

TESTIMONY

New York State Assembly Committee on
Environmental Conservation

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Draft Supplemental Generic
Environmental Impact Statement (dSGEIS)

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**Independent
Oil & Gas Association**
of New York

Chairman Sweeney and distinguished members of the Assembly Committee on Environmental Conservation, my name is Brad Gill and I am the Executive Director of the Independent Oil & Gas Association of New York. I am also president of *Earth Energy Consultants* – a geological consulting company based in Erie County. I am a certified petroleum geologist by profession. I thank you for the opportunity to address the committee today, and to offer our industry’s scientific and objective perspective on the prospect of expanded natural gas exploration in New York.

IOGA of NY was founded in 1980 to protect, foster and advance the common interests of oil and gas producers, professionals and related industries in New York State. While some of our members are large operators, most are small, independent producers.

Throughout the scoping process, and going back more than 18 months, our Association has worked to offer the Legislature, the Governor and the Department of Environmental Conservation (DEC) our expertise regarding the scientific discipline associated with natural gas exploration. We also have engaged in an ongoing public educational effort all across New York State to explain in clear and objective terms the process of natural gas exploration and extraction. Likewise, we have worked to respond to various criticism or concerns – the bulk of which we have found to be based on incomplete or outright false information. We are here again today – and everyday – to present the facts as best we can.

But you see our predicament, even here today, we have to respond to those who have worked to instill fear in the public, in the media and in some elected officials by spreading reckless misinformation in an attempt to block the expansion of natural gas exploration in New York -- or regulate us to the point that we abandon our hopes of drilling in this state’s Marcellus Shale reservoir.

In addition to my comments today, this committee and the DEC will receive separate, comprehensive input from individual IOGA member companies in due course – all of whom are now reviewing the recently released draft final SGEIS to understand its operational, regulatory, environmental and commercial impacts. Let me be clear though we

as an industry welcome a high environmental bar. However, the sGEIS is too comprehensive... it goes so far as to put New York at a distinct competitive disadvantage with other states such as Pennsylvania. Let's remember that drilling is Not new to New York, that there have Not been environmental problems and we need to implement reasonable environmental safeguards but do so quickly to enable New Yorkers to benefit from New York's natural resource and the potential economic benefits in the Southern Tier of New York. Pennsylvania is already benefiting and it's 14 miles away from Broome County where there has not been drilling because of the hold up of the sGEIS. Let's get the process moving and see if the regulations are something industry wants to work with in New York. If it doesn't happen soon, they may keep their rigs elsewhere and New York will lose a golden opportunity. In other words, some operators may opt out of the Marcellus Shale play in New York

As local residents and businesspeople who work in the natural gas drilling profession, our members understand the concerns that many people within the community have about natural gas exploration, particularly regarding the hydraulic fracturing and horizontal drilling processes. Although given their wide and successful application in thousands of horizontal shale wells, we recognize that since the sGEIS update process began in 2008, much speculation about techniques has been based on incomplete and erroneous information.

Drilling for natural gas is not new to New York State. In fact, New York's first natural gas well was dug in 1821 in Fredonia. Since then, more than 75,000 oil and natural gas wells have been drilled. About 13,000 of these are still producing and adding to the long time success of the natural gas industry in our State.

Before the "Marcellus" became a household word, most people were barely aware that our industry even existed in New York. Most didn't know because we've been operating for years in a safe and environmentally conscientious manner – so much so that any environmental incidents you've perhaps heard of are from other states, like New Mexico and Colorado—states that have been far less diligent in their regulatory efforts than New York. This is a critical distinction. You – as lawmakers, along with the general public – are being

misled. There is a world of difference between those circumstances and ours here in New York; to ignore these differences is a disservice to upstate New York and it is grossly unfair. There are fundamental differences in geology between those states and New York. There are typically thousands of feet of sediment and vastly differing lithologies contrasting those States and terrains with ours here in New York. A host of other factors -- like reservoir porosities and perms, fracturing, pressures, drilling and completion techniques -- are being ignored when making these unfair comparisons. Perhaps the most important difference between these other states and New York is the stringent regulatory framework.

Companies in New York – predominately in New York’s Southern Tier – have drilled through the Marcellus formation for years to access many other reservoirs such as the Oriskany, Medina, Queenston, Trenton-Black River, Theresa and others. This is not in any way a new or novel technique and for many decades has proven to be a safe, reliable and environmentally responsible means of producing this great natural resource on behalf of all our citizens.

My hope is that this body will come to better understand our industry’s long standing record and reputation for safety and environmental stewardship in New York, for its adherence to all of this state’s laws and regulations. You – as policymakers and leaders – need to recognize natural gas as an abundant resource and a clean burning fuel that, if tapped in New York, is capable of increasing America’s energy independence for decades to come. Furthermore, New York, which imports 95 percent of its natural gas from other states and regions, including the southwest, has an opportunity to have a much larger presence in the natural gas market and become more self-reliant by tapping this low-cost, clean and efficient fuel.

While we understand and respect the DEC’s lengthy and painstaking efforts in scoping and drafting the SGEIS, we have grown quite frustrated with this process. In our view, it has been unnecessarily slow. The result-- a number of companies have elected to conduct operations and in fact have moved their exploration investment out of State. Along with the operational investment that left New York so went the economic benefit. That said, we remain encouraged that the result of this delay may be an SGEIS that all New Yorkers

can feel secure about. We believe the original GEIS provided more-than-adequate environmental protections, and based on our initial understanding of the draft SGEIS, we believe it will afford even more protection, at all levels and unprecedented anywhere else, the result of a veritable feeding frenzy of environmental regulation. Indeed, it seems every office at DEC has had a hand in its development.

We will distribute formal comments by the Nov. 30 deadline. But suffice to say, New York already has one of the most stringent regulatory regimes in the country relating to oil and gas exploration. Upon implementation of SGEIS, you can be confident New York will continue to have the most aggressive regulatory process in the world.

If we were to rank the public's concerns regarding this issue, the impact on New York's water supplies would likely top the list. In particular, their concerns surround the hydraulic fracturing process, the horizontal drilling process, and the potential impacts on water quality and quantity. Before I describe these – let me say it again, IOGA of NY members have exemplary safety and environmental records, earned over many years of safe and environmentally sound natural gas production in this State.

It's important to state that the vast majority of wells in the U.S. require some form of “stimulation” – such as Hydraulic Fracturing, or “fracing” for short. This process involves using a mixture of water, sand and a small amount of dilute, benign additives injected under pressure to crack or fracture the shale reservoir and release the trapped natural gas.

Our explanations of these processes are part of the public record and easily accessible on the Internet or through DEC, so I won't go into much detail here, except to say the following:

Drilling occurs in what is basically a closed system, as compared to other activities – such as golf course maintenance -- where it is necessary to apply various pesticides, herbicides and fertilizers directly to the ground and without recovery. In hydraulic fracturing, however, fluids are isolated from the environment by cemented steel casings and only touch the rock at significant depths – well below the surface and thousands of feet

below the nearest potable water aquifer. Hydraulic fracturing has been used in New York for decades, without incident of groundwater contamination by frac fluids. Additionally, the SGEIS adds new requirements to further protect water resources:

- There are requirements for construction, operation and maintenance to prevent water quality denigration from storm water run-off
- There are new requirements in the permit application relating to protecting against surface spills and releases at the well pad
- There are specific prohibitions against pit use and where allowed there are stringent specifications
- Tanks used during the course of drilling are fully regulated regarding the location and the timeframe for viability and removal
- The use of pit liners is strictly regulated in terms of types of liners and whether they are even appropriate- there are instances where tanks in lieu of pits are required by the SGEIS
- All hydrofracing additives will be disclosed and there are permit requirements for spill response teams, employee training on prevention and response, location of additive containers to prevent contact with soil or standing water; use of drip pans under connections; notification procedures for spill; repair and containment requirements for breaches, and procedures for checking storm water prior to discharge
- Floodplains are addressed specifically and include a closed loop-tank system for drilling operations

Regarding the fracturing fluid, 99.5 percent is water and sand. The remaining .5 percent contains three primary additives:

- A friction reducer, similar to Canola oil, which thickens the fluid
- A bactericide, such as the chemical chlorine to control bacteria growth – in the same way chlorine is used in our drinking water supply

- The fluid also contains a 0.1 percent portion of a micro-emulsion element, similar to those found in personal care products and cutting oils. This additive ensures coating of the formation and effective fracture fluid recovery.

The SGEIS would impose new requirements, as follows:

- Companies that produce hydraulic fracturing fluid have already disclosed their MSDS information to the DEC, and the DEC has made disclosure a requirement in the SGEIS.
- Water well testing is required – within 1000 feet of the well pad for private wells.
- The DEC mineral resource staff will perform on-site inspections as and whenever necessary.
- Surface casing is clearly and specifically regulated- there may be multiple strings of surface casing; there is a pre-frac checklist and certification form that will attest to well construction, depths and estimated flow rates; no casing disturbances until cement achieves compressive strength of 500psi; intermediate casing cement requirements will be approved on a well-by-well basis
- In primary and principal aquifer areas, notification must be made to DEC prior to surface casing cementing, and cementing cannot commence until an inspector is present

The SGEIS specifically states that potential impacts to ground water from the high-volume hydraulic fracturing procedure itself are “not reasonably anticipated.” But nevertheless, there are numerous mitigation procedures as described above. There are also site-specific SEQRA review requirements for certain operations.

Regarding waste transport, NYSDEC will also require operators to complete and maintain records of haulers and receivers of all flowback water. This manifest system will be similar to that in place for medical waste.

As to the amount of water needed in the fracking process, we understand how important water is as a natural resource, and our members take great pride in protecting it. The volume of water intended to be used by the entire oil and gas industry is relatively small compared to the existing water uses, such as power generation and recreation.

To add perspective, in New York the average precipitation is 90 billion gallons per day. One half of that is returned to the air through evaporation. 27 to 31 billion gallons per day run off into the surface waters and flows to the sea. Another 14 to 18 billion gallons per day seep into and replenish the groundwater supply.

784 million gallons – about 1.75 percent – is actually consumed or, by definition, does not return to the water cycle.

The major consumers include the public, which uses 318 million gallons per day; electrical generators, who use 340 million gallons a day; and all other industry combined, which consumes 60 million gallons. The New York City water supply system itself leaks up to 36 million gallons per day.

By comparison, it is estimated that the natural gas industry could require a maximum of 27 million gallons per day across the three states (New York, Pennsylvania and West Virginia). A study by the Gas Technology Institute showed that industries such as power generation, general industry, public water systems, golf courses and mining all use significantly more water than what would be consumed for Marcellus Shale drilling. This is an important and relevant perspective.

Horizontal drilling is simply a drilling process whereby a well is first drilled vertically to the kick-off point that is well below the ground surface, then using specialized downhole steering equipment the borehole orientation is turned horizontal, and drilled laterally for a predetermined distance. This technology allows multiple wells to be drilled from a common well pad, minimizing the environmental footprint. In other words, it makes the wells more productive and limits the number of well sites on the surface of the land.

Regarding hydrofracturing, it's also important to remember:

- The fracturing process occurs deep in the ground; for Marcellus reservoirs it is expected to take place at least 3,000' to 4,000' and deeper;
- Frac fluid does not come in contact with well water or the fresh water aquifer (again the fresh water aquifer is protected by multiple steel casings and then reinforced with cement);
- Ground water and aquifers are protected from contamination by New York's current regulations as well as the actual depth of the natural gas zone; and
- Frac water reclaimed from the well is trucked away and treated as waste water with disposal only at EPA permitted wastewater facilities.

It is the industry's goal to minimize the consumptive use of large volumes of water by exploring the re-use of stimulation fluids. We are also researching whether water can be pumped or piped in when feasible to minimize truck traffic, but if hauling is necessary, we very typically work with local officials to minimize truck impacts and again the SGEIS addresses this as well. Additionally, some operators in PA have identified early success in the implementation of reuse techniques related to flowback and that will be an important early consideration for operations in New York.

Regarding the Catskill/Delaware Watershed, many unfounded and misleading comments have been made in recent weeks. The City of New York is a significant landowner in the watershed region, it is at least impractical to believe that natural gas deposits beneath thousands of acres of City-owned property could be explored without the review and approval of the New York City Department of Environmental Protection, The SGEIS specifically states that activities in the New York City watershed would/will require extensive documentation, review and permitting. There will be multiple approvals and compliance with multiple authorities. Additionally, it is important not to disenfranchise landowners who may wish to work collaboratively with operators thereby gaining vital economic benefits. There are specific protection measures outlined in the SGEIS:

- Prohibitions against centralized flowback water surface impoundments within the boundaries of the NYC watershed.
- Fluids from reserve pits or on-site tanks will be removed within 7 days of drilling completion and stimulation operations.
- Site specific SEQRA determinations for any proposed well pad within 300 feet of a reservoir, reservoir stem or controlled lake
- There are specific set-back requirements

In my last few moments with you all today, I would be remiss if I did not describe the tremendous potential economic impact that expanded natural gas exploration would bring to New York State. Governor Paterson recognized this potential in the recently released State Energy Plan, which states:

"This resource presents an opportunity for the State to unlock substantial economic value while helping to achieve a key energy policy objective of importance to the State's energy security. Natural gas extraction would create jobs, create wealth for upstate land-owners, and increase State revenue from taxes and land-owner leases and royalties."

An economic study released in August by the Pennsylvania State University for the Marcellus Shale Committee and the Pennsylvania House Natural Gas Caucus estimates that Marcellus Shale development will pump \$14.17 billion into that state's economy in 2010 and create more than 98,000 jobs, while generating \$800 million in state and local tax revenues.

We believe New York can and should realize similar economic benefits. Our industry has been in the perhaps unusual position of NOT asking for an appropriation or other economic development assistance typically provided to other industries, nor a reduction of a fee or tax. Just this week, Governor Paterson announced \$2.5 million in state assistance to help build a pipeline to bring Canadian-produced natural gas to Franklin County. Yet our purpose has been only to ask policymakers' support for a compelling economic development opportunity, one which will likely benefit the State and localities significantly for years to

come. This fact has been all but lost in the debate. Wouldn't it be better to bring New York-produced gas to New York customers?

The state and the public must look at the industry's track record right here in New York to draw a fair comparison. Some people say that previous exploration elsewhere in New York isn't analogous to the pending Marcellus drilling, but it sure is a lot closer to representing our industry's environmental capabilities and safety record than citing examples from other states. It is much more indicative of the job that industry does in New York to look at the more than 30,000 wells on record state-wide or the 5,500 wells drilled in Chautauqua County alone – virtually all of which penetrated the Marcellus and have been hydrofractured without major incident.

Through collaboration, coordinated efforts and the application of cutting-edge technology, we can develop this geologic treasure to the benefit of local communities and the State itself. And we can do all this while absolutely protecting water sources and other environmental resources.

Let us suggest that this is a rare moment in our State's recent history, one in which a truly new and exciting and important prospect for economic resurgence now presents itself. As policymakers, you are among those faced with the question as to whether New York will embrace this opportunity, or instead let other states nearby capitalize on New York's hesitancy. We truly believe that the interests of environmental protection can be balanced with an ability to safely foster and support this effort toward energy self-sufficiency in New York.

Respectfully submitted,

INDEPENDENT OIL AND GAS ASSOCIATION OF NEW YORK
Brad Gill, Executive Director