

The Honorable Andrew M. Cuomo
Governor of New York State
NYS State Capitol Building
Albany, New York 12224

Commissioner Howard A. Zucker
New York State Department of Health
Corning Tower
Empire State Plaza Albany,
New York 12237

Commissioner Joe Martens
New York State Department of Environmental Conservation
625 Broadway
Albany, New York 12233

February 5, 2015

Dear Governor Cuomo, Commissioner Zucker, and Commissioner Martens,

We, the undersigned, firmly support consistent scrutiny of the *full lifecycle process* of High Volume Hydraulic Fracturing (HVHF) and maintain that the same right and responsibility to safeguard public health and safety, invoked in the recent decision to ban HVHF, must also be applied to the New York State permit review process currently underway for the Spectra Algonquin Incremental Market (AIM) pipeline expansion project. We strongly urge the NYS Department of Environmental Conservation (DEC) to follow the precautionary principle cited by Commissioner Zucker and to follow the same health review process in conjunction with NYS Department of Health (DOH) before any permits are issued. We further request that this process be open and transparent, allowing for full public participation. Resolutions calling for a Health Impact Assessment (HIA) have also been issued by Westchester, Rockland, and Putnam counties, as well as by multiple impacted towns.¹

In December, Governor Cuomo made the courageous decision to ban high volume hydraulic fracturing in New York State, based on recommendations from Commissioner Martens and Commissioner Zucker and informed by extensive health and scientific reviews conducted by both the NYS DEC and DOH. This decision placed particular emphasis on the right and responsibility of the Executive along with state agencies to first and foremost safeguard public health and safety. We applaud and appreciate this commitment.

However, the mounting evidence from the growing number of peer-reviewed scientific studies concerning gas infrastructure and the links to significant adverse health impacts that formed, in

¹ Putnam County Resolution: <https://sape2016.files.wordpress.com/2014/05/putnam-county-resolutions-104-163-and-182-1.pdf>

Westchester County Resolution: <https://sape2016.files.wordpress.com/2014/05/080414-wcbol-resolution-no-80-2014-requesting-due-diligence-on-environment-p.pdf>

Rockland County Resolution: <https://sape2016.files.wordpress.com/2014/05/rockland-aim-resolution.pdf>

part, the basis for the conclusion to prohibit HVHF in New York State by Commissioners Zucker and Martens, forewarns of an emerging public health crisis.

It is well understood that “HVHF activities,” as the term was used in the NYS DOH Health Review, refers to the entire complex lifecycle of shale gas development, production and distribution that includes clearance and preparation of the well pad, drilling, shattering the shale to extract the gas or oil, extraction, drilling waste management, and distribution of the oil or gas via pipelines, compressor stations, metering and regulating stations, and other infrastructure components. In his opening remarks regarding the state’s decision to prohibit HVHF, Commissioner Zucker stated, “The public health impacts from HVHF activities could be significantly broader than just those geographic locations where the activity actually occurs, thus expanding the potential risk to a large population of New Yorkers.”²

New York serves as a critical transportation corridor, including an unprecedented number of mid-stream project applications targeting dozens of communities across New York State since HVHF development began in Pennsylvania. The cumulative and synergistic impacts of all these projects on our shared natural resources — our air, our water, our soil and hence our food — must be fully evaluated before any further approvals are granted.

Although these are federal projects, the rights and responsibilities of individual states to protect their air quality and natural resources are also derived from federal statutes, such as the Clean Air Act, Clean Water Act and the Safe Drinking Water Act. Moreover, we believe the state has absolute and unequivocal rights to protect the health and safety of its citizens.

Indeed, many of the studies cited by Commissioner Zucker in his report identify risks associated with gas infrastructure, such as compressor stations.³ The AIM pipeline expansion project seeks to modify 6 existing compressor stations, including the addition of a total of 81,620 horsepower (HP) in New York, Connecticut and Rhode Island. Two of these compressor stations slated for significant expansions are the Southeast Compressor Station from 40,020 HP to 50,340 HP, and the Stony Point Compressor Station from 38,000 HP to 59,000 HP, and are currently under review by the NYS DEC for modification of their Title V air permits.

Compressor stations emit massive quantities of criteria pollutants, such as nitrogen oxides and volatile organic compounds (VOCs) that are linked to cardiovascular and lung disease, cancer and other significant health impacts. VOCs interact with nitrogen oxides and other hydrocarbons in the presence of sunlight to form ground-level ozone. Ozone pollution can travel long distances and can trigger a variety of severe respiratory problems, worsen asthma, reduce lung function and can permanently scar lung tissue.⁴

The Southeast and Stony Point compressor stations are each projected to emit hundreds of thousands of tons of air pollutants per year. These two compressor stations and other heavily polluting AIM pipeline expansion infrastructure components lie within Westchester, Rockland and

² http://www.health.ny.gov/press/reports/docs/high_volume_hydraulic_fracturing.pdf

³ <http://www.earthworksaction.org/files/publications/Health-Report-Full-FINAL.pdf>

⁴ <http://www.epa.gov/groundlevelozone/health.html>

Putnam counties, a non-attainment zone for air quality standards according to U.S. EPA, exceeding limits for ground-level ozone.

Data provided by the American Lung Association indicates that more than 75% of the populations in Westchester, Rockland and Putnam Counties are composed of at-risk subpopulations and include children, senior citizens, residents below the poverty line, residents with cardiovascular disease, COPD, adult and pediatric asthma, and diabetes.⁵ The NYS DOH must evaluate the health risks associated with further degradation in a region with poor air quality and significantly high levels of at-risk populations.

Commissioner Zucker also described uncertainties associated with unconventional drilling because of new issues, such as high levels of radioactivity in Marcellus shale formations. He cited several studies that are currently underway and recommended that the state should exercise the precautionary principle pending the results of such important studies.⁶

As gaseous radon is transported, its decay products, lead and polonium, accumulate along the interior of the pipelines. Radioactive material at compressor stations, and metering and regulating stations, valves, pipelines and pigging stations pose an increased risk of exposure to workers and residents. Radon, the leading cause of lung cancer in non-smokers, has no safe level of exposure. Its decay products, lead, a probable carcinogen, and polonium, a radioactive carcinogen, have a half-life of 22.3 years and 138 days, respectively, and are solids known to attach to dust particles. Lead is a neurotoxin and polonium can cause DNA damage when radon is inhaled and absorbed by the lungs.⁷

Polychlorinated biphenyls (PCBs), known carcinogens, black powder and anaerobic microbials also accumulate in pipeline infrastructure, particularly in the existing Algonquin pipeline. Pigging stations, where pipes are inspected and cleaned, and condensate tanks at compressor stations and metering and regulating stations, as well as venting operations throughout the pipeline, provide multiple pathways of exposure. Radioactive material and other toxins can be inhaled when these contaminants are dislodged by mechanical means in pigging operations. Pigging equipment can contaminate surrounding property during storm water runoff, potentially contaminating nearby soil, and surface and groundwater supplies. These materials can also be inhaled when they become airborne through dust particles.⁸ Corrosion may also cause these particles to leach into soil and waterways.

Particulate matter and volatile organic compounds, such as benzene and formaldehyde, are other pollutants with serious health impacts. A peer-reviewed study by Carpenter et al., cited by Commissioner Zucker, found levels of benzene and formaldehyde, which are carcinogens, near gas compressor stations that frequently exceeded health standards.⁹ Formaldehyde is a byproduct of

⁵ American Lung Association State of the Air 2014: <http://www.stateoftheair.org/2014/states/new-york/westchester-36119.html>

⁶ http://www.health.ny.gov/press/reports/docs/high_volume_hydraulic_fracturing.pdf

⁷ Textbook of Children's Environmental Health, Edited by P. Landrigan and R. Etzel, Oxford University Press, 2013

⁸ 2012 <https://shalegasespana.files.wordpress.com/2012/10/whitereport.pdf>

⁹ <http://cc585cc14e85a9b5a9e1292d.eightfolddesign.netdna-cdn.com/wp-content/uploads/2014/10/Warning-Signs.pdf>

incomplete gas combustion at compressor stations but is also released with fugitive methane. Formaldehyde can impact almost every bodily tissue, leading to acute impacts, such as asthma, and chronic health effects involving neurological, genetic, pulmonary, and reproductive toxicity and cellular damage. Chronic exposures to benzene increase risk of leukemia, birth defects, and significant respiratory effects. The study's findings indicate that health-based risk levels provide only a limited sense of potential adverse health impacts from air pollutants, and do not fully consider vulnerable populations, including children, pregnant women and the elderly, and also demonstrate the critical importance of community-based studies to inform state testing methodology.¹⁰

Particulate matter, also heavily emitted from gas infrastructure, can cause early death from acute and chronic exposures, and is also linked to cardiovascular and respiratory disease. Fine particle pollution may also cause reproductive and developmental damage and cancer.¹¹ A new study by the Harvard School of Public Health¹² found that women exposed to high levels of fine particulate matter, particularly during the third trimester of pregnancy, faced twice the risk of having a child with autism as mothers not exposed to fine particulate matter.

Clearly, the growing body of evidence demonstrating health impacts from shale gas infrastructure indicates that the National Ambient Air Quality Standards offer inadequate public health protections. Moreover, there is virtually no monitoring or oversight. Yearly averages fail to account for exposure to significant spikes in concentrations of air pollutants during accidental or planned blowdown events, and even the yearly averages are entirely self-reported. There is no third-party verification that emissions are within safe limits.

A peer-reviewed study by Brown, Weinberger, et al.¹³ details the failures in monitoring and measuring protocols for air pollutants. Current methodology used for evaluating compliance with ambient air standards does not sufficiently determine intensity, frequency or duration of actual human exposure to the mixtures of toxic substances released regularly at gas infrastructure sites, including compressor stations. Air measurements can significantly underestimate actual exposures without continuous monitoring measurements. Reference standards do not accurately determine health risk because they do not fully consider the potential synergistic effect of different toxic substances and increased transport of toxins deep into the lung via particulate matter. Other serious deficiencies include lack of consideration of local weather conditions, toxic emissions from planned and unplanned compressor station blowdowns, start-up and shut-down operations, cumulative impacts of other heavily polluting gas infrastructure, such as metering and regulating stations, pipelines, and pigging stations, and other polluting infrastructure in the same region.

The Rand study on air pollution in Pennsylvania determined that 60%–75% of the estimated negative impacts, largely due to adverse health impacts, result from compressor station emissions, and that when compressor stations operate below capacity, their emissions are at the lower end of

¹⁰ <http://www.ehjournal.net/content/13/1/82>

¹¹ <http://www.ehjournal.net/content/13/1/82>

¹² <http://www.hsph.harvard.edu/news/press-releases/fine-particulate-air-pollution-linked-with-increased-autism-risk/>

¹³ <http://www.environmentalhealthproject.org/wp-content/uploads/2014/04/reveh-2014-0002-Brown-et-al.pdf>

their projected range. However, when they operate at higher capacity, actual emissions exceed estimates declared in permit applications.¹⁴

These adverse health outcomes have the greatest impact on children, our most vulnerable population.¹⁵ Their immature organs and developing bodies make it more difficult for them to detoxify or eliminate certain toxins. Pound for pound, they receive proportionally greater doses of contaminants found in air, water and food than adults.

Finally, Commissioner Zucker was correct in recognizing the importance of anecdotal evidence. Anecdotal reports of health impacts, specifically from compressor stations, condensate tanks, metering and regulating stations along with other infrastructure, are mounting around the country in shale plays, with disturbing commonality.^{16 17} They include reports of rashes, breathing difficulties, headaches, nausea, and nosebleeds. It is alarming that similar reports have already been seen right here in New York, around gas infrastructure of much smaller scale than what is now proposed by the AIM pipeline expansion project, such as the Minisink Compressor Station in Orange County, New York (12,600 HP).¹⁸ State officials must investigate these reports of health complaints and determine the long-term consequences to residential communities before allowing any further gas infrastructure expansion.

The New York State Department of Health is charged with protecting the public health of New Yorkers. Given the growing body of evidence identifying health risks associated with shale gas infrastructure, such as the AIM project, the NYS DOH must assess the nature and extent of those risks. It must further determine whether or not those risks can be managed through our current regulatory framework.

We therefore strongly urge the NYS DEC to engage the NYS DOH, pursuant to its mission and mandate, to conduct and complete a health study before any permits are issued for the Spectra AIM expansion project. Until the state takes a hard look at the current scientific literature relevant to these infrastructure projects, it cannot assert their safety and New Yorkers will still be exposed to the significant adverse health impacts the HVHF ban is designed to prevent. Without further delay, we request that NYS DEC hit the pause button on issuing air and water permits for the AIM pipeline expansion project and implement a similar health review of the scientific literature and health studies concerning gas infrastructure, and implement baseline and continuous monitoring protocols for its existing operations.

Sincerely,

List of signatories and affiliations on next page

¹⁴ <http://iopscience.iop.org/1748-9326/8/1/014017>

¹⁵ <http://www.imp.lodz.pl/upload/oficyna/artykuly/pdf/full/Lan21-01-04.pdf>

¹⁶ <http://cc585cc14e85a9b5a9e1292d.eightfolddesign.netdna-cdn.com/wp-content/uploads/2014/10/Warning-Signs.pdf>

¹⁷ <http://www.earthworksaction.org/files/publications/Health-Report-Full-FINAL.pdf>

¹⁸ <http://www.vice.com/read/new-yorks-silent-but-deadly-fracking-problem> and <http://www.utne.com/environment/cost-of-fracking-zm0z14fzsau.aspx?PageId=2#ArticleContent>

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Feb. 18, 2015