



Brad Field
Attn: Scope Comments
Bureau of Oil & Gas Regulation
NYSDEC Division of Mineral Resources
625 Broadway, 3rd floor
Albany, NY 12233-6500

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Draft Scoping Comments- Marcellus Shale

The Otsego County Conservation Association (OCCA) appreciates this opportunity to work with the DEC on the Draft Scoping document for the SGEIS. While OCCA understands of the economic benefits NYS sees in natural resource extraction, in no way do we feel that environmental safeguards should be lessened to expedite evaluation in the final SGEIS.

In reviewing this draft scoping document we have come to the realization that a great deal of emphasis is placed on the original 16 year old GEIS related to oil and natural gas extraction. This poses a concern in its application- In the 16 years since the GEIS's adoption many changes have taken place in NYS both demographic/societal as well as within the drilling industry itself having chemical, procedural, and technological changes. Albeit the SGEIS clearly articulates the DEC's reluctance to revisit the original GEIS, can this document allow for a comprehensive analysis of the oil and gas industry its affects to scenic and historic resources, air and water quality, and cumulative impacts associated with a full development of the various gas formations in a relatively unspoiled area.

1.4 State Environmental Quality Review Act

While the Otsego County Conservation Association acknowledges that a GEIS can be a valuable tool in addressing broad issues, cumulative impacts, or impacts that can be mitigated in a standardized fashion, we believe that it can only be effective if it is timely, comprehensive and allows for additional review when applied to unique local situations. The 1992 GEIS had its successes in standardizing industrial practices that saw increased environmental protection. But the lack of public participation in the individual permit process has exposed the weaknesses in this outdated and incomplete document. We would like to see draft scope include strategies to better engage the public in the permitting process of individual permits.

1.5 Pipeline Regulation

The Otsego County Conservation Association takes issue with the exclusion of pipelines, transmission lines, and compressor stations from consideration in the SGEIS. The Draft scope reads:

As explained in Chapter 3 of the GEIS, project application review for natural gas wells does not include gas gathering or transmission lines (and ancillary facilities such as compression stations) for several reasons but primarily because (1) the Public Service Commission, not the DEC, has jurisdiction over the siting of transmission lines and (2) at the time of well permit issuance, there is no certainty that any pipelines will be constructed. However, Department permits are required if an environmentally sensitive area such as a stream or wetland would be disturbed. Because these permit reviews are done when the decision is made to construct a pipeline rather than as part of the well permit review process, pipeline regulation is not included in this draft scope.

The impacts of pipelines on the landscape, especially with a uniformly broad sheet formation like the Marcellus will be significant. The vast grid work transmission lines, pipe lines and compressor stations, will directly contribute to air quality issues through leakage, despoil rural character, lead to habitat fragmentation, and become conduits for invasive species.

While it is true that pipelines fall under the jurisdiction of the PSC, it is improper to segment their obvious environmental impact from review in these proceedings. You cannot have a profitable natural gas industry without pipelines, transmission lines or compressor stations. They are inherent components to this process. Jurisdiction is irrelevant when assessing direct or indirect consequences of an action, and that while the DEC may have little say over how pipes lines are regulated they certainly control the means by which this secondary infrastructure is required. We ask that the DEC review the environmental impacts associated with Marcellus associated pipelines, transmission lines, and compressor stations especially as they affect cumulative air quality, habitat fragmentation and community character.

2.1.2 Hydraulic Fracturing

On Page 10 of the Draft Scoping document the DEC concludes:

Well stimulation, including hydraulic fracturing, was expressly identified and discussed in the GEIS as part of the action of drilling a well, and the GEIS does not recommend any additional regulatory controls or find a significant environmental impact associated with this technology, which has been in use in New York State for at least 50 years.

While the DEC has touted this record of safety involving hydraulic fracturing, including the apparent presence of 13,000 active wells without an incident of ground water contamination, we find that the finding is largely anecdotal and not based upon scientific back ground testing or inquiry. For one, the DEC began asking for the exact chemical make up of fracturing fluids for the first time in June of 2008. This requests, while welcome, is an admission that for the past 50 years the State of New York has not known what chemicals it has been permitting in subsurface injections. The 1992 GEIS speaks generically of fluid classifications including drilling muds, surfactants, bactericides, scale inhibitors, and

acids but it is clear that beyond vague chemical properties the DEC has been unaware of the specific contamination threats these fluids present.

The Otsego County Conservation Association is concerned that this anecdotal and unexamined record of safety will be taken as fact moving forward. If there have been ground water contamination issues in the past they may not have been realized because:

- 1) There has been no requirement to test water quality before, during, or after gas well development.
- 2) Contamination is difficult to qualify and test for if the chemical constituents in the fracturing fluids have been unknown.
- 3) Much of natural gas development in NYS has occurred in rural districts where contamination issues may not be immediately obvious.
- 4) When hydraulic fracturing and other forms of stimulation have disrupted the flow or quality of private water wells the responsible driller has responded with monetary compensation and treatment equipment before the DEC is notified or even involved.

We urge the DEC to go back and test ground water quality in areas that have experienced significant natural gas development to confirm its apparently impressive safety record. To start with we suggest a random sampling of drinking water wells in areas that have had significant natural gas development.

2.1.2.1 Fluid Handling at the Well Site

The Otsego County Conservation Association sees no reason to continue permitting lined waste pits at drill sites when steel tanks are a superior alternative and generally supported by the industry. The Draft scope proposes to continue an evaluation of the merits of lined pits including pit liner specifications. We would ask the DEC to additionally evaluate:

- Differences in soil disturbance between steel tanks and lined earthen waste pits
- Impact on migratory water fowl and transient amphibians that may mistakenly take refuge in the waste pits
- Performance standards of steel tanks vs. lined waste pits in terms of accidental leakage.
- Performance standards of steel tanks vs. lined waste pits in flood prone areas
- Performance standards of steel tanks vs. lined waste pits as they contribute to the off-gassing of volatile organic compounds and other contaminants.

To this last point we take issue with the DEC's assertion in the draft scope:

"Concerns regarding evaporation of pit contents do not arise in New York because precipitation exceeds evaporation and because long-term production pits common in some western states have not been allowed in New York since 1984. Lined pits used during the drilling and stimulation phases must be reclaimed within 45 days after operations end."

While it is true that we do have a more humid climate in New York, the VOC's from the natural gas condensate do evaporate from pits on low humidity days unnecessarily compromising air quality. Sealed metal tanks can make a significant contribution in curtailing fugitive voc and methane emissions but even then there are venting issues that need to be addressed.

4.1.3 Air Quality Impacts

The draft-scoping document states that:

- ***The dSGEIS will examine whether any anticipated activity at Marcellus or other shale well sites could result in an air quality impact that is not discussed in the GEIS.***

This appears to be a reasonable approach to the study until one realizes that the 1992 GEIS considered very little by way of air quality impacts but made broad conclusions as to the insignificance of impacts. The summary conclusion of the document was:

Like most other small construction sites, the associated dust and exhaust fumes are short term and limited in a real extent. (See 8.A and 8.D.1)

While there is mention of:

- (1) Airborne dust from construction activities, including air drilling operations, or traffic on unstabilized access roads,
- (2) Diesel fumes from equipment operation and
- (3) Uncommon accidental uncontrolled flows of methane and hydrogen sulfide.

There is no qualitative or quantitative analysis of emissions and releases or the compounding effect of multiple well projects that would justify this dismissal of this impact. To the contrary there are no significant differences between the technological infrastructure required for Marcellus Shale development and that of Barnett shale. The air quality of Fort Worth, Texas has been significantly degraded by gas drilling activity and suggests that New York reasonably could face the same issues.

The problem is of course cumulative, and while the DEC has seen individual emissions as “short term and limited” the collective impact can have long-term and far reaching effects. The 1992 conclusions of air quality are speculative and unsubstantiated and a scientific study of emissions should have been conducted.

A proper Air quality impact analysis would consist of:

Estimates, by weight, of all anticipated emissions of all potential pollutants involved in the complete production of a gas well, including:

- All emissions from truck traffic, machinery, equipment, flaring, and completion
- All emissions evaporating or leaking from pits, tanks, wellheads and pipelines. If there are additional air Quality impacts from Natural Gas compressor stations they must be factored in as well.
- All emissions from accidental or illegal discharges based on

Emissions would include but not be limited to methane, sulfur dioxide, nitrogen dioxide, carbon monoxide, carbon dioxide, volatile organic compounds (VOC's), particulate matter, toxic metals, hydrogen sulfide, and ground level ozone.

As part of the Cumulative Analysis component of the SGEIS, the DEC must look at the current air quality and clean air standards of the Southern Tier and Catskills and using the likely impacts of one

well, begin to assess the impact of multiple well development and the overall effect on regional air quality, including localized air modeling in rural areas.

4.1.3.1 Greenhouse Gas Emissions

In the 1992 GEIS there is not a single reference to global warming or global climate change. This issue is the primary focus of the NYSDEC and currently guides most of the department's actions and programs. The oil and gas industry plays a sizable role in the proliferation of green house gases (perhaps as much as 12 percent of the state's methane emissions) and the DEC is responsible for the mitigation of the cumulative impacts of the gas and oil wells throughout its permitting process. In spite of the fact that methane produces less carbon dioxide than other fossil fuels when burned, the gas itself is at least twenty-three times a more potent a green house gas than CO₂. Vast quantities of methane and deposited CO₂ are released during the gas extraction process without any regulatory consideration by the DEC for avoidance or mitigation. The only discussion of methane in the 1992 GEIS (10-5) dismissed the industry's methane releases as a fraction of biological sources, and offered no further commentary on the state's obligation to mitigate. Otsego County Conservation Association believes that a complete GEIS would have included:

- a. A comprehensive analysis of natural gas leakage from the completion process, wellheads, storage tanks, and pipelines. This would result in a quantitative assessment of the industry's contribution to Green house gases, detection strategies, and mitigation options would then be devised.
- b. A comprehensive analysis of best available technologies such as flareless "green" completions that not only reduce emissions but also conserve the resource that would otherwise be burned off or emitted into the atmosphere.

The scoping Document of the Supplemental GEIS has stated that:

The Department is currently developing guidance for how greenhouse gas emissions associated with permits the Department issues should be addressed in Environmental Impact Statements. That guidance will be subject to its own public review process before it is finalized, and its implementation with respect to shale gas development will be based on the form and applicability of the final guidance. Therefore, evaluation of greenhouse gas emissions related to shale gas development using horizontal drilling and high-volume hydraulic fracturing is not included in this draft scope but will be addressed as necessary after the Department's guidance is finalized.

The Otsego County Conservation Association is under the impression that this "developing guidance" document is for all areas of permitting **where the global warming implications are not immediately obvious or significantly different from other modest sources of green house gas emissions.** It is our belief that through this initiative the DEC is asking, "should the standard Environmental Assessment Form under SEQRA require applicants to calculate the carbon footprint of a project?"

The oil and Gas industry plays a major and **direct** role in the proliferation of green house gases and should be considered separate from the GHG potential of general projects and actions.

This is clearly something that should be studied in the SGEIS, especially as the natural gas industry expects to grow with the Marcellus play.

4.2.2 Groundwater Quality

The Otsego County Conservation Association is concerned about the contamination of aquifers during the primary stages of well development before protective casing is installed. In North Brookfield, Madison County, NY (Upper Susquehanna Sub basin) a driller attempted to dislodge an impacted drill bit by blasting compressed air down the 400 foot well bore. This resulted in geyser like formations coming from 14 private water wells, and subsequent out-of-tap discharges of mud, methane or nothing at all. This happened in February 2007 and today some of these residences do not have water restored or cannot use their well water without expensive filtration equipment.

Sadly, we do not know how commonly this practice is used or how frequently aquifers are agitated like this, as most wells are developed in rural districts away from drinking water infrastructure. This is not to say that significant damage is not done to ground water, especially as it feeds trout streams and wetlands. Though we know this kind of violation is difficult to identify and then quantify in terms of gallons impacted, we see this as the responsibility of the DEC to investigate. What is the frequency of air drilling intrusion into ground water resources and can we assess the potential impacts as part of our review of Marcellus shale development?

Again, we refer the DEC to our comments in section 2.1.2 that outlines our concern that the Department has not done enough to confirm that ground water resources have been protected.

4.3 Significant Habitats and Endangered, Rare or Threatened Species

The draft-scoping document suggests that issues pertaining to wildlife and significant habitats, as they would relate to Marcellus Shale development, were adequately addressed in the 1992 GEIS. The Otsego County Conservation Association finds that these issues were not sufficiently examined and we hope that the final scoping document will include the following concerns:

- A. The summary of the conflict between habitats and gas drilling (GEIS 6-14) offered that other divisions and agencies may play a role in charting species and critical environmental areas but there is no direct indication of coordination between the Div. Mineral resources and these agencies. The scoping document claims that the division of mineral resources checks the data bases with every application to make sure that there is no conflict between the individual well and a critical habitat area. This is a good first step, but we believe that:
 - a. Well development occurs on private land where there is less information on sensitive species in the natural heritage program database than there is on public land where drilling will most likely not occur.
 - b. On site investigation should be required for every well project, complete with biological inventories.
 - c. The DEC's current approach does not address region wide biodiversity issues that take into account a pattern of cumulative impacts that may not be apparent on the individual permit level.

- d. There is no substantive discussion of mitigation strategies for the habitat impacts of the oil and gas industry beyond well relocation and potential seasonal restrictions.
- e. Natural gas development should be driving information for the Natural Heritage database so that at the very least, the destruction of habitat through well development will generate information helpful in planning the protection of the larger ecosystem.

B. As outlined in our comments on cumulative impacts, the Division of mineral resources should have coordinated with involved agencies to overlay maps of critical habitat, flyways, and endangered species information over potential gas and oil fields to identify areas of conflict and devise region wide mitigation and planning.

C. While the listing of potentially impacted habitats (GEIS8-38) is an appropriate action, the GEIS stated that, " *The Majority of the Significant Habitats in or near existing oil and gas fields fall into one of the following categories:*" and then lists : 1) Heronries, 2) deer wintering areas, and 3) uncommon, rare and endangered plants. This sparse selection of non-threatened species and a general plants category does not constitute a "hard look" at issues of biodiversity. Again, the listing, mapping, and analyzing of all affected habitats is the recommended method to ensure we protect biodiversity and avoid unnecessary conflict.

D. One of the biggest threats to biodiversity is invasive species for which there was no discussion or analysis in the GEIS. The vast grid work of roadways, pipelines, and staging areas that is requisite for the gas industry especially in sheet formations like the Marcellus or the Utica provides long conduits of disturbance for exotic plants to take root and invasive invertebrates to travel. Truck tires are effective vectors for spreading seeds. The DEC must conduct this important analysis to protect the biological integrity of the Catskill's and Southern Tier's more sensitive ecological communities.

4.4 Floodplains

The GEIS, in Chapter 8, includes comprehensive guidelines, which address site construction in flood prone areas. These same guidelines are based on inadequate flood insurance rate maps originally produced in the early to mid 1970's.

Although the dSGEIS will examine whether any additional protections or environmental reviews are needed for drilling sites in floodplains where horizontal drilling and high- volume hydraulic fracturing are proposed, there still exists a need for detailed site analysis in regards to flood conditions. Prior to drilling operators should be required to provide LIDAR generated and or updated site specific Flood Plain surveys to compliment the 1970's FIRM flood Insurance Rate Maps as necessary prior to drilling.

4.7 Cumulative Impacts

The 1992 GEIS fails to live up to its obligations under SEQRA to analyze **cumulative impacts** by concluding that:

...cumulative review is impractical and unnecessary when considering most oil and gas drilling because of the independent nature of each of the wells, i.e., no compounding of environmental significance, and the fact that the economics generally dictate a more cautioned approach of obtaining permits sequentially because of the high costs involved. (3-10)

In keeping with this approach, the Scoping document asserts:

The number of wells which will ultimately be drilled cannot be known in advance, in large part because the productivity of any particular formation at any given location and depth is not known until drilling begins. Changes in the market and other economic conditions also have an impact on whether and how quickly individual wells are drilled.” (Pg.34)

Otsego County Conservation Association finds that these statements are an unjustified dismissal of responsibility. Cumulative impact analysis is required by ELC §617.9(b)(5)(iii) (a) :

An EIS must contain:

Reasonably related short-term and long-term impacts, cumulative impacts and other associated environmental impacts.

Their 1992 statement does not adequately explain why the DEC cannot look at collective environmental impacts, especially ones that cannot be gleaned in an individual permit. A proper cumulative impact analysis would have looked at collective impact issues through full build out models of the potential gas and oil wells including temporary roadways, pipelines, well pads and staging areas based upon spacing requirements and geographical constraints.

Using mapping overlays over this potential development the DEC would insert ground water resources, aquifers, wetlands, critical habitats, air quality attainment areas as well as wastewater infrastructure, transportation infrastructure, community infrastructure and cultural resources.

Ultimately, an analysis based on these maps and overlays of how collective natural and community resources would be affected by the entirety of the full oil, gas, And solution mining build out, including the impact of increased water withdrawals, waste water disposal, habitat fragmentation, increased truck traffic, accidental spills or releases, air and green house gas emissions, noise and secondary growth would allow the department to identify critical environmental areas, potential areas of conflict and opportunities for mitigation.

The DEC has reargued the point that this kind of analysis is impractical because no one can predict the future and modeling extremes serves little purpose. The point of build out modeling, especially in the context of Geographic Information Systems (GIS) is to identify resource constraints,

thresholds, and possible phased approaches to reducing impacts. It should not only be the cornerstone of a guidance document but a continuing resource for the regulator to use as management tool. Again, the omission of this required analysis should invalidate the GEIS as a substitute for the requisite “hard look”.

4.8 Community Character

Community Impacts were largely ignored in the 1992 GEIS save a brief discussion of noise and aesthetic considerations. Since oil and gas development is largely exempt from local zoning laws it would have been especially important for the Division of Mineral Resources to include an analysis of how this heavy industrial feature will affect communities.

ECL 23-303 (2) The provisions of this article shall supersede all local laws or ordinances relating to the regulation of the oil, gas and solution mining industries; but shall not supersede local government jurisdiction over local roads or the rights of local governments under the real property tax law.

The NYSDEC division of Mineral resources in the SGEIS should provide host communities of Marcellus gas development with an analysis of:

- Truck traffic
- Road infrastructure/ degradation
- Local and regional air impacts (under evaluated by GEIS)
- Emergency resources related to the O&G industry (both medical and accident response)
- Law enforcement / correctional infrastructure
- Social Impacts: Housing shortage / alcohol and drug use
- Waste water treatment infrastructure
- Sprawl/ secondary growth impacts

5.1 Public and Local Government Participation

The dSGEIS must involve local government in the review process at minimum to provide local expertise to the will consider whether the Department should require the notification to include other information such as anticipated truck traffic or any planned shipments of spent fluids to municipal waste water treatment plants, which would provide the opportunity for local governments to interact directly with the permittee or the waste hauler regarding these issues, and to involve the public as the municipality may deem appropriate.

Other issues to consider not mentioned in the DEC's Document:

Staffing and enforcement issues

The Otsego County Conservation Association urges the DEC to evaluate staffing and enforcement as it relates to the emerging Marcellus shale play in the SGEIS. As we evaluate drilling accidents that have occurred due to mismanagement in other states we see that no agency has the ability to apply the proper oversight to prevent mishaps.

We would like to see an evaluation of a program that would mandate the constant presence of independent environmental inspectors at drill sites paid for by the company. These licensed and trained professionals would oversee the entire process and have to sign off on hundreds of safety procedures and report violations or accidents. While there is still opportunity for bad actors and corruption, this arrangement creates a structure for accountability and liability beyond what we have now.

Best industry practices

Otsego County Conservation Association would like these changes included in an updated GEIS for all aspects of the industry, not just Marcellus shale:

- Banning of earthen waste pits in favor of steel storage tanks.
- Ground water testing before, during, and after the completion of a well.
- "Green" fracturing fluids
- Closed loop water recycling systems that remediate wastes on-site.
- Flare-less completions that reduce green house gas emissions and recover usable fuel.
- Emission reducing technology
- Phased approaches to well development that concentrate drilling activity into manageable zones and timeframes. Working in phases allows for the consolidation of resource use and can create scenarios where severe impacts are avoided.
- Bonding of well sites to ensure clean-up.
- Noise control technologies.

Thank you for the ability to comment on the Draft Scoping document. If you have any questions, please do not hesitate to call.

Sincerely,



Martha Clarvoe, President



Erik Miller, Executive Director