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New York State Department of Environmental Conservation
Public Hearing on the Draft Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program – Well Permit Issuance for Horizontal Drilling and High-Volume Hydraulic Fracturing to Develop the Marcellus Shale and Other Low-Permeability Gas Reservoirs

November 10, 2009

Testimony presented during the public hearing will be shortened in consideration of time limitations.

Overview

On behalf of Riverkeeper, I would like to thank the New York State Department of Environmental Conservation (DEC) for holding this Public Hearing in New York City and providing local residents the opportunity to learn more and speak publicly about the prospect of hydraulic fracturing in New York State.

Riverkeeper is an environmental watchdog organization that protects the Hudson River and the New York City drinking water supply. Founded in 1966 by a group of commercial fisherman, Riverkeeper focuses on enforcing environmental laws by tracking down and prosecuting polluters. For decades, we have worked with DEC and other local, state, and federal agencies on a variety of enforcement and permitting issues and look forward to continuing our work with the Department in furtherance of our shared goals of watershed protection and environmental enforcement.

The more we learn about the risks of hydraulic fracturing, the more skeptical we are that DEC has adequately considered the potential adverse environmental impacts of high-volume hydraulic fracturing. Further, we are concerned that DEC lacks adequate resources to fully administer even the existing system of permitting, monitoring, inspection, and enforcement of regulations related to gas drilling in New York State. The prospect that the Department seems headed toward approval of a newer, more resource-intensive extraction technology (hydraulic fracturing, or hydrofracking), with an expected dramatic increase in permit applications, is even more alarming.

Summary of Primary Concerns

Riverkeeper, in coordination with other environmental groups and in consultation with technical experts, continues to review DEC's draft SGEIS and will provide more detailed comments before the close of the public comment period.

Principal among our concerns in our ongoing review is the failure by DEC to adequately analyze and address the following:

(1) Establishment of exclusionary zones and permanent protection measures for critically important environmental areas such as the New York City Watershed;

(2) Cumulative impacts to the State's air and water resources that would result from high-volume hydraulic fracturing operations statewide;

(3) Economic costs associated with environmental contamination including, but not limited to, the potential costs of constructing, operating, and maintaining a filtration system for the Catskill-Delaware drinking water supply system in the event that contamination threatens New York City's current filtration avoidance determination ("FAD");

(4) Economic value and benefits of intact forest and wetland ecosystems, including the services such ecosystems provide in terms of clean air, clean water, tourism, recreation, and community character; and

(5) Whether the State has the financial and personnel resources necessary to adequately permit, monitor, and inspect hydraulic fracturing operations and to enforce state regulations and permit conditions in the event of environmental contamination; and if not, the amount of additional funds and resources needed by each division within DEC to properly regulate hydraulic fracturing statewide.

Background on Natural Gas Drilling – The Process and Impacts

Hydraulic fracturing involves the high-pressure injection of millions of gallons of water, sand and toxic chemicals into horizontal wells. After the "fracking" process, the water and chemicals must be recovered and delivered to a suitable treatment facility. While we need to learn more about the "fracking" process to understand its environmental impacts fully, we already know that industrial gas drilling brings with it a host of activities and apparatus that are unacceptable within the NYC Watershed and other surface water drinking supplies throughout the State. A web of pipelines to transport the gas and noisy compressors to push gas from wells through the pipeline system will be needed; large drilling pads capable of handling up to 16 wells will be constructed; hundreds of tanker trucks will be used to haul in water and to remove waste-water; and large open pits are necessary to hold contaminated wastewater. All of the upheaval and disruptive surface activity that would accompany any drilling process, occurring in a watershed infamous for heavy flooding and where all surface runoff flows into New York City's unfiltered water supply, is not acceptable. Moreover, allowing this activity would be reckless in the context of the FAD and the prospect of the City's water consumers paying for a $10 billion filtration plant (with $300 million in annual operating costs) should the U.S. Environmental Protection Agency ("U.S. EPA") revoke the FAD.

The New York City Watershed and the Memorandum of Agreement

The New York City Watershed (the Watershed) is comprised of the Catskill-Delaware system (West-of-Hudson) and the Croton River watershed (East-of-Hudson). The entire Catskill-Delaware system, approximately 1 million acres and consisting of 6 reservoirs, sits atop the Marcellus Shale. The Watershed is unique in that it is the largest unfiltered supply of drinking water in the country, and one of only 5 large municipal unfiltered supplies in the U.S. This system provides over 1 billion gallons of drinking water each day to more than 8 million consumers in the 5 boroughs of New York City, and an additional 1 million consumers in upstate counties.

Riverkeeper is a signatory to the 1997 New York City Watershed Memorandum of Agreement (MOA).[1] This agreement by upstate counties, watershed towns, New York City, EPA, and New York State is designed to protect and preserve the drinking water supply for 9 million New Yorkers in a manner that maintains New York City's ability to avoid the costs of filtration and allows the City to provide over 1 billion gallons of unfiltered drinking water per day. The MOA is recognized around the world as the model for effective watershed protection, and is the result of years of negotiations and hundreds of meetings that included a wide range of stakeholders.

Unfortunately, DEC's draft SGEIS flies in the face of the State's contractual obligations detailed in the MOA. Under the MOA, all parties, including New York State, DEC, the New York State Department of Health, the New York State Department of State, and the New York State Environmental Facilities Corporation, agreed that "the New York City water supply is an extremely valuable natural resource that must be protected in a comprehensive manner."[2] The parties also agreed that economic development within the watershed communities must be consistent with watershed protection.[3]

However, no economic development is less consistent with watershed protection than industrial gas drilling; specifically, high-volume hydraulic fracturing. Furthermore, the MOA did not contemplate, and is not designed to protect, the economic vitality of out-of-state gas companies. The signatories to the MOA agreed to maintain and enhance the social character of the watershed towns.[4] Industrial gas drilling brings with it a host of activities that would be completely incongruent with the social character of the watershed towns; namely, deforestation, extensive road-building and pipeline construction, massive water withdrawals, stormwater runoff and erosion control issues, toxic wastewater, aesthetics, noise, traffic impacts, and the cumulative impacts of these and other environmental problems.

DEC should ban drilling within the NYC Watershed and other surface water drinking supplies throughout the State. Rather than propose any real mitigation measures, the Draft SGEIS maintains that existing regulations, such as NYC's Watershed Rules & Regulations, provide

[1] 1997 New York City Watershed Memorandum of Agreement is available online at: http://www.nysefc.org/home/index.asp?page=294.
[2] 1997 New York City Watershed Memorandum of Agreement, ¶ 5.
[3] MOA, ¶ 6.
[4] MOA, ¶ 6.

enough protections for the NYC Watershed. The City's Regulations, however, do not regulate industrial gas drilling. The Draft SGEIS's treatment of impacts to the NYC Watershed is completely unacceptable.

Water Supply Infrastructure

The Draft SGEIS claims that fracturing zones are "thousands of feet deeper" than any tunnel or aqueduct.[5] This claim is false. NYCDEP's recent Rapid Impact Assessment Report found that (i) portions of the Catskill Aqueduct and the Delaware Aqueduct are in "direct contact" with the Marcellus Formation, and (ii) two reservoirs and substantial portions of aqueducts and tunnels are as close as 500 vertical feet from the Marcellus Formation. Rather than propose any new rules, the Draft SGEIS proposes to continue existing protocols between DEC and NYCDEP regarding drilling near aqueducts and tunnels. This is unacceptable and fails to account for this new drilling technology.

Other Environmental Areas of Concern

New York State is comprised of 17 major watersheds or drainage basins, a watershed being defined as the area of land where all the water drains into one body of water such as a river, lake, reservoir, estuary, or ocean. The NYC Watershed has received special consideration since the early 1900s when construction of the reservoir system and aqueducts began. This special consideration is due in part to its protection under the MOA, the investment that New York City has made in protecting areas around the reservoirs, the sacrifice made by upstate communities during the creation of the reservoir system, the cost savings provided to New Yorkers by EPA's filtration avoidance determination, and the economic benefits to upstate communities by the tourism and recreational industries that have resulted from continued environmental protection.

The New York City Watershed is unique in that it is the source of drinking water for half the state's population and, because of the MOA, is *unfiltered*. However, even in areas where drinking water is filtered, current filtration systems are not designed to treat the types of chemicals used by the oil and gas industry in hydraulic fracturing fluids. Moreover, DEC is not proposing additional treatment facilities or suggesting that current ones would need to be upgraded in order to treat the wastewater produced by hydrofracking operations.[6] For this and other reasons, Riverkeeper is convinced that no hydraulic fracturing should be allowed in any part of the state without new regulations and enforceable environmental safeguards.

There are countless other areas that warrant special consideration due to their ecological significance. DEC has rightfully acknowledged in its recent dSGEIS that drilling on "forever wild" land in the Catskill and Adirondack Parks will be prohibited as these lands enjoy permanent protection under the New York State Constitution.

[5] See dSGEIS at 6-41.
[6] See dSGEIS at 6.1.8.1.

The Marcellus and Utica Shales underlie most of the Catskills and the Southern Tier of New York State. This area is home to the "forever wild" lands of the Adirondack and Catskills parks and the vast systems of creeks and rivers that comprise the upper Delaware River Basin, the Mohawk River, the upper Hudson, the Finger Lakes, and the renowned trout fishing streams of the Catskills. Numerous other state parks, preserves, and wetland areas provide critical habitat for fish and wildlife, serve a variety of ecosystem functions such as water filtration, and are also major tourist and recreational areas. These areas all warrant significant attention; no drilling should be allowed in them until proper rules and regulations have been promulgated to adequately address concerns of environmental contamination and negative impacts to the special character of these regions. Unfortunately, the draft SGEIS gives little mention, let alone analysis, to industrial gas drilling in these ecologically significant areas.

Cumulative Impacts

Riverkeeper doubts whether any proper cumulative impacts analysis can be achieved where the regulatory regimes for gas drilling operations are separate from those of pipeline construction and where the reviews of drilling and pipeline certification are administered by different agencies (DEC and the Public Service Commission, respectively). Moreover, as noted in both the draft SGEIS and the draft State Energy Plan, not only is pipeline approval a lengthy process,[7] but gas producers contend that "pipeline[s] must be certified, built, and ready to accept gas before knowing for certain that [gas] well[s] will be a success."[8] To date, neither DEC nor the Energy Planning Board has offered any analysis of the potential adverse environmental impacts of pipeline construction and operation associated with the delivery of natural gas obtained via high-volume hydraulic fracturing. It is therefore perplexing that the State Energy Planning Board and DEC both imply that pipeline construction may occur prior to high-volume hydraulic fracturing.

Further, DEC concedes in the draft SGEIS that it does not know the rate at which development will proceed. While this inability to predict gas drilling production rates is understandable, it is also a convenient excuse for failing to adequately quantify and analyze cumulative impacts, thus precluding informed public review of cumulative impacts.

Economic Costs

The draft SGEIS details economic benefits of allowing hydraulic fracturing operations in New York State. It provides a lengthy section detailing projected benefits to upstate counties if hydraulic fracturing proceeds. However, DEC fails to offer any real analysis of the potential economic costs that result from deforestation, road building, erosion and stormwater runoff, chemical contamination, seismic activity, and public health problems, all of which have been documented in other states where hydraulic fracturing occurs.

[7] See draft State Energy Plan Natural Gas Assessment at 39), available at: http://www.nysenergyplan.com/DRAFT%20Energy%20Plan%20FINAL.pdf.
[8] See draft State Energy Plan at 50.

For instance, roads in Pennsylvania have required resurfacing and widening after wear and tear from the heavy equipment used by oil and gas developers. The project will use mainly taxpayer dollars. The oil company that uses the road, Atlas Drilling, will contribute $50,000 to the project, while the township needed to borrow over $290,000 to finance it. Residents are concerned that the township cannot afford to pay for the damages caused by Atlas Drilling's use of the road.[9]

Moreover, DEC continues the time-honored industry tradition of externalizing environmental costs by omitting any analysis on the economic value and benefits created by intact forest ecosystems, clean stream and rivers, recreational fisheries, and open space, and the costs associated with environmental damage. This is unacceptable.

Environmental Contamination

Perhaps the most egregious part of DEC's draft SGEIS is its failure to acknowledge, and plan for, environmental contamination that will result if hydraulic fracturing proceeds in New York State.

This may be attributed in part on the agency's heavy reliance on claims made by industry trade groups and agency officials from other states.[10]

For instance, DEC notes in Appendix 15 a statement by PA DEP that "no groundwater pollution or disruption of underground sources of drinking water has been attributed to hydraulic fracturing of deep gas formations." This statement is not only inaccurate based on recent accidents that PA DEP is investigating, but it is also contradicted by the sentence that immediately follows it: "All investigated cases that have found pollution, which are less [sic] then [sic] 80 in over 15 years of records, have been primarily related to physical drilling through the aquifers, improper design or setting of upper and middle well casings, or operator negligence."[11]

DEC also relies on a statement by New Mexico Energy, Minerals and Natural Resources Department, claiming that "[w]hile we do currently list approximately 421 ground water contamination cases caused by pits and approximately an equal number caused by other contamination mechanisms, we have found no example of contamination of usable water where the cause was claimed to be hydraulic fracturing."[12] Does this mean it was only the ancillary activities of hydraulic fracturing that caused over 800 incidents of groundwater contamination? Are the "pits" for produced water or something altogether unrelated to hydrofracking? And what is "usable water" versus unusable water?

In sum, DEC relies on statements from regulators from 12 states – Alabama, Alaska, Colorado, Indiana, Kentucky, Louisiana, Michigan, Oklahoma, Tennessee, Texas, South Dakota, and

[9] Ted Lutz, *Work Now Underway to Resurface Turkey Track*, THE KANE REPUBLICAN (July 15, 2009), *available at* http://www.kanerepublican.com/content/view/107525/1/.
[10] See dSGEIS at Appendix 15.
[11] *See id.*, Letter from Joseph J. Lee.
[12] *See id.*, App 15.

Wyoming – all denying any historical incidence of groundwater contamination due to hydraulic fracturing. Unfortunately, as documented by Riverkeeeper in its continuing series of Industrial Gas Drilling Reporters, there is current evidence of contamination that may be related to hydraulic fracturing in virtually every one of these states.[13]

Riverkeeper has been tracking this issue for the past 18 months. Each day brings new reports of environmental problems associated with hydraulic fracturing. Indeed, hydrofracking has been linked to hundreds of cases of environmental contamination around the country, ranging from flammable tap water in Colorado to dead cattle in Louisiana; earthquakes in Texas to well water contamination in Wyoming and massive fish kills in Pennsylvania.

Yet the DEC appears to be ignoring these reports and relying instead on the conclusions by industry-backed groups such as the Ground Water Protection Council, which concludes state oil and gas regulations are adequately designed to directly protect water resources and that regulations based on anecdotal evidence are not recommended.

The Precautionary Principle

Riverkeeper urges DEC to instead follow the precautionary principle, which provides sound justification to ban industrial gas drilling within the New York City Watershed and other areas of ecological significance. The precautionary principle is about decision-making, and has become a widely embraced concept of environmental law throughout the world.[14] It was articulated in the United Nation's 1992 Rio Declaration (adopted at the 1992 Earth Summit) and provides that government actions should err on the side of protecting public health and the environment, and a lack of scientific certainty should not preclude the adoption of cost-effective measures to control environmental risks.[15]

The precautionary principle is seen in legal case law as well. For example, in 1976 the Washington, D.C. Circuit Court of Appeals issued an opinion in a groundbreaking case concerning scientific uncertainty regarding health effects of leaded gasoline. The first sentence of that opinion foresaw many issues now confronting the environment: "Man's ability to alter his environment has developed far more rapidly than his ability to foresee with certainty the effects of his alterations."[16] This case provides a strong endorsement of a precautionary approach to regulating "in the face of danger" stating that "[a]waiting certainty will often allow for only reactive, not preventive regulation."[17]

Additionally, in the Reserve Mining litigation, the Eighth Circuit heard Reserve Mining's appeal *en banc* and upheld the district court's injunction requiring abatement of discharges of asbestos-

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[13] See Riverkeeper Industrial Gas Drilling Reporters at: http://www.riverkeeper.org/campaigns/safeguard/gas-drilling/.

[14] *See* Robert Percival, *Who's Afraid of the Precautionary Principle?*, 23 Pace Envtl. L. Rev. 21 (Winter 2005-06).

[15] *See id.*

[16] Ethyl Corp. v. EPA, 541 F.2d 1, 6 (J. Skelly Wright, D.C. Cir. 1976) (court acknowledged the high degree of scientific uncertainty, but upheld EPA's decision to regulate lead in gasoline).

[17] *Id.* at 25.

like fibers into Lake Superior; but rather than requiring them to stop immediately as the District court had required, the Court of Appeals gave Reserve Mining "reasonable time" to abate the discharges.[18] There was substantial scientific study conducted in this case, with results that were less than crystal clear. The court, however, summarized its key rulings, which included that: "No harm to the public has been shown to have occurred to this date and the danger to health is not imminent. The evidence calls for preventive and precautionary steps." *Id.*

Both New York State and New York City should heed the command of the precautionary principle and set aside the New York City Watershed, comprising only 8% of New York's portion of the Marcellus Shale, from industrial gas drilling. The risk of contaminating half the State's drinking water supply is too great a risk to justify industrial gas drilling in the New York City Watershed. Moreover, the five counties in the West-of-Hudson portion of the New York City Watershed have no experience with any oil or gas drilling, and industry representatives assert that the Marcellus Shale formation becomes less rich ("thins out") as it moves eastward into the New York City Watershed. Notably, such a ban would not apply to areas of New York that have historic experience with environmentally responsible oil and gas drilling. Without question, this is a cost-effective measure to control environmental risk and balances environmental protection with economic development.

Concluding Remarks

Thank you for the opportunity to testify here tonight and for consideration of the public comments expressed by Riverkeeper and other stakeholders throughout the public comment period.

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[18] Reserve Mining Co. v. EPA, 514 F.2d 492, 500 (8th Cir. 1975).