



Protecting our communities and environment from exploitative gas drilling of the Marcellus Shale

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Noise and health

BY SHIRARI, ON JANUARY 6TH, 2009

Statement to DEC, Scoping session for dSGEIS, Oneonta, NY, Dec. 2, 2008

[REDACTED]

Attn: Scope Comments
 Bureau of Oil and Gas Regulation
 NYSDEC Div. of Mineral

SIGN THE PETITION



UPCOMING EVENTS

- March 2, 2011:
 - Next Meeting, March 2nd (6:00 pm)
- April 17, 2011:
 - Walk About Water (all day)

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« Dec Feb »

Next Meeting, March 2nd

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To Whom It May Concern,

Thank you for this opportunity to add these remarks during your public comment period for the Draft Scope for the Supplemental Generic Environmental Impact Statement (dSGEIS).

Summary:

A.) Since long-term use of compressors will be needed to push the gas from the Marcellus Shale along the pipelines, and long-term exposure to the low-frequency noise (LFN) of compressors is injurious to health (Vibroacoustic Disease, VAD), the DEC will need to coordinate with the Public Service Commission (PSC) at the earliest stages of siting and permitting of horizontal drilling for gas in the Marcellus Shale in order to assure adequate set-back from homes and schools, etc. The DEC may even need to take over the PSC's regulation of the post-drilling production and transmission phase.

B.) The DEC will need to coordinate with health departments at all levels of government to research, regulate and monitor the health impacts of noise as well as those of water and air pollution.

C.) The DEC will need to consult with expert acousticians regarding effective mitigation of noise, in particular, low frequency noise (LFN). Solutions might include setbacks, housings and dampers, plus any other

January 2009

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ABOUT US

Shaleshock Action Alliance is a movement that works toward protecting our communities and environment from exploitative gas drilling in the Marcellus Shale region. [\(more\)](#)



LINKS

- [Catskill Citizens](#)
- [Catskill Mountain Keeper](#)
- [Community Science Institute \(Water Monitoring\)](#)
- [Concerned Citizens of Ulysses](#)
- [Don't Frack with NY](#)
- [Frac Tracker](#)
- [Fracking Resource](#)
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- [Gasland Preview](#)
- [Marcellus Protest](#)
- [Oil and Gas Accountability Project \(OGAP\)](#)
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- [Schoharie Valley Watch](#)
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- [Skaneateles Lake Watershed & Fracking](#)
- [Solid Shale](#)

mitigation available.

Three short stories that have brought me to make this statement about the noise impacts from drilling for gas in the Marcellus Shale:

1.) Voom! Voom! Voom! At 3 AM on a Sunday morning about a year ago this startling racket woke our relatives in Madison County, NY. Shortly after being scared out of their wits they located a gas drilling rig just beginning work about a half mile up the hill from their home. "You can't do this! It's the middle of the night!" "Yes, we can", said the drillers, and, indeed, people on the local Town board investigated and told our relatives "Yes, they can."

***Local citizens must be NOTIFIED.

***If neither the DEC nor the State will do so, local governments must figure out how to regulate noise while allowing farmers the freedom to work.

2.) A friend told me about a "successful" gas well in Spencer, NY; her friends wished they had never signed a lease for a Trenton Black River (TBR) well 10 years ago. The drillers never cleaned up the area as they had promised, the family's well became disturbed and the water undrinkable, and the noise of two compressors run by two generators became unbearable during the six months they were used to push the gas along the pipeline when the pressure from the TBR well began to peter out. The well was 1,500 feet from their home and the noise was 90 decibels. The

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family felt they would have had to move if it continued.

***People who sign gas leases need to know what they are getting into. This family had not anticipated this type of ongoing noise. I assume they did expect the initial noise of drilling activities (as described in the GEIS), but were uninformed about what could happen in the production stage, oversight of which is delegated to the PSC. Perhaps this is not your purview, but a lot of people have signed leases which either did not disclose the full effects of drilling or were broken later by the gas companies when they did not fulfill promises of clean-up or remediation. (Also, here is another "undocumented" case of undrinkable water, unacknowledged by the DEC; maybe a special study of all "Undocumented" well contaminations should be done.)

and

3.) There was an article titled "Un-Well" in the Fort Worth Weekly which told a story about Charles Morgan, a retired Air Force Major, whose ear drum was ruptured by the low frequency noise of 11 gas compressors a mile away from his home. I had no idea such a thing could happen. As it turns out, that is the least of his problems. He suffers from terrible headaches, "sky-high" blood pressure, jumpy legs, and, to get a good night's sleep and quiet his nerves, he sometimes takes a hotel room far from noise.

("Un-Well", Peter Gorman, Fort Worth Weekly, Wed., Oct.29, 2008)

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<http://www.fwweekly.com/content.asp?article=7262>

What Charles Morgan suffers from is Vibroacoustic Disease, VAD, which affects the whole body and is cumulative. The study of this disease is relatively recent because many of its effects are internal, previously not associated with noise at all. Many of the studies are European and were done in conjunction with studies about noise produced by jet engines, wind turbines, industrial sites and rail lines. Several, relating to the effects of living near the noise of jets taking off from nearby airports, have shown that residents' blood pressure spikes even when they are sleeping (indicating that it's not just an annoyance factor), and also have shown children's learning problems that correlate to living in such noisy neighborhoods.

("Vibroacoustic disease: the need for a new attitude towards noise", Public Participation and Information Technologies 1999, pub. CITIDEP, 2000.)

<http://www.citidep.pt/papers/articles/alvesper.htm>

("Acute effects of night-time noise exposure on blood pressure in populations living near airports", European Heart Journal, Feb. 12, 2008.)

[http://eurheartj.oxfordjournals.org/cgi/content/full/ehn013v1?](http://eurheartj.oxfordjournals.org/cgi/content/full/ehn013v1?maxtoshow=&HITS=10&hits=10&RESULTFORMAT=&fulltext=airport&searchid=1&FIRSTINDEX=0&resourcetype=HWCIT)

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("Noise Pollution Takes a Toll on Health and Happiness", Washington Post, June 4, 2006.)

<http://www.washingtonpost.com/wp-dyn/content/article/2007/06/04/AR2007060401430.html>

Health Impacts

“Vibroacoustic disease (VAD) is a whole-body, systemic pathology, characterized by abnormal proliferation of extra-cellular matrices, and caused by excessive exposure to low frequency noise (LFN). VAD has been observed in LFN-exposed professionals, such as, aircraft technicians, commercial and military pilots and cabin crewmembers, ship machinists, restaurant workers, and disk-jockeys.” (“Vibroacoustic disease”, N. Castelo Branco and Mariana Alves-Pereira, (Portugal), Noise & Health Journal, 2004;6:3-20)

<http://www.noiseandhealth.org/article.asp?issn=1463-1741;year=2004;volume=6;issue=23;spage=3;epage=20;aulast=Castelo;type=0>

Branco and Alves-Pereira, et al, have done numerous studies about VAD, principally among aircraft workers in Portugal, and here are some of the health effects which I have culled from their papers:

Increased morbidity

Heart:

Thickening of cardiovascular structures, extra tissue around pericardium and valves
High blood pressure
Strokes

Psycho-Neurological:

Depression
Increased irritability and aggressiveness
Rage reactions

Suicidal tendencies
Over-sensitivity to sound
Tendency for isolation
Decreased cognitive skills
Dizziness, severe vertigo,
balance disturbances
Early ageing
Palmo-mental archaic reflex
Late onset epilepsy
Seizures
Brain lesions

Respiratory problems:
Difficulty breathing
Coughing
Lung tumors

Digestive problems:
Gastro-intestinal complaints
Stomach cramps, nausea,
diarrhea, heartburn
Ulcers
("Noise-Induced Gastric
Lesions", Cent. Eur. J. Public
Health 2006; 14 (1): p. 35-38)
[includes rat studies]
<http://www1.szu.cz/svi/cejph/archiv/2006-1-09-full.pdf>

LFN is a genotoxic agent –
mutagenic – causing:
Malignancies
Tumors in kidneys and brain

LFN affects the baby in the
womb:
("Vibroacoustic Disease in a
Ten Year Old Male", Branco et
al, Inter-Noise 2004, Prague,
Czech Republic, August. 22-
25, 2004, 33rd International
Congress and Exposition on
Noise Control Engineering.)
http://www.ninapierpont.com/pdf/Alves-Pereira_grain_elevator_VAD.pdf

Also:
Stress (all frequencies)
Headaches
Body aches

The health effects of VAD are

cumulative, with symptoms showing up in Stage I (Mild, 1-4 years), worse in Stage II (Moderate, 4 – 10 years), and devastating after 10+ years (Stage III, Severe).

(See chart in, "Monitoring Vibroacoustic Disease", Branco et al, paper, Nov. 2002.)

<http://www.lowertheboom.org/links/h13Monitoring%20Vibroacoustic%20Disease.pdf>

Well, I could go on, or you could research further.

Since, as I understand it, the gas in the Marcellus Shale does not have the natural pressure, which is found in the "conventional" gas wells of other deposits such as the TBR, there will be a perpetual need for compressors and their (usually diesel-powered) generators for the life of these new wells. Such unremitting noise for years on end will have a devastating effect on all creatures living close by – including humans of all ages. In her paper, Pierpont has recommended a setback of 1.5 miles from the LFN noise of wind turbines.

("Health, hazard and quality of life near wind power installations – How close is too close?", Nina Pierpont, MD, PhD, March 1, 2005. Archives & Collections Society, Ontario, Canada)

http://www.aandc.org/research/wind_noise_pierpoint.html

***Coordination and consultation with County and State Health Departments would seem to make sense, not only regarding noise, but also regarding possible air pollutants and, most of all, about identifying the health

effects of toxins in fracking-water which could end up in our fresh water as a result of the huge amounts of water which will be used in horizontal drilling in the Marcellus Shale.

In the dSGEIS, on p. 8, 1.5, Pipeline Regulation, it is stated,

“as explained in Chapter 3 of the GEIS, project review for natural gas wells does not include gas gathering or transmission lines (and ancillary facilities such as compression stations)”.

Contrary to what is stated on p.18, Draft SGEIS, 4.1.1 Noise Impacts,

“Longer-Term Noise Impacts – Gas well production sites are described by the GEIS as very quiet”,

these naturally unpressured Marcellus Shale gas wells will require very noisy compressors to push the gas along the pipelines the whole time they are producing, perhaps for 10, 20, 30, even 40 or 50 years.

In view of this fact the DEC needs to consider the noise aspect of the well sites before permitting. Therefore,

***Coordination with the Public Service Commission should begin at the time of siting BEFORE permitting in order to be sure that the setback will be far enough from residences since compressor noise will ensue for years on end. Or perhaps the DEC will need to take over the regulation of production and transmission.

Mitigation

Online there are websites advertising housings for compressors. Would these mitigate only the audible

higher frequency noise and not the lower frequencies, which often are felt rather than heard and have much, much longer wavelengths and not only travel much farther but can go underground and through walls? I have consulted two of my colleagues in the SUNY Oneonta Music Department who are experts in recording engineering. They both suggested some type of damper might possibly be placed beneath compressors. Also, online I have seen compressors with “whisperizers” advertised, but don’t know what that means. Perhaps there would be a way to consolidate compressors serving multiple wells into an isolated spot, but it is hard for me to imagine a spot in our region such that there is no habitation within a 1.5-mile radius.

(Washington State, EFSEC-Energy Facility Site Evaluation Council, Sumas Energy 2 Generation Facility, Application No. 99-1, FSEIS-Final Supplemental Environmental Impact Statement, Section 3.4 LFN, plus Contents page.)

<http://www.efsec.wa.gov/Sumas2/eis/seis/fseisch3-4.pdf>

<http://www.efsec.wa.gov/Sumas2/fseis.shtml#contents>

(“Gas Compressor Station Noise”, Mueller Environmental Designs, Inc.)

<http://www.muellerenvironmental.com/Documents/DOCUMENT/200-032.pdf>

***Expert acousticians should be consulted.

***Research should be done about noise regulation of the gas industry in other states,

(Colorado, Washington, Fort Worth, Grand Prairie and Flower Mound, Texas).

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Some additional sources:

Earthworks/OGAP (Oil & Gas Accountability Project):
Noise Resources

<http://earthworksaction.org/noiseresources.cfm>

Types of Noise, Health effects of LFN

<http://earthworksaction.org/typesofnoise.cfm#LFNHEALTHEFFECTS>

OSHA – European Agency for Safety and Health at Work, Danish study on hearing loss and other effects of noise.

http://osha.europa.eu/en/risksobservatory/hearingloss/denmark/source_description.htm

“Guidelines for Community Noise”, World Health Organization, WHO, Ed. Berglund, Lindvall, Schwela, 1999.

<http://whqlibdoc.who.int/hq/1999/a68672.pdf>

“Transport noise and health”, European Federation for Transport and Environment,

<http://www.transportenvironment.org/module-htm/pages-display-pid-16.html#references>

“The Stacks”, Health/Noise links:

<http://www.lowertheboom.org/stacks.htm#health>

“Effects of Low Frequency Noise up to 100 Hz”, M. Schust, Federal Institute for Occupational Safety and

Health, Berlin, Germany.
02/06,2004.

<http://www.noiseandhealth.org/article.asp?issn=1463-1741;year=2004;volume=6;issue=23;spage=73;epage=85;aulast=Schust>

All around where we live people are either signing gas leases, or joining landowners' groups to negotiate gas leases, or, as with the farmer whose land adjoins our back property line, have four years to go on a 30-year lease. Years ago there was no inkling of the possible massive industrial effect and change to community character that the current Marcellus gas "play" could produce. I speak partly as a musician, (certainly not as a scientist or an MD), as the wife of a musician, neighbor of another musician couple and relative to the entire family of musicians in Madison Co., NY, mentioned in story #1, (at least 5 of us are composers), and I speak partly as a very concerned citizen of a beautiful rural area. You have to know by now that there are a great number of us who are extremely worried about the impending gas development in our state. Most people I talk to are trusting you to regulate the coming drilling so we all can remain healthy and stay here to continue to enjoy the place where we have settled – some of us for many generations. Others I talk to don't think there's a chance in hell that you can manage to do the job right. As many have said, please get it right – and honor the people's faith in you!

Again, thank you for this opportunity to give input

during your Scoping for the dSGEIS.



UNCATEGORIZED DEC, DRILLING, DSGEIS, FRACKING, HEALTH, LETTERS, LONGTERM EFFECTS, NOISE, SOUND

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