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January 11, 2013

Attn: Draft HVHF Regulations Comments
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-6510

Dear Commissioner Martens:

Please consider the following comments on the New York State Draft High-Volume Hydraulic Fracturing (HVHF) Regulations. I am submitting these comments on behalf of concerned constituents of my district in Tompkins and Cortland counties.

Since 2008, the NYS Department of Environmental Conservation (DEC) has been working on an update to the 1992 Generic Environmental Impact Statement governing the state Oil, Gas and Solution Mining Regulatory Program. The proposed revised rules issued by the Department of Environmental Conservation on November 29th, 2012 are intended to “supplement the Department’s ability to monitor and enforce certain measures identified in the Department’s revised draft Supplemental Generic Environmental Impact Statement” (SGEIS).¹ Yet, to date, the final SGEIS has not been released, and there is no “Final Agency Decision” with regard to HVHF. Commenting on regulations which are supposed to supplement an uncompleted draft document subverts the intent of the State Administrative Procedure Act (SAPA), which establishes uniformity in state agency rulemaking procedure to “insure[] that equitable practices will be provided to meet the public interest” and to replace a disjointed approach to rulemaking which would “create misunderstanding by the public.”² With the eleventh hour decision by the DEC and the Department of Health (DOH) to perform a public health analysis of HVHF, even though human health impacts must be comprehensively

¹ N.Y. DEP’T ENVTL. CONSERV., *Revised Regulatory Flexibility Analysis For Small Businesses and Local Governments* at 1 (proposed Nov. 2012), available at <http://www.dec.ny.gov/regulations/87450.html>

² STATE ADMIN. PROCEDURE ACT, § 100.

evaluated under the State Environmental Quality Review Act (SEQRA),³ the inchoate HVHF rulemaking process has led to considerable “misunderstanding” by the public, elected officials, health professionals and scientist experts, as well as, apparently, the Governor-appointed Hydraulic Fracturing Advisory Panel which has not met since December 2011. I again urge, as I have previously, immediate written public notice regarding the intent and scope of the DOH Review, release of DEC’s “Health Impact Analysis” for public review, at least one public hearing to allow Commissioner Shah and the three outside health experts to hear testimony about the proposed DOH review, and a minimum 30 days for public review and comment by all interested parties of the proposed DOH Review.

Issuance of these proposed revised rules, and asking the public to comment on rules without the final record of decision and final SGEIS document, creates a severe problem of transparency and legitimacy surrounding the HVHF review. Indeed, the September 2011 dSGEIS, and these proposed regulations, fail to adequately address fracking concerns which are already occurring in New York and ignores concerns from other states due to use of the same HVHF shale gas extraction technology. Broadly, hydraulic fracturing has been linked to the following adverse impacts which do not receive adequate attention by the NYDEC or other relevant agencies: 1) potential health impacts, 2) wastewater treatment and disposal, 3) the effect of gas drilling on the mortgage and real estate markets, 4) a balanced socio-economic assessment, and 5) climate change. Until the public has been satisfied that these issues have been adequately addressed, any proposed regulations on the matter are premature. This is especially troubling given the lack of response by DEC, DOH or any state entity as to the nature of the health review. New York health professionals have demanded a full Health Impact Assessment (HIA), an issue of grave importance, I hope you agree, in light of the State’s own admission concerning fracking fluid that:

“[t]oxicity testing data is quite limited for some chemicals, and less is known about their potential adverse effects.... there is little meaningful information one way or the other about the potential impact on human health of chronic low level exposures to many of these chemicals, as could occur if an aquifer were to be contaminated as the result of a spill or release that is undetected and/or unremediated.”⁴

Additionally, the public awaits the revised socioeconomic assessment of HVHF in New York State. The SGEIS draft socioeconomic report was met with withering criticism by the public, and by the Advisory Panel, for failing to quantify any negative impacts associated with HVHF across our state, and often coming to conclusions which were at odds with the information and studies cited (i.e. property valuation). On December 20, 2011, DEC, facing pressure about these questions from many quarters, asked for a reassessment of socioeconomic considerations facing NY due to unconventional natural

³ See State Env'tl. Quality Review Act (SEQRA) § 617.2(l), “Environment means the physical conditions that will be affected by a proposed action, including ... human health,” available at <http://www.dec.ny.gov/regs/4490.html#18102>

⁴ N. Y. DEP’T ENVTL. CONSERV., *Draft Supplemental Generic Environmental Impact Statement (dSGEIS)* at 5-75 (proposed Sept. 2011), available at <http://www.dec.ny.gov/energy/75370.html>

gas drilling.⁵ The public and elected officials have yet to see an updated report despite the tacit admission that the original socioeconomic review was deeply flawed. Troublingly, the proposed regulations provide no new information, and inform the reader that “[t]he 2011 rdSGEIS contains a detailed analysis of the socioeconomic impacts associated with approval to utilize HVHF.”⁶ However, given the state’s own recognition of the inadequacy of their review, as well as public comments from expert economists across the state, we know the 2011 SGEIS does not form an adequate record upon which to base comprehensive socioeconomic impacts from HVHF. It is unacceptable to issue proposed regulations upon an incomplete and flawed guidance document. The SAPA requires that “[a]n agency, upon request, shall, within thirty days, make available for inspection and copying any scientific or statistical study, report or analysis... that is used as the basis of a proposed rule and any supporting data...”⁷ I trust that any and all studies in support of HVHF rulemaking will be released within 30 days of receipt of these public comments as has been requested through the Freedom of Information Law by my colleagues and environmental and health organizations. The public deserves transparency and legitimacy with respect to rules that have significant environmental and public health impacts.

All of these serious concerns notwithstanding, I submit these comments on the proposed Draft HVHF Regulations.

I. 6 NYCRR §190.8(ag)

A. Allowing for extraction of shale gas using toxic hydraulic fracturing fluid underneath state lands is incompatible with the policies of forest and wildlife conservation found in Article XIV, Section 3 of the NYS Constitution.

Article XIV, Section 3 of the NYS Constitution declares that forest and wildlife conservation are the policies of the state.⁸ High-volume hydrofracking surface impacts adjacent to state lands will thwart these constitutionally mandated policies, and allowing HVHF drilling to exploit mineral interests under state lands would damage the interests of all NY citizens by: 1) impacting water quality, 2) obstructing recreation, 3) fragmenting habitat and harming wildlife through access roads and nearby surface impacts, 4) failure to sustainably manage the publicly-owned lands in perpetuity.

Minimizing surface impacts within state-owned lands is inadequate protection for the state policies of forest and wildlife conservation. Especially with respect to State Forests which can only be leased when “leasehold rights shall not interfere with the operation of such reforestation areas for the purposes of which they were acquired and as

⁵ Jon Campbell, *DEC Going to Take Closer Look at Hydrofracking Costs*, POLITICS ON THE HUDSON, Dec. 20, 2011, available at <http://polHUDSON.lohudblogs.com/2011/12/20/dec-to-take-closer-look-at-hydrofracking-costs/>

⁶ N.Y. DEP’T ENVTL. CONSERV., *Revised Regulatory Flexibility Analysis For Small Businesses and Local Governments* at 2 (proposed Nov. 2012), available at <http://www.dec.ny.gov/regulations/87450.html>

⁷ STATE ADMIN. PROCEDURE ACT, § 104(1).

⁸ N.Y. CONST. art. XIV, §3(1).

defined in Section 3 of Article XIV of the Constitution.”⁹ The Marcellus formation is known to be “dry,” with as much as 1/3 of the five million gallons (per well) of fracking fluid injected underground remaining underground. What happens to this chemically-laced water? We don’t know. It may end up in the well water of nearby residents, or indeed, in streams and lakes across the region. Groundwater dynamics are incredibly complex and a major risk of contamination exists as unreturned fracking fluid migrates through unseen subterranean channels over time, and is even gained into a surface water body. DEC regulations concerning the use of state lands makes clear that “[n]o person may pollute in any manner nor deposit waste material of any kind in or on waters under the jurisdiction of the department.”¹⁰ Therefore, the allowance of hydraulic fracturing fluid under the surface of state lands leads to the very real possibility of pollution of state water resources.

II. 6 NYCRR §560.4 -- Setbacks

A. Setback requirements do not ensure protection of NYS water resources as required by the DEC’s general duties under ECL Article 1 and its Water Resources policy under ECL Article 15.

Under ECL Article 1 § 1-1010(1), the DEC is obligated to “conserve, improve and protect its natural resources and environment and to prevent, abate and control water, land and air pollution, in order to enhance the health, safety and welfare of the people of the state.”¹¹ Also, New York State water resources policy mandates that “reasonable standards of purity and quality of the waters of the state be maintained consistent with public health, safety and welfare and the public enjoyment thereof, and the propagation and protection of fish and wildlife...”¹²

Yet, these setback limits place an arbitrary 500 foot buffer zone around the 18 Primary Aquifers of New York State, defined as “highly productive aquifers presently utilized as sources of water supply for major municipal water supply systems” and bans drilling within these aquifers.¹³ The state acknowledges that approximately 5 million residents of NY depend upon groundwater, yet the only protections for aquifers are limited to these Primary Aquifers. These proposed regulations ignore the vast amounts of irreplaceable groundwater stored in the state’s *Principal* Aquifers. Principal Aquifers are “aquifers known to be highly productive or whose geology suggests abundant potential water supply, but which are not intensively used as sources of water supply by major municipal systems at the present time.”¹⁴ Failing to protect “highly productive” sources

⁹ NY ENVTL. CONSERV. LAW §9-0501.

¹⁰ N.Y. DEP’T ENVTL. CONSERV., *Use of State Lands* § 190.3(C), available at <http://www.dec.ny.gov/regs/4081.html#12996>

¹¹ N.Y. ENVTL. CONSERV. LAW § 1-1010(1) (1970)

¹² N.Y. ENVTL. CONSERV. LAW § 15-0105(7).

¹³ N.Y. DEP’T ENVTL. CONSERV., *Division of Water Technical & Operational Guidance Series (TOGS)* §2.1.3, available at http://www.dec.ny.gov/docs/water_pdf/togs213.pdf; proposed Regulation 750-3.2(b)(37)(ii)

¹⁴ *Id.*

of water simply because they do not supply “major municipal systems at the present time” is incredibly short-sighted, and New York deserves better. The residents who depend on these aquifers live in small towns or use private water wells, and deserve the same level of protection for their water. We cannot institute a dual standard for basic health protections and clean water across the state, as the current regulations impose.

As these regulations are proposed without a contextual document nor any empirical data supporting the state’s decisions, it is not clear that 500 feet of buffer from a dwelling is adequate to prevent sound, light, air and water pollution from adversely affecting the use and enjoyment of one’s property. Indeed, the U.S. Geological Survey (USGS) found these setback distances “afford limited protection” and the municipal water system 2,000 foot setback “is one-size-fits-all and may provide only partial protection to the aquifers” and “does not take local geohydraulic conditions and topographic settings into account.”¹⁵ Ineffective protections are especially problematic, as the compulsory integration law threatens to bring HVHF to any New York residents who live above a shale formation. The risks of contamination can be forced upon landowners who want to bear no risk from hydraulic fracturing and who have not signed a lease to willingly allow extraction of their mineral resources. Also, fracking is known to release many air pollutants, including hydrogen sulfide which is documented to have grave effects on human health especially with prolonged exposure.¹⁶ Recent studies show great risk of health effects from air pollution from those living a half-mile or closer to an oil and gas operation. Concerns were driven mainly by exposure to trimethylbenzenes, xylenes, and aliphatic hydrocarbons, with benzene exposure leading to greatly increased cancer risk.¹⁷

Additionally, ECL § 1-0101(3) clarifies that: “It shall further be the policy of the state to foster, promote, create and maintain conditions under which man and nature can thrive in harmony with each other, and achieve social, economic and technological progress for present and future generations.”¹⁸ This imposes a duty to craft policy that is forward-looking, ensuring the existence of high quality natural resources and economic opportunities that are not detrimental in the long term for this generation and all future generations. HVHF, using current technology, is violative of this critical balance between health, safety, the sanctity of our natural world (which also brings in billions of tourism dollars across NY), and a stable, growing, economic sector which can be relied upon by New Yorkers for gainful employment in perpetuity. HVHF achieves none of these overarching state policy objectives. Without adequate assurance that the risks are not too great, and the economic opportunity is not short-lived and outweighed by costs to local governments, reduction in property values and technical mortgage violations, HVHF must not go forward in NYS. Indeed, unquantified costs for local government services

¹⁵ U.S. Geological Survey, New York Water Science Center, Comments on the Revised Draft Supplemental Generic Environmental Impact Statement 7 (2012)

¹⁶ See U.S. Department of Health and Human Services, Toxicological Profile for Hydrogen Sulfide, July 2006, available at <http://www.atsdr.cdc.gov/toxprofiles/tp114.pdf>

¹⁷ McKenzie, Witter, Newman, Adgate, *Human health risk assessment of air emissions from development of unconventional natural gas resources*, Colorado School of Public Health, May 2012 available at <http://www.ncbi.nlm.nih.gov/pubmed/22444058>

¹⁸ N.Y. ENVTL. CONSERV. LAW § 1-1010(3) (1970)

including road repair, county health department complaints and contamination response, increased police forces, emergency response, over-burdened schools and more could lead to more expenditures than tax receipts in any given municipality. Yet, these regulations without any data, state that “these revised rules will not have substantial adverse effects on small businesses and local governments,”¹⁹ and goes on to list the numerous expenses above. This is an inadequate record for making a final decision on the local government impacts from HVHF.

B. 100-year floodplain maps must be updated to reflect increased occurrences and extent of flooding due to climate change.

Over the last two years, New York has faced severe flooding from hurricane Irene, tropical storm Lee, and Superstorm Sandy. The old floodplain maps are outdated and irrelevant. If the intent is to prevent flooding to well sites, and the uncontrolled contamination that can ensue, then the maps need to be updated, as several environmental groups and legislators have called for.²⁰

III. 6 NYCRR §750-3.3(b)(1) -- Prohibited Activities and Discharges

A. Prohibiting HVHF in unfiltered watersheds, but not protecting the rest of New York’s water resources, acknowledges risks of contamination yet fails to protect vast areas of the state, in contravention of ECL Section 17.

One of the biggest risks of hydraulic fracturing -- involving the injection of hundreds of thousands of gallons of chemicals, many known to be harmful to human health, and many as-yet-unresearched – is the potential to contaminate New York’s water supplies. Indeed Governor Cuomo recognized how critical a threat to water hydrofracking really is in his 2010 campaign book, *Power NY: The New NY Agenda vol. 2*, stating: “existing watersheds are sacrosanct and Andrew Cuomo would not support any drilling that would threaten the State’s major sources of drinking water.”²¹ Accordingly, in order to reduce risk, proposed regulation §750-3.3(b)(1) calls for a complete prohibition on HVHF in the New York City and Skaneateles Lake watersheds.²² Due to their water purity, these watersheds have a Filtration Avoidance Determination (FAD), granted by the EPA, eliminating the need for water treatment plants for New York City and Syracuse. ECL §17-0103, however, states that the purpose of the Water Pollution Control law is “to safeguard the waters of the State from pollution by preventing any new

¹⁹ N.Y. DEP’T ENVTL. CONSERV., *Revised Regulatory Flexibility Analysis For Small Businesses and Local Governments* at 1 (proposed Nov. 2012), available at <http://www.dec.ny.gov/regulations/87450.html>

²⁰ Mireya Navarro, *Flooding Brings New Wrinkle To Fracking Report*, N.Y. TIMES, Sept. 9, 2011, available at <http://green.blogs.nytimes.com/2011/09/09/upstate-flooding-brings-new-wrinkle-to-fracking-report/>

²¹ ANDREW CUOMO, *POWER NY: THE NEW NY AGENDA VOL. 2* 92 (2010), available at http://www.andrewcuomo.com/system/storage/6/89/e/798/andrew_cuomo_power_ny.pdf

²²dSGEIS at 7-5 ; 6 NYCRR §750-3.3(b)(1) (proposed Oct. 2011), available at <http://www.dec.ny.gov/regulations/77383.html>

pollution” and defines “water of the state” to include both surface and groundwater.²³ Applying protections to the unfiltered watersheds, but not to all residents of New York, ignores that contamination of unfiltered private well water across NY faces the same risks as the FAD watersheds, and surface waters can suffer severe degradation from uncontained blowouts. The severe impacts of contamination can lead to health problems and tremendous diminution of property value.²⁴

After this recognition that HVHF poses enough of a risk to prohibit drilling in a buffer zone extending 4,000 feet from these key NY watersheds, clearly the rest of New York deserves the same protection for its surface and groundwater. Note the recent problems with several wells in western New York which may have been polluted by nearby gas well drilling operations starting in 2005. Several homeowners experienced diminished water quality shortly after commencement of drilling in the region, and referred their complaints to the local health department. A letter from the Chautauqua County Water Resource Specialist, referring the case to the NYDEC, stated: “[t]his is a well-documented case showing drinking water impacts that are seemingly related to gas well development.... the Chautauqua County Department of Health requests that your Division thoroughly investigate to identify the cause of contamination...”²⁵ However, the push for more investigation was fruitless, and the DEC doubted the connection to gas drilling, despite urging by county officials.²⁶

As federal regulation over HVHF is minimal, at best, as the industry enjoys exemption from hazardous waste classification under the Resource Conservation and Recovery Act (RCRA) and fracking wells are not subject to the Safe Drinking Water Act (SDWA).²⁷ There is an obvious need to understand the prevalence of methane and fracking chemical contamination from gas drilling operations; anecdotal evidence from one situation to another is unacceptable. As the health effects of such contamination are not well understood, there also must be greater emphasis on a comprehensive health study. In the absence of federal regulation, this burden lies with the DEC. It is the citizens of New York who will pay the costs with their health, with their livelihood, and possibly even with the complete destruction of their property value -- for many their main life-long investment -- should contamination occur. Additionally, and also of great concern to New Yorkers, is the release of the EPA’s Draft Research Report: “Investigation of Ground Water Contamination near Pavillion, Wyoming” on December 5, 2011.²⁸ This study is the culmination of three years of groundwater sampling and research in Pavillion, performed by the EPA under authority of the Comprehensive Environmental Response,

²³ N.Y. ENVTL. CONSERV. LAW § 1-0103; § 1-0105(2).

²⁴ Eliza Griswold, *The Fracturing of PA*, N.Y. TIMES, Nov. 17, 2011, available at <http://www.nytimes.com/2011/11/20/magazine/fracking-amwell-township.html>

²⁵ Liz Lawyer, *Residents Fault DEC Over Claims of Gas Drilling Impact on Water Wells*, ITHACA J., Nov 2, 2011, available at <http://www.theithacajournal.com/article/20111102/NEWS01/111020368/Residents-fault-DEC-over-claims-gas-drilling-impact-water-wells>

²⁶ *Id.*

²⁷ Osborn at 4.

²⁸ U.S. ENVTL PROT. AGENCY, *Draft Research Report: Investigation of Ground Water Contamination Near Pavillion, Wyoming*, (Dec. 2011) Available at http://www.epa.gov/region8/superfund/wy/pavillion/EPA_ReportOnPavillion_Dec-8-2011.pdf

Compensation, and Liability Act (CERCLA), otherwise known as Superfund law.²⁹ The study began in early 2008 at the request of local residents, who found their water quality to be compromised with foul odor and taste following HVHF in the area, and wanted information. It is irresponsible and a violation of the precautionary principle for the state to move forward with HVHF at great risk to New Yorkers, before such a critical study is completed.

**IV. 6 NYCRR §560.7 – Waste Management and Reclamation
§554.1(4) – Drilling Practices and Reports**

A. The proposed regulations offer no wastewater plan, unacceptably leaving waste treatment up to the well operators. Promulgated regulations must adequately protect state water resources at risk of contamination from fracking fluid chemicals, while minimizing the impact to drinking water supplies and ecologically important surface waters.

In February 2011, *The New York Times* published a revealing article on the struggle of Pennsylvania authorities to safely manage and dispose of millions of gallons of toxic and radioactive fracking wastewater.³⁰ Sewage treatments plants are not equipped to process the radioactive material present in fracking wastewater, and with prolonged exposure, the facility equipment may corrode due to the high chloride content of flowback and produced water. Most shockingly, release of “treated” water into the Monongahela River in the summer of 2008 led the EPA to require all Pittsburgh residents to drink only bottled water, as the level of radionuclides exceeded the allowable federal drinking water level.³¹ An internal EPA memo called this event “one of the largest failures in U.S. history to supply clean drinking water to the public.”³² Clearly a similar public health scandal in New York must never happen. Given this known inability of treatment plants to handle fracking flowback, why does the DEC allow for processing at Publicly Owned Treatment Works (POTWs)? The letter sent to Governor Cuomo on September 15, 2011 by the Physicians, Scientists and Engineers for Healthy Energy, signed by 59 top scientists from around the world, speaks about the inability of existing water filtration systems to protect against hydraulic fracturing wastewater.³³

Other proposed disposal methods also cause problems. Under the 1992 GEIS, the use of disposal wells for brine in New York is regulated using a site-specific SEQRA

²⁹ *Id.* at 1

³⁰ Ian Urbina, *Regulation Lax as Gas Wells’ Tainted Water Hits Rivers*, N.Y. TIMES, Feb. 26, 2011, available at <http://www.nytimes.com/2011/02/27/us/27gas.html>

³¹ *Id.*

³² *Id.*

³³ Letter from Physicians Scientists and Engineers for Healthy Energy, to Governor Andrew Cuomo (Sept. 15, 2011) available at http://psehealthyenergy.org/data/Sign_on_letter_Final.pdf

determination.³⁴ Accordingly, injection is not proposed for widespread use in the 2011 generic EIS supplemental update. However, even if New York does not allow for underground injection disposal of brine and fracking waste in state, it means that another state will accept the waste, but at what cost? Underground injection wells have been problematic all across the country, with numerous states concluding that the pressurized waste underground frequently causes earthquakes. In July, the Arkansas Oil and Gas Commission voted 7-0 to shut down disposal wells and ban future disposal wells in a 1,150 square mile area in central Arkansas.³⁵ The region experienced hundreds of small earthquakes, with the most powerful at 4.7 magnitude on February 27, 2011.³⁶ In Oklahoma, the state faced, on average, 50 small tremors a year, until 2009, when the number spiked to over 1,000 a year with a peak magnitude of 5.6 in November of 2011.³⁷ More recently, on December 31, 2011, a 4.0 magnitude quake shook Northeastern Ohio, leading to closure of the related injection disposal well.³⁸ As Ohio is the closest and cheapest destination to deliver any future NY fracking wastewater for disposal, it is safe to say that injection wells in Ohio would receive some of our waste. That is, if they even allow for underground injection following the increasingly severe quakes. As states move to restrict the use of underground injection wells, it is clear that New York cannot count on use of these wells for disposal in the future. The questionable ethics of allowing transport of our wastewater to states with more lax environmental standards aside, neither underground injection wells nor POTWs can provide for adequate wastewater treatment going forward.

Another disposal method for fracking brine, as allowed under the 1992 GEIS, is the spreading of this fluid on roadways to melt snow and ice in the winter. As recently as April 2010, DEC granted permits to allow for several upstate municipalities to spread brine from vertical wells drilled in western NY.³⁹ Based on brine characteristics in the 1992 GEIS, it is very likely that this brine has contaminants that violate the applicable groundwater effluent limitation standards when spread on the roadside. NYS regulation § 703.6(a) provides a table of applicable thresholds for effluent discharge into fresh, potable, groundwater aquifers.⁴⁰ These provisions “apply to a discharge from a point source or outlet or any other discharge... that will or may enter the waters of the State.... [u]nless a demonstration is made to the contrary, it shall be presumed that a discharge to the

³⁴ N.Y. DEP’T ENVTL. CONSERV., *Draft Supplemental Generic Environmental Impact Statement (dSGEIS)* at 7-65

³⁵ Rob Moritz, *Panel Bans Injection Wells in Quake Zone*, ARK. NEWS, July 27, 2011, available at <http://arkansasnews.com/2011/07/27/panel-bans-injection-wells-in-quake-zone/>

³⁶ *Id.*

³⁷ Associated Press, *Oklahoma Still Shakin’ From Earthquake*, NY DAILY NEWS, Nov. 7, 2011, available at http://articles.nydailynews.com/2011-11-07/news/30371543_1_magnitude-aftershocks-earthquake

³⁸ Henry Fountain, *Disposal Halted at Well After New Quake in Ohio*, N.Y. TIMES, Jan. 1, 2012, available at <http://www.nytimes.com/2012/01/02/science/earth/youngstown-injection-well-stays-shut-after-earthquake.html>

³⁹ G. Jeffrey Aaron, *Wastewater from Gas Drilling Being Used for Area Road Maintenance*, ITHACA J., Jul. 20 2012, available at <http://www.theithacajournal.com/article/20110720/NEWS01/107200369/Wastewater-from-gas-drilling-being-used-area-road-maintenance>

⁴⁰ N.Y. COMP. CODES R. & REGS. tit. X, § 703.6(a), available at <http://www.dec.ny.gov/regs/4590.html>

ground or unsaturated zone is a discharge to groundwater.”⁴¹ This expansive definition appears to include brine spreading. The original 1992 draft GEIS cites in table 15-5, “Chemical Characteristics of Commercial Road Salt, Shallow Oil Brine and Deep Gas Brine,” approximate levels of sodium, barium, lead, and many other potential contaminants. Focusing on the levels for the Deep Gas Brine, which are likely those closest to Marcellus shale production, the contaminant levels easily exceed the 50 micrograms/liter level for lead, and the 2,000 micrograms/liter threshold for barium, amongst many others.⁴² Thus road spreading of brine appears to be violative of groundwater effluent standards.

ECL § 17-0501 prohibits discharge to any water of the State in violation of a water quality standard. As presently constructed, no wastewater treatment options in NY will detoxify the millions of gallons of contaminated fracking water. Requiring approval of a wastewater plan by the DEC, as required in these proposed rules, offers false assurances when there are no good choices as to how to properly dispose of millions of gallons of contaminated wastewater.

V. 6 NYCRR 556.2(b) – Operating Practices

A. Allowing for methane leakage from a well site fails to account for the latest scientific information about methane’s greenhouse gas effect and contravenes state policy

A report issued by the New York State Energy Research and Development Authority (NYSERDA) on November 18, 2011, called *Response to Climate Change in New York State* (part of the ClimAID project), discusses the costs of Climate Change to our state. The section titled “Economics” warns that “[o]verall costs of impacts within the energy, transportation, and coastal zone sectors will be most significant, likely by many-fold, but impacts within each sector will be significant.”... “This is well illustrated in the agriculture and ecosystem sectors, where particular components such as specific crops and modes of production or rare and endangered ecosystems and species could be significantly affected ...”⁴³ In issuing “[k]ey policy recommendations, targeted for New York State decision-makers” the ClimAID report advocates the wisdom of promulgating “regulations based on up-to-date climate projections.”⁴⁴ Another major element of New York’s efforts to curb global warming is based in Governor Paterson’s Executive Order #24, also continued by Governor Cuomo, which calls for NYS to reduce greenhouse gas emissions 80 percent by the year 2050.⁴⁵ Order #24 also established the New York

⁴¹ *Id.*

⁴² N.Y. DEP’T ENVTL. CONSERV., *Generic Environmental Impact Statement (GEIS)* (1992) Table 15-5, 15-8c, available at http://www.dec.ny.gov/docs/materials_minerals_pdf/dgeisv2ch15.pdf

⁴³ NYSERDA, *Response to Climate Change in NY*, 457 (Nov. 18, 2011). available at <http://www.nyserd.ny.gov/en/Publications/Research-and-Development/Environmental/EMEP-Publications/Response-to-Climate-Change-in-New-York.aspx>

⁴⁴ *Id.*

⁴⁵ Exec. Order No. 24 (Aug. 6, 2009), available at <http://www.nyclimatechange.us/ewebeditpro/items/O109F22395.PDF>

Climate Action Council which released their Interim Report on November 9, 2010, agreeing with leading climate scientists that the effects of Climate Change are already upon us and immediate action is required to mitigate emissions, including methane.⁴⁶

A 2010 study by Robert Howarth, Renee Santoro and Anthony Ingraffea, comes to the conclusion that “[a] complete consideration of all emissions from using natural gas seems likely to make natural gas far less attractive than other fossil fuels in terms of the consequences for global warming.”⁴⁷ Howarth et al revisited the topic in a background paper for the National Climate Assessment, and reiterate that “methane is the second largest contributor to human-caused global warming”.⁴⁸ Methane is an extremely potent greenhouse gas, up to 105 times more powerful per molecule than CO₂ over a twenty year timeframe – a timeframe in which our climate scientists tell us we must quickly cut greenhouse gases in order to try to avoid irreversible climate catastrophe. Howarth takes into account the large amounts of “methane leak” which occur during the HVHF extraction and transmission process, data which has been verified by the National Oceanic and Atmospheric Administration’s own study,⁴⁹ and calls for more research into the effects of shale gas drilling on climate change, especially if drilling increases the risk of missing the “80 by 50” target of Executive Order #24.

The state’s hydrofracking review must assess the effects of the DEC’s action to permit HVHF in New York upon other established state climate change policy. We may even need to consider whether Executive Order #24 is outdated, given the increasingly urgent warnings that global warming is advancing more rapidly than earlier estimates. Governor Cuomo has recognized the necessity for New York to lead in the area of climate change following the massive devastation of Superstorm Sandy, stating that “we will not allow the national paralysis over climate change to stop us from pursuing the necessary path for the future.”

VI. 6 NYRCC 550 – Promulgation and Enforcement of Rules and Regulations

A. Without a full economic assessment, including the immediate and long-term costs of HVHF, the DEC cannot base its decision to issue permits upon unquantified “economic benefits”

⁴⁶ NYSERDA, *NY State Climate Action Plan Interim Report*, 457 (Nov. 9, 2010), available at <http://nyclimatechange.us/InterimReport.cfm>

⁴⁷ Robert Howarth, PRELIMINARY ASSESSMENT OF THE GREENHOUSE GAS EMISSIONS FROM NATURAL GAS OBTAINED BY HYDRAULIC FRACTURING at 1, available at <http://www.technologyreview.com/blog/energy/files/39646/GHG.emissions.from.Marcellus.Shale.April.12.10%20draft.pdf>

⁴⁸ See Robert Howarth, METHANE EMISSIONS FROM NATURAL GAS SYSTEMS, Feb. 25, 2012 available at <http://www.eeb.cornell.edu/howarth/Howarth%20et%20al.%20--%20National%20Climate%20Assessment.pdf>

⁴⁹ Jeff Tollefson, *Air sampling reveals high emissions from gas field*, NATURE, Feb. 2012 available at <http://www.nature.com/news/air-sampling-reveals-high-emissions-from-gas-field-1.9982>

The Revised Regulatory Impact Statement reaches some troubling and incorrect conclusions about the deference and authority the DEC wields when it comes to HVHF rulemaking. The DEC, in its requirement to consider the alternatives to its decision to propose these regulations, notes that “[a]nother alternative the Department has considered is the denial of permits for HVHF in New York State.” Yet this option was rejected, because it “would also eliminate all of the economic benefits that could be generated by that activity” despite the surety that denial of permits “would fully protect the environment from any environmental impacts associated with HVHF.”⁵⁰ In lieu of a proper socioeconomic report, I feel it is premature to state that the long-term economic benefits would be positive for New York State. Inexplicably and shockingly, the DEC has ignored the work of a nationally-recognized expert in economic development, Dr. Susan Christopherson of Cornell, our state’s land grant university and a world-rekowned institution. Her research indicates that, while there are economic benefits for some, there is likely long-lasting damage to other sectors of the local economy, such as tourism, agriculture, and retail.⁵¹ In the recent lawsuit, *Norse Energy Corp. USA, v. Town of Dryden*, a coalition of businesses, including farms, breweries and wineries, filed an amicus brief in favor of local zoning authority to limit the location of gas drilling because heavy industrialization of the landscape and use of toxic fracking chemicals are anathema to their economic well-being. Job creation and positive economic impact is likely overstated; the DEC needs to fully assess the costs before using “lost economic opportunity” as a rationale.

B. The proposed regulations misconstrue the intent of ECL §23-0301, incorrectly concluding that New York Mineral Resources Law compels legalization of HVHF.

Additionally, the Department claims that a failure to issue HVHF permits would “contravene New York State’s declaration of policy in Article 23 of the ECL to develop gas resources that will maximize the ultimate recovery of those resources.”⁵² Unfortunately, this is a misreading of the law, which in relevant part establishes the policy to “regulate the development, production and utilization of natural resources of oil and gas in this state in such a manner that will prevent waste...in such a manner that a greater ultimate recovery of oil and gas may be had, and that the correlative rights of all owners and the rights of all persons including landowners and the general public may be fully protected.”⁵³ Both this law, and the definition of “waste” are quoted as part of the DEC’s statutory authority for regulating and issuing permits for HVHF. Importantly, this law does not require development of natural gas through high-volume hydraulic fracturing, obviating the other duties of the DEC to provide protection for New York’s environment. A better understanding of the development of the law of oil and gas in New York State indicates that the correlative rights doctrine, and “to regulate...in such a

⁵⁰ N.Y. DEP’T ENVTL. CONSERV., *Revised Regulatory Impact Statement (RIS)* at 33 (proposed Nov. 2012), available at <http://www.dec.ny.gov/regulations/87440.html>

⁵¹ Susan Christopherson, and Ned Rightor, *How Should We Think About the Economic Consequences of Gas Drilling?*, (May 2011), available at http://www.greenchoices.cornell.edu/downloads/development/marcellus/Marcellus_SC_NR.pdf

⁵² *RIS* at 33.

⁵³ See NY ENVTL. CONSERV. LAW §23-0301 (1981).

manner as will prevent waste,” is not intended to mandate unsafe and contaminating fossil fuel extraction in contravention of traditional DEC environmental protections. Case law from the Appellate Division, Third Department, documents the historical governance of the common law principle of “rule of capture” over oil and gas resources.⁵⁴ This archaic rule of law, designed to encourage development in the vast, untamed, and seemingly limitless wilderness of the nascent United States allowed for any person who could exploit subsurface minerals into physical possession to rightfully own the materials, regardless of whether the resources came from under their property or the property of another. Accordingly, every landowner was forced to drill a well in order to claim the mineral resources beneath their land, leading to excessive wells and considerable waste.⁵⁵ To provide for “greater ultimate recovery of oil and gas” and “prevent waste,” New York established well spacing units and replaced the “rule of capture” with the concept of “correlative rights.”⁵⁶ Because landowners might be unable to drill a well directly on their own property due to spacing laws, correlative rights ensure pro rata compensation for any oil and gas removed from their mineral estate, regardless of the location of the well.⁵⁷ Oil and gas policy encouraging “greater ultimate recovery” is enhanced by spacing laws and the correlative rights doctrine, yet “greater” recovery does not mandate “maximum” recovery of mineral resources through technologies that pose too great a risk to public health and the environment.

VII. 6 NYCRR 555.5 – Plugging and Abandonment

A. Proposed regulations for plugging and abandonment are inadequate to ensure no brine or methane leakage in perpetuity.

After its producing lifespan, each natural gas well will need to be plugged. Otherwise, production brine will continue to ooze out of the wellhead, contaminating the surface, and methane may continue to be dumped into the atmosphere, contributing greatly to climate change as a greenhouse gas 105 times more potent than CO₂ over a 20-year timeframe. With evidence of melting glaciers and the increasing effects of climate change, climate scientists are telling us the 20 year window is critical.⁵⁸ Ensuring that a well is properly plugged in perpetuity, however, is not a simple task. It will require frequent monitoring and continued expense and testing, to make sure the contaminants from deep in the earth remain where they belong. There is nothing in these regulations that ensures protection for the residents of New York over time. Rather, once enough time passes, landowners may face compromised wells on their property. Tellingly, the DEC has a poor track record when it comes to monitoring and remediating abandoned

⁵⁴ *Western Land Serv. v. NYSDEC* 26 A.D.3d 15, 16 (N.Y. App. Div. 2005).

⁵⁵ *Id.*

⁵⁶ *Id.* at 17.

⁵⁷ *Id.*

⁵⁸ N.P. Myhrvold, *Greenhouse gases, climate change, and the transition from coal to low-carbon electricity*. ENVIRONMENTAL RESEARCH LETTERS, VOL. 7, 2012, available at <http://iopscience.iop.org/1748-9326/7/1/014019>

wells, with over 5,000 across the state and a woefully underfunded account for these wells.⁵⁹

VIII. 6 NYCRR Part 551 – Reports and Financial Security

Under the proposed rules, well operators must file financial security for plugging a well, up to \$250,000, with such security capped at an unknown “amount specified by the Department regardless of the number of wells.” These financial security provisions only apply to wells 6,000 feet or more in “true measured depth.” Facing severe possibilities of long-term contamination from an unplugged or degraded abandoned well, New York landowners and taxpayers must not be asked to pick up the expense for proper well plugging. The regulations must apply to all wells of any depth, and require full liability for all wells that an operator owns.

Such risks are heightened, based on the difficulties in obtaining insurance for many homeowners. In July of 2012, Nationwide Insurance announced that it would reserve the right to not extend any homeowner’s insurance policy due to risks from hydraulic fracturing.⁶⁰ As detailed in a *New York Times* article from October of 2011, and first brought to my attention by a local residential mortgage industry expert and the Tompkins County Legislature in May of 2011, widespread gas leasing across NY is causing conflict with the mortgage and real estate industries. Use of hazardous substances and materials on a homeowner’s property is a violation of the terms of the secondary mortgage market, where most U.S. mortgage interests are concentrated after sale from a smaller lending institution. Additionally, the residential secondary mortgage market prohibits commercial and industrial activities on mortgaged residential properties. Gas drilling operations and the storage of heavy equipment can violate both restrictions, yet are commonly granted under a standard gas lease. Real estate agents find that local lenders are now uneasy about granting mortgages for properties that have gas leases, which has a detrimental restriction on the alienability of land, and creates a major limitation to fundamental homeowner property rights.⁶¹ In turn, mortgages encumbered by gas leases are routinely bundled and sold as mortgage-backed securities, despite the lack of compliance with the standards of major lenders. Securitization of mortgages that are in default, or tied to property that loses great value due to water contamination, for instance, pose a serious risk to the stability of our financial system. Widespread unconventional gas drilling promises to affect communities across the state that are unequipped to deal with the effects of heavy industrial activity, and NYS must assess the impacts of gas leasing on the real estate and mortgage markets before moving forward with HVHF.

⁵⁹ Ray Finger, *Abandoned Wells Dot Region*, ITHACA J., Oct. 26 2012, available at <http://www.toxicstargeting.com/MarcellusShale/news/2012-10-26/abandoned-gas-wells-dot-region>

⁶⁰ Mike Tsikoudakis, *Nationwide Mutual Insurance Responds to Leaked Fracking Memo*, BUSINESS INS., July 19 2012, available at <http://www.businessinsurance.com/article/20120719/NEWS06/120719871>

⁶¹ Ian Urbina, *Rush To Drill For Natural Gas Creates Conflicts With Mortgages*, N.Y. TIMES, Oct. 19, 2011, available at <http://www.nytimes.com/2011/10/20/us/rush-to-drill-for-gas-creates-mortgage-conflicts.html>

IX. Conclusion

By developing the regulatory record for HVHF using the Precautionary Principle, and using empirical, scientific data to inform the final decision, New York's citizens and environment have a greater chance to be protected into the future. The people and wildlife of New York State must not be asked to bear the impacts of drilling, threatening the sanctity of our environment and health for future generations, and seriously putting at risk the Climate Change goals of the state.

Respectfully submitted,

A handwritten signature in black ink that reads "Barbara S. Lifton". The signature is written in a cursive style with a large, prominent initial 'B'.

Barbara Lifton
Member of Assembly
125th District

BSL/jal