Home Mortgage, stated:

> Wells Fargo has no set policy regarding lending decisions on properties where gas or other drilling and mining operations exist. We have made loans on properties where leases exist.

Wells Fargo is not alone in providing mortgages to properties with gas leases. One of our local banks, Chemung Canal Trust Company (CCTC) with offices in New York and Pennsylvania, has approved multiple mortgages for borrowers with existing gas leases. CCTC has also mortgaged properties where the subsurface oil, gas and mineral rights have been severed. It is the policy of the bank to consider all applications on a case-by-case basis, including those in markets that are within the Marcellus Shale footprint.

The New York Times recently published an article expressing similar concerns for homeowners with leases seeking mortgages. The article was titled "Rush to Drill for Natural Gas Creates Conflicts With Mortgages." The article motivated John F. Spall, Director of The Dime Bank in Honesdale, Pennsylvania, to state:

> I have been in private practice as a real estate attorney in Northeastern Pennsylvania for more years that I'd like to admit. My firm has offices in both Pike and Lackawanna Counties. I also operated a real estate business for a number of years and serve as a Director of The Dime Bank, which is headquartered in Wayne County. I have also served as local counsel to one of the major oil and gas companies operating in our area. I offer you all this in the way of background for what I'm about to say – that Ian Urbina's article in the New York Times this past week was seriously flawed. I reached out to him when I heard he was doing a story on this subject. Unfortunately, his deadline had already passed by the time I got his reply. I wish we had been able to talk, because he got so much so wrong.[20]

Natural gas production is occurring hand-in-hand with normal lending procedures right over the border in Pennsylvania. Spall cites many positive aspects of gas leases on residential property including, but not limited to, bonus payments enabling many customers to settle mortgages well before their expected maturation and lenders assigning gas lease revenues to themselves as a way of improving collateral on the loan. Spall also declares that review of mortgages on file in counties in the Northern Tier of Pennsylvania show many associ-

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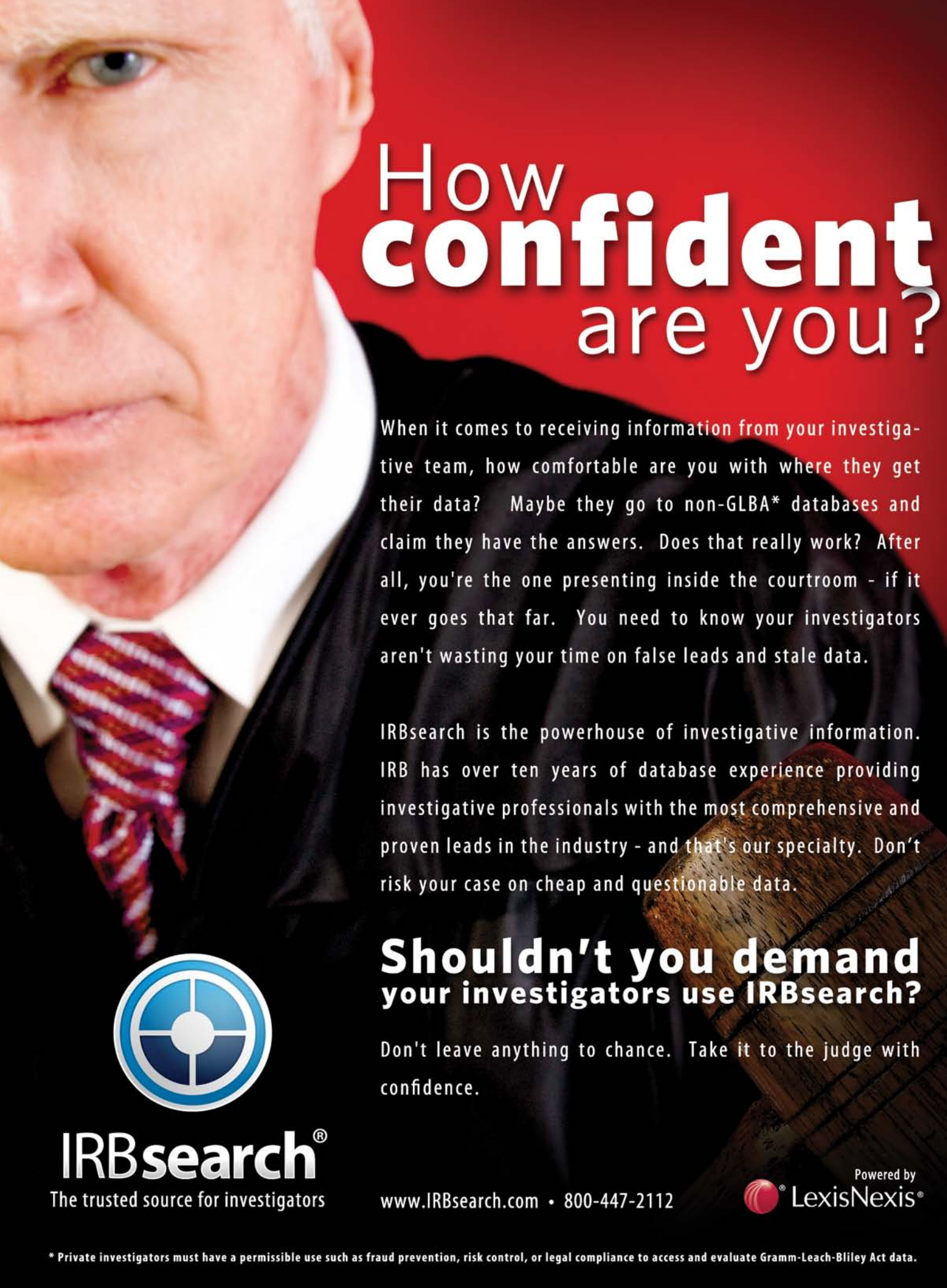
How confident are you?
When it comes to receiving information from your investigative team, how comfortable are you with where they get their data? Maybe they go to non-GLBA* databases and claim they have the answers. Does that really work? After all, you're the one presenting inside the courtroom - if it ever goes that far. You need to know your investigators aren't wasting your time on false leads and stale data.
IRBsearch is the powerhouse of investigative information. IRB has over ten years of database experience providing investigative professionals with the most comprehensive and proven leads in the industry - and that's our specialty. Don't risk your case on cheap and questionable data.
Shouldn't you demand your investigators use IRBsearch?
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* Private investigators must have a permissible use such as fraud prevention, risk control, or legal compliance to access and evaluate Gramm-Leach-Bliley Act data.

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ated with properties having gas leases and, in virtually all those cases, there are corollary assignments of leases to the lenders.

I frequently discuss oil and gas related title insurance issues with Gil Hoffman, Vice President and District Counsel of Chicago Title Insurance Company. Mr. Hoffman sent me his thoughts about the Radow article:

> From a title insurance perspective, certainly some oil and gas leases will be problematic. However, the more I have studied the title issues associated with oil and gas leases, the more comfortable I have become in my belief that mortgage financing and title insurance can coexist peacefully with oil and gas leases, in the great majority of cases. Certainly, some title issues will necessitate a bit of flexibility and creativity, but nothing extraordinary when compared with, say, canals, railroads, mines and transmission lines. Also, current and proposed environmental controls should serve to protect the market value of leased properties. The royalties generated by gas leases should enhance Lessor-Borrowers' ability to pay their mortgages, further reducing the risks associated with mortgage lending of leased property. Lenders and title companies need to grow past their generalized concerns when confronted with land affected by gas leases, recognize that the sky really isn't falling, and get on with the business of lending and insuring on gas-leased property, just as Adirondack area Lenders learned to live and loan while tolerating the reserved mineral rights present in so many titles in that region. We should be adjusting our practices to deal with the various title issues presented by modern gas leasing, rather than rejecting titles to gas-leased property.

Indeed, Fannie Mae recognizes "outstanding oil, water or mineral rights" as "acceptable . . . minor impediments" if "customarily waived by other lenders, as long as they do not materially alter the contour of the property or impair its value or usefulness for its intended purposes."[21] Similarly, Freddie Mac finds title insurance exceptions for oil, gas, water or mineral rights to be "acceptable if commonly granted by private institutional Mortgage investors in the area where the Mortgaged Premises are located," and if, among other things, "There is a comprehensive endorsement to the title insurance policy that affirmatively insures the lender against damage or loss due to the exercise of such rights."[22] (The other name for the TIRSA 9 Endorsement for residential mortgage title policies in New York is the Comprehensive Endorsement). For buyers, a "TIRSA Owner's Extended Protection Policy" can provide great coverage, for a small additional premium.[23]

> A poorly negotiated oil and gas lease may create issues for the landowner, and so, the best defense against problems is representation by competent counsel. A carefully negotiated oil and gas lease will protect the landowner and his mortgage lender, serve the needs of the lessee, and enable required title coverage.

Most practitioners in New York's gas-producing communities agree that the market will resolve these issues. Lenders with stricter policies towards oil and gas leases will simply lose market share to their competitors.

Digging Into Lease Negotiations

A carefully negotiated oil and gas lease is key to protecting the landowner. Most landowners understand today that lease negotiations must be conducted by competent professionals. Many have turned to landowner coalitions for oil and gas expertise and to increase their bargaining power with the power of a large block of acreage. Organizations like the Joint Landowners Coalition of New York and the National Association of Royalty Owners can also provide assistance.

Indeed, landowners are routinely negotiating special setbacks, protections and privileges in their leases. Dozens of addenda to the standard lease are now routine, including provisions addressing shut-in fees, indemnification, hold harmless, insurance, damages, facility placement, facility access, work timing, storage issues, water testing, remediation of damages, operations, vertical and horizontal pugh clauses, water usage, audit rights, reimbursement of tax rollbacks, protection of agricultural activities and erosion and sedimentation control requirements and reclamation provisions to ensure restoration of the property to its original condition.

Well-negotiated leases address facilities location in great detail and require consultation with the landowners as well as generous setbacks from water sources, habitation and other concerns. Many of these setbacks are required in the SGEIS itself. Pipelines are excluded from the lease and require separately negotiated agreements except to the extent required to connect the well pad with the gathering line system. Compressor stations are also excluded from the lease.

As is now common practice throughout the industry, many natural gas producing companies enter into separate agreements with property owners where a significant surface disturbance is planned. These agreements are separate from those that provide access to the property owner's mineral rights below and are

carefully negotiated to include special compensation and other incentives for the temporary inconveniences the landowner experiences while development proceeds.

Just below our state line, landowner-friendly leases are being signed with up-front payments of $5,750 an acre and 20% royalties. Five-year renewable terms are common but so are other arrangements. The lease is not indefinite and extensions are not indefinite unless legal counsel has failed to properly define terms, which is the whole point of negotiations in the first place.

Dependence on Foreign Oil

According to T. Boone Pickens, the U.S. imported 57% of its oil, or 333 million barrels in October 2011, sending approximately $36.4 billion to foreign countries. That's sending $816,086.64 per minute overseas instead of recycling those dollars back into our economy.[24] Pickens says:

> Foreign oil dependence continues to be an overlooked, yet fundamental barrier to economic recovery. Domestic natural gas is the only resource that can elevate the country from our economic turmoil by creating hundreds of thousands of American jobs and redirecting foreign oil money back into the hands of American businesses.
>
> In addition to its transformative economic potential, natural gas also has the benefit of being cleaner, cheaper, and more abundant than oil. When you consider all of this, it is unbelievable that our country keeps sending billions of dollars to OPEC nations for a foreign resource that is more expensive and does not make us safer or create jobs here in America.[25]

Every president since President Nixon has stressed the importance of reducing our dependence on foreign oil. Natural gas in New York and throughout our nation brings us closer than ever to achieving energy independence.

How Will Natural Gas Production Affect the Development of New Construction and the Economy?

To examine this it is again proper to look to our southerly neighbors. Let's compare Williamsport, Pennsylvania, with Ithaca, New York. Williamsport is in the middle of the developing Marcellus play in Pennsylvania. Ithaca is a town whose many residents have expressed concerns about natural gas development. What conclusions can be drawn between economic development and recovery in areas with and without natural gas production? The Bureau of Economic Analysis annually reviews the economic conditions of 366 metropolitan areas in the United States. It measures the gross domestic product (GDP) generated in each, identifies the sources of growth or decline and ranks the areas compared to others. In reviewing these statistics it is noticeable that Ithaca and Williamsport are similar communities in size, with populations of roughly 30,000 persons each and per capita incomes of slightly above $19,000 in both cases. Both have heavy populations of students. Thanks to natural gas production that is where the similarities end. Williamsport grew by 7.8% in 2010, earning it a ranking of seventh in the nation for GDP growth in 2010, while Ithaca gained only 1.0%, giving it a rank of 252 out of 366 metro areas. Williamsport grew by more than three times the national average of 2.5%, while Ithaca fell behind at barely two-fifths' the U.S. rate. Williamsport grew its economy by $247 million (in constant dollars), while Ithaca added only $35 million.[26]

Most landowners understand today that lease negotiations must be conducted by competent professionals.

Not too long ago the situation was different. In fact, just four short years ago in 2007, Williamsport was feeling the pains of economic contraction as jobs were leaving en masse. Williamsport faced a seemingly rust belt future. Ithaca's economy was $32 million larger and the gap widened over the two years that followed to $169 million; but, in 2010, natural gas companies and those who service them came to Williamsport in earnest as exploration ramped up. The results have been astounding. Williamsport now has a $43 million advantage over Ithaca. Growth such as this doesn't happen without new construction. The city is host to new and expanded hotels, eateries, commerce and industrial parks and, yes, residential developments. In fact, a massive residential development project that is expected to bring $16.5 million of revenue to the city[27] was just announced.

Of course, the benefits of natural gas production in Pennsylvania are not limited to the City of Williamsport. The Commonwealth as a whole is benefiting from the development of natural gas. According to the latest report from the Pennsylvania Department of Labor, the benefits realized by the state are as follows:

- As of the first quarter of 2011, Marcellus Shale related industries employed 214,000 Pennsylvanians
- From 2008–2011 employment grew by 63% in core Marcellus industries compared to an overall .9% growth rate for all industries in the Commonwealth
- The average wage in core Marcellus industries was $76,036, which is more than $29,800 greater than the average of all industry wages in Pennsylvania and

exceeds the Pennsylvania median household income (2009) by $26,535
- The average wage in ancillary Marcellus industries was $62,581, which is more than $16,400 greater than the average for all industries in Pennsylvania
- The Northern Tier Workforce Investment Area (WIA), which encompasses the most rapid growth in Marcellus Shale core industries in volume and percentage, saw an increase of 1,806 employees from 2008 to 2011 representing an employment increase of over 2,000%[28]

In addition to these benefits, the Pennsylvania Department of Revenue, at the direction of Governor Tom Corbett, released an analysis showing that companies engaged in and related to natural gas drilling activities in Pennsylvania have paid more than $1.1 billion in state taxes since 2006. Those taxes are in addition to the billions of dollars of infrastructure investments, royalty payments and permit fees paid by the industry. The Revenue Department's analysis, which breaks out tax payments from oil and gas companies and their affiliates through April 2011, indicates that 857 of these companies have already paid $238.4 million in capital stock/foreign franchise tax, corporate net income tax, sales/use tax and employer withholding to the state in 2011. These figures from the first quarter of this year already exceed by nearly $20 million the total tax payments made in all of 2010 (Pa. Dept. of Revenue Release, 5/2011). The analysis also identified $214.2 million in personal income taxes paid since 2006 attributable to Marcellus Shale lease payments to individuals, royalty income and sales of assets.[29]

Keep in mind, Pennsylvania is producing these economic numbers without a severance tax or ad valorem tax. New York has an ad valorem tax which taxes oil and gas production at the local level, producing tax revenues for the communities shouldering the burden of the development. The JLCNY produced estimated tax revenues for the Town of Windsor, New York, assuming the existence of five well pads over five years using average production numbers from Susquehanna, Bradford and Tioga counties in Pennsylvania. These five wells pads were estimated to produce $20,446,106.20 in local tax revenue with $13,361,260.07 paid to the Windsor School District. This is just one example of how all New York residents will enjoy economic benefits from natural gas development regardless of whether they are large landowners.

The benefits New York could accrue from natural gas production, given the current landscape and assuming no changes in tax structure, are significant even when using conservative estimates. For example, the SGEIS estimates there is potential for 54,000 new jobs and $2.5 billion in economic activity that may be created annually throughout the state. Many of these jobs would be in hard-hit places like Broome, Tioga and Chemung counties who have experienced economic malaise for years. The SGEIS predicts these counties would experience annual increases in employee earnings of approximately $254 million to

Estimate of Ad Valorem Tax Paid to Town of Windsor

Summary Table of Five Year Total of Estimated Ad Valorem Taxes Paid for One to Five Pads

Township Service	Number of Pads, Developed in 2-2-2 Sequence in Years 1 to 3				
	1	2	3	4	5
County Services	$961,240.17	$1,922,480.34	$2,883,720.50	$3,844,960.67	$4,806,200.84
Town Wide	$194,837.39	$389,674.78	$584,512.17	$779,349.56	$974,186.95
Town Wide Highway	$4,996.50	$9,993.00	$14,989.50	$19,986.01	$24,982.51
Town Hwy. Outside Village	$164,932.36	$329,864.72	$494,797.07	$659,729.43	$824,661.79
Fire Protection (Avg.)	$90,962.81	$181,925.62	$272,888.43	$363,851.24	$454,814.05
Avg. 2010-2011 School Taxes	$2,672,252.01	$5,344,504.03	$8,016,756.04	$10,689,008.06	$13,361,260.07
Five Year Total	$4,089,221.24	$8,178,442.48	$12,267,663.72	$16,356,884.96	$20,446,106.20

Input Variables:

Five Year Rolling Average Price	$9.80 /MCF	(from NYS ORPS, 2011, for Medina Wells)
Equalization Rate	66.50%	(from Town of Windsor)

Single Well Production Rates per: 2009–2010 Susquehanna/Tioga/Bradford Counties, PA

Table Courtesy of JLCNY Inc.
WWW.JLCNY.COM

$1.0 billion, or 4.7% to 18.7% of the 2009 total wages and salaries for the region.[30]

One of the benefits my firm regularly witnesses are donations to charities. Pennsylvania landowners receiving oil and gas bonuses and royalties have increased my firm's estate planning practice. Many of our clients tell us their first priority is giving to their church and local charities. They say they have been blessed and feel compelled to share their good fortune. Also, many oil and gas companies in Pennsylvania regularly make charitable donations to schools, organizations and the communities where they operate.

Conclusion

New York Times columnist David Brooks recently published an article titled "Shale Gas Revolution." He states:

> The United States is a country that has received many blessings, and once upon a time you could assume that Americans would come together to take advantage of them. But you can no longer make that assumption. The country is more divided and more clogged by special interests. Now we groan to absorb even the most wondrous gifts. A few years ago, a business genius named George P. Mitchell helped offer such a gift. As Daniel Yergin writes in "The Quest," his gripping history of energy innovation, Mitchell fought through waves of skepticism and opposition to extract natural gas from shale. The method he and his team used to release the trapped gas, called fracking, has paid off in the most immense way. In 2000, shale gas represented just 1 percent of American natural gas supplies. Today, it is 30 percent and rising. . . . A few weeks ago, I sat around with John Rowe, one of the most trusted people in the energy business, and listened to him talk enthusiastically about this windfall. He has no vested interest in this; indeed, his company might be hurt. But he knows how much shale gas could mean to America. It would be a crime if we squandered this blessing.[31]

New York is one of the prime locations in the Marcellus Shale world class gas play. Developed properly, the Marcellus and other producing formations in New York will be a game changer for our state and our nation, bringing us clean energy and proven economic benefits. There is real prosperity just across the border in Pennsylvania. There are well-paying jobs, new infrastructure and greater tax revenue. Our neighbors are benefiting from safe and responsible Marcellus Shale development. It is time to bring those benefits to New York. ■

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