

From: Larysa Dyrszka
To: Edward Hanlon/DC/USEPA/US@EPA
Date: 02/26/2011 10:29 AM
Subject: comments to SAB on EPA hydraulic fracturing study

Mr Hanlon--

Attached are my comments to the SAB on the draft of the EPA hydraulic fracturing study.

Larysa Dyrszka

Physicians and scientists are concerned about the prospect of massive unconventional gas drilling in the United States and its potential for significant adverse impacts on the health of American citizens.

<http://mediasite.cidde.pitt.edu/mediasite/Catalog/pages/catalog.aspx?catalogId=566b50d1-554d-42a5-977f-61354f1eda33>

The potential health impacts associated with the life-cycle of hydraulic fracturing are being overlooked in the current EPA study on hydraulic fracturing, despite numerous reports of health-related concerns in parts of the country where hydraulic fracturing is on-going (1). Concerns about the health impacts of hydraulic fracturing are a recurrent theme as no cumulative impact study has been undertaken. A health impact assessment (HIA) must be done for every municipality where gas drilling is contemplated. Despite the narrow look at hydraulic fracturing only as it concerns drinking water in the current EPA study, our regional office of the EPA concluded that "potential impacts to human health and the environment...warrant further scientific and regulatory analysis," expressing particular concern about local and regional air quality, water quality and radioactive materials disturbed during drilling (2).

Each well and each fracturing cycle requires 3-9 million gallons of fresh water mixed with hundreds of thousands of pounds of chemicals (about 10,000 gallons of chemicals per million gallons of water used), many of them known neurotoxins, carcinogens and endocrine disruptors. Estimates are that 50-95% of the fracking fluids are permanently left underground where, over time, they may migrate to contaminate ground water and aquifers (3). Fluids that are returned to the surface are contaminated with the fracturing chemicals and the "brines" from the gas bearing layers that may contain, among other things, naturally occurring radioactive substances and heavy metals (4). Dr. Theo Colborn, a renowned environmental health analyst, has listed many of the chemicals on the website of The Endocrine Disruption Exchange and provides evidence of the possible health effects of some of the chemicals that drillers/frackers have disclosed they are using (5). And just last month, investigators from a House Energy Committee announced that diesel fuel, containing benzene, toluene and other BTEX compounds, were extensively used in hydraulic fracturing operations in 19 states despite an industry pledge not to do so. The US Department of Health and Human Services and private research have recognized that the BTEX compounds can lead to brain, respiratory, and kidney damage (6).

Moreover, the processing of gas at the drill site and at compressor stations generates significant air pollution. Volatile organic compounds, BTEX, NO_x, PAHs and H₂S, and other HAPs are routinely released into the atmosphere. Al Armendariz, now EPA's Region 6 Regional Administrator, documented the amounts of air polluting fugitive gases from the hydraulic fracturing in the Barnett Shale near the Dallas/Fort Worth Area. (7). The health impacts of these emissions are potentially enormous and, of course, affect populations both near the extraction activity as well as "downwind" (1) (8). It is imperative that the EPA study include the health effects of resultant air pollution which is part of the life cycle of gas well.

Risks to human health are therefore present at every step of the gas extraction process. These include possible contamination of drinking water sources through surface spills, well casing failures, blowouts, and other events, migration of drilling and fracking fluids, during drilling or fracking or over time to ground water sources and aquifers through naturally occurring fissures, well blowouts and well casing failures (9), noise and VAD (Vibro-Acoustic Disease) (10), radioactive contamination (11) and air contamination by emissions from venting, pipeline leaks, compressor stations and the intense truck traffic required over each well's life-cycle (12).

Despite these known hazards, the oil and gas industry is exempt from important provisions of the Safe Drinking Water Act, the Clean Air Act, the Clean Water Act, and other federal environmental laws. The absence of federal regulatory oversight has left it up to individual states to regulate this industry and adequately enforce those regulations.

In the opinion of many, shale gas extraction employing the current technology has the potential to compromise the quality of our water and air for decades to come. It also has the potential to significantly and negatively impact the health of our citizens, especially those with respiratory ailments, the elderly, infants and children, pregnant women and their unborn children. Expressing concern, the Medical Society of the State of New York recently adopted a resolution calling for a moratorium on natural gas extraction using hydraulic fracturing until valid information is available to evaluate the process for its potential effects on human health and the environment (13). The NYS Chapter of the American Academy of Pediatrics supported a moratorium on gas drilling pending further studies (14). Dr. Chatham-Stephens of The Mt Sinai Children's Environmental Health Center recently testified before the NYC Council expressing serious concerns that children's health will be adversely impacted by gas drilling (15). And just this week the Bassett Health-care Network in Cooperstown, NY issued a press release addressing their health concerns about gas drilling (16).

The EPA must include a rigorous discussion and investigation of the public health issues as they will be affected by unconventional natural gas extraction or face the potential consequences for years and decades to come. We believe that all aspects of gas drilling must be investigated in order to assure that public health is not endangered by the commencement of hydraulic fracturing. The health community advocates that steps be taken to evaluate the risks to public health *prior to* the permitting of hydraulic fracturing.

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Below are the referenced papers :

- (1) [Potential Exposure-Related Human Health Effects of Oil and Gas Development: A Literature Review \(2003-2008\), Colorado School of Public Health, University of Colorado Denver \(August 1, 2008\).](#)
Also [Witter power point presentation](#), and [Witter white paper 2010 Health Impact Assessment for Battlement Mesa, Garfield County, Colorado \(2010\)](#) .
- (2) [Comment letter of the EPA, Region 2, dated December 30, 2009 to NYSDEC Division of Mineral Resources.](#)
- (3) ["Final Impact Assessment Report: Impact Assessment of Natural Gas Production in NYC Watershed," Hazen and Sawyer Environmental Engineers and Scientists, December 2009, page 57; and](#)
[Statement of James L. Northrup, former ARCO Planning Manager, to Otsego County Board \(July 21, 2010\); and](#)
Power point by Professor Tony Ingraffea from <http://www.otsego2000.org/> [The Facts about Shale Gas Drilling in New York State](#) Unatego, NY, 10/6/2010 and

- [Chemical and Biological Risk Assessment of Natural Gas Extraction in New York](#) by Ron Bishop, SUNY Oneonta and Sustainable Otsego
- (4) http://un-naturalgas.org/resources_and_documents.htm → [DEC's dSGEIS download page](#) see chapter 5 (chemicals) and appendix 13 (NORMs) and
 - (5) <http://endocrinedisruption.com/chemicals.multistate.php> (2011) and http://endocrinedisruption.com/files/NaturalGasManuscriptPDF09_13_10.pdf Video also available at www.endocrinedisruption.com.
 - (6) <http://www.nytimes.com/2011/02/01/business/energy-environment/01gas.html?src=me&ref=business>; industry reply: <http://www.chron.com disp/story.mpl/business/energy/7406933.html>; http://hinchey.house.gov/index.php?option=com_content&view=article&id=1556:hinchey-holt-urge-drbc-to-suspend-hydrofracking-rulemaking-process&catid=71:2011-press-releases and this about the investigation: <http://democrats.energycommerce.house.gov/index.php?q=news/waxman-markey-and-degette-investigation-finds-continued-use-of-diesel-in-hydraulic-fracturing-f>
 - (7) [Armendariz, A. Emissions from Natural Gas Production in the Barnett Shale Area and Opportunities for Cost Effective Improvements \(January 26, 2009\).](#)
 - (8) [London, E. Comments to the EPA regarding the impacts of toxic emissions from natural gas extraction activities September 27, 2010](#)
 - (9) see "exploratory" well papers <http://www.damascuscitizens.org/DRBC-HEARING.html> and <http://www.scientificamerican.com/article.cfm?id=wastewater-sediment-natural-gas-mckeesport-sewage> and <http://www.vanityfair.com/business/features/2010/06/fracking-in-pennsylvania-201006> and from the University of Pittsburgh School of Public Health <http://www.fractracker.org/2010/09/water-well-contamination-studies.html> and NRDC's Amy Mall's report on cases of water contamination http://switchboard.nrdc.org/blogs/amall/incidents_where_hydraulic_frac.html
 - (10) <http://teeic.anl.gov/er/oilgas/impact/drilldev/index.cfm> and [comments to the NYS DEC on the scoping of the dSGEIS 12/2/2008 by Kristina Turechek](#) and [a medical article on noise and VAD](#)
 - (11) [USGS and NORMs](#) and a [NYSDOH commentary on the dSGEIS of 7/21/2009](#) from http://63.134.196.109/documents/10sep28_Otsego2000EPACommentsFINAL.pdf and [Resnikoff et al's report on Radioactivity in the Marcellus Shale of 5/19/2010](#) and a [Scientific American article on radioactivity in wastewater 11/9/2009](#) and [Radioactive Waste in Horizontal Hydrofracking](#) by James L. "Chip" Northrup, September 20, 2010 from <http://www.otsego2000.org> and [comments by the NYS Conference of Environmental Health Directors on SGEIS](#) and an [article by David Lewis with additional embedded links](#)
 - (12) [Dr Eric London's comments to the EPA](#) and [Dr Robert Howarth's article on GHG Emissions from Nov 2010](#) and [updated Jan.26: 2011](#) and a [recent \(2010\) technical paper from the EPA on GHG emissions from natural gas development](#) and a [report on H2S emissions health](#) and an [article from the San Antonio Current on health issues from gas emissions](#) and

- this about [formaldehyde in air emissions in Texas](#) from [HARC.edu](#)
- (13) <http://gdacc.wordpress.com/2010/12/10/new-york-state-medical-societies-call-for-moratorium>
 - (14) NYS AAP on a moratorium, see <http://gdacc.wordpress.com/medical-professionals-information/>
 - (15) [Mt Sinai Children's Environmental Health Center comments to the EPA](#)
 - (16) (text below)

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STATEMENT FROM BASSETT MEDICAL CENTER BOARD OF TRUSTEES

The Board of Trustees of Bassett Medical Center, based in Cooperstown, New York, at the headwaters of the Susquehanna River, is deeply concerned about the consequences of hydrofracking on the long-term safety of the water supply within the region served by Bassett. The Board is aware of the Executive Order through May of 2011 that provides for a more limited moratorium through July 1, 2011, which was affirmed by Governor Cuomo. The Board views the issue of hydrofracking as a public health issue of the highest priority.

From a public health perspective, there have historically been few higher priorities than ensuring the safety of water supplies in New York State. The Department of Health oversees the delivery of drinking water and is charged with the responsibility of assuring water sources are adequately protected. The Public Health Council of New York State was founded in 1913 to ensure that there would be careful monitoring and regulation of public water supplies in the state.

The New York City Department of Environmental Protection has taken the position that hydraulic fracturing to recover natural gas poses unacceptable risks to the water supply and has asked the state Department of Environmental Conservation to prohibit natural gas drilling in the NYC watershed. The Susquehanna River watershed warrants the same consideration that assures protection for its aquifers and surface resources.

While the New York State Department of Environmental Conservation (DEC) regulates natural gas development in New York, the historic responsibility to preserve the safety of the water has resided in the purview of the Department of Health (DOH). For this reason, the Board of Trustees of Bassett Medical Center supports DOH's continued involvement and attention to the public health concerns that have been raised, including possible contamination of the water supply. As DOH and DEC work to complete a comprehensive evaluation of the risks to the watershed and the health of the public, it is paramount that these concerns be addressed in the Supplemental Generic Environmental Impact Statement. These findings must be incorporated into the regulations for hydrofracking that are currently under development by the Department of Environmental Conservation. All information from these sources, as well as the study currently underway by Environmental Protection Agency should be made available for public scrutiny and discussion prior to the initiation of hydrofracking in the Susquehanna River watershed.

Board of Trustees of Bassett Medical Center