

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

January 10, 2012

Dear New York State Department of Environmental Conservation:

Founded in 1968, the Otsego County Conservation Association is Otsego County's oldest environmental conservation association. We are a private, non-profit membership group dedicated to promoting the appreciation and sustainable use of Otsego County's natural resources through education, advocacy, resource management, research, and planning. OCCA plays a key role in initiating and carrying out programs designed to improve and/or protect Otsego County's air, land, and water.

OCCA recognizes and appreciates that the New York State Department of Environmental Conservation has worked extensively to improve environmental safeguards in its revised Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program. However, we still do not believe the SGEIS adequately addresses the protection of water, air, wildlife or habitat, nor does it sufficiently mitigate possible environmental impacts by high-volume hydraulic fracturing to our ecosystem as a whole.

OCCA questions numerous findings, procedures, and suggested mitigations in the SGEIS, as outlined in the accompanying comments, and asserts that the DEC has failed to comply with New York State's Environmental Quality Review Act. We find that the DEC has not taken the "hard look" required under SEQRA at the potential environmental impacts of high-volume hydraulic fracturing related activities. As such, we request that you immediately withdraw the revised draft SGEIS in order to resolve these fundamental shortcomings.

In several ways the DEC has effectively responded to the public's concerns regarding the oil and gas industry in the Marcellus shale region. It has accomplished this by providing more information on the potential impacts and proposed mitigation measures regarding air pollution, water contamination and withdrawals, and habitat fragmentation. Yet, despite these improvements, there continue to be crucial weaknesses in the proposed regulatory framework.

In keeping with our mission and organizational expertise, fracking fluid disposal plans, habitat fragmentation, surface spills and releases, subsurface pathways, floodplains, impacts on ecosystems and wildlife, control measures for nitrogen and sulfur oxides, and enforcements are among the concerns we have specifically addressed. We have also noted the DEC's failure to evaluate cumulative impacts on the region in terms of water quality, air quality, agriculture, tourism, public health and safety, job markets, housing markets, and quality of life. The 2011 rdSGEIS fails to address cumulative impacts and appropriate remediation in any meaningful way, as required by law.

And finally, the number of omissions, misinformation and mislabeled sections in Chapter 11 alone, "Summary of Potential Impacts and Mitigation Measures," is sobering in such a lengthy and highly technical document upon which we are all expected to rely to set the standard for gas development throughout the state. We find that the document needs to be properly cross-referenced and fact-checked, and that the content of the SGEIS overall still requires a lot of work with regard to both style and substance. This chapter is a prime example.

The gas isn't going anywhere – we urge the state to make sure that both the technology and the process are perfected and proven before moving forward. In the meantime, rather than disturbing our lands and putting our waters at risk, OCCA believes that our county, our state and our nation as a whole should focus on decreasing our use of fossil fuels and turning to applications of renewable energy sources.

The protection of New York State's clean air and clean water resources, natural systems and biodiversity is fundamental to the health, safety, and welfare of the people of the state and to our overall economic and social well-being. On behalf of our 800-plus membership, our final recommendation – in addition to immediate withdrawal of the current revised draft SGEIS – is that the DEC suspend all permitting until the U.S. Environmental Protection Agency concludes its study on the potential impacts of hydraulic fracturing on drinking water resources.

Sincerely,

Vicky M. Lentz  
President

## **Chapter 3 Comments**

### **3.2.1 Scenarios for Future SEQRA Compliance Under the SGEIS**

**and**

### **3.2.3 EAF Addendum and Additional Informational Requirements**

We understand that a project-specific SEQRA determination for a given permit application would be required whenever the proposed drilling project and its impacts are not addressed, or not adequately addressed, in the 1992 GEIS and the rdSGEIS. Section 3.2.1 states, “The projects that categorically fall into this category are listed in Section 3.2.3 (p. 3-5).” Presumably, “this category” refers to the category of projects that are not adequately addressed in the 1992 GEIS or the rdSGEIS. In any event, Section 3.2.3 sets forth the content of an Environmental Assessment Form (EAF) Addendum that will be required of certain applications, as described on page 3-9, but does not appear to identify projects that are deemed inadequately addressed in the 1992 GEIS or the rdSGEIS. As a consequence, it is not clear when projects will require site-specific SEQRA determinations, except for those projects identified in Section 3.2.5 as requiring SEQRA determinations of significance.

The DEC should revise the rdSGEIS to enumerate specific instances when site-specific SEQRA determinations will be required, and should also revise the general statement regarding the

requirement for a site-specific SEQRA determination if the project is not adequately addressed in the 1992 GEIS or the rdSGEIS.

Furthermore, Section 3.2.3.9 provides that the EAF Addendum will require a permit application to identify whether or not the project “...conflicts with local land use laws, regulations, plans or policies (p. 3-14)” or is inconsistent with a comprehensive plan or other local land use plan.

We do not believe that merely requiring the provision of such information is adequate to protect the interests of municipalities that have adopted such land use laws, regulations, plans or policies. Municipalities should be notified of every permit application for well pads or drilling within its boundaries. The DEC should also provide the municipality with an opportunity to bring relevant information to the attention of the DEC. Furthermore, any project that is prohibited by or inconsistent with an existing local land use law, ordinance, regulation, plan or policy should require a site-specific SEQRA determination, in which the municipality is invited to participate as an involved agency in a coordinated review.

### **3.2.2.2 Project Scope**

While operators are required to submit a separate application for each well drilled, “...location screening for well pad setbacks and other required permits, review of access road location and construction, and the required stormwater permit coverage will be for the well pad based on submission of the first well permit application for the pad (pp. 3-6 to 3-7).” This means that the associated setbacks and regulations for a given well pad will only be reviewed once, at the time the first well application is submitted.

If some aspect of the well-pad development is found to be inadequate, the DEC should reserve the right to correct the problem with subsequent permits. We encourage the DEC to consider reviewing habitat impact mitigation, fencing, lighting, and other alterable site-specific permitting conditions with every well permit in order to ensure that the latest and best habitat, lighting, and noise impact mitigations are implemented.

### **3.2.3.1 Hydraulic Fracturing Information**

The DEC should prohibit the use of additives that are recognized as potentially harmful to the environment, e.g., chemicals subject to Section 8(e) of the Federal Toxic Substance Control Act (TSCA), or, at a minimum, the DEC should require a site-specific SEQRA review with a determination of significance for every site where compounds found in the TSCA are proposed to be used.

### **3.2.3.3 Distances**

The DEC should require a site-specific SEQRA determination if the minimum distances specified in Section 3.2.3.3 are not satisfied.

Streams, wetlands, storm drains, lakes and ponds should have the same minimum distance requirement of 2,640 feet as water supplies. Toxins and pollutants found in hydraulic fracturing (fracking) fluid do not necessarily break down over time. Because so little is known about the affects many of the compounds have on environmental and human health, and because water systems are linked across time and space by the water cycle, we feel that the DEC should require the same setback as water supplies for *all* waterbodies, regardless of their proximity to public drinking water systems.

### **3.2.3.4 Water Well Information**

The DEC should require permit applicants to provide documented evidence that they utilized each of the information sources listed on page 3-11. "Diligent efforts" is not an adequate standard to ensure compliance.

### **3.2.3.5 Fluid Disposal Plan**

The DEC has failed to adequately address the reality of fracking fluid disposal. Especially with variable quantities of fracking fluid coming up during the completion and production phases, how can the DEC possibly ensure that all liquid wastes are accounted for with a Drilling and Production Waste Tracking Form? Our concern in this issue stems from the fear that operators, or their workers, will be able to bypass the proposed Drilling and Production Waste Tracking system and dump untreated fracking fluids and solid wastes, polluting our soil and water.

New York State does not have the disposal well capacity to accommodate the expected level of fracking waste, nor does it have privately-owned or publicly-owned water treatment facilities that could accommodate this type and quantity of wastewater. With Ohio and Pennsylvania currently experiencing their own fracking development, all disposal facilities in the region are in demand. While we appreciate that the DEC has proposed to require operators to designate how their wastes will be handled before obtaining a permit, we wonder if the DEC is really prepared to vet in-state and out-of-state disposal and treatment facilities to ensure capacity is available, and to deny or delay permits if available capacity is not demonstrated. Such oversight would require considerable manpower and if administered properly could result in permit denials due to the lack of proper disposal or treatment capacity.

### **3.2.3.10 Habitat Fragmentation**

The ecological assessment is far too limited in its considerations of impacts on native species that may be affected by high-volume hydraulic fracturing (HVHF) development. The assessment should address impacts on *all* species of animals and plants whose habitats will be disrupted by HVHF operations, not just forest interior and grassland birds.

### **3.2.4 Prohibited Locations**

It is not clear why a 500-foot setback is an acceptable distance for private water wells whereas 2,000 feet is required for public water supply wells, river or stream intakes and reservoirs. Because any given body of water ultimately empties into another, we feel that all streams, storm drains, lakes and ponds should be treated the same as public water supplies.

### **General Comments on Chapter 3**

The recently issued report commissioned by NYSERDA, “Responding to Climate Change in New York State – Synthesis Report,” recommends that climate change be taken into consideration in planning. Among others, two examples of the consequences of climate change that can effect planning are changing rainfall patterns and shifting flood zones. Yet there is no mention of climate change in the rdSGEIS.

## Chapter 6 Comments

### 6.1.3 Surface Spills and Releases at the Well Pad

The DEC asked the New York State Department of Health (DOH) to evaluate the compounds used in HVHF-related activities. Based on this evaluation, the DEC concludes that, "...the proposed additives contain similar types of chemical constituents as the products that have been used many years [for vertical well HVHF drilling, but] ... the potential environmental consequences of an upset condition could be proportionately larger..." for horizontal HVHF operations (p. 6-18) compared to consequences of surface spills from vertical well HVHF-related activities covered in the 1992 GEIS.

While the DEC has consulted with the DOH to consider potential *health* impacts of surface spills and releases, the Department has not considered impacts of surface spills on the aquatic ecosystems *themselves*, nor on the impacts to terrestrial soils and organisms that would be exposed to the significantly higher concentrations of HVHF-related chemicals should a spill occur. We recognize that a brief ecosystem impact analysis was provided in the 1992 GEIS, but feel that this issue warrants another look considering the significant scientific advances in ecology and biology research that may have identified new impacts in the past nineteen years. The DEC should at a minimum reconsider how HVHF-related chemicals will affect aquatic organisms throughout their entire lifecycles, the effects these chemicals may have on the biodiversity of our waterways, and whether surface spills or releases will facilitate colonization of our ecosystems by invasive species. Such an evaluation is not outside the scope of the SEQRA process, and indeed was provided briefly in the Stormwater Runoff section (6.1.2) with respect to the impacts of excess sediment on aquatic ecosystems: "Excess sediment can fill or bury the rock cobble of streams that serve as spawning habitat for fish... [and can cause] algae bloom, low dissolved oxygen and other water-quality impairments (p. 6-17)." Here we request only that the DEC provide an equivalent assessment for other water contaminants.

### **6.1.3.1 Drilling**

Section 6.1.3.1 of the rdSCEIS states, “Contamination of surface water bodies and groundwater resources during well drilling could occur as a result of failure to maintain stormwater controls, ineffective site management and inadequate surface and subsurface fluid containment practices, poor casing construction , or accidental spills and releases (p. 6-19).” While the DEC recognizes that these accidents can occur, it makes no attempt to quantify the impact by estimating the number of such accidents that New York may reasonably expect. Nor has the DEC included an analysis of incidents in other states, such as Pennsylvania and West Virginia, which have suffered these impacts. Such information would allow us to gain a better understanding of the prevalence of these types of accidents, and thus assist New York State in better assessing its risk. Such an analysis is possible and appropriate, as demonstrated by the DEC’s “Fact Sheet: What We Learned From Pennsylvania” and the Ecology and Environment, Inc. analysis that estimates socioeconomic impacts of HVHF-related activities<sup>i</sup>. The DEC’s evaluation of environmental impacts is inadequate without such an analysis.

### **6.1.3.2 Hydraulic Fracturing Additives**

**and**

### **6.1.3.3 Flowback Water and Production Brine**

We have two comments we wish to share with the DEC on sections 6.1.3.2 and 6.1.3.3:

1. Before water is mixed with sand and fracking chemicals to make fracking fluid, the chemicals are stored in highly concentrated forms. High concentrations of many chemicals can have a different effect on the environment than the same chemical in a more diluted form. The DEC should address the impacts that surface spills of high concentrations of fracking chemicals may have on soils, lakes, rivers, streams, wetlands and wildlife.

2. Similar to the concerns we expressed in our comments to section 6.1.3.1 (above), the DEC fails to consider the frequency of the various accidents that can occur during the well completion phase of horizontal HVHF drilling. The estimated severity and frequency of accidents would help us determine our risk, and can be developed using accident reports and data obtained from other states' departments of environmental protection which have experienced horizontal HVHF drilling.

#### **6.1.4 Groundwater Impacts Associated with Well Drilling and Construction**

In section 6.1.4, the DEC states repeatedly that the probability of groundwater contamination from properly-constructed wells is very low. While this may be the case, the DEC has made no attempt to assess the number of HVHF wells drilled in Pennsylvania and West Virginia that have failed or have been *improperly* constructed, and that have resulted in water contamination by natural gas, turbidity, or fracking fluid. The DEC has failed to analyze the incidents of fluid migration, blowouts, pipeline failures, pad fires and other accidents related to well drilling and construction that can jeopardize our ground water resources<sup>iii</sup>. Our knowledge of drilling impacts is incomplete without such an analysis, as is our understanding of appropriate mitigation measures.

#### **6.1.5.1 Pollutants of Critical Concern for Unfiltered Drinking Water Supplies**

The DEC discusses how phosphorus, pathogens, suspended sediment, and toxic compounds pose a risk to Filtration Avoidance Determination (FAD) watersheds, and came to the conclusion that HVHF-related activities should not be allowed in those areas because of the risk that New York City and Syracuse water resources may become polluted. We strongly disagree with the DEC's assessment that the Primary and Principal Aquifers and all other surface and ground waters of the state are somehow less vulnerable to these pollutants. While the municipal drinking water systems in the rest of the state are not required to conform to FAD regulations, they are indeed

vulnerable to at least two of the four pollutants that are of such concern for FAD water systems, namely, phosphorus and toxic compounds. Besides a few municipalities with water treatment facilities that may be equipped to deal with the types of contaminants found in fracking fluid and production brine (such as Niagara Falls), *all* other public and private water treatment facilities near or overlaying the Marcellus and Utica shale regions are unable to remove these contaminants, thus leaving their drinking water vulnerable to these pollutants. Phosphorus and toxic compounds cannot be removed by standard water treatment facilities, which means that non-FAD municipal drinking water resources are threatened by these pollutants just like the water of New York City and Syracuse.

### **6.1.5.3 Adverse Impacts to Unfiltered Drinking Water from High-Volume Hydraulic Fracturing**

The DEC did not consider environmental impacts of the high-volume hydraulic fracturing (HVHF) process and related large-scale industrial development in the context of the Chesapeake Bay Program, of which New York State is a participant. The DEC should address drilling impacts in the context of New York State's Water Implementation Plan, which aims to reduce the State's nitrogen, phosphorus and sediment inputs into the Chesapeake Bay watershed. The Department must consider drilling's impacts on not only New York State itself, but also on surrounding states and the greater environmental health of the multi-state region of which we are a part. To that end, the Department should work with the United States Environmental Protection Agency (EPA) to identify and allocate nutrient exports to the natural gas industry within the Chesapeake Bay model.

### **6.1.6.2 Subsurface Pathways**

The ICF International study "Analysis of Subsurface Mobility of Fracturing Fluids" failed to consider the prevalence of karst in the regions overlaying the Marcellus and Utica shales in New

York State. These rock formations are conduit bearing in nature, meaning that water in solution, along with its toxic contaminants, can travel up to several kilometers a day. Aquifers that co-occur with karst formations may be particularly vulnerable to surface spills as well as to subsurface contamination caused by leaking wells. “This poses serious problems when monitoring for water quality. Contaminants enter the ground easily through sinkholes and sinking streams, and filtering is virtually non-existent. Even small solution conduits can transmit groundwater and contaminants hundreds of times faster than the typical un-enlarged fracture network. Hydrofracking-related contaminants that may enter karstic solution conduits, from below or above, would quickly degrade groundwater and surface water quality<sup>iv</sup>.”

The DEC should ban HVHF development activities in watersheds, such as those which feed into Otsego Lake, that overlay karstic regions.

#### **6.1.9.1 NORM Considerations – Cuttings**

We understand that the composition of Marcellus shale varies throughout the formation. Because of this, we are concerned that naturally occurring radioactive materials (NORM) concentrations may vary spatially and may pose a threat in certain areas while remaining benign in others. Therefore we recommend that the DEC require that drill cuttings, flowback, and production brine be tested prior to allowing any particular disposal method or leaving the drilling site. We also recommend that the DEC's conclusion that NORM levels are equal to background levels be regularly re-evaluated and updated as new information is made available.

#### **6.2 Floodplains**

The DEC did not consider the effect that fracking chemicals would have on terrestrial and aquatic ecosystems if a well pad was flooded. This is a particular concern because of the multiple severe flood events that have occurred in the past five years and New York's outdated flood plain maps.

Our hydrologic systems are changing so that flood events are becoming more frequent and more severe, increasing the likelihood that well pads near water bodies will become flooded.

### **6.3 Freshwater Wetlands**

The rdSGEIS should describe potential impacts from spills and discharges of the chemicals involved in the fracturing process in both concentrated and dilute forms on wetland ecosystems.

#### **6.4.1 Impacts of Fragmentation to Terrestrial Habitats and Wildlife**

Because there is limited New York-based scientific data available to determine the effects oil and gas development will have on ecosystem functioning, the DEC should conduct a small-scale trial version of this process prior to jumping right into a full-scale drilling project. That way, adverse effects can be studied and documented prior to delving into full-on drilling processes. Although studies have been carried out elsewhere, every site is different and every ecosystem responds differently to disturbances, which means that New York-specific studies should be conducted.

##### **6.4.1.2 Impacts of Forest Fragmentation**

The DEC has not considered whether drilling-related activities such as deforestation may have a significant impact on nutrient and sediment inputs into the Susquehanna and Chemung rivers. We recommend that the DEC analyze anticipated changes in land use by acreage, such as forest clearing, to estimate nutrient and sediment export from New York via the Susquehanna and Chemung rivers.

### **6.5.2 Air Quality Impact Assessment**

The DEC did not consider the potential of nitrogen oxides (NO<sub>x</sub>) deposition on New York's water quality. Although the DEC considered the air quality impacts of nitrogen and sulfur oxides (SO<sub>x</sub>), the potential impacts of NO<sub>x</sub> and SO<sub>x</sub> on the quality of our land and water were completely neglected. This is particularly relevant because of New York's efforts to achieve total nitrogen reductions from the Susquehanna River and Chemung River watersheds, as required by the Chesapeake Bay Program.

## **6.6 Greenhouse Gas Emissions**

We feel that the DEC should look at the impact that natural gas development has on global warming compared to the impact of other energy sources on global warming. While the DEC's analysis of greenhouse gas (GHG) emissions released during the extraction process seemed thorough, the Department should also consider the complete life cycle net release of GHG's from the entire Marcellus shale development process to the delivery and consumption of the Marcellus shale energy sources. Such an analysis should be compared to equally comprehensive analyses of other sources of energy such as coal, oil, solar, wind and geothermal energies.

### **6.6.10 Summary of GHG Emissions**

There is a significant amount of carbon dioxide and methane that will be released during the completion phase of development. Carbon dioxide sequestration can be achieved through the addition of carbon dioxide scrubbers in smokestacks. Large smokestacks are already in use in other industrial activities; similar smaller scrubbers could possibly be used during the completion process to reduce carbon dioxide emissions.

### 6.8.1.2 Representative Regions

The rdSGEIS discusses that the economic benefits involved in oil and gas development have the potential to expand economies both locally and nationally. However, due to the finite nature of natural resources, regional and national growth that is dependent on those resources is also finite and inevitably follows a boom and bust cycle. The DEC fails to adequately address this reality and the potentially profound effect it will have on the region's economy<sup>v</sup>, housing market, and government revenue and expenditure. The bibliography in the rdSGEIS indicates that the DEC knows about studies on the boom and bust cycle of natural gas extraction and its effects on rural communities<sup>vi</sup>, but the Department fails to discuss potential impacts in the context of Marcellus shale development and post-development.

The employment benefits with regard to oil and gas development activities are limited and non-sustainable. Similar to other natural resource extraction industries, employment of this nature has only a small window of time for large-scale employment. When development activities wind down, only a few individuals will remain to carry out routine maintenance duties.

The DEC recognizes that tourism will likely decrease as a result of the industrial activities associated with oil and gas development. In several regions in upstate New York, tourism is a significant component of the local economy. Otsego County is particularly dependent on its tourism industry, which is based on the Baseball Hall of Fame and the county's beautiful scenery, clear air and water, and bucolic small communities. Individuals who seek to enjoy the scenic and cultural resources of Otsego County may be deterred as the industrialization of our communities and landscapes progresses. Tourism, unlike natural resource extraction, has the potential to contribute to Otsego County's economy indefinitely.

The DEC briefly mentions that the agricultural industry may also be adversely affected by drilling-related activities. However, the DEC does not quantify the degree or character of the impact; instead, the Department simply states that it may occur. The DEC should address how drilling-related activities may affect agriculture, including soil quality, availability of agricultural workers, and noise and pollution impacts on livestock and general farm operations.

### **6.8.3 Housing**

DEC addresses the potential positive and some negative consequences of the drilling industry on regional housing markets. However, the DEC does not consider the effects on housing after the drilling industry has left, such as:

- The condition of the housing stock following an influx of transient workers;
- The possibility of plummeting housing prices after the gas development boom and the consequent impact on property tax revenues;
- The temporary and permanent housing that will be left vacant after the boom.

Many communities in New York's southern tier currently suffer from a large surplus in housing, resulting in very low housing prices and poor quality housing stock<sup>vii</sup>. While a large influx in workers to the area would create a more robust housing market and would create financial incentives for owners to maintain and reinvest in their properties, the influx may also trigger a building boom in the housing market. Due to the influx of drilling workers in Bradford County, PA, there has been a sharp increase in recreational vehicles (RV's), trailers and other temporary structures being used as housing. Will New York communities experience a similar trend? Once the extraction industry leaves, what will become of the excess housing? In what condition will the housing market be? These questions are crucial to the health of our communities but were not considered by the DEC.

#### **6.9.2.5 New Landscape Features Associated with the Reclamation of Well Sites**

As part of the reclamation process, the DEC should require an inspection that will determine: 1) soil quality, 2) that appropriate vegetation is replanted, 3) that access roads are removed and the underlying soil is restored, 4) that water sources surrounding the site are not contaminated and

that waterways and waterbodies are not damaged, and 5) that all hazardous wastes are removed and disposed of properly.

## **6.12 Community Character Impacts**

The DEC fails to mention potential post-drilling effects on the communities that overlay the Marcellus shale. During HVHF development towns, populations, services, housing and businesses may all grow and allow the local economy to thrive. However, like so many other towns that rely on a particular industry for survival, once operations cease and employment opportunities dry up, communities that were positively affected by gas drilling will be at risk of suffering economic decline and housing market collapse. Residents may be forced to relocate to seek out new employment opportunities, thus weakening other facets of the town's economy<sup>viii</sup>. These risks are not addressed in the rdSGEIS analysis.

## **General Comments on Chapter 6: Cumulative Impacts**

Because the extent of oil and gas development is likely to be widespread throughout the southern tier, it is vitally important to consider its *cumulative impacts* on the region in terms of the job markets, the housing markets, water quality, air quality, tourism, agriculture, public health and safety, and quality of life. What is the effect of many, many well pads in a region, as opposed to the localized impacts of a single well pad? What are the effects of many, many miles of pipeline? What are the cumulative effects of many, many miles of access roads? What are the effects of many, many thousands or hundreds of thousands of heavy industrial truck trips in the region on our air quality, traffic patterns, public health, human and wildlife mortality rates? What are the effects of a huge influx of non-local workers on our health care, safety, and emergency response systems, housing markets, and job markets? The 2011 rdSGEIS fails to address these questions or their remediation in any meaningful way, as required by law.

The DEC also did not evaluate the cumulative impacts of repeatedly fracking the same well, which should include the effects of repeatedly applying high pressure to well casings and cement, and the impacts on roads of repeated use by heavy trucks. There is also no discussion of the cumulative impacts on surface subsidence and its possible impact on groundwater. There is no discussion or mitigation of cumulative impacts of drilling and fracking under the purview of the DEC, combined with related activities that are under the purview of the Public Service Commission. These include construction and operation of pipelines, gas treatment plants and compression stations. The rdSGEIS should consider the combined cumulative impact of all these activities.

There is no discussion of the cumulative impacts or mitigation of dealing with flowback fluids and produced fluids from the large number of wells that are projected. Disposal of flowback fluids and produced fluids to treatment plants that do little more than dilute the material before discharge into rivers and or lakes will cumulatively result in increased levels of pollutants downstream. This must be addressed on a cumulative basis, not by treating each discharge as a one-time inconsequential event. Similarly, the effect of repeated spreading of produced fluids on roads must be addressed on a cumulative basis, as well as single events. The 2011 rdSGEIS does not address the cumulative public health impacts from protracted and/or repeated human exposure to fracking additives, drilling fluids, methane gas, volatile hydrocarbons or other substances used in the drilling, fracking, processing and transportation related to natural gas, whether that exposure occurs at the drill site as a work place, at adjacent dwellings, in or near public buildings or at any other place that people might be exposed repeatedly to substances used during any step in the process.

## **Chapter 7 Comments**

### **7.1.1.4 Impact Mitigation Measures for Surface Water Withdrawals**

We recommend that the DEC prohibit water withdrawals on small headwater streams and allow withdrawals only on the larger rivers. This would protect smaller water bodies while reducing regulatory complexity and allowing the DEC to focus their oversight on larger rivers.

#### **7.1.4.1 Private Water Well Testing**

OCCA asks that DEC adopt a 3,000-foot testing radius around well pads instead of a 1,000 foot radius, in light of the Center for Rural Pennsylvania study released in October 2011. This study indicates that a 3,000-foot buffer is a more appropriate radius for private water well testing, based on the finding that a small number of wells that were 3,000 feet from a well pad or closer exhibited drilling-related contamination with bromide, metals, and/or sediments<sup>ix</sup>.

#### **7.1.8.1 Treatment Facilities**

The DEC should prohibit publicly owned treatment works (POTWs) from accepting fracking fluid, unless they are one of the few facilities that are equipped to deal with such industrial wastes appropriately. Most POTWs in the state are not designed to accommodate industrial wastes like flowback fluid and production brine. The large amounts of total dissolved solids and toxic compounds found in fracking fluids would be discharged into area surface waters as effluent, effectively polluting our waterways with HVHF toxins. Prohibiting this mode of disposal may also incentivize drilling operators to develop and install their own on-site water recycling technologies or build specialized treatment plants to properly treat fracking fluids.

## **7.2 Protecting Floodplains**

OCCA expressed its concerns about the outdated flood plain maps in its comments on the 2009 draft SGEIS. Given the catastrophic flooding that New York suffered yet again in 2011, we feel the issue is even more urgent in the context of drilling and warrants additional comments.

We applaud DEC's commitment to updating flood maps, as demonstrated by their announcement in October 2011 to seek \$2.5 million over the next five years from the Federal Emergency Management Agency for this purpose<sup>x</sup>. However, because of the time required to conduct surveys and develop updated maps, we are concerned that well pads will be built within these newly delineated floodplains before the maps have been updated, affectively bypassing the ban on drilling in the floodplains. We strongly encourage DEC to safe-guard our water resources against potentially catastrophic pollution that could be caused by drilling in floodplains. The easiest solution to this is for the DEC to entirely ban HVHF development in New York State. At the very least, the DEC should ban drilling in areas that have flooded in either the 2006 or the 2011 floods, providing at least an additional 100 foot buffer beyond those areas.

## **7.4 Mitigating Potential Significant Impacts on Ecosystems and Wildlife**

We do not accept the assertion that "significant adverse impacts to habitats, wildlife, and biodiversity from site disturbance... will be unavoidable (p. 7-77)." In light of DEC's recognition that the landscape-wide disturbance will have a significant impact on our grassland and forest habitats and our endangered, threatened, and rare native species, the proposed regulations are quite vague in terms of the minimum actions expected from operators. Without firm guidelines in place, there is no way to ensure that appropriate mitigation measures will actually occur. Simple requirements can be made that would mitigate habitat impacts in meaningful ways.

While we recognize the mitigation measures that DEC has proposed for individual well pad sites in terms of protecting vulnerable bird populations and species places on the endangered or

threatened species lists, the rdSGEIS in its current form falls short of protecting our environment from the ill effects of habitat fragmentation.

We propose the following concrete mitigation measures that should be required for gas field development:

- If there is an open space or an edge area available to drill in, the well pad must be placed there instead of in a core forested area or a contiguous grassland area.
- “Soft edges” must be required for *all* infrastructure development in forested areas.
- A short list of acceptable measures to create “soft edges,” such as 1) planting shrubs (referring to a list of native shrubs that would be acceptable, or a reference to contact an expert to assist in determining acceptable shrubs for the area) and 2) creating non-linear edges/jagged edges, which would be required for pipelines, well pads, and roads through forested areas.
- Track development at the regional scale.
- Identify and protect wildlife corridors that connect habitat areas on a state-wide scale, by prohibiting development in these corridors that would result in fragmentation and/or obstruction of the use of the corridors by wildlife.
- Require specific mitigation measures to allow wildlife to safely cross roads.

#### **7.4.1.2 Reducing Indirect and Cumulative Impacts of Habitat Fragmentation**

In referencing the Wilbert *et al* 2008 study in Chapter 6, the DEC clearly indicates that it understands the importance of planning for development at the scale of an entire gas field: “[Wilbert *et al*. 2008 findings suggest] that landscape-level planning for infrastructure development and analysis of wildlife impacts need to be done prior to initial development of a field. Where development has already occurred, the study authors recommend that ...

cumulative impacts from additional development be assessed (pp. 6-70 to 6-71).” However, in Chapter 7 DEC failed to address possible ways to mitigate impacts and cumulative development at the scale of the entire gas field. Additionally, in Chapter 6 the DEC summarizes wildlife corridors between habitat patches at a state-wide scale, yet in Chapter 7 neglects to propose ways to protect these corridors or seriously address ways to ensure that connectivity between habitat patches at a state-wide scale is maintained. Given the recognition that cumulative and state-wide planning and coordination of development and its impacts on habitat fragmentation and wildlife populations enjoys among environmental experts and the DEC itself, the DEC must address how it intends to minimize the fragmentation and isolation of habitats at the scale of the entire gas field. Also, the DEC must consider mitigation strategies to address the cumulative impacts of development on wildlife at the regional scale.

#### **7.5.1.1 Control Measures for Nitrogen Oxides- NO<sub>x</sub>**

**and**

#### **7.5.1.2 Control Measures for Sulfur Oxides- SO<sub>x</sub>**

We strongly encourage the DEC to act on the US EPA’s request that states be involved in building the framework for implementing a new multi-pollutant standard for NO<sub>x</sub> and SO<sub>x</sub> emissions<sup>xi</sup>. In July 2011, the EPA expressed its intention to launch a field pilot program to gather additional data on the indirect affects NO<sub>x</sub> and SO<sub>x</sub> have on sensitive ecosystems, using CASTNET monitoring sites in designated acid sensitive eco-regions. New York has three such sites, located in Tompkins County, Ulster County, and the Adirondacks; two of these sit atop the Marcellus shale formation. Given the inevitable increase in NO<sub>x</sub> and SO<sub>x</sub> pollutants due to drilling in the Marcellus shale region and the southern tier’s status as an acid sensitive eco-region<sup>xii</sup>, we view this opportunity to participate in this process as crucial to maximizing environmental protections, mitigating environmental impacts, and protecting human welfare.

### **7.5.1.3 Natural Gas Production Facilities Subject to NESHAP 40 CFR Part 63, Subpart HH (Glycol Dehydrators)**

In their current state the DEC's proposed regulations that address benzene emissions will be out of date before they are even enacted. On page 7-106 the rdSGEIS states that, "All glycol dehydrator units used at the well pad will be required to assure compliance with the 1 ton per year (Tpy) benzene emission limit..." However, the EPA has proposed to eliminate the 1 Tpy benzene compliance option for glycol dehydrators<sup>xiii</sup>: "The proposed changes would eliminate the 1 ton per year benzene compliance option for glycol dehydrators ... at major sources."

### **7.5.1.3 Natural Gas Production Facilities Subject to NESHAP 40 CFR Part 63, Subpart HH (Glycol Dehydrators)**

**and**

### **7.5.3 Summary of Mitigation Measures to Protect Air Quality**

**and**

## **7.6 Mitigating GHG Emissions**

On July 28, 2011 the EPA proposed a set of sweeping regulations that would significantly reduce harmful air pollution from the oil and gas industry<sup>xiv</sup>. These proposed regulations would allow continued responsible growth of the industry and are currently in use as best practices in several states. These regulations affect multiple stages of gas development, particularly well completion and gas transmission. The four regulations are: 1) a new performance standard for volatile organic compounds (VOCs); 2) a new source performance standard for sulfur dioxide; 3) an air toxics standard for oil and natural gas production; and 4) an air toxics standard for natural gas transmission and storage. These proposed federal regulations impose tighter restrictions than those proposed by DEC on the amounts of pollutants that the natural gas industry is allowed to release into the air, resulting in significant benefits to public health and welfare over and above

DEC's proposed regulations. The EPA's proposed regulations are also more in line with the cutting edge in industry technology and best management practices, as reflected in the EPA's successful Natural Gas STAR Program, and ensure that air pollution is mitigated to the maximum extent practicable.

DEC should continue its moratorium on issuing permits at least until the EPA New Source Performance Standards and National Emission Standards for Hazardous Air Pollutants regulations take effect. By doing this, DEC will ensure that all permits issued in the Marcellus shale comply with these new regulations. Once the new federal regulations are adopted the DEC will be legally obligated to comply with them because federal regulations take precedent over the state's. By proceeding with permitting before EPA's regulations are finalized, DEC opens up the possibility of some permits being issued under regulations that are too lax and that may result in high levels of benzene and other VOCs that could have been prevented, as well as potentially large amounts of methane gas.

#### **7.4.3 Protecting Endangered and Threatened Species**

OCCA feels that the DEC should consider including the habitats of cerulean warblers and eastern hellbenders – and any other species that come under consideration for listing by either the state or federal government – as areas that require additional regulations for the purposes of protecting these vulnerable populations. While their protected status is not yet official, these two species are in decline and therefore warrant increased protection over other species with more robust populations.

## **Chapter 8 Comments**

### **8.1.1.3 Local Government Notification**

The DEC states that it will notify local governments when a well application is filed, rather than after the application is approved. While this is a step forward, it is short of the Home Rule protections in other states, where the applicant would have to get permission to drill from the local municipality or county.

### **8.1.1.4 Road-Use Agreements**

The DEC should require operators to demonstrate that they will comply with all local road use agreements and/or local road ordinances. The DEC should not close a permit until the operator can demonstrate that all of its local obligations were met.

### **8.1.1.5 Local Planning Documents**

The rdSGEIS states that operators will be required to identify whether their drilling-related activities conflict with local land use laws, regulations, plans or policies (p. 8-4) when they file an EAF Addendum. However, the DEC does not address how conflicts will be resolved once they are recognized. The DEC should develop their policies on this subject further. Particularly, we hold that the DEC should not violate municipalities' Home Rule rights by granting permits that ignore local land use ordinances or local comprehensive plans. The DEC should explicitly state that it will not grant such permits. The DEC should also ensure that local municipalities are notified of and allowed enough time to respond to pending permits.

### **8.2.3 Enforcement**

How will DEC ensure that there are enough resources for enforcement and oversight? Does DEC have a plan in place for enforcement? Can development be limited so that enforcement can keep pace with development? We understand that the DEC is at the mercy of state legislators for appropriate oversight and regulatory funding. However, we also assert that the current political and fiscal environment that the state faces is relevant to the SEQRA review process and should be

considered by the Department when determining whether to allow HVHF activities in the state. We also feel that the DEC should consider working with New York State Comptroller DiNapoli and New York State Assemblyman Sweeny on their bill to create a Natural Gas Damage Recovery Fund<sup>xv</sup>.

## Chapter 11 Comments

### Introduction

While the existence of this table is a highly valuable summarization tool, the weight of each impact description is not evenly distributed across the board. Certain impacts lack description (e.g. “Depletion of water supply in streams.”) while others are cluttered as a list of every impact included in that resource category (e.g. “Transportation” – “Increased traffic on roadways; damage to local roads, bridges and other infrastructure; increased number of breakdowns and other accidents; risk of potentially hazardous spills; traffic impacts near rail centers.”). Likewise, the mitigation measures adhere to a similar discrepancy. Greater balance is needed within the descriptions of each category in order to best convey a unified value for each potential impact and mitigation measure.

### Impacts

#### **“Depletion of water supply in streams.” 6.1.1.1**

While this statement represents a relevant impact, nowhere in this section is this term used. “Reduced stream flow” is the acceptable term throughout the document and even in Chapter 11 is designated within the same section of Chapter 6. Therefore, this impact statement should be removed so as to not cause confusion between the two terms.

#### **“Contamination of surface waters, groundwater, or drinking water aquifers from chemical, fuel, or lubricant spills (including drilling and fracturing fluids).” 6.1.3**

A secondary containment system has been left out as a mitigation measure for this impact. Page 7-34 of Chapter 7 reads: “For all wells subject to the SGEIS, supplementary permit conditions for high-volume hydraulic fracturing would include the following requirements with respect to fueling tank and refilling activities:

- Secondary containment consistent with the objectives of SPOTS 10 for all fueling tanks;
- Fueling tanks would not be positioned within 500 feet of a perennial or intermittent stream, storm drain, wetland, lake or pond;

- Fueling tank filling operations would be manned at the fueling truck and at the tank if the tank is not visible to the fueling operator from the truck; and
- Troughs, drip pads or drip pans would be required beneath the fill port of the fueling tank during filling operations if the fill port is not within the secondary containment.”

**“Contamination of aquifers/groundwater from hydraulic fracturing.” 6.1.5**

This impact statement does not support the information present in this section of the document.

**“Harm to local wildlife populations from the loss of habitat.” 6.4.3**

This impact statement is lacking in its scope. This section of the document refers to the threat these activities will have on endangered and threatened species and should be reflected as such in the table.

**“Degradation of Air Quality.” 6.5**

The following mitigation measures for air quality have been left out of the table:

- “Drilling and fracturing engines will not be operated simultaneously at the single well pad.” 7.5.3.1
- “The maximum number of wells to be drilled and completed annually or during any consecutive 12-month period at a single pad will be limited to four.” 7.5.3.1
- “Condensate tanks used at the well pad shall be equipped with vapor recovery systems to minimize fugitive VOC emissions.” 7.5.3.1
- “Wellhead compressors will be equipped with NSCR controls.” 7.5.3.1

**Socioeconomic & Community Character Impacts 6.8 & 6.12**

This resource section should be broken out into the following impacts:

- “Localized impacts on the housing market caused by the in-migration of construction and production workforces.”
- “An increase in demand for certain state and local government services, resulting in increased government expenditures.”

- “A rise in living expenses due to increases in employment, income, tax revenues and production royalties.”
- “Potential changes in the economic, demographic and social characteristics of affected communities that could be viewed as negative by some and positive by others.”

### **Transportation Impacts 6.11**

This resource section should be broken out into the following impacts:

- “Increased traffic on roadways.”
- “Damage to local roads, bridges and other infrastructure.”
- “Increased number of breakdowns and other accidents.”
- “Risk of potentially hazardous spills.”
- “Traffic impacts near rail centers.”

### **Mitigations**

**“Well pads for high-volume hydraulic fracturing prohibited within 2000’ of public drinking water wells, river or stream intakes and reservoirs.” 7.1.12.1**

The section number for this mitigation measure does not exist in the document.

**Specifies setback distances from structures, surface waters, public/private water wells, and water supply springs. 7.1.12.1**

The section number for this mitigation measure does not exist in the document.

**“Limits duration of fluid impoundment after permanent/temporary suspension of drilling/hydraulic fracturing.” 7.1.3.4**

This mitigation statement should take advantage of the fact that the duration of impoundment is a known figure of 45 days; therefore reading: “Limits duration of fluid impoundment to 45 days after permanent/temporary suspension of drilling/hydraulic fracturing.”

**“Requires operator to test private water wells.” 7.1.4.1**

This mitigation statement should be more detailed by stating: “Requires operator to sample and test all private water wells within 1000 feet of the well pad or within 2000’ of the well pad if no wells are available for sampling within 1000 feet.”

**“Requires diligence of operator in researching, locating, characterizing, and reporting public and private water wells within 2640 feet (1/2 mile) of proposed well.” 7.1.12.1**

The section number for this mitigation measure does not exist in the document.

**“Requires site-specific SEQRA review of HVHF permit applications to produce from a formation with <1000’ of vertical separation from potential or known subsurface water supplies.” 7.1.5**

This mitigation measure is not found within this section of the document.

**“Closed-tank systems must be used for flow-back of wells” 7.3.1.2**

The section number for this mitigation measure does not exist in the document.

**“Specifies and requires record-keeping of generation, transfer/hauling, and receipt of flowback wastewater.” 7.1.6.1**

The section number for this mitigation measure does not exist in the document.

**“Prohibits spreading of HVHF flowback water on roads.” 7.1.6.2**

The section number for this mitigation measure does not exist in the document.

**“Requires submission of a fluid disposal plan for flowback water which specifies quality, maintenance, and monitoring of piping and conveyances.” 7.1.6.3**

The section number for this mitigation measure does not exist in the document.

**“Requires partial and final well pad reclamation.” 7.4.1**

This mitigation measure is a catchall for every impact involved in this process. It is too generic a statement for the type of potential loss the industry could inflict upon the local ecosystem. It should at least cover the potential siting of projects away from known threatened regions and make note of incidental take permits.

**“Prohibits use of the BTEX class of compounds as additives in HVHF fluid surface impoundments.” 7.5.3.2**

This mitigation measure does not support the information present in this section of the document.

**“Requires reporting of fracturing additives and public access restrictions.” 7.5.3.2**

This mitigation measure does not support the information present in this section of the document.

**“Requires catalytic technology for production equipment.” 7.5.3.3**

The section number for this mitigation measure does not exist in the document.

**“Outlines necessary monitoring work.” 7.8.2**

The section number for this mitigation measure should be 7.7.2.

**“Requires NORM testing of discharged waste fluids and material in production tanks.” 7.8.2**

The section number for this mitigation measure should be 7.7.2.

**Socioeconomic & Community Character Mitigation Measures 7.8 & 7.12**

The following mitigation measures should be included for socioeconomic & community character:

- “Through its permitting process, the Department will monitor the pace and concentration of development throughout the state to mitigate adverse impacts at the local and regional levels.”

- “The Department will consult with local jurisdictions, as well as applicants, to reconcile the timing of development with the needs of the communities.”
- “Where appropriate the Department would impose specific construction windows within well construction permits in order to ensure that drilling activity and its cumulative adverse socioeconomic effects are not unduly concentrated in a specific geographic area.”
- “Actively encourage the hiring of local labor through job training programs and apprenticeships to lessen the impact of in-migration.”
- “Increase the restrictions and reclamation requirements within Agricultural Districts in order to reestablish productive farmlands.”

### **Transportation Mitigation Measures 7.11**

The following mitigation measures should be included for transportation:

- “Potential for road use agreements between operators and municipalities.”
- “Requirement to file a transportation plan that includes proposed routes and a road condition assessment.”
- “Site-specific mitigation of safety impacts would be applied to each applicant’s permit and could result in first responder emergency response training, require the operator to pay for the addition of traffic control devices, limit heavy truck traffic to off-hour periods to minimize congestion, avoid school bus routes and hours, avoid sensitive locations for trucks carrying hazardous materials, or limit truck weight, axle loading, and weight during seasons when roads are most sensitive to damage from trucking.”
- “Reimbursement for costs associated with local road work.”
- “State permit regulations could be developed that assess mitigation fees as a permit condition to defray some of the costs from incremental damage to the state road system.”

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## Comments we took under consideration while developing our own:

New York State Water Resource Institute. Comments on Preliminary Revised Draft SGEIS. 2011.

Lou Allstadt's comments on cumulative impacts, procedural deficiencies, public drinking water, and water wells. 2011.

Otsego County Soil and Water Conservation District. Draft comments on the revised draft SGEIS. 2011.

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