



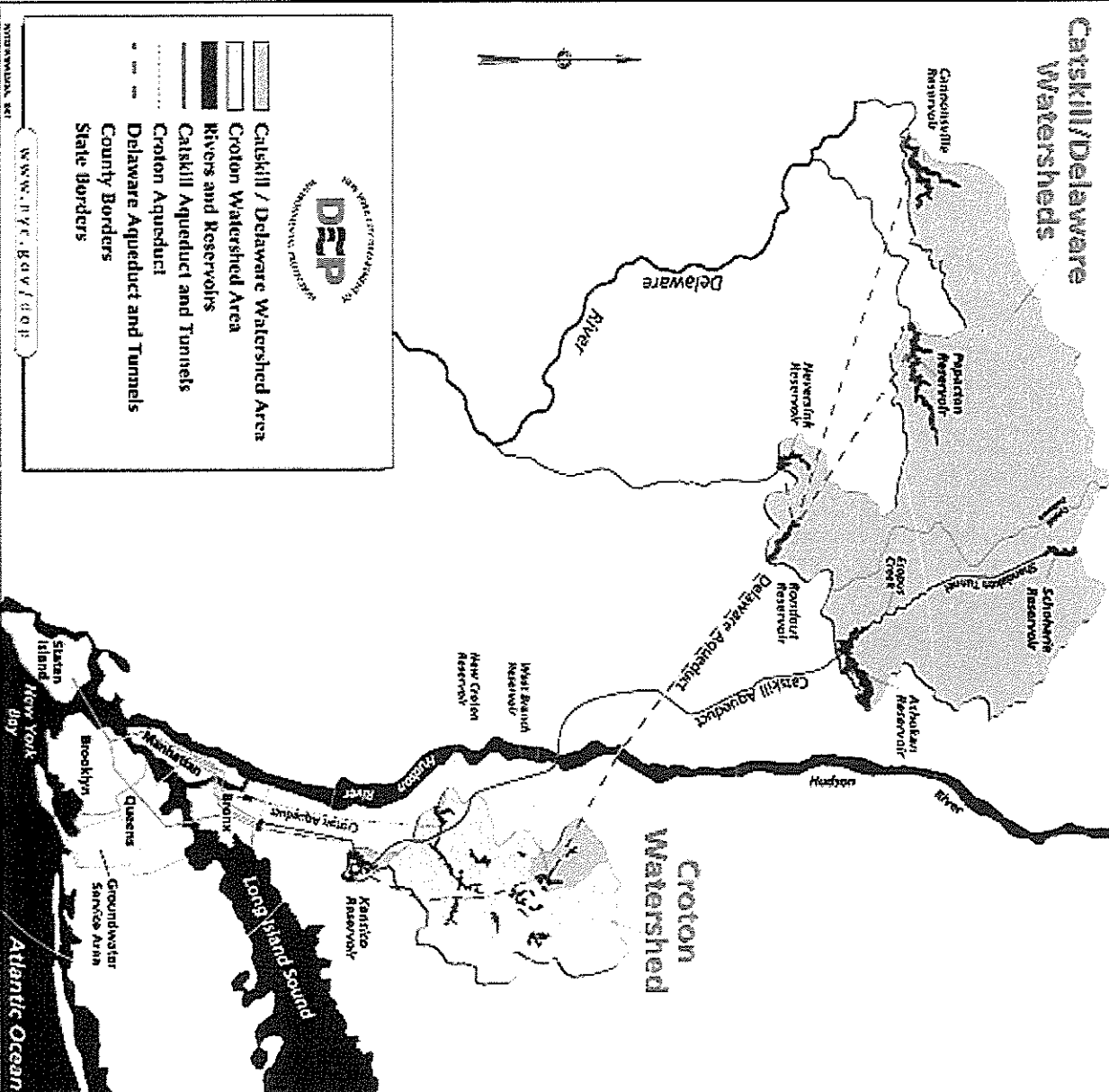
DEP Briefing to the NYC Council Committee on Environmental Protection on the Natural Gas Impact Assessment Project

October 23, 2009

Presentation Overview

- NYC Watershed and Natural Gas Development
- Natural Gas Impact Assessment Project
 - Project status
 - Assessment Components
 - Highlights of Results
 - Future Planned Work
- Site Visit to Bradford County, PA

New York City's Water Supply System



New York City Water Supply

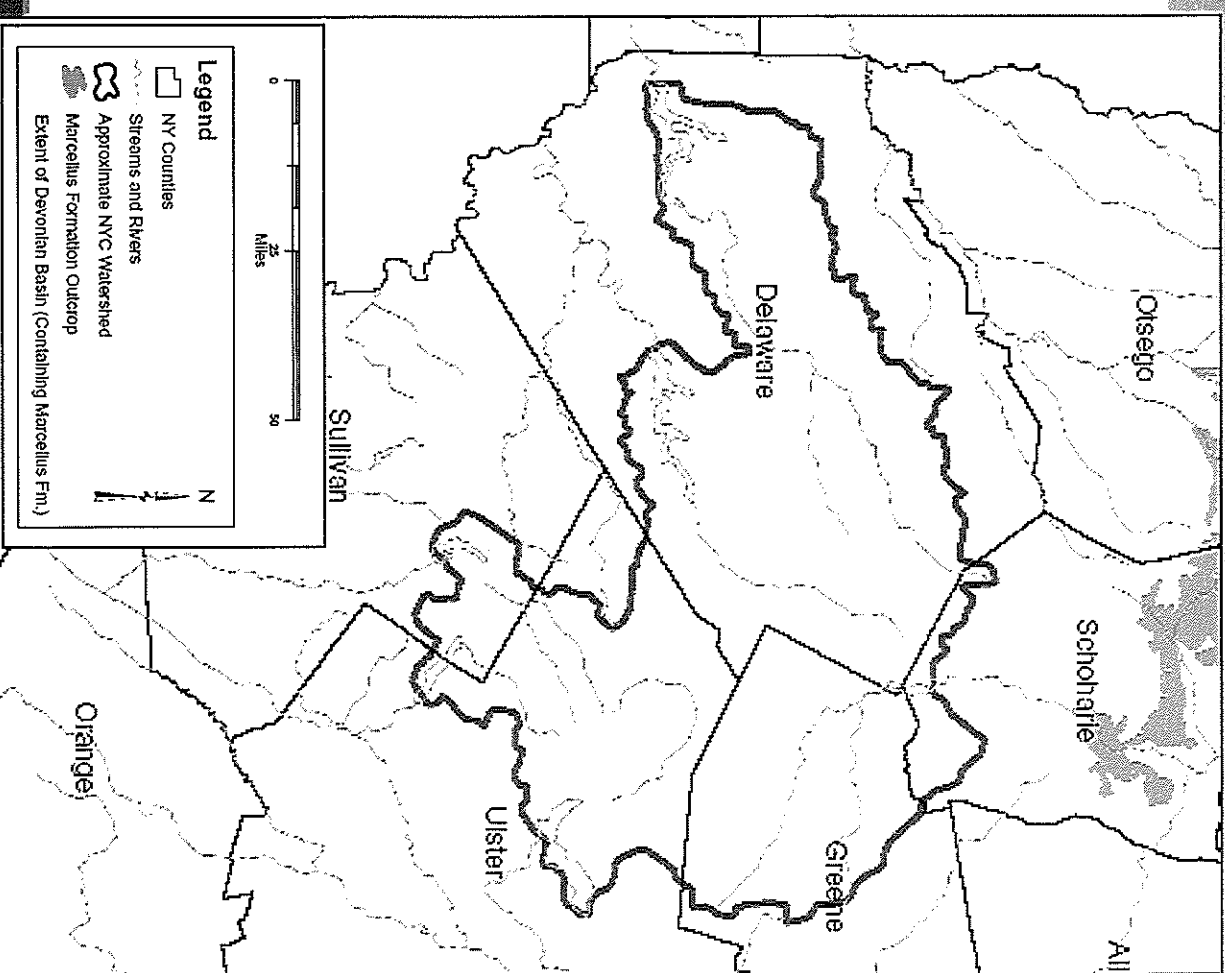
- Primarily a surface water supply with 19 reservoirs & 3 controlled lakes
- System Capacity: 550 billion gallons
- Serves 9 million people (1/2 of population of New York State)
- Delivers approx. 1.1 billion gallons per day to the City
- Source of water is a 2,000 square mile watershed in parts of 8 upstate counties

Natural Gas Exploration

- **Recent interest in natural gas exploration in the NYC watershed**
 - Combination of proximity to the Millennium Pipeline, improved drilling technology and higher prices makes shale drilling more feasible
 - Target formation is the Marcellus Shale
- **Natural gas production is not new to NYS**
 - ~13,684 active oil and gas wells which produced 50.32 bcf (billion cubic feet) of gas and 397,060 barrels of oil in 2008
 - Total market value of the oil and gas produced in New York in 2008 is estimated at \$486 million

Natural Gas and the Marcellus Shale

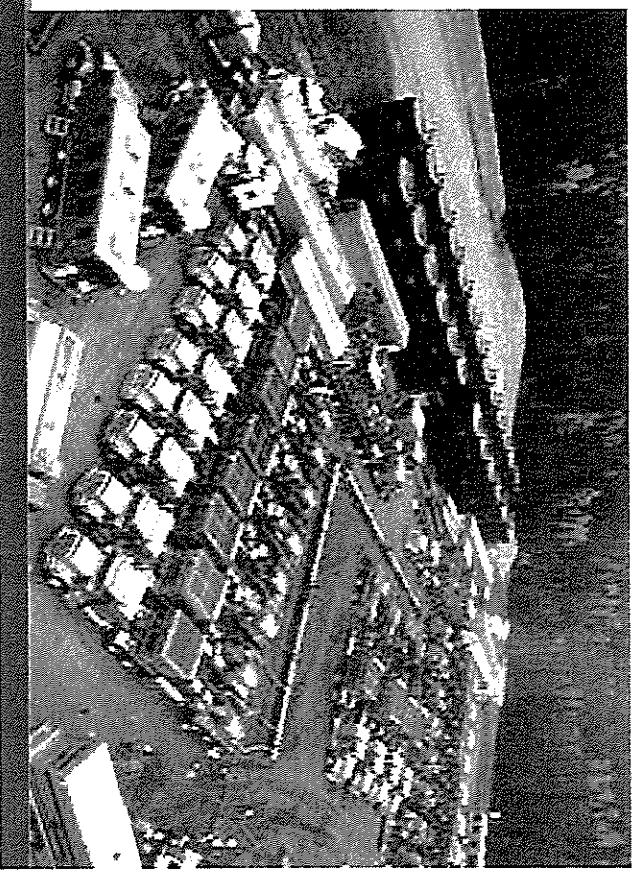
- The Marcellus Shale formation underlies the entire NYC WOH watershed and is the shallowest of several potential gas producing formations
- It is a “non-conventional source rock” meaning the gas is distributed across the formation (i.e., bubble wrap)
- Base of the Marcellus occurs ~3,000 - 7,000 ft. underground





Natural Gas Development Activities/Impacts – Estimated Quantities

- Two to five acres of disturbance per site, not including access roads
- 500 to 800 truck trips per well (18-wheeler and tanker trucks)
 - Equipment, chemicals, water, proppant, waste, etc.
- 2-9 million gals. of stimulation water per well, additional volume needed for rehabilitation
 - 1% to 5% of volume are chemicals
 - 100,000 to 300,000 lbs of proppant
- Average of 15,000 gal./yr. of produced water



Joint Venture Project – H&S/LBG

- In January 2009, Water Board hired Hazen and Sawyer/Leggette, Brashers and Graham (Joint Venture) to conduct an assessment of potential impacts to the NYC watershed from natural gas drilling (DEP is managing the project)
- The assessment focuses on potential impacts to water quality, water quantity, and water supply infrastructure
- **Scope of Work:**
 - Assessment Component – phased approach; rapid and final assessment reports
 - Technical Assistance Component – SGEIS and on-demand technical assistance

Contract Progress and Deliverables

- **Reports**

- Rapid Impact Assessment Report
- Final Impact Assessment Report – due by 12/31/09

- **DEC SGEIS**

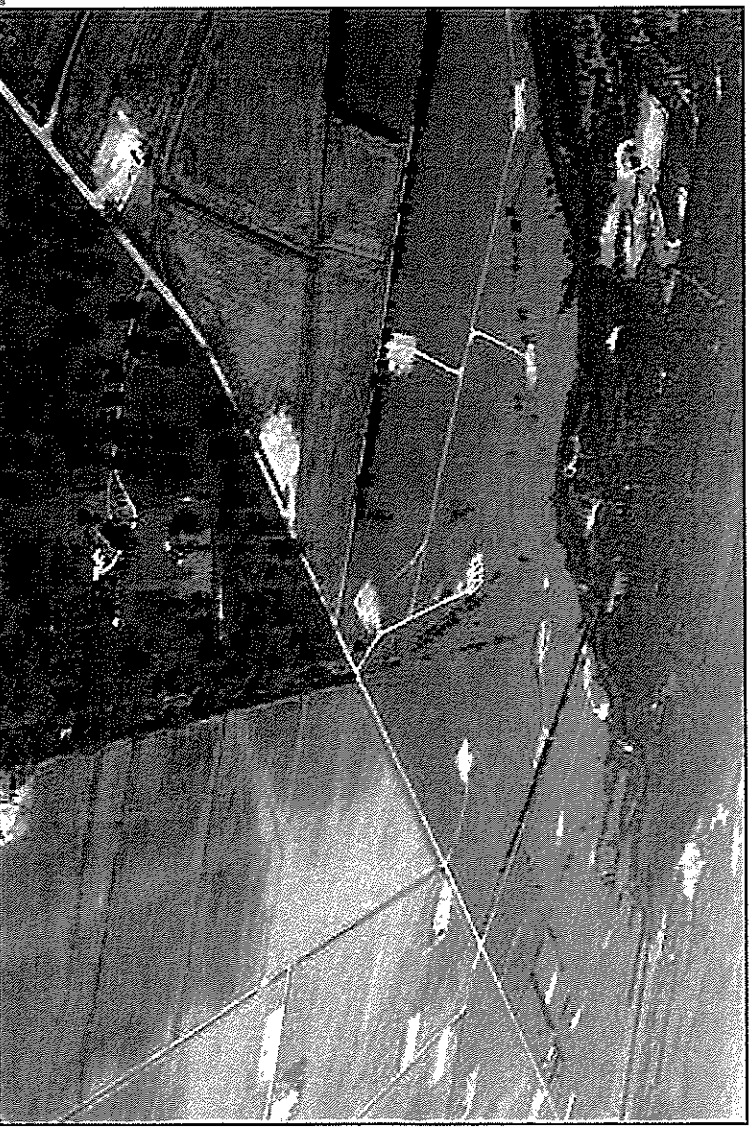
- JV reviewed and provided comments on the scope for the SGEIS
- Awaiting release of the draft SGEIS – originally expected Spring 2009
- Once draft SGEIS is released, City will comment as part of public comment process

Rapid Impact Assessment - Components

- **The Rapid Impact Assessment was designed to quickly provide DEP with basic information on all potential impacts**
 - Policy development and emergent issues
 - Focus more detailed investigations on critical impacts
- **Assessment included:**
 - Evaluation of natural gas development activities and their impacts
 - Analysis of regional hydrogeology and potential water quality signatures
 - Review of available data on drilling and fracturing fluids
 - Review of natural gas issues and regulations in other states
 - Preliminary risk evaluation for DEP major infrastructure

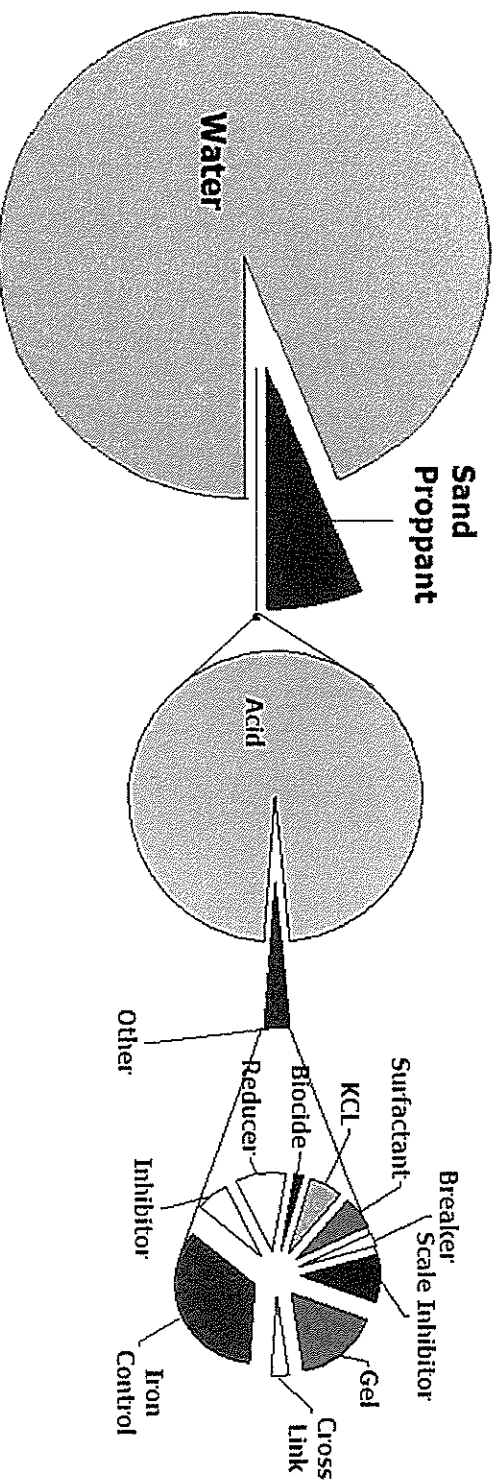
Rapid Impact Analysis Highlights Water Quality

- All the activities required for natural gas drilling involve some risk to the water supply. Many are similar to construction sites but the chemical and wastewater risks are unique to the industry.
- Level of impacts in the watershed would be related to rate and magnitude of natural gas development



Rapid Impact Analysis Highlights Hydrofracing Chemicals

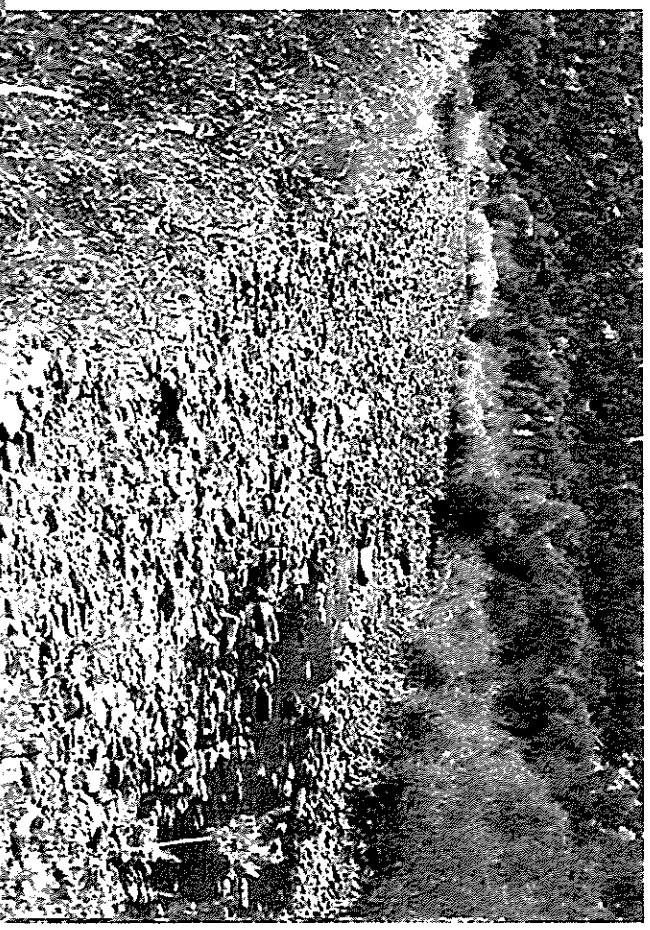
- **Developed a database of potential chemicals:**
 - Over 430 products; over 350 individual chemicals
 - Original TedEx database was expanded to include fate and transport, analytical methods, regulations, etc.
- **Additives range from food-grade substances (sucrose, xanthan gum, etc.) to potentially hazardous compounds (BTEx, heavy metals, biocides, etc.)**



Rapid Impact Analysis Highlights

Water Quantity

- **Impacts would depend on location, timing, source, and magnitude of withdrawals**
 - Excessive withdrawals can result in operational impacts due to reduced reservoir inflow or altered flow or quality in regulated streams (e.g., Esopus Creek)
 - Groundwater flow regimes could be altered by natural gas development, potentially impacting baseflow
- **Particular concern in the Catskill watershed**
 - Lack of withdrawal permitting authority and basin-level planning framework provided in the Delaware watershed by DRBC



Rapid Impact Analysis Highlights Infrastructure

- **Assessment is using data compiled from record drawings, geologic reports, etc. and evaluating:**
 - Location and separation distance with respect to all possible gas-bearing units
 - Potential paths through rock formations that could allow the transmission of contaminants (e.g., faults or joints)
 - Structural condition of the infrastructure
- **Drilling and hydraulic fracturing operations in close proximity to critical NYC infrastructure could potentially lead to structural impacts**
- **There is also a risk of influxes of poor quality groundwater and/or natural gas under certain conditions**

 $\rightarrow z$

Rapid Impact Analysis Highlights

Case Studies

- **Failures compiled from eight formations/states (PA, LA, TX, AR, WY, NM, CO, KY) focused on analogous shale formations**
- **Isolated failures occurred for all activities. Human error was a leading cause when a cause is determined**
- **Systemic failures generally related to lack of regulation (e.g., use of unlined wastewater pits)**
- **Many states have recently revised or are in the process of revising their regulations**

Final Impact Assessment Components

- **Infrastructure Risk Technical Memo**
 - Complete the analysis of the Delaware Tunnels and develop proposed drilling set-backs
- **Watershed Risk Technical Memo**
 - Develop a few, key "what-if" scenarios
 - Identify any strategies for minimizing the risks to the watershed
- **Final Impact Assessment Report**
 - Will be geared toward non-technical audience and contain a brief synopsis of all components, including those completed for the Rapid Impact Assessment

Conclusions of Rapid Impact Assessment

- **The site preparation on the surface is likely to increase erosion and run-off into the reservoirs.**
- **The wellbore, which acts as a conduit between geological formations, can allow previously isolated contaminants to flow into shallow groundwater or surface water.**
- **The stimulation of the well introduces hazardous chemicals into the watershed.**
- **Water withdrawals for hydrofracing may have direct water supply operational impacts.**
- **The hydrofracing process creates enormous volumes of industrial wastewater that cannot be effectively treated by conventional processes.**

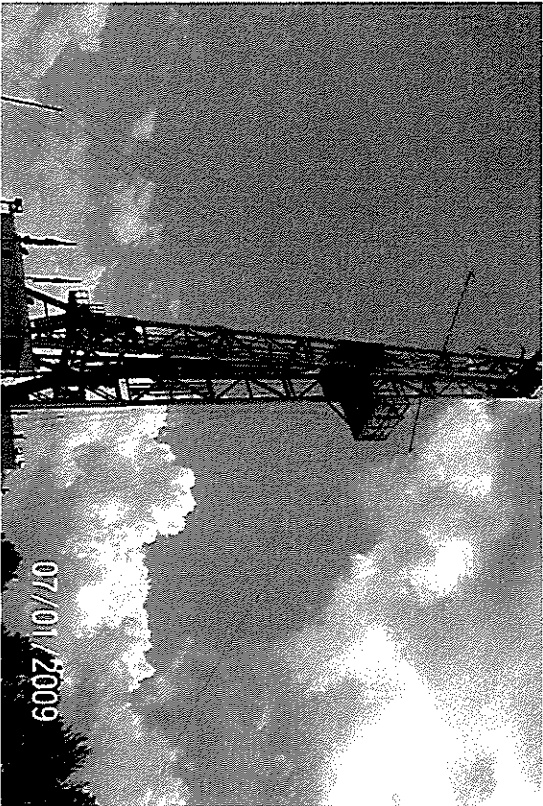
Next Steps

- **Rapid Impact Assessment Report has provided a thorough overview of potential impacts to water quality, water quantity, and DEP infrastructure**
- **Work to date supports a level of concern about potential water supply impacts**
- **Remaining work will focus on what will be most useful to DEP given the inherent uncertainties**
 - e.g., buffer distance around aqueducts and facilities

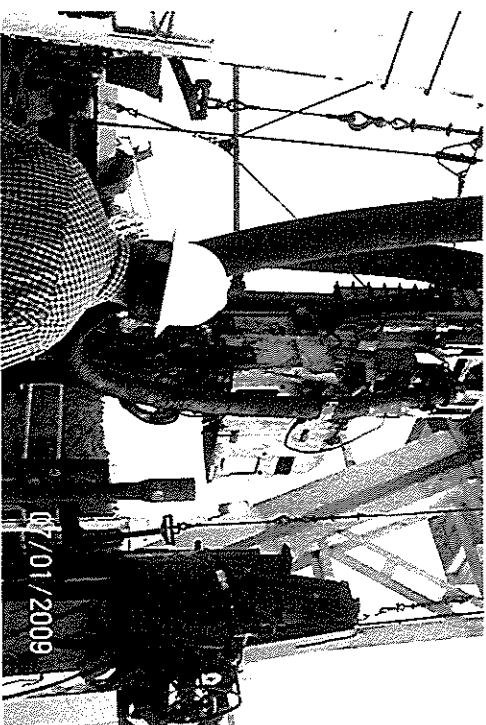
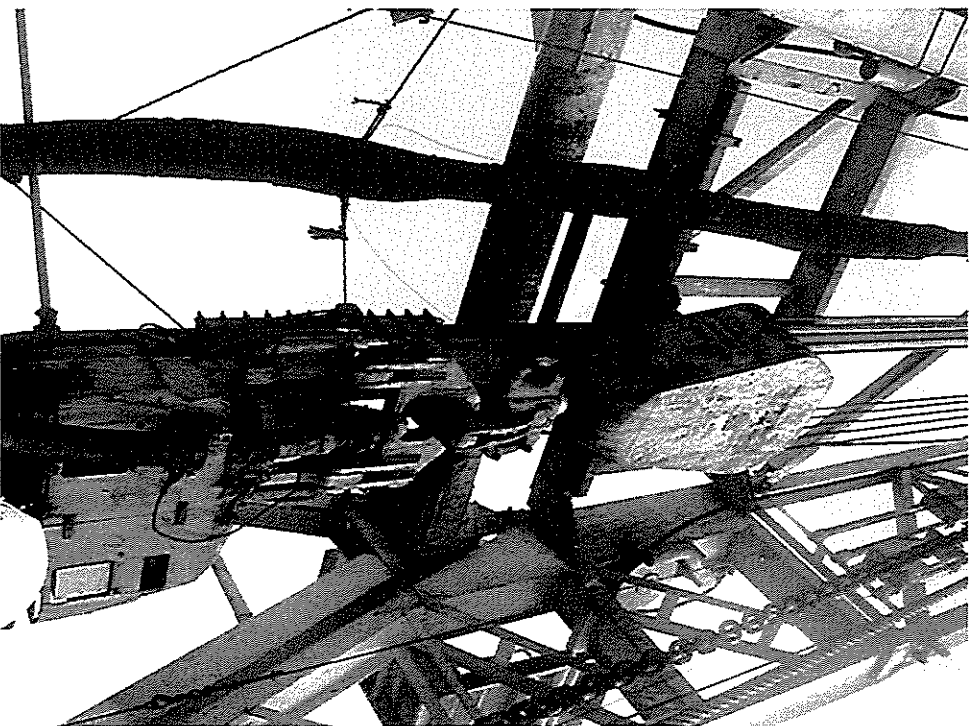
Site Visit to two Chesapeake Natural Gas Drilling Sites in Bradford County, PA

- **Chesapeake Energy provided the opportunity to see active natural gas drilling operations.**
- **On July 1st, DEP and JV staff traveled to Bradford County, PA to see:**
 - Judd Well Site (vertical drilling phase)
 - Evanchick Well Site (producing phase)
 - Gas pipeline under construction

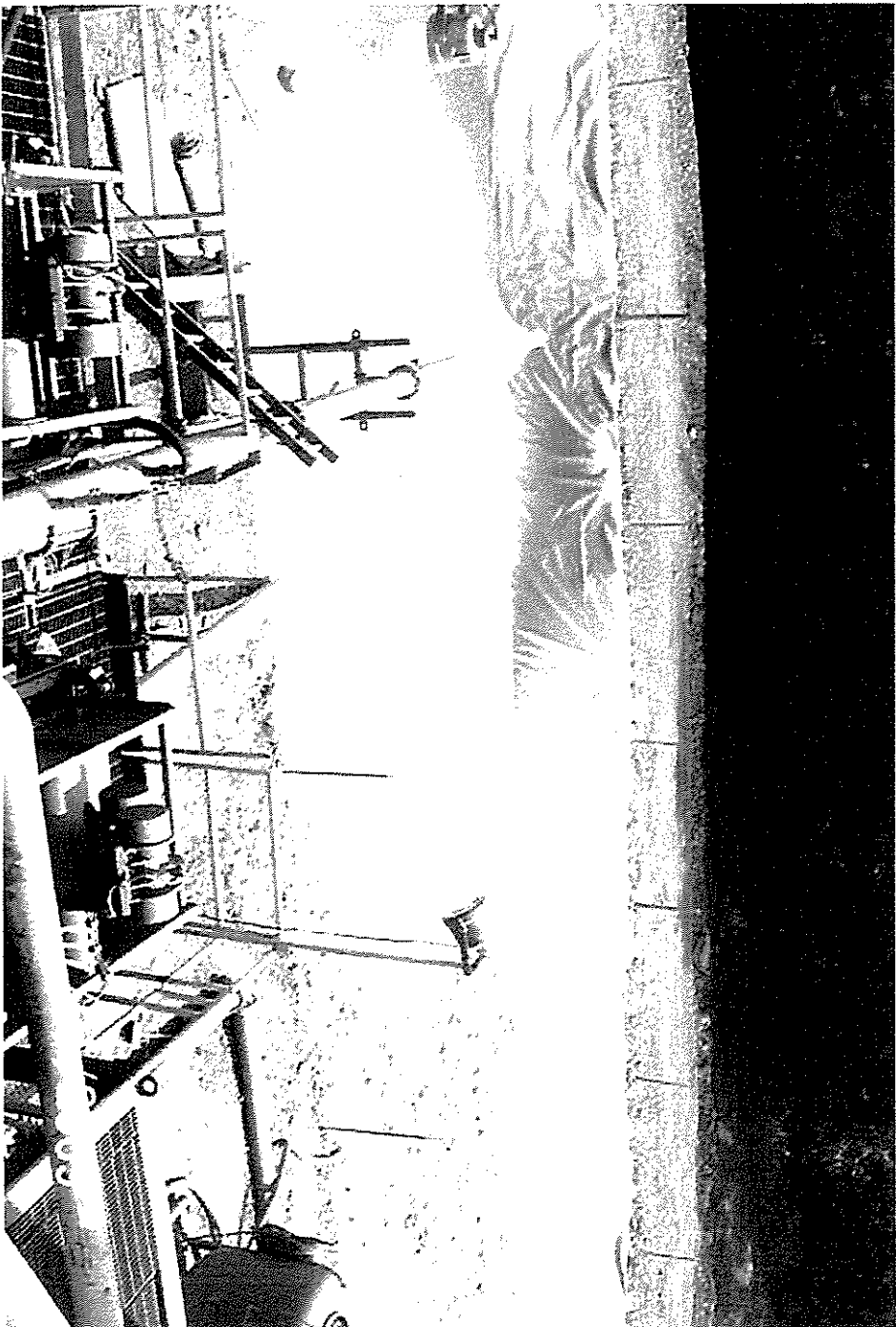
Site 1: Judd Well Under Construction



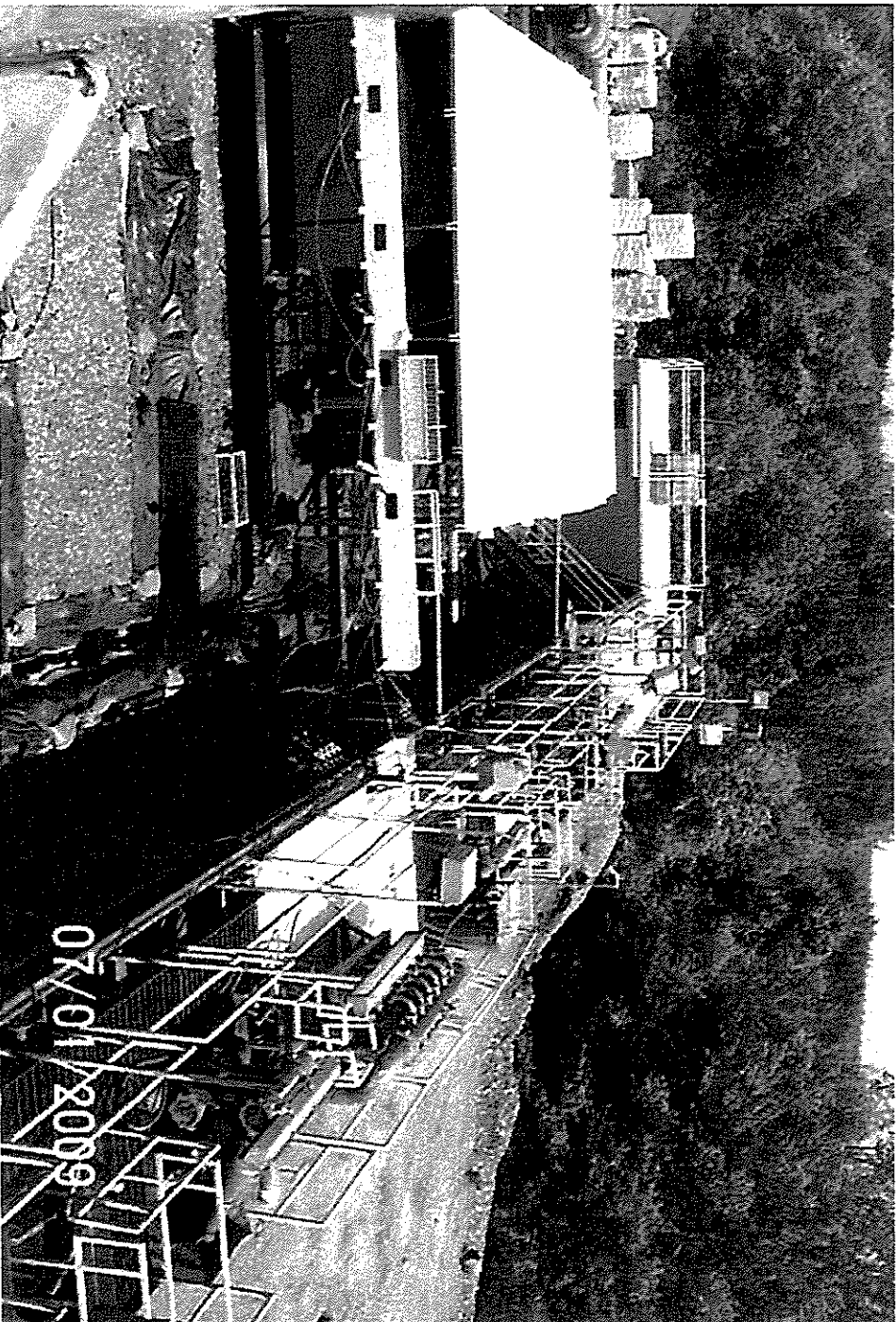
Drilling Platform and Block



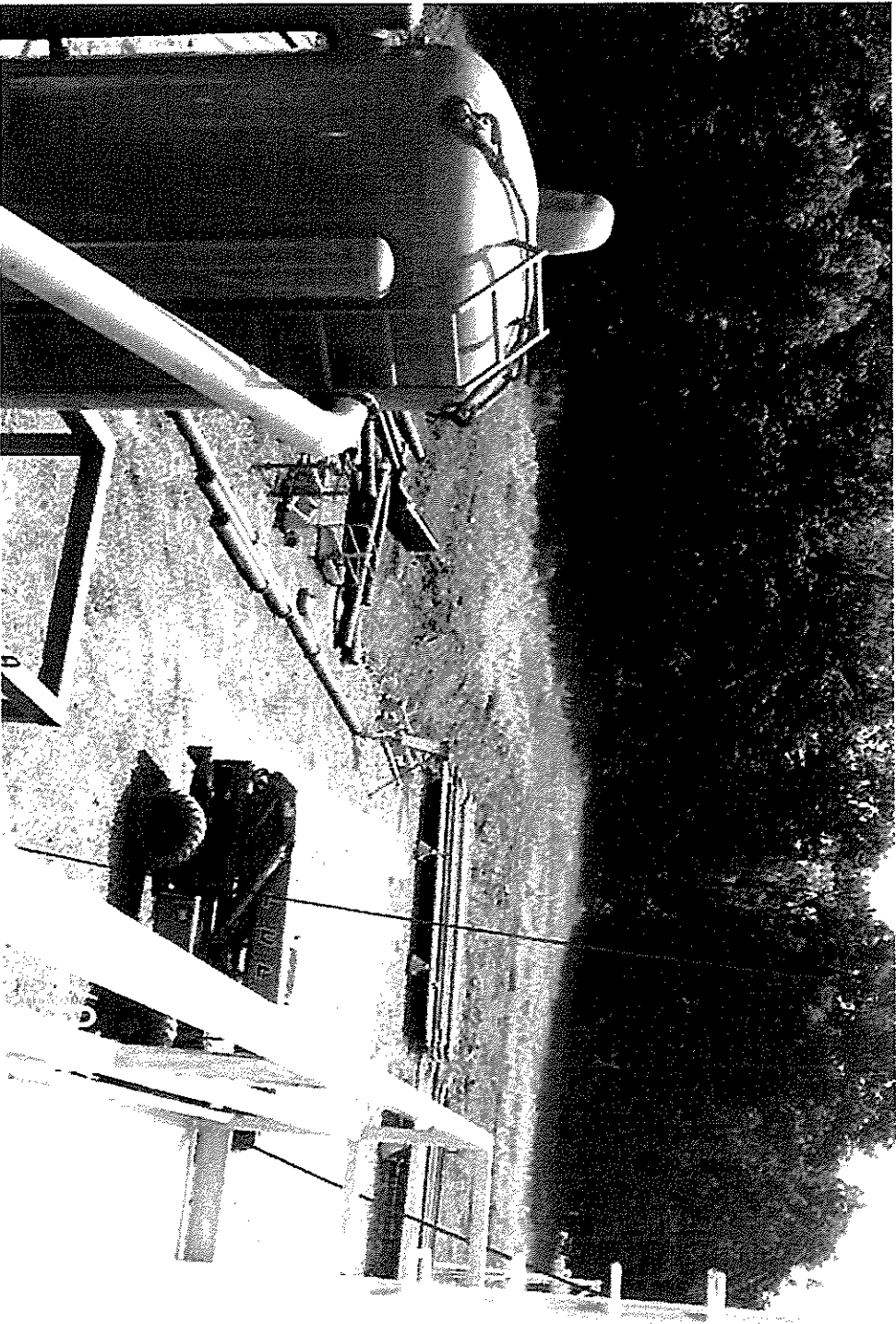
Mud Pit



Mud Recycling



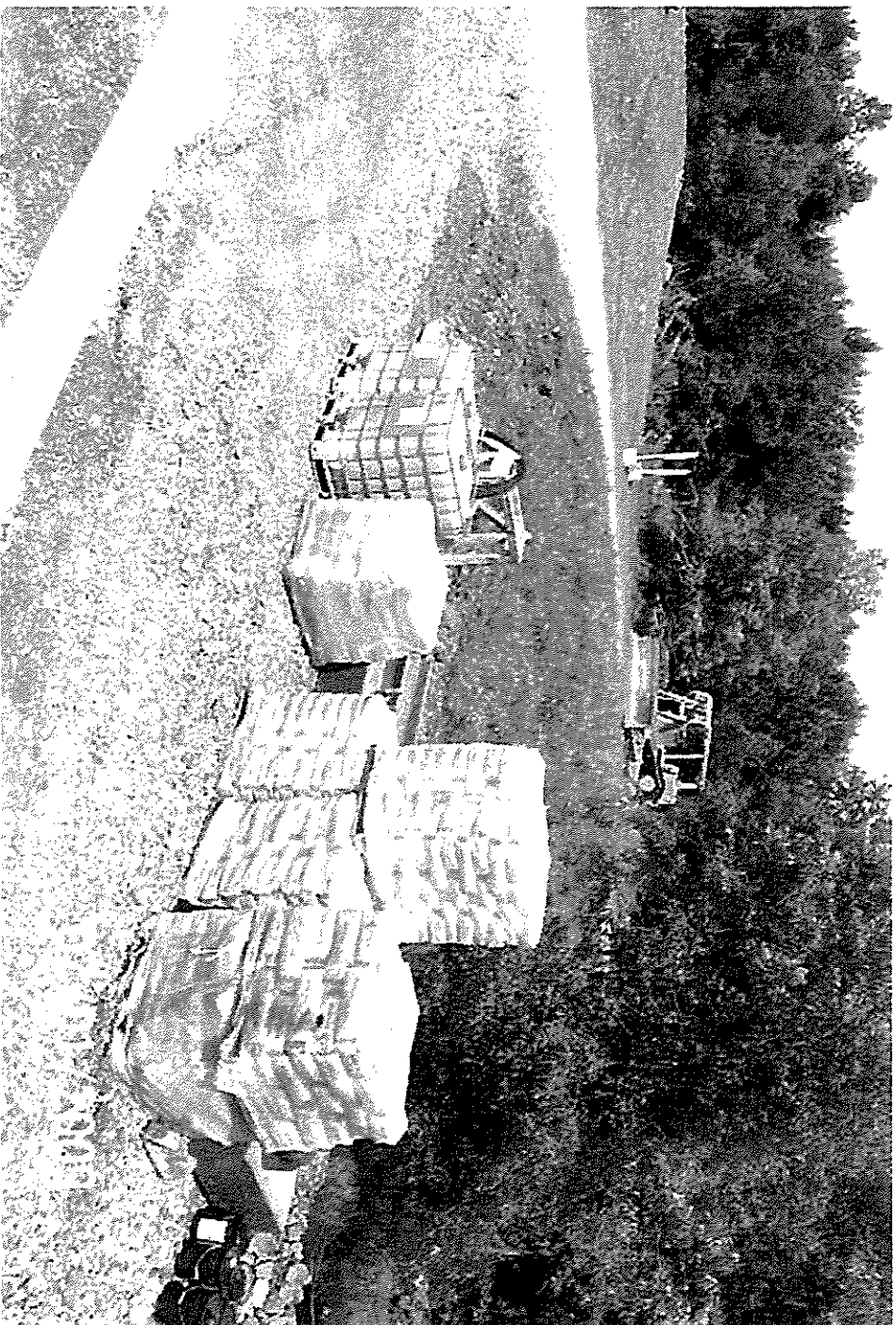
Stormwater and Erosion Control



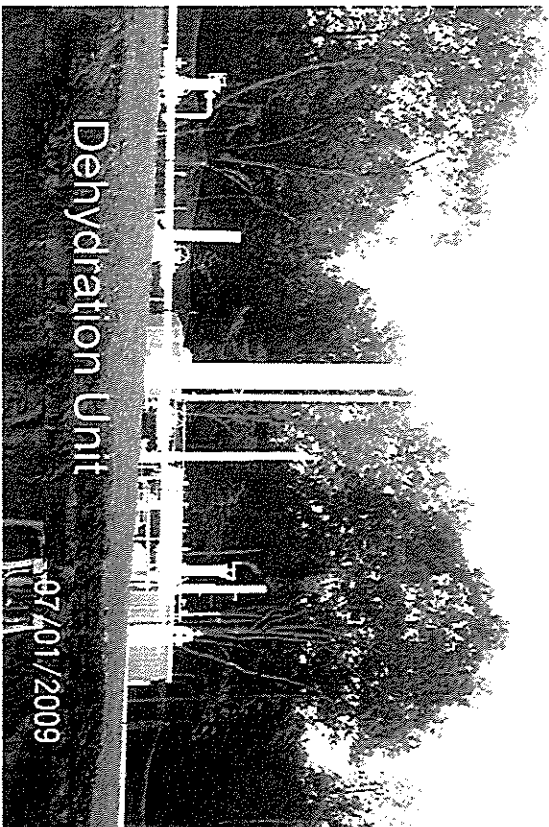
Pumps, Generators, and Compressors



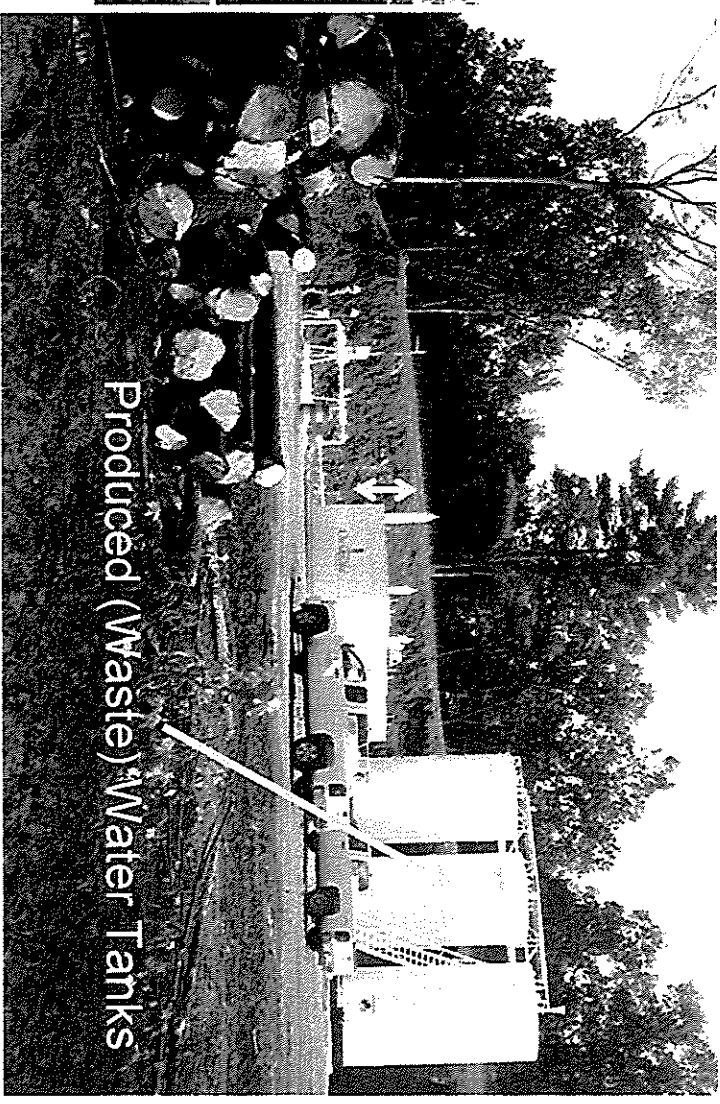
Chemical Storage



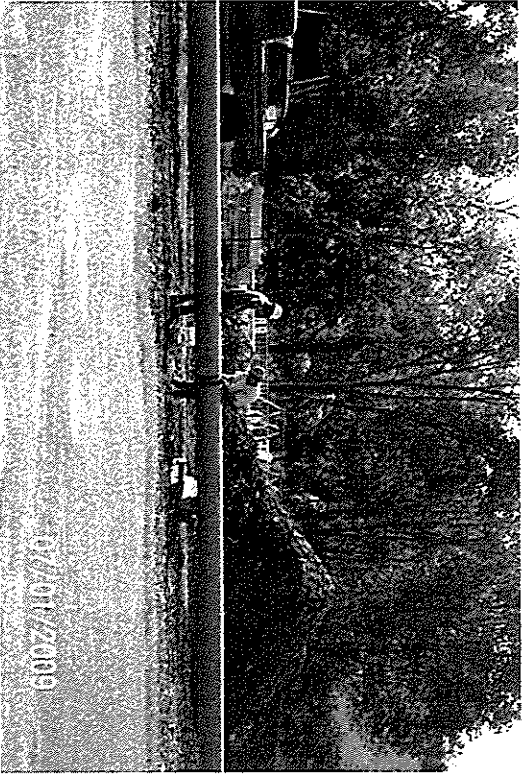
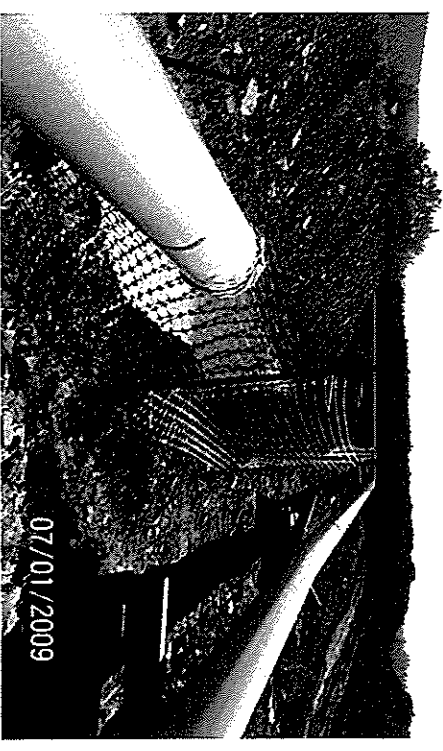
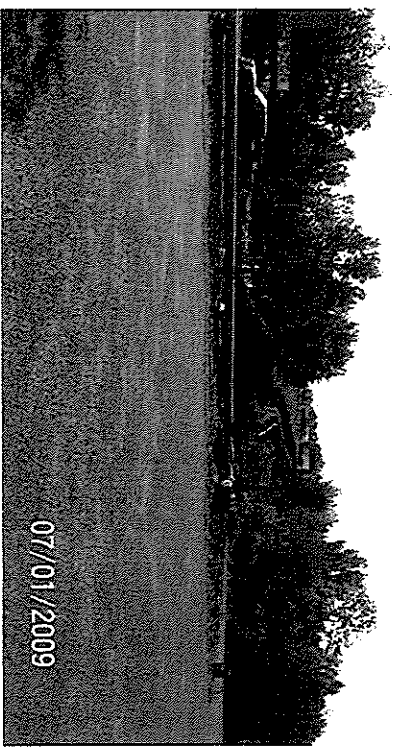
Evanchick Site - Gas & Produced Water Collection Facilities



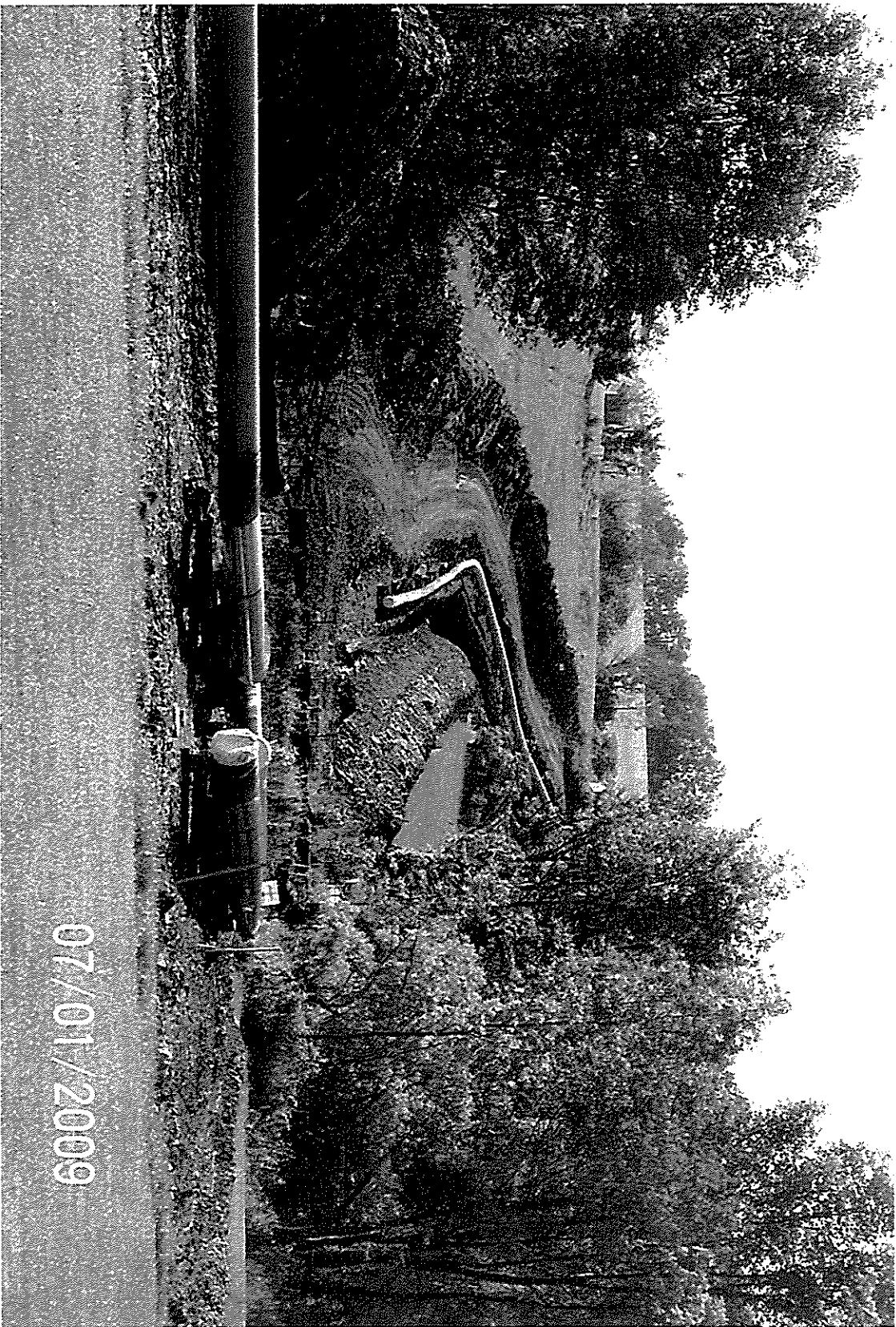
07/01/2009



Chesapeake Pipeline Under Construction

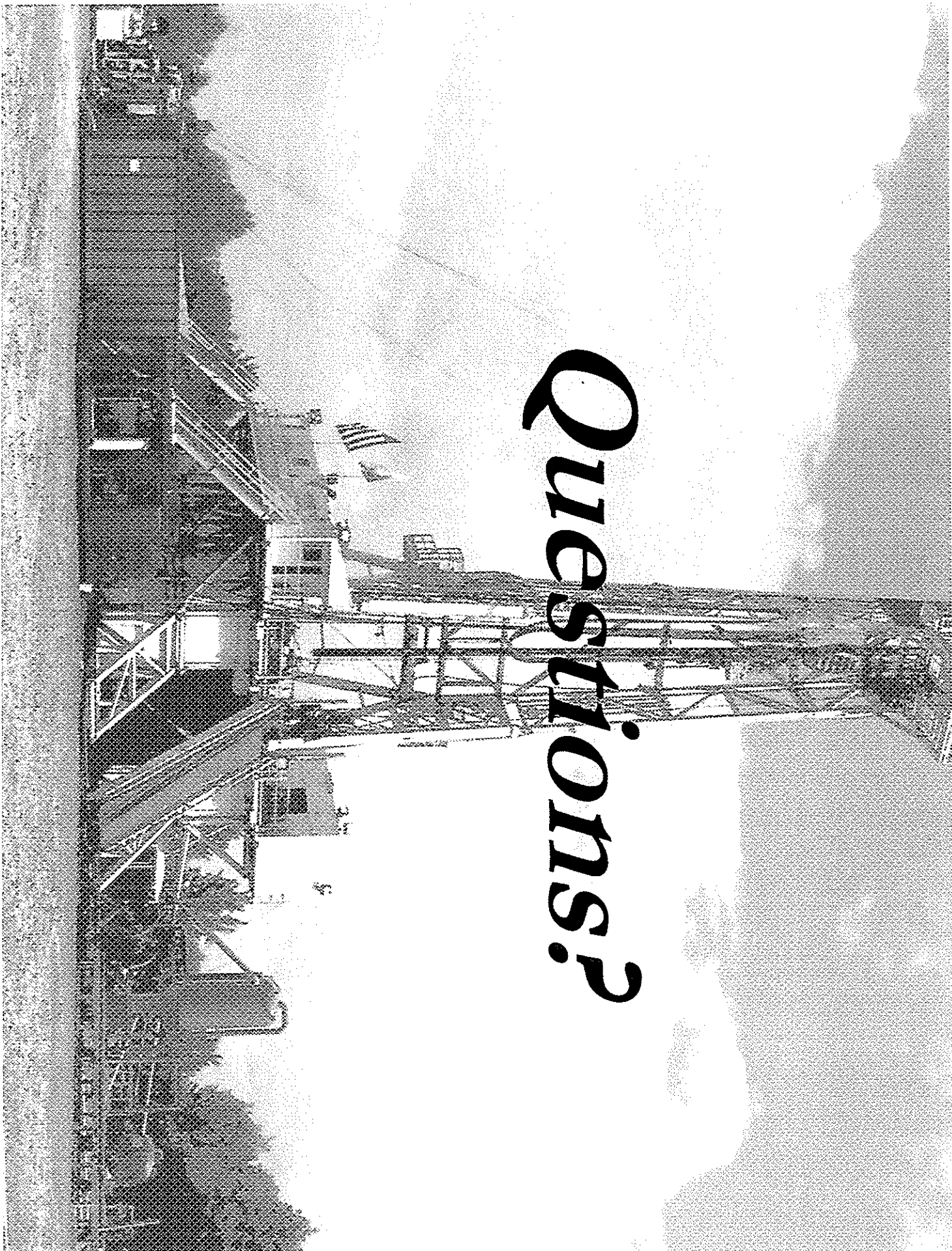


Chesapeake Pipeline Under Construction



07/01/2009

Questions?



**Testimony of Steven W. Lawitts
Acting Commissioner
New York City Department of Environmental Protection
before the New York City Council
Committee on Environmental Protection
concerning the Draft Supplemental Generic Environmental Impact
Statement governing natural gas drilling
Friday, October 23, 2009
City Hall – Committee Room**

Good morning Chairman Gennaro and Members. I am Steven W. Lawitts, acting commissioner of the New York City Department of Environmental Protection (DEP). I am joined by Paul Rush, P.E., deputy commissioner of the Bureau of Water Supply. Thank you for the opportunity to testify on natural gas drilling, a subject of vital interest to the City of New York. I have a short prepared statement, after which I will ask Paul to make a presentation highlighting the work of our consultant and describing the potential for natural gas drilling to adversely affect our system.

Clean water is essential to public health. The regional water supply system operated by DEP is the primary source of drinking water for approximately one-half of the State's residents. It provides approximately 1.1 billion gallons of water to 8.4 million residents of New York City, one million consumers outside of New York City in Westchester, Putnam, Orange and Ulster counties (including New Paltz, Newburgh, Tarrytown, Peekskill, White Plains, Scarsdale, New Rochelle, Yonkers, and other major towns in those counties), and millions of commuters and visitors every day. In addition, other residents from these upstate counties have the right to tap into this water system. In an average year about 90% of our water is provided by two watersheds in the Catskills region which are known as "the Catskill"

and “the Delaware” watersheds. Virtually all of these watersheds lie directly over the Marcellus Shale formation. It is no exaggeration to say that this clean water system allows for the future development of the entire downstate region and the economic engine that it provides for New York State.

Hydro-fracturing drilling in the watershed creates the potential to jeopardize public health. Natural gas drilling of any sort is an industrial activity that can pollute the ground and surface waters that form an integral part of New York City’s drinking water system. Hydro-fracturing drilling operations require the clearcutting of forest, the construction of new roads and drilling pads, the storage and use of chemicals that can include benzene and other carcinogens, and surface impoundments or tanks to store those chemicals and briny flowback liquid. In addition, drilling and fracturing with pressurized solution can damage aqueducts and other subsurface facilities, cause settling, and contaminate groundwater. Because New York City has an unfiltered system serving nine million customers, the potential for contamination is especially alarming.

That is why DEP has vigorously sought to protect its customers from any public health risks and unnecessary costs. In a July 2008 letter, then-Commissioner Emily Lloyd expressed the Administration’s grave concern to New York State Department of Environmental Conservation (DEC) Commissioner Grannis at the prospect of natural gas drilling in the watershed and made several recommendations. When Commissioner Grannis made a determination to issue a Supplemental Generic Environmental Impact Statement (SGEIS) on natural gas drilling, DEP submitted comments on the scope of the SGEIS to underscore the need for

the State to carefully analyze those issues that most affect the watershed and our customers. In September 2009, I again wrote to Commissioner Grannis to express DEP's alarm at the potential impact of natural gas drilling on our unfiltered watersheds. I also requested that he obtain from the New York State Department of Health (NYSDOH) an assessment of the public health impacts of drilling in our unfiltered watershed. As the primary regulator of drinking water quality in the State, NYSDOH is uniquely qualified to identify the risks to public health that natural gas drilling presents, and whether those risks can be sufficiently addressed over the long term.

DEP has engaged a joint venture of engineering firms to provide independent, expert advice on the subject of natural gas exploitation via hydro-fracturing and risks to our drinking water supply. I have asked Commissioner Grannis to extend the draft SGEIS comment period by approximately 45 days so that we will have time to complete the consultant's study. Although we have not received a response from Commissioner Grannis, we are sure he will give the extension request due consideration.

If our study or NYSDOH review should conclude that gas drilling currently proposed by the State will create risks to our watershed, then the price tag for this proposal will be at least \$10 billion, which will have to be paid for by someone. The U.S. Environmental Protection Agency (EPA) and NYSDOH allow DEP to operate the Catskill-Delaware water systems without filtration only because those watersheds retain much of their rural and agricultural land uses and because DEP, together with upstate landowners, has created a vigorous system of land use controls. This waiver

is possible only because the City is meeting very stringent criteria, and only four other large cities in the country have received it. New York City could not avoid filtration for the Croton system, which supplies 10% of our water annually, and as a consequence is now spending more than \$2 billion to build a filtration plant. If the EPA's Filtration Avoidance Determination is revoked because of the impacts from natural gas drilling, a much larger filtration plant for the Catskill-Delaware system will have to be built that we estimate could cost \$10 billion to construct and \$100 million per year to operate. That translates to a 30% increase in the price of water and sewer service currently paid by New York City residents.

While we are still assessing whether drilling in the watershed can be done safely under any circumstances, if the State decides to permit this activity, then it must include and account for the cost of a filtration plant and its operation in any regulatory framework that would allow drilling in the watershed. Failure to do so would impose a massive unfunded mandate on the City and its water rate payers, who are already bearing the cost of several billion-dollar projects that are driven by such mandates. In recognition of this growing problem, Governor Paterson recently mandated in Executive Order 17 that "the fiscal impact of any legislative or regulatory proposal that imposes a mandate should be evaluated to the fullest extent possible to consider the cost to local governments." The significant potential costs of allowing drilling in the watershed cannot simply be passed onto New York City, and must not be ignored as this process moves forward.

In view of the potential costs of repairing any damage caused by natural gas drilling, the Catskill-Delaware watersheds deserve State protection. In the

past the State has enacted special protections for the residents who rely on surface water from the Great Lakes by closing the beds of Lakes Ontario and Erie to gas exploration. This precautionary approach is appropriate for the Catskill-Delaware watersheds. The nine million New York residents who depend upon Catskill-Delaware water deserve the same amount of protection as those New Yorkers who depend upon Great Lakes surface waters.

I appreciate that Commissioner Grannis is concerned about the impacts of natural gas drilling on New York City's watershed. DEP's strong working relationship with Commissioner Grannis and his staff is reflected in the fact that the draft SGEIS responds to some of the comments we submitted on the proposed scope of the document. I hope that Commissioner Grannis will favorably consider our request for an extension of the draft SGEIS comment period to allow time for stakeholders such as New York City to submit more detailed comments. We recognize and appreciate that Commissioner Grannis has already scheduled a hearing in New York City on November 10th. We would welcome additional hearings.

In closing, the high stakes involved when considering natural gas drilling in our unfiltered watersheds mean that DEC must consider very seriously all of the comments and suggestions DEP has made to date on this issue and will make in the future, and carefully weigh the risks and consequences. That completes my part of the presentation. With the Chairman's permission, I would ask Paul Rush to complete our testimony this morning.



NEWS

Office of the
New York City Comptroller
William C. Thompson, Jr.



1 Centre Street, New York, NY 10007 . (212) 669-3747 . press@comptroller.nyc.gov . www.comptroller.nyc.gov

FOR IMMEDIATE RELEASE:

October 23, 2009

Contact: Mike Loughran, (212) 669-3564

mloughr@comptroller.nyc.gov

THOMPSON: INTRO 1850-A WILL HELP PROTECT OUR CITY'S WATER SUPPLY

Deputy Comptroller for Budget Marcia Van Wagner, representing New York City Comptroller William C. Thompson, Jr., provided testimony today at a City Council hearing of the Committee on Environmental Protection in support of Proposed Intro 1850-A, which calls on the New York State Legislature to support a ban on natural gas drilling within the upstate boundaries of the watershed of New York City's drinking water supply.

Testimony of Deputy Comptroller for Budget Marcia Van Wagner before the New York City Council Committee on Environmental Protection on proposed Resolution Intro 1850-A, Prohibition of Drilling for Natural Gas in New York City's Watershed:

Good Morning Chairman Gennaro and members of the Committee on Environmental Protection. I am Marcia Van Wagner, Deputy Comptroller for Budget, and I am here representing Comptroller William C. Thompson, Jr. at your hearing regarding the State Department of Environmental Conservation's draft Supplemental Generic Environmental Impact Statement and the proposed Council Resolution 1850 calling for a prohibition on gas drilling in our city's watershed.

The New York City water system provides about 1.237 billion gallons per day of water to 9 million people. Approximately 90 percent of this water arrives from the Catskill and Delaware watersheds in upstate New York, which sit atop a section of the Marcellus Shale formation. The City, with the cooperation of the State and local communities, has already invested hundreds of millions of dollars over the past decades to protect the watersheds. In 2007, the U.S Environmental Protection Agency renewed the City's Filtration Avoidance Determination based on the success that the City's efforts had achieved. In the absence of the FAD, the City would need to construct a filtration plant that could cost from \$6 billion to \$10 billion dollars, which would in turn result in additional debt service expense of as much as \$730 million. This increase in debt service alone would require a 27 percent increase to City water and sewer rates, even before adding the high cost of operating such a facility.

Comptroller Thompson is appalled that the Department of Environmental Conservation's draft SGEIS would open access to the City's watershed for hydraulic fracturing to extract natural gas. Hydraulic fracturing is not regulated under the Clean Water Act, and exposing our water supply to the dangers of contamination posed by this technology is highly irresponsible.

Comptroller Thompson expressed his concerns about gas drilling in the watershed in 2008, in comments submitted in the DSGEIS scoping process. Neither the final scope nor the newly proposed SGEIS were responsive to the fundamental concerns the Comptroller and others raised. When the draft SGEIS was released several weeks ago, the Comptroller again stated his concerns and noted that he had written to the Governor and DEC emphasizing that the decision to drill so close to our water supply must include the strictest oversight to ensure that the millions of people who rely on the region's water do not suffer ill effects.

It is not only drinking water that is at risk. In Pennsylvania, where "fracking" has been underway for some time, the State of Pennsylvania has had to issue alerts at least three times in the past year regarding the quality of water in rivers into which wastewater from natural gas drilling has leached. The water has affected aquatic life and is reported to have damaged machinery, equipment, and household appliances. The existing water treatment plants in Pennsylvania have not been able to handle the volume and composition of the fracking fluid. Similar and even more dire outcomes have been recorded at fracking sites around the country.

The things that we know about fracking -- that it results in contaminated water supplies, invites inevitable and devastating chemical spills, and turns environmentally sensitive areas into intensive industrial sites--must be paired with the things that we do not know about fracking. These include the undisclosed chemical compounds used in the fracking process and the long-term consequences of fracturing underground formations and introducing chemicals into them. It is important to note that while the SGEIS would require some disclosure of additives used in the fracking process, it would not require drillers to disclose the specific chemicals used in those additives.

For these reasons, Comptroller Thompson wholeheartedly endorses Resolution 1850 and a ban on drilling for natural gas within the boundaries of the watershed of the New York City water supply.

Additional news available at www.comptroller.nyc.gov

*You can sign up for news alerts at the Comptroller's Twitter site at <http://twitter.com/ComptrollerNYC/>
New York City Comptroller's Office press@comptroller.nyc.gov / Main: (212) 669-3747 / Fax: (212) 669-8879*

###



**THE CITY OF NEW YORK
OFFICE OF THE PRESIDENT
BOROUGH OF MANHATTAN**

SCOTT M. STRINGER
BOROUGH PRESIDENT

Thank you Chairman Gennaro and members of the Committee on Environmental Protection for holding this important and timely hearing on natural gas drilling in the Catskill/Delaware watershed.

I am here today to briefly explain why the draft Supplemental Generic Environmental Impact Statement (SGEIS) published on September 30, 2009 by the New York State Department of Environmental Conservation (DEC) provides inadequate environmental, health and economic protections for the City of New York. I will be submitting additional testimony on the technical merits of the SGEIS at the Department of Environmental Conservation on November 10, 2009, however, I believe there are some important details that simply can't wait until that time.

The SGEIS takes a disappointing and reckless position on the protection of the Catskill/Delaware watershed, exempting less than one third of the land in the watershed from hydraulic fracturing. This means that a form of natural gas extraction that produces one of the most toxic industrial byproducts produced by gas and oil drilling will be permitted in the remaining unprotected sections of the same watershed that provides New York City with 90% of its unfiltered water supply.

Earlier this year my office released "Uncalculated Risk", a report that documented extensive environmental degradation connected to hydraulic fracturing, including over two dozen leaks, spills, contaminations and explosions in nine different states. If the State rushes to approve hydraulic fracturing in the Catskill/Delaware watershed and continues to downplay the dubious environmental track record associated with this type of drilling, New York City's most crucial natural infrastructure will be compromised.

Additionally, if we allow hydraulic fracturing in the Catskill/Delaware watershed, an accident adjacent to New York City's unfiltered water supply could introduce the threat of grave human health consequences. I am shocked that the DEC would even contemplate the potential exposure of New York City's unfiltered water supply to benzene, formaldehyde, ethylene glycol, hydrochloric acid, toluene and hundreds of other endocrine disruptors and carcinogenic chemicals used for hydraulic fracturing.

If the environmental and human health consequences of the DEC's proposal to allow hydraulic fracturing are not reason enough for an explicit ban on hydraulic fracturing in the Catskill/Delaware watershed, the long-term economic toll that drilling would cause must also be seriously considered.

In July 2007, the City and State reached an agreement on a filtration avoidance determination with the U.S. Environmental Protection Agency (EPA) for "a series of watershed protection

initiatives and activities” meant to prevent the construction of a water filtration plant and maintain New York City’s water supply in its natural, unfiltered state.

Prior to the EPA’s most recent filtration avoidance determination the City had sunk over \$168 million into the purchase some 70,000 acres of land in the Catskill Delaware Watershed. When the 2007 filtration avoidance determination was reached the City pledged to spend an additional \$300 million for additional land acquisitions. On top of the money paid for land acquisition, the city also pays over \$100 million in annual property taxes on the watershed land that it owns.

The key to the EPA’s filtration avoidance determination was the fact that the State’s plans for land acquisition meant that a growing amount of land would be unavailable for any kind of private development – residential building and the construction of new commercial enterprises of any sort. And now, today, we’re talking about allowing natural gas drilling over the remaining land in the watershed that is not publicly owned.

Not only would this be a major reversal to a longstanding policy that New York State just reaffirmed two years ago, it would mean that a repeal of New York City’s filtration avoidance determination by the EPA upon its expiration would be a near certainty.

If the sanctity of the Catskill/Delaware watersheds pristine water is violated by hydraulic fracturing, there would be no choice but to construct a water filtration system to mitigate the potential contamination that drilling could cause. Building a water filtration facility would cost an estimated ten to twenty billion dollars. On top of that, the RAND Corporation has estimated an annual cost of \$300 million for the maintenance and upkeep of such a facility.

When we add all of these numbers up, even the most optimistic long-term projections for the amount of tax revenue generated by hydraulic fracturing would pale in comparison to the sunk and future costs that the State and City should have to bear if a new water filtration facility must be constructed.

With all of these factors in mind, I am making the following calls to action:

- First, the DEC should extend the commenting period on the draft SGEIS from 60 days to 120 days. The SGEIS is an 800 page technical document and it takes an enormous amount of time to read and digest. It is unrealistic for the DEC to expect concerned citizens to make sound public comments without a sufficient amount of time for review.
- Second, I call on every person at this hearing to join me at the DEC’s public hearing on November 10, 2009. We need every concerned New Yorker to participate in that hearing and send a clear message to Albany: Keep our water safe.
- Finally, I call on Governor Paterson and the DEC to make an immediate modification to the SGEIS and explicitly ban hydraulic fracturing in the Catskill/Delaware watershed. I believe the choice is simple: we either correct this error and ban drilling now, or soon enough the officials entrusted with protecting our environment will be asked to explain why they were asleep at the switch when it mattered most.

Thank you Councilman Gennaro for the opportunity to testify on what is the most important environmental issue this city has faced in the last decade. I look forward to working together with you and other members of the Council to “Kill the Drill”.

FOR THE RECORD

The New York City water shed is beautiful and while beautiful also filters the drinking water of more than eight million people. Aren't we being short sided to let energy companies such as Chesapeake come in tour state and use our pristine drinking water to pump out natural gas. And the water used will be contaminated by the chemicals mixed with the water to be imploded into the earth to force the earth to give up the natural gas contained there in. Then more water will be needed in the process to clean up the gas before it can be used. When all is done our water will then need to be cleaned before we can use it. Our water that in the beginning of the process was some of the best drinking water in the world that had been naturally filtered by flowing through our beautiful watershed.

Bonnie Lane Webber
1155 Park Avenue, 5SE
NYC 10128 1209
212 348-7183



**THE COUNCIL OF THE CITY OF NEW YORK
COMMITTEE ON ENVIRONMENTAL PROTECTION**

PUBLIC HEARING

**DRAFT SUPPLEMENTAL GENERIC ENVIRONMENTAL
IMPACT STATEMENT RELATING TO DRILLING FOR
NATURAL GAS IN NEW YORK STATE USING HORIZONTAL
DRILLING AND HIGH-VOLUME HYDRAULIC FRACTURING**

OCTOBER 23, 2009

**Testimony of John H. Williams
Ground-Water Specialist
U. S. Geological Survey
425 Jordan Road
Troy, NY 12180-8349
518-285-5670
jhwillia@usgs.gov**

Good morning. The U. S. Geological Survey appreciates the opportunity to provide comments here today. For those of you who may not be familiar with the USGS, we are a non-regulatory, scientific organization within the U. S. Department of the Interior. In New York State, we conduct a wide range of surface-water and groundwater quantity and quality investigations in cooperation with other Federal, State, and local agencies. We continuously monitor hydrologic conditions at about 300 surface-water sites and 150 observation wells across New York State. We also maintain the USGS National Water Information System (NWIS) data base that contains hydrogeologic information from over 50,000 wells in the State.

I have worked for the USGS for the past 29 years in Pennsylvania and New York. I am currently the Ground-Water Specialist for the USGS New York Water Science Center, responsible for technical oversight of the USGS ground-water data and investigation programs in New York State. I also coordinate a USGS-wide training and technology transfer program in borehole geophysics. My educational background includes a BA in Geology from Colgate University and a MS in Geoscience with specialization in hydrogeology from Penn State University.

Gas development in the Marcellus, Utica, and other organic-rich black shales in New York State will involve horizontal drilling and high-volume hydraulic fracturing. The

draft Supplemental Generic Environmental Impact Statement (dSGEIS) proposes many critical measures to help minimize the impact of shale-gas development on the water resources of the State. However, a number of these measures need to be more clearly defined or require further evaluation.

Onsite burial of drill cuttings at shale-gas development sites, which is allowable under the dSGEIS if oil-based drilling mud is not used, should be carefully considered. According to Lash and Engelder (2008), pyrite is abundant in the high-TOC basal intervals of the Marcellus Shale. Oxidation and leaching of pyritic shale produces an acidic, metals-rich discharge commonly referred to as AMD (Acid Mine Discharge). A multi-horizontal well site will generate 100 to 500 times the volume of AMD-producing pyritic shale cuttings than that generated at a single-vertical well site. If these pyritic shale drill cuttings are left onsite, the potential for future surface-water and groundwater contamination is significant – removal and disposal of all cuttings at an approved landfill would be the preferred approach.

Freshwater in the Marcellus Shale play area occurs in fractured shale and sandstone of upper Devonian age. A review by the USGS of gas-exploration well records suggests that freshwater circulates in fractured bedrock to a depth of nearly 800 feet in some upland settings. An assumed freshwater aquifer depth of 850 feet as proposed in the draft SGEIS appears reasonable for the Marcellus play area. Installation of surface casing and cementing this casing to land surface to protect freshwater aquifers of this depth is a sound approach. As proposed in the dSGEIS, also cementing the production casing to the land surface (where no intermediate casing is used) will provide needed additional protection. Requiring the collection of cement-bond logs for each casing string will help detect any uncemented annular spaces or gaps that may provide pathways for saltwater and (or) gas migration. Mill scale should be sand blasted from casings to ensure good quality cement-bond logs. The dGEIS indicates that surface casing should not extend into zones known to contain measurable quantities of shallow gas. Shallow saltwater and (or) gas has been penetrated in the upper Devonian bedrock in some areas. It is not clear from the draft SGEIS how casing, cementing, and venting requirements will be modified to deal with these conditions.

Completion records for most gas-exploration wells provide little or no information on aquifer conditions above the targeted gas horizon. This lack of reporting results in a huge loss of information that would be useful in understanding and protecting the State's groundwater resources. The dSGEIS does little to rectify this situation. Completion forms that require recording of water quality and quantity with depth would be beneficial. These forms could require field measurement of specific conductance of drilling discharge water, which would provide a quantitative evaluation of salinity with depth. Also, specific-conductance and temperature logging of the open borehole prior to surface-casing installation with a portable wireline logger commonly used in the groundwater industry would be an efficient means to delineate freshwater aquifers and saltwater zones.

Surface water and groundwater are a single resource. Groundwater discharge from bedrock and valley-fill aquifers is the source of stream baseflow. Induced river infiltration may supply up to 90 percent of the water to heavily pumped wellfields in the valley-fill aquifers of New York State. Natural infiltration of upland tributary streamflow and unchanneled runoff also is an important source of recharge to valley-fill aquifers (Randall, 1978 and Kontis and others, 2004). Upland tributaries are particularly susceptible to impacts from surface-water and groundwater withdrawals under low-flow conditions. Aquifer-testing procedures to evaluate impacts of groundwater withdrawals for frack-water supply in areas outside the Susquehanna River Basin are not clearly defined in the dSGEIS. The pass-by flow limitations of surface-water withdrawals based on drainage area proposed in the dSEGIS appear reasonable as a first cut method. A more rigorous method should be developed based on a regional systematic low-flow analysis with available streamflow data. The cumulative impact of multiple withdrawals along a stream course is not addressed, nor is how will these withdrawals be monitored, reported, and regulated as they are in the Susquehanna and Delaware River Basins.

The flowback water from hydraulic fracturing of Marcellus Shale wells has been shown to contain elevated dissolved solids, chlorides, barium and other heavy metals, and radioisotopes. Use of tanks rather than surface impoundments for containment of all fracking fluids and the flowback water will help to minimize release of fracking fluid chemicals and flowback contaminants at the site. The “treatment” and ultimate disposal of the flowback water continues to be an unresolved issue of concern. The potential use of public wastewater treatment plants as a treatment option for these fluids needs to be thoroughly researched before it should be considered as an option.

Natural groundwater quality in the aquifers overlying the Marcellus and Utica play areas is highly variable. Concentrations of contaminants such as chlorides and radioisotopes vary by two orders of magnitude in water sampled from water wells. With such natural variability, documentation of water-quality impacts from gas drilling and hydraulic fracturing would be extremely difficult. Water-quality sampling of private water wells in the vicinity of gas-exploration wells prior to development and following drilling and hydraulic fracturing is proposed in the dSGEIS. This water-well sampling program is in the best interest of the private well owners and the gas-development companies, and it is a good approach to determine short-term, site-specific impacts on the existing groundwater use sites. However, the water-well testing program does not address any longer term cumulative impacts to the groundwater resources. Water-quality sampling is considered complete one year after the last well at a multi-well site is drilled and fracked if a problem is not detected. Also, if there are no water wells within a half-mile of a drilling site, or if permission to sample a well within this radius is not granted, it appears that no groundwater monitoring is undertaken at all. A multi-year program involving sampling of existing private wells and(or) newly installed monitoring wells would be needed to detect potential impacts such as a gradual regional increase of chlorides and methane in the groundwater. Surface water-quality monitoring is not considered in the

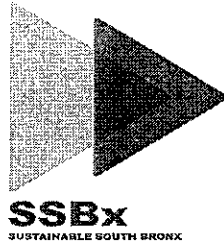
dSGEIS (other than stormwater runoff), but should be part of an encompassing water-resource monitoring program.

References

Kontis, A. L., Randall, A. D., and Mazzaferro, D. L., 2004, Regional hydrology and simulation of flow of stratified-drift aquifers in the glaciated northeastern United States: U. S. Geological Survey Professional Paper 1415-C, 156 p.

Lash, G. G. and Engelder, T., 2008, Pyrite laminae in black shale – An additional source of permeability in unconventional reservoirs: Geological Society of America *Abstracts with Program*, vol. 40, no. 6, p. 233.

Randall, A. R., 1978, Infiltration from tributary streams in the Susquehanna River Basin, New York: U. S. Geological Survey Journal of Research, vol. 6, no. 3, p. 285-297.



FOR THE RECORD

October 23rd, 2009

Committee on Environmental Protection
City Hall, committee room
New York, New York 10007

Dear Members of the Committee on Environmental Protection,

Regarding The Draft Supplemental Generic Environmental Impact Statement
Relating to Drilling for Natural Gas in New York State Using Horizontal Drilling
and Hydraulic Fracturing

On behalf of Sustainable South Bronx, I would like to express our grave concerns regarding the matter concerning evaluation of natural gas drilling in New York State using Horizontal Drilling and Hydraulic Fracturing. In simple terms, it is a catastrophe waiting to happen.

Sustainable South Bronx (SSBx) has been championing hope and opportunity for the people of the South Bronx and other urban communities since 2001. Our unique comprehensive approach to problem solving combines public advocacy, job training and education to improve economic and environmental conditions, resulting in more prosperous and revitalized communities.

We are deeply concerned that the SGEIS cannot protect the New York City Watershed, Catskill Park or the Delaware River from the environmental impacts of horizontal drilling and hydraulic fracturing.

We believe the risk to upstate and downstate communities' drinking water is too great to consider further development of natural gas drilling in the Marcellus Shale.

Above all, we advocate for curtailment of energy use, the coordination of statewide energy efficiency programs and investment in renewable energy over the investment in natural gas drilling.

Fracturing fluid and other hydraulic fracturing additives contain highly toxic chemicals. Whose impacts and risks we cannot fully understand or regulate due to proprietary protections from the from the Clean Water Act, the Environmental Response Compensation and Liability Act (CERCLA), the Resource Conservation and Recovery Act, and the Safe Drinking Water Act



This process of hydraulic fracturing requires millions of gallons of water.

We cannot make a polluting industry, which mixes toxic organic chemicals with millions of gallons of surface water, a clean one through regulation. This practice will result in withdrawing millions of gallons of water from our natural waterbodies, disturbing communities with truck access roads and millions of gallons of waste water to be remediated. The truth is a tremendous amount of resources are going into over-regulating a pollution based industry, rather than investing in cleaner technologies such as wind, solar and solar thermal.

The real impact of hydraulic fracturing, thousands of feet underground is unknown.

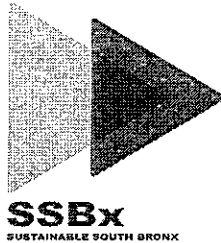
The SGEIS goes to great lengths to articulate which projects will require site specific SEQRA determinations. Many of the conditions discuss the target fracture zones and estimates of proximity to fresh water. How can we ensure these targeted zones and estimates are accurate? We cannot approve the use of toxic chemicals and practices in close proximity to natural resources and public drinking water based on estimated impacts.

Horizontal drilling and the use of proprietary fracturing fluid near the New York City Watershed, in or near the Catskill Park, and near the federally designated Upper Delaware Scenic and Recreational River are too dangerous.

Even the strictest permits with EAF's, GEIS's and SGEIS's cannot cover spills and "incidents". We have seen the devastation of these natural gas drilling incidents on drinking water in nearby Dimock Pennsylvania and pollution of natural waterways in Dunkard Creek along the Pennsylvania-West Virginia border.

We strongly urge the Governor's Office, the Department of Environmental Conservation and the New York City Council to reconsider the development and future permitting of horizontal drilling hydraulic fracturing in the Marcellus Shale. It is a flagrant disrespect of our natural resources to grant oil and gas companies exemption from the Clean Water Act, the Environmental Response Compensation and Liability Act (CERCLA), the Resource Conservation and Recovery Act, and the Safe Drinking Water Act. The lack of transparency and oversight regarding the contents of fracturing fluid, proppants and additives is not only a threat to adequate drill site clean-up and worker safety but also a hindrance to understanding the impacts on our natural aquifers and the drinking water that millions of New York City residents rely on.

While we understand the demands on the State Government to address the energy demands of New Yorkers are many, and the lure of exploring a resource that claims low emissions is attractive, we shouldn't be ignorant of the risks that this particular resource extrapolation creates. There are viable alternatives that provide green



jobs that do not risk our drinking water, nor the well-being of the states population. And we shouldn't forget that even natural gas generates emissions, NOx, which is just as bad as the emissions emitted through coal or oil.

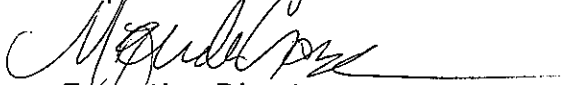
We understand that our concerns here in New York City are primarily focused upon our access to safe drinking water. But the issue that every New York State Resident should be concerned with is that this process will impact us all. The risks and impacts of using hydraulic fracturing methods to extract Natural Gas are not limited to the land upon which it occurs. We need to learn from New York State's past mistakes, there are just certain industrial processes that are too risky to use when so much is at risk.

We in the South Bronx and communities like it across this state, communities that have been disinvested through economic engines of pollution, unfortunately understand all too well the impact and the consequences of using certain "safe" technologies. These engines of pollution have decimated our health, our future and our well-being. We urge the Council to be vigilant on this matter. Imagine 10 years from now, will this Committee be listening to New Yorkers who can't drink water from their own faucets. Is that the future we want?

We thank you for your time and for the opportunity to publicly present our comments.

Sincerely,

Miquela Crayton



Executive Director
Sustainable South Bronx



DEBORAH J. GLICK
Assemblymember 66TH District
New York County

THE ASSEMBLY
STATE OF NEW YORK
ALBANY

CHAIR
Higher Education Committee

COMMITTEES
Environmental Conservation
Rules
Ways & Means

**Testimony of Assemblymember Deborah J. Glick
Before the New York City Council's
Committee on Environmental Protection
Regarding: Oversight: The Draft Supplemental Generic Environmental Impact
Statement Relating to Drilling for Natural Gas in New York State Using Horizontal
Drilling and Hydraulic Fracturing**

October 23, 2009

I greatly appreciate this opportunity to testify on the issue of gas drilling in New York State using horizontal drilling and hydraulic fracturing. The draft of the Supplemental Generic Environmental Impact Statement (SGEIS) released by the New York State Department of Environmental Conservation (DEC) raises numerous concerns, several of which I would like to address. Certainly, a much more comprehensive list of concerns will be presented to the DEC via oral and written comments throughout the public comment period.

My first concern regards the comment period itself. It is imperative that the DEC extend the comment period to 180 days to allow everyone sufficient time to review the draft report and offer their feedback. In particular, those who will be directly impacted by the activities the DEC intends to permit deserve an opportunity to weigh in on the draft SGEIS. While I was pleased to see that the DEC has scheduled four information sessions/hearings, it is essential that these be treated as full public hearings. Further, more hearings need to be scheduled in additional locations that are reasonably accessible so that all those who would like to speak out on this issue have an opportunity to do so.

Although gas drilling has occurred for many decades in various locations in New York State, this new method of horizontal drilling and hydraulic fracturing (called "fracking") in the Marcellus Shale poses serious environmental concerns. It involves drilling horizontally through the bedrock for up to a mile and cracking it open with high-pressure blasts of water, sand and chemicals in order to release the gas. In this process, significant volumes of wastewater are produced. Disposal of this wastewater has been an ongoing challenge for communities where fracking has occurred. This is an issue of grave concern. While wastewater within the New York City watershed may be required to be transported out of the area, this raises additional concerns about the environmental and transportation impacts that heavy trucks would impose on the watershed including diesel particle and truck oil contamination of soil, surface and ground water.

Hydraulic fracturing requires an enormous volume of water. The diversion of large amounts of fresh water for fracking will not only endanger the supply of fresh water, a concern already in many communities, the toxic chemical compounds used in fracking fluid will also threaten the safety of that water supply. The environmental impacts of drilling in similar shales has shown that extracting

natural gas by fracking can have disastrous consequences to the air, water, public health, wildlife, and the integrity of local communities. Pollution from gas exploration and production has involved known carcinogens, reproductive toxicants, and other toxic chemicals like arsenic, hydrogen sulfide, mercury and volatile compounds including benzene and xylene. While I applaud the DEC for requiring energy operators to disclose all the chemicals used in hydraulic fracturing, a requirement that has been resisted everywhere else, it is unclear how that disclosure will impact an approval or a rejection of a requested permit.

The DEC has stated that it would ensure that wells permitted within the watershed be subject to stringent review standard. This assurance is meaningless in the event of groundwater contamination or a surface spill of wastewater tainted with toxic fracking fluid. The DEC's proposal to test private water wells within 1,000 or 2,000 feet of a drill site prior to drilling, to provide baseline information and allow for ongoing monitoring, cannot guarantee that water will not become contaminated.

It can be argued that drilling can be safe if you have enough safeguards; but those safeguards have to be site-specific. However, drilling in a watershed is not acceptable. Although the vast majority of wells proceed without incident, even a one percent accident rate would be a catastrophic problem for drinking water because fracking fluids are so toxic. The rate of accidents needs only to be very small to contaminate a water system or a water source, whether it's for drinking water or environmental activity. Once these pollutants are in the water they are very hard to get out. Standard filtration systems do not remove them, and standard industrial toxic waste treatments, which have never been done on a scale like this before, are highly expensive and not a hundred percent reliable.

While a final decision to open up the Marcellus Shale watershed to natural gas drilling has yet to be made, the draft SGEIS seems to claim that drilling in the watershed can be done with adequate safeguards for the environment. Given the evidence from other locations where fracking has occurred, I am highly doubtful of this. New York City has spent \$488 million dollars to purchase land in the watershed area to act as a buffer to protect the watershed from harmful runoff or development that could damage our water supply. The watershed area represents only 8% of the area that is believed to contain Marcellus shale. To put at risk the water supply for 9 million people, to potentially waste taxpayer investment in buffer lands, and to expose taxpayers to the further expense of filtration or remediation in the event of unanticipated contamination of the City's water supply runs counter to the premise of environmental protection.

It is my firm belief that the City Administration must protect our water supply by firmly opposing the inclusion of watershed lands in any area for which permission is given to drill by the DEC.



**THE COUNCIL OF THE CITY OF NEW YORK
OFFICE OF COMMUNICATIONS**

CITY HALL
NEW YORK, NY 10007
(212) 788-7116

****FOR IMMEDIATE RELEASE****

October 23, 2009

Contact: 212-788-7116
Release # 102-2009

Statement by Speaker Christine C. Quinn and Council Member James F. Gennaro
Re: Natural Gas Drilling in the NYC Watershed

Statement from Speaker Quinn:

While I appreciate the economic opportunity that natural gas extraction presents for the State of New York, I believe the risk to a watershed that provides clean drinking water to over 8 million New Yorkers is simply too great. And if we compromise that watershed, we risk billions of dollars in potential costs from large scale filtration, which might not fully reverse the damage done. Given those circumstances, it's hard to imagine that we would even consider natural gas drilling in what is clearly our most valuable natural resource.

Banning drilling in the watershed would exclude less than 6% of the total Marcellus shale in New York State, while protecting 50% of the State's drinking water. And to ensure that drilling is rigorously monitored and regulated where it is allowed, I also join my colleagues in urging Congress to include hydraulic fracturing in the Safe Drinking Water Act.

Statement from Environmental Protection Committee Chair James F. Gennaro:

New York City's upstate reservoirs have been supplying the city with pure, unfiltered world-renowned drinking water for 167 years. As a policymaker and a geologist who has focused intensively on the state of the city's reservoirs for 20 years, I know that the proposed protections for the NYC water supply articulated in the state's natural gas drilling plan are grossly insufficient and would jeopardize the city's water supply. We simply cannot allow that to happen. An unfiltered, irreplaceable water supply is not the place to conduct inherently-polluting heavy industrial drilling. Our hearing will make that point loud and clear.

###



TESTIMONY OF

MARCIA VAN WAGNER
Deputy Comptroller for Budget

NEW YORK CITY COMPTROLLER'S OFFICE

Before the

NEW YORK CITY COUNCIL
Committee on Environmental Protection

Proposed Res 1850-A
Prohibition of Drilling for Natural Gas in City's Watershed

October 23, 2009

Good Morning Chairman Gennaro and members of the Committee on Environmental Protection. I am Marcia Van Wagner, Deputy Comptroller for Budget, and I am here representing Comptroller William C. Thompson, Jr. at your hearing regarding the State Department of Environmental Conservation's draft Supplemental Generic Environmental Impact Statement and the proposed Council Resolution 1850 calling for a prohibition on gas drilling in our city's watershed.

The New York City water system provides about 1.237 billion gallons per day of water to 9 million people. Approximately 90 percent of this water arrives from the Catskill and Delaware watersheds in upstate New York, which sit atop a section of the Marcellus Shale formation. The City, with the cooperation of the State and local communities, has already invested hundreds of millions of dollars over the past decades to protect the watersheds. In 2007, the U.S. Environmental Protection Agency renewed the City's Filtration Avoidance Determination based on the success that the City's efforts had achieved. In the absence of the FAD, the City would need to construct a filtration plant that could cost from \$6 billion to \$10 billion dollars, which would in turn result in additional debt service expense of as much as \$730 million. This increase in debt service alone would require a 27 percent increase to City water and sewer rates, even before adding the high cost of operating such a facility.

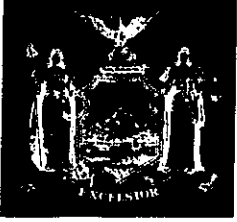
Comptroller Thompson is appalled that the Department of Environmental Conservation's draft SGEIS would open access to the City's watershed for hydraulic fracturing to extract natural gas. Hydraulic fracturing is not regulated under the Clean Water Act, and exposing our water supply to the dangers of contamination posed by this technology is highly irresponsible.

Comptroller Thompson expressed his concerns about gas drilling in the watershed in 2008, in comments submitted in the DSGEIS scoping process. Neither the final scope nor the newly proposed SGEIS were responsive to the fundamental concerns the Comptroller and others raised. When the draft SGEIS was released several weeks ago, the Comptroller again stated his concerns and noted that he had written to the Governor and DEC emphasizing that the decision to drill so close to our water supply must include the strictest oversight to ensure that the millions of people who rely on the region's water do not suffer ill effects.

It is not only drinking water that is at risk. In Pennsylvania, where “fracking” has been underway for some time, the State of Pennsylvania has had to issue alerts at least three times in the past year regarding the quality of water in rivers into which wastewater from natural gas drilling has leached. The water has affected aquatic life and is reported to have damaged machinery, equipment, and household appliances. The existing water treatment plants in Pennsylvania have not been able to handle the volume and composition of the fracking fluid. Similar and even more dire outcomes have been recorded at fracking sites around the country.

The things that we know about fracking – that it results in contaminated water supplies, invites inevitable and devastating chemical spills, and turns environmentally sensitive areas into intensive industrial sites—must be paired with the things that we do not know about fracking. These include the undisclosed chemical compounds used in the fracking process and the long-term consequences of fracturing underground formations and introducing chemicals into them. It is important to note that while the SGEIS would require some disclosure of additives used in the fracking process, it would not require drillers to disclose the specific chemicals used in those additives.

For these reasons, Comptroller Thompson wholeheartedly endorses Resolution 1850 and a ban on drilling for natural gas within the boundaries of the watershed of the New York City water supply.



News from...

SENATOR THOMAS K. DUANE

29th SENATORIAL DISTRICT • NEW YORK STATE SENATE



STATEMENT BY NEW YORK STATE SENATOR THOMAS K. DUANE
BEFORE THE NEW YORK CITY COUNCIL
ENVIRONMENTAL PROTECTION COMMITTEE
REGARDING THE DRAFT SUPPLEMENTAL GENERIC ENVIRONMENTAL
IMPACT STATEMENT
ON THE OIL, GAS AND SOLUTION MINING REGULATORY PROGRAM

October 23, 2009

My name is Thomas K. Duane and I represent New York State's 29th Senate District, in which more than 300,000 residents and countless businesses depend on clean and safe tap water. Thank you for the opportunity to present testimony before the Environmental Protection Committee of the New York City Council on the New York State Department of Environmental Conservation's (DEC) draft Supplemental Generic Environmental Impact Statement on Well Permit Issuance for Horizontal Drilling and High-Volume Hydraulic Fracturing to Develop the Marcellus Shale and Other Low-Permeability Gas Reservoirs (dSGEIS).

As you know, hydraulic fracturing is a process by which millions of gallons of water and a slurry of toxic chemicals, or "frac fluids," are pumped at high-pressure into horizontal wells to access bubbles of natural gas in dense mineral formations. While the dSGEIS demonstrates that the agency has studied the catastrophes associated with natural gas drilling around the nation, the proposed mitigation measures do not go far enough to ensure that New York will not suffer a similar fate. The document highlights potential impacts on water resources, including contamination by: stormwater runoff, surface spills and leaks, pit or surface impoundment failures, improper waste disposal, and well drilling and construction. Yet, DEC has determined that with a number of proposed mitigations, 1,077 square miles, or approximately 70%, of the New York City watershed in the Catskills and Hudson River Valley could be developed for natural gas production. It is inconceivable and unacceptable that the dSGEIS does not include a ban on high-volume hydraulic fracturing in and around New York City's watershed and, indeed, all water supplies statewide.

The New York City Department of Environmental Protection (DEP) commissioned a Rapid Impact Assessment Report to study the potential environmental impacts of natural gas production in the City's watershed and found that even effective regulation and inter-

agency coordination cannot eliminate the significant risk to our water supply. As you know, it is because of DEP's aggressive protection of New York City's watershed that since 1993, the U.S. Environmental Protection Agency has granted the City a Filtration Avoidance Determination (FAD) that exempts it from having to construct and operate a multi-billion dollar water filtration system, which we as taxpayers and ratepayers cannot afford, especially in this time of economic hardship. Steven W. Lawitts, Acting Commissioner of DEP, has said the loss of the FAD would result in a 30% increase in the price New York City residents pay for water and sewer service.

While DEP's exceptional oversight has kept our tap water clean and safe, advocates are concerned that hydraulic fracturing will result in contamination of our watershed that will render our tap water, with or without a filtration system, unfit to drink. The damage would be crippling to New York City, the primary economic engine of the State, and to those who live and work here. There is ample evidence linking this type of drilling to contaminated wells and streams in other states. We cannot accept this threat to public health; we must assume a no-risk policy and prohibit such drilling in this – or any – watershed.

I also object to the dSGEIS's apparent hasty dismissal of alternative actions concerning oil and gas resource development in New York State. Specifically, the dSGEIS deems phased-permitting "not practical or necessary," citing DEC's inability to predict the number of wells which will be drilled and its consequent inability to predict regional cumulative impacts. Many natural resources and environmental authorities suggest DEC could control for both of these unknowns by implementing a dynamic phased-permitting plan that accounts for unused permits and changing cumulative impacts. They argue that initiating drilling in the Marcellus Shale at a relatively slow and steady rate would serve to allay concerns that DEC does not have the staff and resources to properly review permit applications, inspect well sites, and oversee drilling operations. It would also enable DEC to ensure that existing wastewater treatment facilities have sufficient capacity to receive and process the enormous quantities of wastewater that will inevitably be produced by the industry. I urge DEC to reconsider this alternative.

Lastly, I emphatically believe that the public comment period for the dSGEIS is insufficient. An 803-page document analyzing what is arguably the most significant encroachment of industry on our natural environment and threat to our public health in decades cannot be adequately digested by the general public in only 60 days. I join many of my colleagues in government and environmental advocates in calling for another 45 to 60 days to review it. Many of my constituents are deeply concerned about the impending gas drilling and they deserve an opportunity to fully consider the issue and have their opinions heard.

I thank the Environmental Protection Committee of the New York City Council and, in particular, Council Speaker Christine Quinn and Committee Chairperson Jim Gennaro for their leadership on this issue and I look forward to continuing to work with you to ensure that the proposed drilling for natural gas in the Marcellus Shale does not proceed without adequate regulatory protections for our precious natural resources.

Statement of Dusty Horwitt, JD*Senior Counsel, Environmental Working Group*

Oversight Hearing on the Draft Supplemental Generic Environmental Impact Statement Relating to Drilling for Natural Gas in New York State Using Horizontal Drilling and Hydraulic Fracturing Before the New York City Council Committee on Environmental Protection Friday, October 23, 2009 at 10:00 a.m.

Submitted for the Record

Mr. Chairman, distinguished members of the committee: My name is Dusty Horwitt, and I am Senior Counsel at Environmental Working Group (EWG), a nonprofit research and advocacy organization based in Washington, DC, Oakland, California and Ames, Iowa. I thank the members of the Committee for this opportunity to testify.

For the last several years, Environmental Working Group has used government and industry records to track a virtually unprecedented increase in oil and gas drilling in the Western United States. We have found that much of this drilling has been completed with exemptions under most major federal environmental laws. As part of our work, we have investigated the practice pioneered by Halliburton known as hydraulic fracturing that is the subject of today's hearing.

Last year, we worked with Theo Colborn, a distinguished scientist in Colorado who has identified dozens of chemicals used by the natural gas industry. We found that at least 65 chemicals used by the natural gas industry in Colorado – many of them used in hydraulic fracturing – were listed or regulated as hazardous substances under six federal statutes including the Clean Air Act, Clean Water Act and Superfund but are largely exempt from these laws when used in oil and gas drilling. We have continued to investigate hydraulic fracturing this year and have uncovered some troubling information about chemicals used in this process.

I'd like to add to the testimony I presented to the committee last year by making a few comments about New York State's Department of Environmental Conservation's Draft Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program, Well Permit Issuance for Horizontal Drilling and High-Volume Hydraulic Fracturing to Develop the Marcellus Shale and other Low-Permeability Gas Reservoirs.

We have reviewed much of the document and believe that the state is still not taking seriously the threat that hydraulic fracturing and natural gas drilling poses to New York City's drinking water. Nor is the state taking seriously the risk of water contamination in other parts of New York. Our analysis confirms our belief that New York State should not allow drilling in the watershed for New York City's drinking water supply nor should it allow drilling in other areas where drinking water supplies might be compromised. Given the seriousness of this issue and the 800-page length of the draft EIS, the state should give citizens more than 60 days to comment.

Petroleum Distillates are a Major Concern

Perhaps the leading reason to prevent natural gas drilling and hydraulic fracturing near drinking water supplies is the use of petroleum distillates. The DEC notes that "diesel-based fracturing fluid is not proposed or reviewed by this Supplement...."¹ However, Environmental Working Group has recently conducted an analysis which found that diesel – like any substance distilled from crude oil – is a petroleum distillate.² And the DEC has identified at least 14 different petroleum distillates that are used or proposed for use in the Marcellus Shale formation in New York.³ The DEC has also identified as chemicals that are used or are likely to be used in New York's Marcellus Shale formation aromatic hydrocarbons that are likely to be found in petroleum distillates.⁴

Environmental Working Group will release its complete analysis of petroleum distillates within the next few weeks, but I will share a few of our findings today. Our research shows that petroleum distillates are likely to contain benzene, one of the aromatic hydrocarbons identified by the state.⁵ The EPA has found benzene to be a known human carcinogen that is toxic in water at levels greater than five parts per billion.⁶ Petroleum distillates are also likely to contain all of the so-called BTEX chemicals – benzene, toluene, ethylbenzene and xylene.⁷ The EPA has concluded that all of these substances are toxic in water at very low levels.⁸

Diesel has received much of the attention when it comes to dangerous fracturing fluids. But when companies say that they will not use diesel and then use petroleum

¹ New York Department of Environmental Conservation. Draft Supplemental Generic Environmental Impact Statement Well Permit Issuance for Horizontal Drilling And High-Volume Hydraulic Fracturing to Develop the Marcellus Shale and Other Low-Permeability Gas Reservoirs (hereinafter DSGEIS), at 7-41.

² U.S. Environmental Protection Agency. Draft Regulatory Impact Analysis: Control of Emissions from Nonroad Diesel Engines, Assessment and Standards Division, Office of Transportation and Air Quality, Chapter 5: Fuel Standard Feasibility, April 2003. Accessed online August 23, 2009 at <http://www.epa.gov/otag/cleaner-nonroad/>.

³ Id. at 5-45-5-51, 5-53.

⁴ Id. at 5-45-5-51, 5-53-5-54.

⁵ Mehlman, Myron A. Benzene: A Haematopoietic and Multi-organ Carcinogen at Any Level Above Zero. 9 (no. 1) European Journal of Oncology 15 (2004). Kopstein, Melvyn. Potential Uses of Petrochemical Products Can Result in Significant Benzene Exposures: MSDSs Must List Benzene as an Ingredient, Journal of Occupational and Environmental Hygiene, 3: 1-8 (January 2006).

⁶ U.S. Environmental Protection Agency. Consumer Factsheet on: BENZENE. Accessed online August 18, 2009 at http://www.epa.gov/safewater/contaminants/dw_contamfs/benzene.html.

⁷ Mehlman, supra note 5. National Park Service (NPS). 1997. Environmental Contaminants Encyclopedia, Fuel Oil, General Entry. Accessed online August 28, 2009 at <http://www.nature.nps.gov/hazardssafety/toxic/fueloil.pdf>.

⁸ See, e.g. U.S. Environmental Protection Agency (EPA Toluene). 2009. Consumer Factsheet on: TOLUENE. Accessed online August 18, 2009 at http://www.epa.gov/safewater/contaminants/dw_contamfs/toluene.html.

distillates, the data shows that it's a bit like promising not to smoke Marlboros and then smoking Camels, Kools, Virginia Slims and every other type of cigarette. As far as the toxic components, the products are roughly the same.

A major concern with petroleum distillates is benzene. To put the toxicity of benzene in perspective, and to demonstrate the risks to water supplies for New York City and other towns, consider these facts from the DEC's draft EIS. The DEC estimates that the amount of water used to hydraulically fracture a single well in the Marcellus Shale will range from about one million gallons to eight million gallons.⁹ The DEC estimates that the amount of friction reducer mixed with the water will comprise about 0.08 percent of the total fracturing solution.¹⁰ Petroleum distillates are commonly used as friction reducers and are also used in other components of fracturing solutions.¹¹ Therefore, the amount of petroleum distillate used for fracturing a well in New York is likely to range from 800 gallons to 6,400 gallons (0.08 percent of between one and eight million gallons of water). Published levels of benzene in petroleum distillates with names similar to those used or likely to be used in New York range from 700 parts per million for 140° flash aliphatic solvent, to 1,000 parts per million for Stoddard Solvent to 4,000 parts per million for kerosene to 93,000 parts per million in naphtha solvents.¹²

In other words, these levels of benzene range from 140,000 times the EPA's safe level to 18.6 million times the EPA's safe level. These figures mean that if 800 gallons of petroleum distillate were to contaminate a water supply, depending on the benzene concentration, it would likely take somewhere between 112 million gallons (800 X 140,000) and 14.9 billion gallons (800 X 18.6 million) of water to dilute the benzene to EPA's safe level. If 6,400 gallons of petroleum distillate were to contaminate a water supply, it would likely take somewhere between 896 million and 119 billion gallons of water to dilute the benzene to EPA's safe levels.

For comparison, the total amount of water used daily by New York City according to the DEC is 650 million gallons,¹³ or less than the amount of water that would be needed to dilute the benzene in a spill of petroleum distillates in many scenarios. In

⁹ Id. at 5-73, 6-137.

¹⁰ Id. at 5-44.

¹¹ Id. at 5-60-5-61. See also Chesapeake. Hydraulic Fracturing Fact Sheet, May 2009. Submitted to U.S. House of Representative Committee on Natural Resources. See also Chesapeake. 2009. Media Resources, Hydraulic Fracturing Fact Sheet, May 2009. Accessed online August 18, 2009 at <http://www.chk.com/media/pages/mediaresources.aspx>.

¹² DSGEIS at 5-46, 5-48-49, 5-51, 5-53. Mehlman, supra note 5. Kopstein, supra note 5.

¹³ DSGEIS at 6-10. The New York Department of Environmental Protection puts the figure at one billion gallons per day for New York City and several nearby counties. See New York Department of Environmental Protection. New York City 2008 Drinking Water Supply and Quality Report. Accessed online October 22, 2008 at <http://www.nyc.gov/html/dep/pdf/wsstate08.pdf>.

some cases, even the total amount of water used each day by the entire state of New York (9-10 billion gallons per day)¹⁴ would not be enough.

To be sure, it is possible that all or part of the petroleum distillate used to fracture a well would not contaminate water supplies. Some or all could be trapped underground. Petroleum distillate that is spilled prior to fracturing or after fracturing in drilling wastewater might be absorbed by soil or otherwise contained before it reaches water supplies.

But the amounts of petroleum distillate likely to be used are significant and petroleum distillate in the form of diesel will be used to power drilling equipment even if diesel is not used in hydraulic fracturing. The DEC reports that an average of 29,000 gallons of diesel fuel was required to complete fracturing jobs in the Marcellus Shale in West Virginia and Pennsylvania.¹⁵ This diesel used to run equipment will likely add to the total amount of petroleum distillate used for the fracturing fluid. The result is an increased likelihood that, somewhere in the process, some quantity of petroleum distillate will spill or leak, threatening water supplies with benzene contamination. It is also important to note that there may be thousands of wells drilled in New York, each of which could cause benzene contamination.¹⁶ And, as we have seen, a little bit of benzene goes a long way.

Recent Cases of Contamination Linked to Fracturing, Drilling

Contamination from benzene or related chemicals associated with drilling is not just a hypothetical scenario. In the summer of 2008, in one of the few government tests ever conducted on water contamination near natural gas fields, the Bureau of Land Management found benzene in drinking water wells in Sublette County, Wyoming. Although researchers did not identify the source of the contamination, the only likely source in the otherwise rural area is intensive natural gas drilling involving hydraulic fracturing.¹⁷

In May 2008, Colorado outfitter Ned Prather drank water from the tap in his rural cabin. The water was contaminated with all of the BTEX chemicals (benzene, toluene, ethylbenzene and xylene), including 100 parts per billion benzene. Natural gas companies have drilled 18 wells within 3,000 feet of the spring that supplies his water, there is a pit of production water on a hill overlooking his cabin, a second pit was reclaimed shortly after Prather took his toxic drink, and in the winter of 2007, a company spilled nearly 8,000 gallons of diesel fuel on a nearby hill when a spigot was accidentally left open. The Denver Post reported that "bad water has decimated his outfitting business. Hunters don't want to stay in a cabin with suspect water or to harvest deer and elk they fear could be drinking contaminated water." Thus far, medical tests have found no damage to Prather, but he has suffered unexplained

¹⁴ DSGEIS at 6-9.

¹⁵ Id. at 6-120.

¹⁶ Id. at 6-144.

¹⁷ Lustgarten, Abrahm. Buried Secrets: Is Natural Gas Drilling Endangering U.S. Water Supplies? ProPublica, Published on the front page of the Denver Post, November 17, 2008.

health problems that predate his toxic drink. His hands and head shake and the tremors have grown worse recently. "Not that many people have turned up a glass and drank that much benzene at one time," he said.¹⁸

In March and April 2004, the natural gas company EnCana fractured an improperly cemented well in Garfield County, Colorado. Gas escaped from about 7,000 feet underground, entered a natural fracture about 3,000 feet below the surface, and traveled laterally about 3,500 feet from the well where it contaminated Divide Creek, forcing local residents to drink bottled water. Inspectors found high levels of benzene in the water (99 parts per billion) the day after residents noticed unusual bubbles in the creek. One nearby resident, Lisa Bracken, described the creek as having so many bubbles that it looked like a "popped can of soda." Another nearby resident, Steve Thompson, said that "I came down with a funnel and scooped some of the biggest bubbles with it....I lit the bubbles with a match, and they burned like gas. It even melted my funnel."¹⁹

A report prepared for Garfield County found that the contamination also included methane gas and toluene, ethylbenzene and xyleneithin. In August 2004, the COGCC fined EnCana a record \$371,200 and imposed a moratorium on drilling within a two-mile radius of the seep.²⁰ EnCana has operated an air sparge system for the past four years to reduce benzene levels in the creek. This system involves the injection of air into the creek to dissipate benzene into the atmosphere.²¹

In the spring of this year, Pennsylvania officials fined Cabot Oil and Gas for an 800-gallon diesel spill from a truck that overturned.²² It is unclear whether benzene contamination resulted from the spill, but diesel typically contains benzene.

¹⁸ Lofholm, Nancy. Fears of Tainted Water Well up in Western Colorado, The Denver Post, October 12, 2009.

¹⁹ Chakrabarty, Gargi. Toxic Bubbles Trouble Silt; Divide Creek Tainted by Natural Gas Leak, Toxic Benzene, Rocky Mountain News, April 13, 2004, at 1B. Chakrabarty, Gargi. Commission OKs Record Fine for EnCana Gas Seep, Rocky Mountain News, August 18, 2004, at 3B. Thyne, G. Review of the Data for the West Divide Creek Gas Seep. Prepared for Garfield County, by Science Based Solutions Inc. August 6, 2004. Personal communication with Geoffrey Thyne, October 22, 2009. Colorado Oil and Gas Conservation Commission, Library, Public Presentations, Materials Related to the July 14-15, 2009 Commission Hearing in Glenwood Springs, West Divide Creek 2009 by Geoffrey Thyne. Accessed online October 22, 2009 at <http://cogcc.state.co.us/>.

²⁰ Id.

²¹ Personal communication with Geoffrey Thyne, October 22, 2009. Colorado Oil and Gas Conservation Commission, Library, Public Presentations, Materials Related to the July 14-15, 2009 Commission Hearing in Glenwood Springs, West Divide Creek Gas Seep Overview by EnCana. Accessed online October 22, 2009 at <http://cogcc.state.co.us/>. U.S. Environmental Protection Agency, Underground Storage Tanks, Air Sparging. Accessed online October 22, 2009 at <http://www.epa.gov/swerust1/cat/airsparg.htm>.

²² Lustgarten, Abrahm. Frack Fluid Spill in Dimock Contaminates Stream, Killing Fish, ProPublica, September 21, 2009. Accessed online October 22, 2009 at <http://www.propublica.org/feature/frack-fluid-spill-in-dimock-contaminates-stream-killing-fish-921>.

Recently, state officials ordered Cabot Oil and Gas to stop hydraulic fracturing operations in Susquehanna County, Pennsylvania after the company was involved in three spills in nine days.²³

The DEC has noted that many states have reported no contamination from hydraulic fracturing,²⁴ but we are not aware that any states have even looked for contamination from fracturing, including New York. Late last year, we sent a Freedom of Information Law request to the DEC asking for any tests that the agency had conducted on water contamination from hydraulic fracturing. The DEC said that it had conducted none, nor did it have tests conducted by others.²⁵

In addition to the recent discovery of benzene in water wells in Sublette County, Wyoming by the Bureau of Land Management, the EPA this spring found that 11 of 39 water wells near Pavillion, Wyoming were contaminated with substances that may be linked to nearby gas drilling. More tests are planned.²⁶

And Garfield County, Colorado officials released a study last year that linked methane contamination in water wells to methane in the same rock layer a mile and a half underground where gas companies are drilling. The scientists who conducted the study did not determine how the gas reached the water, but their results provide evidence that gas or other contaminants from drilling could work their way to the surface from deep underground. "It challenges the view that natural gas, and the suite of hydrocarbons that exist around it, is isolated from water supplies by its extreme depth," Judith Jordan, the oil and gas liaison for Garfield County told ProPublica.²⁷

Disclosure Needed: Nurse's Near-Death Experience Could be Repeated

The DEC has proposed that companies be required to disclose their fracturing chemicals before fracturing begins.²⁸ While this requirement is a step in the right direction, it is unclear whether this disclosure would be to the DEC or to the general

²³ Lustgarten, Abrahm. Pennsylvania Orders Cabot Oil and Gas to Stop Fracturing in Troubled County, ProPublica, September 25, 2009. Accessed online October 22, 2009 at <http://www.propublica.org/feature/pennsylvania-orders-cabot-to-stop-fracturing-in-troubled-county-925>.

²⁴ DSGEIS at 5-144-5-145

²⁵ Environmental Working Group Freedom of Information Law Request to New York Department of Environmental Conservation, December 12, 2008. New York Department of Environmental Conservation response to Environmental Working Group, January 14, 2009.

²⁶ U.S. Environmental Protection Agency. Site Investigation, Analytical Results Report, Pavillion Area Groundwater Investigation, Pavillion, Fremont County, Wyoming, August 19, 2009. Hurdle, Jon. U.S. Finds Water Polluted Near Gas-drilling Sites, Reuters, August 27, 2009.

²⁷ Lustgarten, Abrahm. Officials in Three States Pin Water Woes on Gas Drilling, ProPublica, April 26, 2009. Accessed online October 22, 2009. Versions of the story appeared in the Albany Times Union, Denver Post, and Pittsburgh Post-Gazette.

²⁸ DSGEIS at Appendix 6, Proposed Environmental Assessment Form (EAF) Addendum.

public. It is critical that the public know what chemicals companies are injecting into each well including Chemical Abstract Services (CAS) numbers so that the public and first responders can easily know what chemicals are being used. The DEC deserves credit for including CAS numbers in the DSGEIS.

Public disclosure is especially important because one of the companies that supplied information to the DEC about chemicals proposed for use in fracturing shale formations in New York is perhaps the most infamous fracturing company in terms of public disclosure. In Durango, Colorado, in 2008, a valve broke on a tank carrying 300 gallons of a fracturing fluid called ZetaFlow manufactured by Weatherford, the Houston-based company that supplied chemical information to DEC. About half of the ZetaFlow spilled out. According to Clinton Marshall, who was one of the workers transporting the chemical, most of the spill was captured by a spill container, implying that some of the spill escaped. Cathy Behr, a nurse who later treated Marshall came in contact with the ZetaFlow that had spilled on him. As a result, Behr became gravely ill, suffering respiratory failure, heart failure and liver failure. As Behr's doctor worked to save her life, Weatherford refused to disclose the chemical's contents, citing trade secrets. Behr later recovered (Slowthower 2008, Hanel 2008a, Hanel 2008b).

ZetaFlow is still advertised on Weatherford's website. "This ZetaFlow system can be used on all types of formations, including a variety of sandstones, carbonates, coals and shales," the company says.²⁹ ZetaFlow is not mentioned in the DSGEIS, but the DEC must ensure that before ZetaFlow or other chemicals are used in the state, their names and constituents are made publicly available. And the state should prohibit the use of any chemicals, such as ZetaFlow, that are not proven safe.

Recommendations

The DEC deserves credit for proposing tougher standards for high-volume hydraulic fracturing such as water well testing before drilling³⁰ and limits on the volume of wastewater that can be stored in pits and the duration that such water can remain in pits.³¹

However, the risks from drilling, particularly with benzene, are so great that Environmental Working Group continues to recommend that the DEC prohibit drilling in the watershed for New York City's drinking water supply and in all other areas where drinking water supplies might be compromised. These risks are compounded by the fact the DEC likely lacks adequate staff to enforce proposed or existing standards as Speaker Quinn demonstrated in her questioning of the DEC last September. Our upcoming investigation of petroleum distillates indicates that staffing shortages also

²⁹ Weatherford, ZetaFlow, Conductivity Enhancer, Fines Control and Load Recovery Agent. Accessed online October 22, 2009 at <http://www.weatherford.com/weatherford/groups/public/documents/search/searchresults.hcst?phrase=zetaflow&x=0&y=0>.

³⁰ DSGEIS at 7-38.

³¹ Id. at 7-30-7-31.

exist for state and federal agencies charged with enforcing the Safe Drinking Water Act.

EWG also urges the DEC to adopt our recommendations made at previous city council hearings. These recommendations include:

- 1) Requiring public disclosure of chemicals used to drill each well prior to drilling including chemicals used in hydraulic fracturing and
- 2) Prohibiting the use of chemicals that could compromise the quality of water supplies and that are not demonstrated to be safe for humans and the environment.

The state should apply our recommended standards to all oil and natural gas drilling even if such drilling does not include "high-volume hydraulic fracturing" or horizontal drilling. Drilling for oil and natural gas involves extremely toxic chemicals that are harmful at microscopic levels. Just because drilling uses a lower volume of fracturing fluid or is strictly vertical does not mean that it is safer.

Thank you for this opportunity to testify. I look forward to your questions.



RIVERKEEPER

Testimony of: James L. Simpson, Staff Attorney, Riverkeeper, Inc.

New York City Council

Committee on Environmental Protection Hearing:

Oversight - The Draft Supplemental Generic Environmental Impact Statement Relating to Drilling for Natural Gas in New York State Using Horizontal Drilling and Hydraulic Fracturing.

Proposed Resolution 1850-A: Calling on the New York State Legislature, the New York State Department of Environmental Conservation, and New York State Governor David Paterson to prohibit drilling for natural gas within the boundaries of the watershed of the New York City drinking water supply.

October 23, 2009

As one of the signatories to the 1997 New York City Watershed Memorandum of Agreement ("MOA"), and in keeping with our mission to safeguard the ecology integrity of the Hudson River and the New York City Watershed, Riverkeeper welcomes the opportunity to participate in this hearing.

First, I would like to acknowledge and thank Councilman James Gennaro for his continued leadership on this and other important environmental issues.

On September 30, 2009 the New York State Department of Environmental Protection ("DEC") released its draft Supplement Generic Environmental Impact Statement on its Oil and Gas Regulatory Program ("Draft EIS").

While we are still reviewing the details of this 805-page document, our initial review shows there are many problems with it. In general, this is a pro gas drilling document. It is evident that the DEC's Division of Mineral Resources wants nothing more than to issue drilling permits as soon as possible. Riverkeeper and its experts are reviewing the details of this document and will provide extensive comments before the comment deadline. That said, I have 6 specific comments at this point.

1. **Insufficient public comment period.** A mere 60 days (including Thanksgiving weekend) is a woefully inadequate timeframe for the public to digest and comment upon this 805-page document. This amounts to over 13 pages a day, seven days a week. The Draft EIS states that DEC's 1992 EIS on this issue was "the culmination of a 12-year effort." (Draft EIS, p. 1-4). If the 1992 EIS was a 12 year effort, why is DEC only giving the public 60 days to review this document? As the NY Times editorialized, this is "dangerously irresponsible"

given what is at stake. DEC should extend the comment period by at least an additional 60 days. After all, the gas isn't going anywhere.

2. **No new regulations proposed.** Even though this Draft EIS is a supplemental analysis of DEC's "regulatory program" there are a grand total of zero new regulations proposed in this Draft EIS. DEC's existing regulatory structure was adopted over two decades ago. Moreover, the very reason for this supplemental Draft EIS is new technology using substantial amounts of water and chemicals and proposed drilling in areas, like the NYC Watershed, with no prior history of gas drilling. Rather than propose any new regulations to govern this new type of drilling, DEC wants to address all of the impacts through its permitting procedures. DEC should go back to the drawing board and propose statewide regulations, incorporating best management practices, to regulate this activity.
3. **DEC should ban drilling within the NYC Watershed and other surface water drinking supplies throughout the State.** Rather than propose any real mitigation measures, the Draft EIS says that existing regulations, such as NYC's Watershed Rules & Regulations, provide enough protections for the NYC Watershed. The City's Regulations, however, do not regulate industrial gas drilling. The Draft EIS's treatment of the NYC Watershed is completely unacceptable.
4. **Lack of protection for NYC Water Supply Infrastructure.** The Draft EIS claims that fracturing zones are "thousands of feet deeper" than any tunnel or aqueduct. (Draft EIS, 6-41). This is a false statement. NYCDEP's recent Rapid Impact Assessment Report found that (i) portions of the Catskill Aqueduct and the Delaware Aqueduct are in "direct contact" with the Marcellus Formation, and (ii) two reservoirs and substantial portions of aqueducts and tunnels are as close as 500 vertical feet from the Marcellus Formation. Rather than propose any new rules, the Draft EIS proposes to continue existing protocols between DEC and NYCDEP regarding drilling near aqueducts and tunnels. This is unacceptable and fails to account for this new drilling technology.
5. **Lack of clarity on fracking chemicals.** In Chapter 5, the Draft EIS lists many fracking product names and, separately, constituent chemicals used in those products. However, DEC does not link the constituent chemicals to product names because it has deemed the product compositions and formulas to be trade secrets and therefore exempt from public disclosure (Draft EIS, page 5-52). What is lacking is any analysis of the environmental impact of these chemicals to, say, drinking water. We are still studying this issue but are deeply concerned with what we have learned so far.
6. **Failure to Study Cumulative Impacts.** The Draft EIS contains no real analysis of the cumulative impacts associated with industrial gas drilling. Lawyers and policy-makers refer to this concept as the tragedy of the commons; it is also known as "death by a thousand cuts." Rather than analyze each well individually,

as DEC does in the Draft EIS, DEC must study the cumulative impacts from hundreds or thousands of wells throughout the NYC Watershed, the Catskills, and beyond.

Background – Natural Gas Drilling – The Process and Impacts

Hydraulic fracturing involves the high-pressure injection of millions of gallons of water, sand and toxic chemicals into horizontal wells. After the “fracking” process, the water and chemicals must be recovered and delivered to a suitable treatment center. While we need to learn more about the “fracking” process to understand its environmental impacts fully, we already know that industrial gas drilling brings with it a whole host of activities and apparatus that are unacceptable within the NYC Watershed and other surface water drinking supplies throughout the State. A web of pipelines to transport the gas and noisy compressors to push gas from wells through the pipeline system will be needed; large drilling pads capable of handling up to 16 wells will be constructed; hundreds of tanker trucks will be used to haul in water and to remove waste water; and large open pits are necessary to hold contaminated wastewater. All of this upheaval and disruptive surface activity that would accompany any drilling process, occurring in a watershed infamous for heavy flooding and where all surface runoff flows into New York City’s unfiltered water supply, is not acceptable. Moreover, allowing this activity would be reckless in the context of the filtration avoidance determination (“FAD”) and the prospect of the City paying for a \$10 billion filtration plant (with \$300 million in annual operating costs) should the U.S. Environmental Protection Agency (“U.S. EPA”) revoke the FAD.

Industrial Gas Drilling Inconsistent with 1997 MOA

As the Council knows, New York City, New York State, U.S. EPA, several state agencies (including DEC), dozens of watershed counties and towns, and several environmental organizations including Riverkeeper all signed the 1997 New York City Watershed Memorandum of Agreement (“MOA”). The MOA set the stage for the City to receive the FAD and is the product of years of extensive negotiations and has been hailed internationally as the model for watershed protection.

In the MOA all the parties (including DEC) agreed that “the New York City water supply is an extremely valuable natural resource that must be protected in a comprehensive manner.”¹

All the parties also agreed that economic development within the watershed communities must be consistent with watershed protection.² However, no economic development could be less consistent with watershed protection than this.

¹ 1997 NYC Watershed Memorandum of Agreement, ¶ 5, *available at*, <http://www.nysefc.org/home/index.asp?page=295>.

² MOA, ¶ 6.

All parties also agreed to maintain and enhance the social character of the watershed towns.³ Industrial gas drilling brings with it a whole host of activities that would be incongruent with the social character of the watershed towns.

DEC must ensure its actions are consistent with its obligations under the MOA.

Conclusion

New York City is the trustee for the New York City Watershed. This unfiltered water supply is the State's greatest natural resource and, perhaps, the City's greatest capital asset. As the trustee, the City has the duty to protect the water supply not just for this generation but for our children and our children's children.

Riverkeeper supports Councilman Gennaro's Resolution No. 1850-A and urges the full City Council to pass it immediately.

I thank the City Council for the opportunity to participate in today's hearing.

³ MOA, ¶ 6.

NYC Council Committee on Environmental Protection
October 23, 2009

**COMMENTS RE HYDROFRACTURING IN THE NYC
WATERSHED PORTION OF THE MARCELLUS SHALE**

Croton Watershed Clean Water Coalition, Inc.
Federated Conservationists of Westchester County, Inc.

As not-for-profit organizations among whose concerns is the protection and preservation of NYC's high quality drinking water that serves 9 million people, we are deeply concerned that the proposal to extract natural gas in the underlying Marcellus Shale through hydrofracturing will lead to the contamination and pollution of NYC's unsurpassed source of water.

NYC is the largest city in the world that is blessed with high quality drinking water that still only requires minimal treatment prior to reaching its consumers. NYC's 75% forested, still largely undeveloped watershed is the provider of this high quality water. Because of the DEP's strenuous efforts to protect its watershed and maintain the high quality of water in its reservoirs, the EPA has granted a Filtration Avoidance Determination (FAD) for its Catskill/Delaware (Cat/Del) watershed that lies mainly West of Hudson (WOH) entirely in the Marcellus Shale area. NYC's Croton Watershed that lies East of Hudson (EOH) was not so fortunate. Due to development pressures in the Croton watershed, EPA was not willing to grant it a FAD. As a consequence, NYC is in the process of building a chemical filtration plant for the Croton. The plant was originally estimated at \$800 million. That cost has now risen to \$3.2 billion, accompanied by skyrocketing rises for NYC ratepayers. The Cat/Del can supply at least ten times as much water to NYC as the Croton. If Cat/Del water were contaminated because of drilling for natural gas in the Marcellus Shale, or some other cause, the accompanying costs for a filtration plant would be astronomical. Neither NYC nor NYS residents who receive NYC water should have to be burdened with such a cost.

DEC's presentation of the possibilities of drilling in the NYC Watershed, indeed its apology for doing so, comes at a time of severe economic stress, when Governor Paterson is trying, by any means possible, to close NYS's \$3 billion budget gap. Estimates for the revenue from drilling for natural gas in the Marcellus Shale are in the \$1 billion figure.

The Governor has been trying to streamline the approval process for developments in NYS by issuing Executive Order #25. As stated in our 8/14/09 letter to the Governor, "... the Regulatory Review and Reform Program, purportedly for the purpose to 'evaluate, reform, or repeal, where necessary, rules and paperwork requirements...' would merely streamline the processes through which developers, oil and gas companies and others could obtain permits, and make it more difficult, if not impossible, for the average citizen to have a voice in preventing environmental degradation."

DEC has now published its 10/5/09 DSGEIS report - Well Permit Issuance for Horizontal Drilling And High-Volume Hydraulic Fracturing to Develop the Marcellus Shale and Other Low-Permeability Gas reservoirs - (available at OGdSGEIS at the DEC website).

In keeping with the streamlining process, the Governor is pushing for early hearings and the rapid acceptance of the DSGEIS. The public has only till November 30th to respond with written comments, a ridiculously short time for having to comment on over 800 pages laden with a heavy technical content.

In addition, the document appears not to be available in some of the NYC public libraries, listed by DEC as repositories for the report. This contravenes 6 NYCRR Part 617.12(b)(3): "All SEQR documents and notices, including but not limited to, EAF, negative declarations, positive declarations, scopes, notices of completion of an EIS, EISs, notices of hearings and findings must be maintained in files that are readily accessible to the public and made available on request" and (5) "If sufficient copies of the EIS are not available to meet the public interest, the lead agency must provide an additional copy of the documents to the local library."

The fact that DEC started the review process prior to having the document available in the local libraries, appears to contravene the above SEQR law. The clock should start when all documentation needed for comments is available to the public. Because of the size of the document and the fact that it was not available to members of the public, the written comment period should be extended to January 31st, 2010.

Besides the DSGEIS, there is the Draft NYS Energy Plan that also calls for natural gas drilling in the Marcellus Shale. CWCWC and FCWC consider the Energy Plan's insistence on extraction of natural gas within the NYC watershed to be a dire threat, indeed an unacceptable threat, to the integrity of the drinking water supply for over 9 million NYS residents, and has expressed that view at the 8/21/09 Public Hearing held at Hunter College.

In the following comments, CWCWC and FCWC will present an overview of the many hazards to water quality that are inevitable consequences of fracking. Most of these hazards are described in detail in Hazen and Sawyer's 9/2009 Rapid Impact Assessment Report (RIAR), commissioned by DEP. DEP will have a complete report ready by mid-December.

We shall also challenge the contention in the 10/5/09 DSGEIS report that drilling in the NYC Watershed area of the Marcellus Shale can be done safely, if the proper precautions are taken.

In a situation where the unfiltered drinking water of 9 million people is at stake, absolute safety is required - a clearly impossible goal. Therefore, this is a classical example that calls for the exercise of the Precautionary Principle.

A Brief Introduction to "Fracking"

From the DEP Report, page ES-2: "The area of land assigned to a well is called a spacing unit, and the number of wells that may be drilled in an area is based on NYSDEC spacing unit regulations. A minimum spacing unit of 40 acres is required for a single well, and a 640 acre spacing unit is required for multiple wells drilled from a common wellpad. Once the site is prepared and the wellpad is completed, operators begin drilling the well. One or more wells may be drilled from a single wellpad. In the NYC watershed area, the well would likely consist of a 3,000 to 7,000 feet deep vertical section that extends out laterally for an additional 2,000 to 6,000 feet....Construction of gas wells in the Marcellus Shale will require drilling through shallow aquifers and penetrating formations that may contain high level of total dissolved solids, hydrocarbons, heavy metals, radionuclides or other potential contaminants. The wellbore creates a conduit for fluid flow between these previously isolated geologic formations." A mixture of water, sand, and chemicals is then injected into the well at high pressure to create fractures in the shale and release the gas. "An average fracturing operation may require on the order of from three to nine million gallons of water, 1% to 2% of which reportedly consists of various products and chemicals designed to control fluid properties and facilitate fracturing."

Although 1% to 2% of chemicals might appear to be too small to be harmful, we must remember that, in many cases, harmful concentrations are measured in parts per million.

Moreover, the names of the chemicals that are injected into the shale and that could contaminate their drinking water are shamefully kept secret from the public. From Earthworks: "Despite the widespread use of the practice, and the risks hydraulic fracturing poses to human health and safe drinking water supplies, the U.S. Environmental Protection Agency ("EPA") does not regulate the injection of fracturing fluids under the Safe Drinking Water Act. The oil and gas industry is the only industry in America that is allowed by EPA to inject known hazardous materials -- unchecked -- directly into or adjacent to underground drinking water supplies."

The three to nine million gallons of water have to be obtained from the most convenient source available. If there is no nearby source available, the millions of gallons have to be trucked in. Otherwise they are sucked out of the local sources. This presents a danger of depleting aquifers, the base-flow for streams, drying up wetlands, and lowering the depth of local lakes, ponds, and reservoirs.

The risks of private wells being contaminated by the fracking process are very real, as we show in the next section. The reasons are not hard to find. Millions of gallons of fluid are injected into the shale under intensely high pressure that opens up the fissures in the shale and releases the gas. From the RIAR, page 18: "Upward vertical migration through extensive, open fractures or an improperly sealed gas well can allow for the cross-formational migration of groundwater between flow regimes (i.e., short-circuiting). Such a migration can allow for the discharge of high salinity and gas enriched groundwater directly to the ground surface or into shallower (local or intermediate) flow regimes.

Under these conditions, the discharged groundwater could occur at a considerable distance from the corresponding source area and formation."

It is easily seen that, in many cases, the upward migration of fracking fluid mixed with highly saline fluids that are present at the depth of the shale can contaminate the well waters of local residents. A 40-acre wellpad, the minimum allowed per wellhead, would allow a neighboring wellhead as close as 750 feet. Assuming the neighboring well goes down to 500 feet, that the fracking well goes to a depth of 3,000 feet and then horizontally about 2,000 feet, the fracking material released from the horizontal portion could be as close as 1,500 feet - not a great distance for fluid under high pressure to travel.

Incidents of Private Wells Being Contaminated and Burden of Proof

Having read through the extensive documentation pertaining to hydrofracturing or "fracking" in the Marcellus Shale, we can only come to one conclusion - fracking should be banned in the NYC watershed. The risks of contaminating the watershed's groundwater, streams, wetlands and reservoirs are diverse and, in many cases, unforeseeable and therefore uncontrollable. It is inevitable that over time, contamination will occur.

In fact, there have been numerous incidents of contamination in other watersheds. For example the Texas Groundwater Protection Committee has reported an average of 6,000 alleges groundwater contamination cases per year, since 1990, with 5,267 cases being currently investigated for 2007. Apparently, these have not deterred natural gas drilling. However, the situation in NYS is radically different. It would take only a small fraction of those occurrences for EPA to withdraw its FAD for the Cat/Del, an action that would place a near intolerable burden on NYC finances and as well as on many of its residents.

ProPublica (August 4, 2009) reported that "The incident is the latest in a string of more than 50 similar cases related to gas drilling in the state...", the incident being a natural gas well leak near the town of Roaring Brook, PA. Further reports by ProPublica refer to four homes in Lycoming County, PA that have lost their drinking water to pollution, due to gas drilling, and 18 other homes where the water is being tested.

Earthworks, in an August 14, 2009 Press Release, describes how citizens in Pavillion, WY call for a fracking moratorium. They found that "11 of 39 tested wells were contaminated. Among the contaminants are toxics used in oil and gas production."

In several cases, local residents whose wells have been adversely affected have considerable trouble being reimbursed for the damages they suffered. The drilling company will argue that the chemicals found in a well are the same as those used as lawn pesticides, for example. The burden of proof is thus cleverly shifted to the victim.

We recommend that all wells, within a reasonable range, be carefully tested for the quality and quantity of chemicals that they may happen to contain. If any new chemicals are discovered subsequently to the start of operations, then the burden of proof must be clearly on the drilling company to prove that they are not responsible.

Given the cutback in manpower at DEC for the sake of so-called "streamlining", we fear that adequate monitoring of wells is not possible and that local residents who have lost their potable water will be left with little recourse.

Fracking Chemicals

A database developed by the Endocrine Disruption Exchange (RIAR, p. 36) identifies 435 products composed of over 340 individual chemical components used in fracking. However, the drilling companies have been reluctant to divulge which chemicals they use in the fracking process, claiming the privilege of trade secrets. In particular, they do not reveal how these various chemicals are combined to make products that are used in fracking. We liken this to being told that carbon, nitrogen, oxygen, and hydrogen are harmless, and not being told that, if combined in the correct proportions and configuration, they can produce TNT. The drilling companies have not been forthcoming in informing the public as to what is being injected into their aquifers. Although CWCWC hopes that permits will never be issued in the NYC watershed, should such an unhappy event occur, however, no permits should be allowed until the drilling companies provide full, complete lists of all the components and combinations they use in their drilling activities.

To do otherwise would be a dereliction of NYS's duty to protect public health and safety.

Storage of Hazardous Waste

There are various estimates on how much of the injected, chemically-laden water, flows back to the surface. Estimates vary between 40% and 70%, possibly depending on whether already existing water within the shale layer, is included. This flow-back water is laden with contaminants such as cobalt, chromium, salts and lead, among others. An additional concern is the surfacing of materials containing Naturally Occurring Radioactive Material or NORM. According to the River Reporter (see <http://www.riverreporter.com/issues/09-01-08/news-backflow.html>), "NORM consists of Radium 226 and Radium 228, which are bone seekers that result in lung cancer and bone cancer." This wastewater has an unusually high brine water content, as well as Total Dissolved Solids (TDS), radionuclides and chemicals, all of which must be disposed of safely. Bromides are a concern since their disinfection byproducts are as dangerous, or even more so, than the haloacetic acids and trihalomethanes normally found to some extent in NYC water. Disinfection byproducts due to bromides could cause NYC water to be out of compliance with Stage 2 Disinfection Byproduct Rule.

It is shocking to see pictures of the hazardous waste water that is retrieved from the drilling process "stored" in open pits, merely lined with plastic. There appear to be no precautions against the effects of a heavy storm that could easily wash the hazardous mix into neighboring streams, lakes, and wetlands with disastrous effects on local fish and wildlife.

The usual procedure, if on-site storage is only temporary, is to transport the hazardous waste to a sewage treatment plant (STP) that is supposedly capable of cleaning it. This can present a multitude of problems.

First, only a few STPs are capable of dealing with an unusual mix of chemicals, some of which are not required to be revealed under the Trade Secret Law. Since tens of millions of gallons of water are used in fracking, and these have to be treated by the STPs, the result is that an individual STP likely will not be able to deal thoroughly with the volume, resulting in improperly treated effluent - not only the fracking water but also the sewage waste that the STP is originally designed for.

In NYS there are no specialized STPs for this kind of waste. Therefore, an alternative might be to store the waste via deep underground injection wells. However, disposal sites are limited due to the volume and the hazardous nature of the material. According to the RIAR, "Overall, waste management failures were responsible for the majority of documented water contamination incidents related to natural gas development." In addition, costs could be exorbitant. Even if suitable waste disposal sites were found, their use would still be problematical since the Underground Injection Control (UIC) program does not regulate materials that are not being injected under the waste disposal programs. In other words, there would be little supervision or control.

Thus, the problems associated with storing hazardous waste could, of themselves, be sufficient to ban gas drilling in the NYC Watershed.

The transport of these hazardous wastes is also a problem. Most will be transported in NYS approved trucks, some having a capacity of up to 9,000 gallons. A fracking operation can use up to 3 million gallons (mg) of water. Unless these 3mg are sucked out of the ground locally, they will have to be transported to the site by truck. That would require 600 trips of the largest trucks to bring the fracking water to the site, and a near equivalent number to haul the wastewater away, depending on how much is retrieved.

Accidents are unavoidable, and some trucks filled with hazardous waste will inevitably spill their contents into the NYC watershed.

Additional Concerns

We have touched on what we deem to be the main threats to the integrity of NYC water in the Cat/Del watershed. In our opinion those threats are so dangerous that they warrant the prohibition of drilling in the NYC watershed.

There are other threats, each has a lesser impact, yet taken together could do irreparable damage to the watershed.

Destruction of Land and Forests

The Cat/Del watershed is heavily forested and relatively undeveloped. Fracking involves laying bare anywhere from 40 to 640 acres (1 square mile) of mostly forested land in order to provide the area for the machinery. If drilling were to become more prevalent, the landscape would change from forest to one pockmarked with bare spots. In addition, roads will have to be cut through the forests in order to haul the heavy equipment to the pads. The effects will be devastating to wildlife and any endangered and threatened species in the vicinity, whose habitat will be destroyed. Furthermore, fragmenting and destroying the forest will have a deleterious effect on water quality since forests are supreme in their ability to provide the best quality water.

Laying of Pipes

Gas transmission pipelines may lie above ground or up to 6 feet below ground. Constructing the pipeline creates disturbance and can severely impact sensitive wildlife habitat as well as neighboring streams, wetlands and reservoirs, if improperly installed. Herbicides and other 'cides should be used sparingly. According to the RIAR, page 44, "Gas treatment at compressor stations and/or refineries may require chemicals and create liquid wastes that if handled improperly could lead to surface water or groundwater contamination."

Seismic Testing

Testing for the location of shale deposits is accomplished through the use of "Thumper Trucks". By detonating explosives below ground, they generate energy in the form of waves. The various paths taken by the waves give an indication of below-ground conditions. There is concern that these explosions that generate waves with an energy of up to 100,000 pound-foot could promote earthquakes which would further weaken the fissures promoted by fracking, and release the deep-lying toxic water, through the intervening layers and into the groundwater.

In conclusion, we would like to reiterate that the Catskill/Delaware Watershed is a unique area in the world that supplies high quality water, with a minimum of treatment, to over 9 million people. Unlike areas that are less sensitive because they do not have comparable water resources, although they may have other resources such as oil and gas, the Cat/Del cannot tolerate any impacts that would pose a threat to its hard-won Filtration Avoidance Determination. The result would be an unacceptable financial burden on NYC residents and all those who use Cat/Del water, to pay \$20 to \$30 billion for a filtration plant, not counting inevitable inflation.

The NYC watersheds not only supply superb water. They also supply some of the most beautiful landscape in the world - that graces the Hudson River and its valley with its mountains, rivers and forests. There is nothing like it.

If contamination should occur, no one really knows for how long it may last and whether it could ever be remediated, let alone what illness could result to humans, wildlife and vegetation. The potential astronomical cost aside, how could we ever replace this excellent, world-renowned water? If we cannot use the reservoir system, what do we do for water?



Testimony of Federated Conservationists of Westchester County, Inc.

Before the Committee on Environmental Protection
The Council of the City of New York
October 23, 2009

On Oversight: The Draft Supplemental Generic Environmental Impact Statement Relating to Drilling for Natural Gas in New York State Using Horizontal Drilling and Hydraulic Fracturing

Good Morning,

I am Steven J. Levy, Co-President of the Federated Conservationists of Westchester County, Inc. (FCWC). Federated Conservationists of Westchester County, Inc. was founded in 1965 as a not-for-profit coalition of dozens of local environmental groups to form a strong, single voice for combating pollution and preserving Westchester's many precious natural resources. FCWC has promoted environmentally sound planning and decision making throughout the region and educated the public and government officials on the need to protect natural resources. As the premier environmental watchdog in Westchester, the organization has influenced local, county and state governments in the defense of air, water and land. <http://www.fcwc.org>

Speaking on behalf of the FCWC as its Co-President, we applaud Councilman James F. Gennaro and the entire Environmental Protection Committee of the Council of the City of New York for their proactive approach in bringing the issue of drilling for natural gas in the State of New York to the forefront. We are very much concerned as well as appalled the State of New York would consider the extraction of natural gas in our watershed system.

Since 1965 when the FCWC was founded, one of our most long-standing and primary goals in working to protect Westchester County and its region's natural resources has been to protect our drinking water quality. Everything we know about this proposed drilling process causes us great concern should it be allowed in the New York City Catskill/Delaware Watershed. Nothing should be permitted by the State of New York Department of Environmental Conservation (DEC) that could conceivably jeopardize the drinking water of New York City and others which use this unparalleled reservoir system. Among our other concerns are potential impacts such as: increased air and land pollution, increased risk of earthquakes, and endangerment of forests and wildlife. The watershed for the NYC water supply is unique to any other part of the country and we must preserve it.

Furthermore, based on this position, we reach all the same conclusions Dr. Marion Rose and the Croton Watershed Clean Water Coalition (CWCWC) provide in their testimony. Energy sources are numerous and can be developed in places of relative safety. Our clean drinking water in the watershed is irreplaceable and filtering out the kind of chemicals used in this process is perhaps impossible; not to mention the unbelievably high cost and other unintended consequences. **We believe no possible precautions will be sufficiently effective to guarantee the safety of our watershed infrastructure. Thus, applying the precautionary principle, it is our position the DEC should deny all permit applications for natural gas wells within the New York City Catskill/Delaware Watershed, in order to preserve the integrity of our watershed for future generations.** The FCWC believes that we must not risk contamination of our drinking water. We also agree with the CWCWC that affording the public only until November 30, 2009, to respond to this endeavor is clearly inadequate for a proposal of such magnitude and likely catastrophic impact. Additionally, we plan to provide further comments.

Thank you for the opportunity to speak this morning.



**Testimony of
Deborah Goldberg, Earthjustice**

**The Council of the City of New York,
Committee on Environmental Protection**

**Hearing: Draft Supplemental Generic Environmental Impact Statement
on the Oil, Gas and Solution Mining Regulatory Program**

October 23, 2009

Thank you very much Chairman Gennaro and Members of the Committee for inviting me to testify today on the Draft Supplemental Generic Environmental Impact Statement on the Oil, Gas and Solution Mining Regulatory Program ("DSGEIS") released last month by the New York State Department of Environmental Conservation ("DEC"). I am Deborah Goldberg, Managing Attorney of the Northeast Office of Earthjustice. Earthjustice is a nonprofit public interest law firm dedicated to protecting the magnificent places, natural resources, and wildlife of this earth and to defending the right of all people to a healthy environment. Earthjustice has been working for more than a year to ensure that New York does not repeat the mistakes made in other states with intensive gas development and in particular to ensure that drinking water supplies of New Yorkers are not placed at risk by an inadequately protective state regulatory program.

Earthjustice is working with allies and scientific experts to prepare comprehensive and detailed comments on the DSGEIS, which we will submit by the end of the comment period. Today, I am going to focus on only one procedural point and three substantive problems that leap off the face of the document and do not require complex, technical analysis.

1. The Comment Period Must Be Extended for Another 60 Days.

The DSGEIS is more than 800 pages long and very poorly organized. Much of it is very technical. The reader often is forced to go back to the 1992 GEIS to understand the scope of analysis offered. DEC nevertheless has fixed the day after Thanksgiving as the deadline for comments, meaning that the comment period is effectively *less* than 60 days. Significantly more time is needed.

There is no need to rush through the environmental review process. The gas has been in the shale for millions of years, and it still will be there in another few months. We should have an additional 60 days in which to prepare comments on the draft, so that we do not in our haste allow industrial gas development to poison the water we drink, pollute the air we breathe, and destroy the landscapes that nourish our spirit.

2. Drilling Should Not Proceed Until DEC Adopts Updated Regulations.

The regulations governing natural gas development in New York have not been updated since 1985. By 1994, an independent review of the program by the State Review of Oil & Natural Gas Environmental Regulations ("STRONGER") offered numerous recommendations for improvements. New York declined to update its rules then, and 15 years later, the regulations are seriously out of date and inadequate to protect public health and the environment from the impacts of gas development processes, including hydraulic fracturing.

Governor Paterson ordered preparation of an SGEIS because the State had never examined the potentially significant adverse environmental impacts of high-volume hydraulic fracturing. The DSGEIS confirms the inadequacy of the current regulations and permitting program by identifying numerous potentially significant impacts of gas development that cannot be handled by the rules. Under the State Environmental Quality Review Act ("SEQRA"), DEC must explain how it intends to mitigate those impacts. Nevertheless, DEC has not proposed a single new regulation.

DEC is proposing to use nothing more than new forms and permit conditions as safeguards against the admitted dangers of gas extraction. Under that system, the industry can lobby against imposition of the conditions every time it applies for permission to drill a well, and the public will be forced to monitor thousands of permits—one by one—to ensure that promised protections are actually in place. Unless they file freedom of information requests and read through lengthy technical documents, landowners who have leased their mineral rights will have no way of knowing whether the companies extracting the gas are taking adequate precautions. In sum, there will be no guaranteed baseline for environmental protection other than the decades-old program that DEC has recognized to be outdated and no guarantee that the measures required to mitigate environmental impacts, as described in the DSGEIS, actually will be implemented.

DEC cannot take credit for mitigating environmental impacts and at the same time keep unbridled discretion to decide whether and when to include the mitigation measures in permits. The DSGEIS must propose new regulations, and when the environmental review process is complete, the proposed regulations must be promulgated through a formal rulemaking. That procedure (unlike the permitting process) is designed to provide opportunities for ample public participation, and it is the only way to establish transparent, consistent, state-of-the-art, and enforceable requirements for the entire industry across the entire state. Moreover, nothing less will suffice as mitigation for adverse impacts identified in the DSGEIS. Of course, permit conditions that are more protective than the baseline regulations also may be required to mitigate site-specific impacts. Until regulations are officially promulgated, however, there should be no permits issued for drilling in the Marcellus Shale or other low-permeability formations.

3. The Cumulative Impact Analysis Is Deficient.

As a generic review of a statewide program, the DSGEIS must take a hard look at cumulative, secondary, and long-term impacts of the proposed action. DEC does not begin to meet the legal standard for such an analysis in a cumulative impacts analysis that is barely five pages long. Instead of estimating the potential impacts of intensive development of thousands of wells over a period of decades, against the background of already existing and pending new development, DEC looks at the impacts of developing a single well pad. The evaluation of regional impacts—the *only* level at which many impacts (such as ozone pollution) can legitimately be analyzed—is largely a litany of complaints about how hard it is to predict what will happen.

In fact it is not that hard to develop the required analysis. There are well known methodologies for analyzing cumulative impacts even when an agency does not have complete certainty about the scale or pace of development. DEC has more than adequate information to develop a reasonable worst-case scenario, or set of possible scenarios, for examination. The agency is perfectly willing to trot out the predicted economic and fiscal benefits from the development of 2,000-4,000 wells in Broome County over ten years; predictions of cumulative environmental impacts also can—and must—be made, by adopting reasonable assumptions based on available data. If DEC genuinely has no clue, is incapable of figuring out, or is unwilling to explain what intensive gas development might mean for New Yorkers' health and natural heritage, gas drilling should not be permitted in this state.

4. The Alternatives Analysis Is Inadequate.

Under DEC's regulations, the agency must consider "all reasonable alternatives." The DSGEIS evaluates exactly one alternative—completely banning development of low-permeability reservoirs—which the agency summarily rejects. Two additional alternatives are included in the draft, but without any serious discussion: (1) a phased permitting approach, and (2) the use of "green" technologies and additives in drilling and fracturing.

The discussion of the phased permitting alternative does little more than reproduce text from the deficient cumulative impact analysis. (Indeed, the cut-and-paste job is so crude that the last section of what is supposed to be the discussion of the phased permitting alternative is titled "Regional Cumulative Impacts Conclusions/Recommendations.") Again, DEC complains that it does not know "with any certainty" what the industry will do. But fleshing out discussion of this alternative does not require that information. The point is to create a feasible plan for gas development that is limited over time and space (which may well differ from what industry would do to maximize profits), and to offer a reasoned assessment of the environmental impacts of the plan so that a reasoned choice can be made between the alternative and the proposed action.

DEC declines to assess the "green" alternative to current industry practices because it is too "difficult" to assess the claims of chemical companies that their fracturing additives are environmentally friendly. But the alternative that requires discussion should be framed differently. The agency should be considering an alternative that involves a complete ban on the use of any chemical additive that the industry cannot prove to be non-toxic. DEC should consider the impacts of offering our drinking water at least the level of protection that already is afforded to the foods and pharmaceuticals we ingest.

Testimony of Ken Baer
Sierra Club, Atlantic Chapter (NYS)
91 6th Avenue
Brooklyn, NY 11217
718-638-3533

My name is Ken Baer. I am the past Chair of the Atlantic Chapter of the Sierra Club, which encompasses all of New York State and where we have over 38,000 members. I am giving testimony on behalf of the Sierra Club.

An abundant amount of clean water is needed to sustain human life as well as life on Earth. Everything must be done to protect the water supply in all of New York State.

The Sierra Club recognizes the great danger to water quality in New York State that hydraulic fracturing represents. The use of hydraulic fracturing to extract natural gas from impermeable rock, such as the Marcellus and Utica Shale Formations, needs to be addressed by the New York State Legislature. Water supplies have been irreparably contaminated and people have developed severe health problems where runoff from hydraulic fracturing have infiltrated drinking wells. These real life horror situations are playing out in many states.

Some of the chemicals the gas and oil industry uses to extract gas are **highly toxic and non-biodegradable**. Once these compounds get into water supplies it is virtually impossible to filter them out. Gas drilling entities have already caused people and farm animals to have skin problems, brain lesions, cancer and reproductive disorders. Their activities contaminate our **water, soil and air** and have already adversely affected New Mexico, Colorado, Utah, Wyoming, Ohio, Pennsylvania and Texas. In several places people can ignite their drinking water.

As much as New York City is concerned about its own water supply, it must not take a provincial attitude toward the issue of fracking. A strong message must be sent to both the State Legislature as well as the Governor that this great progressive city is not only interested in its own watersheds, but those in the rest of the state. All of us are well aware of the phrase "United we stand, divided we fall". This is an opportunity to tell the Legislature that this is not just a New York City problem, but a statewide problem.

The Sierra Club looks to this City Council and the State Legislature to address the dangers that this form of gas drilling presents to the entire state. Every New Yorker must be assured that their drinking water and food is **not** riddled with highly toxic drilling chemicals — and that the **foodsheds** for NYC and other urban centers are not compromised. All people are precious, and all 17 watersheds in our state are sensitive, and special, because they are crucial for the livelihoods and the survival of *a//* the people who live in them.

Thank you.

TELCO ***TOOLS, INC.***

P.O. Box 1, Bellport, New York 11713
U.S.A.
(516) 289-0444

FIRST IN TOOLS AND QUALITY



**Sierra Club Atlantic Chapter Comments to the New York City Council,
Committee on Environmental Protection –
Proposed Resolution No. 1850-A**

October 23, 2009

The Members of the Gas Drilling Task Force for the Sierra Club Atlantic Chapter have been studying the impacts of hydrofracking and horizontal drilling in the Marcellus Shale formation and other tight shale formations in New York State. We have discovered that there are no best management practices that make this form of gas drilling an acceptable risk to our health and the environment.

Regarding the Proposed Resolution No. 1850-A which calls on the New York State Legislature, the New York State Department of Environmental Conservation, and New York State Governor David Paterson to prohibit drilling for natural gas within the boundaries of the watershed of the New York City drinking water supply - **all New York State watersheds must be protected** from existing hydrofracking techniques used to release gas from the Shale formations.

Hazardous and dangerous chemicals are injected with water into the ground to facilitate this process. One well may be injected with 10,000 pounds of chemical substances combined with millions of gallons of water. The disclosure of the exact content and volume of fracking fluids does not protect against them and does not reduce their toxicity. Even if fracking fluid chemicals were not used, substances that normally remain underground are brought to the surface by the fracking process. The release of arsenic, heavy metals, radon and other radioactive carcinogens are of sufficient concern in their own right to preclude support of this inherently toxic process.

It has been stated that in Pennsylvania, 60-70% of the water used in hydrofracking within the Marcellus Shale formation stays underground and does not return to the hydrologic cycle. The water can shift underground and contaminate wells and aquifers, the portion that returns to the surface contains the industrial chemicals.

The NYS Geological Society has identified natural fissures as a major source of fugitive methane. Fracking causes fractures not just where the gas is meant to escape but along unmapped fissure lines of least resistance — into large and small aquifers, individual's wells, home basements Thus escalating a dangerous situation into an uncontrolled one.

While the recent NYDEC DGEIS for Natural Gas Drilling gives no indication of the actual waste water capacity for all of New York. The appendices lists 134 eligible pretreatment plants across the state, giving the impression that we may have sufficient capacity to remediate the chlorides, heavy metals, VOC's, benzene, radium, and the tens of thousands of gallons of industrial chemicals associated with flow back water. But of those 134 listed plants only 3 currently accept natural gas production water and in a limited capacity. **New York has virtually no waste water infrastructure to service the needs of the Marcellus Shale gas extraction industries.**

In spring 2008 Covalent Energy began the permitting of a vertical well in Maryland, NY. As one of the first wells in Otsego County, the DEC required disclosure of where drilling fluids were to be disposed. Covalent Energy needed nearly a year to secure a letter of commitment from a Publicly Owned Treatment Works (POTW) facility willing to take their waste water. The facility is nearly three and a half hours away in Watertown, and had no previous experience with drilling wastes. Even though the DEC gave their approval to the arrangement, the EPA, who administers the industrial pretreatment program was not notified and has since expressed concern about the lack of disclosure. If 50,000 gallons of waste water has that much difficulty to find a treatment source in New York, it is easy to imagine the capacity constraints for the millions of gallons of waste water inherent to a single Marcellus gas well. We have been unable to determine the waste water's final destination from those projects and in general, the DEC does not currently track the movement of waste water.

My colleague Roger Downs has been told that the majority of the waste water went to large industrial Pennsylvania treatment plants, but he has been informed by conversations with plant managers that there is little New York wastewater going across the border because Pennsylvania is already at over capacity. So where is all this waste water going?

Last year the DEC estimated that there will be a 36.2 billion dollar deficit in New York's waste water infrastructure needs over the next 20 years. Environmental Advocates of New York documented that the DEC has "administratively renewed" or rubberstamped 90 percent of the permits in need of renewal instead of substantively reviewing the performance of these facilities and the impact their pollution may have on the state's lakes and streams. The DEC simply does not have the staff or funding to administer a pretreatment program for gas production wastes that would be sufficiently protective of our watersheds.

There is the need for a cumulative assessment for all hydrofracking impacts. Further issues of concern include incessant and extreme noise from hydrofracking, destruction of wildlife habitat, deforestation, and the State's recreation industry.

Shale gas should not be considered a transitional fuel source or having a transitional role due to the adverse public health and environmental impacts. New York State has made considerable progress with energy efficiency and sustainable energy developments. An increase in natural gas production will displace the potential for the implementation of wind, solar and other innovative low-carbon and nuclear free sustainable energy systems. A policy that supports expansion of the extraction of shale gas is a short-term solution benefiting only special interests, to the detriment of public health and the environment.

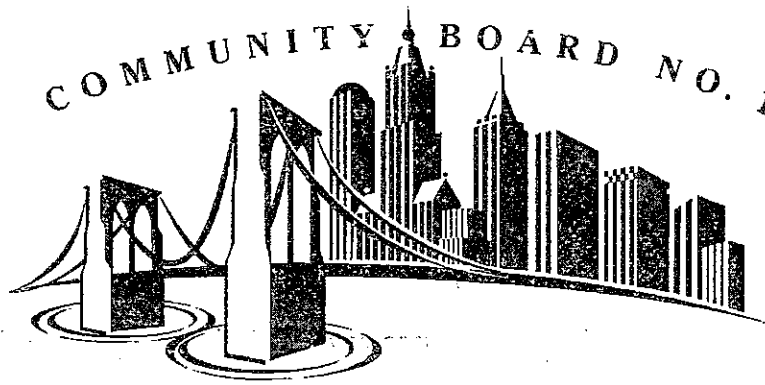
The Sierra Club requests the Committee to use its full powers to protect all New York State watersheds and communities directly and/or indirectly impacted by deep shale - horizontal fracturing gas extraction.

Thank you for your consideration of these Comments.

Sincerely,

A handwritten signature in black ink that reads "Annie Wilson". The signature is written in a cursive, flowing style.

Annie Wilson
Energy Committee Chair, Sierra Club Atlantic Chapter
Post Office Box # 2430, New York, NY10009
energy@newyork.sierraclub.org



The Council of the City of New York
Committee on Environmental Protection
Oversight Hearing on

The Draft Supplemental Generic Environmental Impact Statement Relating to Drilling for
Natural Gas in New York State Using Horizontal Drilling and Hydraulic Fracturing

Testimony by Catherine McVay Hughes, Vice Chairperson, Community Board One

Friday, October 23, 2009
10:00 a.m. in the Committee Room, City Hall Manhattan

Good morning. I am Catherine McVay Hughes, Vice Chairperson of Community Board One (CB1). We appreciate this opportunity to testify about The Draft Supplemental Generic Environmental Impact Statement Relating to Drilling for Natural Gas in New York State Using Horizontal Drilling and Hydraulic Fracturing (T2009-1651). We thank Chairman James F. Gennaro of the New York City Council Committee on Environmental Protection and Manhattan Borough President Scott Stringer for their tireless efforts to defend our drinking water supply and to bring this important issue to the forefront.

We support Resolution 1850-2009 which calls on the New York State Legislature, the New York State Department of Environmental Conservation (DEC), and New York State Governor David Paterson to prohibit drilling for natural gas within the boundaries of the watershed of the New York City drinking water supply. CB1 unanimously passed a resolution unequivocally urging the NYS DEC to prohibit the use of hydraulic fracturing in the New York City watershed on May 26, 2009.

As you know, both the NYS DEC and the New York City Department of Environmental Protection (NYC DEP) have a mandate to protect the watershed and land surrounding the watershed. The NYS DEC also has a mandate to protect the groundwater and surface water of New York State. We have concerns that drilling or fracturing could cause problems or contaminate the surface water (watershed) or groundwater in the areas of work.

In addition, we are here today to call on the Governor to extend the public comment period an additional 60 days from the end of the current public comment period on November 30, 2009. There is no need to rush into drilling for natural gas within the boundaries of our watershed. Our country's supply of natural gas is projected to be more than sufficient for years

City of New York



Julie Menin CHAIRPERSON | **Noah Pfefferblit** DISTRICT MANAGER
49 Chambers Street, Suite 715, New York, NY 10007-1209
Tel 212 442 5050, Fax 212 442 5055, Email cb1@cb1.org, www.cb1.org

and decades to come, and according to a recent federal Energy Information Administration publication, “the current forecast assumes some additional production curtailments as natural gas inventories begin to swell toward capacity limits this month.”ⁱ In other words, we are already drilling more gas than we can store.

We also have the following concerns:

- Cross contamination between surface water and drinking water wells
- Well permit issuance in the watershed areas
- Septic fields in the area permitted for drilling or fracturing
- Dual roles for the city and state in the protection of NYC drinking water
- Gas leaks ⁱⁱ

According to a report by Manhattan Borough President Stringer called “Uncalculated Risk: How plans to drill for gas in Upstate New York could threaten New York City’s water system” (February 2009), there is “a scary record of hydraulic fracturing in other states ... including leaks and spills; water pollution; explosions; and water theft.” Therefore, NYS DEC should seriously consider requiring that a financial bond be put up to cover the complete cost of water filtration plant of all chemicals used prior to establishing even a well head. This is a common practice used routinely in many businesses. We are concerned that “shell” companies could be established, and if a problem were to develop, there would be only the taxpayer left with the bill to remediate the damage as we have seen in many superfund sites. A bond or escrow arrangement would protect the City and upstate area and any reputable company could provide it.

As the Community Board representing Lower Manhattan, which includes the World Trade site, we were deeply concerned about the safety of our air and water after the terrorist attacks of September 11, 2001. The City has committed significant resources to defend its 8 million residents against toxic and radioactive chemicals. To allow horizontal drilling and hydraulic fracturing in the Marcellus Shale within the boundaries of our watershed for potential short term financial gain is unconscionable. In other parts of the world, countries are going to war over the quantity and quality of their water supply. Our water supply is one of our most precious resources and we must continue to vigilantly protect it. Thank you for your consideration of CB1’s testimony today.

ⁱ “**U.S. Natural Gas Consumption.** Total natural gas consumption is projected to decline by 2.0 percent in 2009 and 0.2 percent in 2010 ([U.S. Total Natural Gas Consumption Growth Chart](http://www.eia.doe.gov/emeu/steo/pub/contents.html)). Weak economic conditions continue to hamper the industrial sector, where the most recent data show natural gas consumption is down by 12.4 percent through July compared with the same period last year. With lower consumption in the residential and commercial sectors as well, natural gas use in the electric power sector continues to serve as the only demand outlet for increased natural gas supplies,” according to Short-Term Energy and Winter Fuels Outlook dated October 6, 2009 Release, Energy Information Administration, Official Energy Statistics from the U.S. Government, <http://www.eia.doe.gov/emeu/steo/pub/contents.html>

ⁱⁱ The New York Times, “Curbing Emissions by Sealing Gas Leaks, by Andrew C. Revkin and Clifford Krauss, October 14, 2009

NEW
YORKERS
FOR
SUSTAINABLE
ENERGY
SOLUTIONS
STATEWIDE

The New York City Council Committee on Environmental Protection

James F. Gennaro, Chair, City Hall

New York, NY 10007

Friday, October 23, 2009, 10:00 a.m.

SUBJECT: T2009-1651 Oversight - The Draft Supplemental Generic Environmental Impact Statement Relating to Drilling for Natural Gas in New York State Using Horizontal Drilling and Hydraulic Fracturing.

SUBJECT: Res 1850-2009 Resolution calling on the New York State Legislature, the New York State Department of Environmental Conservation, and New York State Governor David Paterson to prohibit drilling for natural gas within the boundaries of the watershed of the New York City drinking water supply.

PURPOSE: Hearing to solicit public input on the above

BY: Michael Lebron and Stanley Scobie, principals: New Yorkers for Sustainable Energy Solutions Statewide

Michael Lebron | 36 Cooper Square, Suite 7F, New York, NY 10003 | 917-743-7568

Stanley R Scobie, PhD. | 37 Oconnell Rd., Binghamton, NY 13903 | 607-669-4683

Chair James Gennaro, Members of the Committee, good afternoon. I am Michael Lebron of New Yorkers for Sustainable Energy Solutions Statewide (NYSESS).

New York State has had and will continue to have some level of natural gas energy extraction. Sadly, oil and gas developers like to refer to NY as a cheap date; mainly because NY, almost alone among the oil and gas states, has no severance tax.

Such a tax, paid on the value of the resource removed, reflects the reality that natural resources, once removed, are gone - often leaving a mess behind. And, it reflects the concept that extractive industry should pay its fair and full share of costs.

Whether or not there is gas drilling in the City's watershed - and the Delaware River Basin that it is inextricably linked to - any natural gas extraction must pay its due bills at the point extraction occurs because this is the point at which environmental and societal costs are incurred. Simply put, we argue that NYC should *not* be paying - through tax revenue to the State's general fund - for costs of energy extraction elsewhere in the State.

That is the case now. The Department of Environmental Conservation - including the minerals division is funded almost completely through general revenue.

Proposals to increase permitting fees through legislation, although undoubtedly well intended, will quickly fall prey, as they always do, to inflationary price increases. You can easily see this in current permit fees which cover only a very small fraction of real administrative and enforcement costs.

What is needed is a revenue source that adjusts to evolving costs, and is directed into a lock box for DEC administration, enforcement, and an adequate "super-fund"-type resource to acknowledge and be able to respond to what we know, with *absolute certainty*, will be the inevitable physical or financial catastrophes.

Speaking of catastrophes, and by way of example, the 2002 Comptroller's Report showed the economic cost to the city from the attacks on 9/11 would total between

NEW YORKERS FOR SUSTAINABLE ENERGY SOLUTIONS STATEWIDE

\$83 billion and \$95 billion. The final figure depends, in part, on the number of jobs that are eventually relocated out of the city.

Federal officials had pledged \$21.4 billion in total federal assistance to the City. But only \$2.7 billion had been released.

Of this, the estimated amount of money needed to overhaul lower-Manhattan subways was \$7.5 billion, yet the amount of money granted by the U.S. government to overhaul lower-Manhattan subways was \$4.55 billion.

This past year, the citizens of Cohecton had to pick up the \$1.2 million tab for road repair after the completion of the Millennium Pipeline, which came to \$900 for each of its 1,328 citizens.

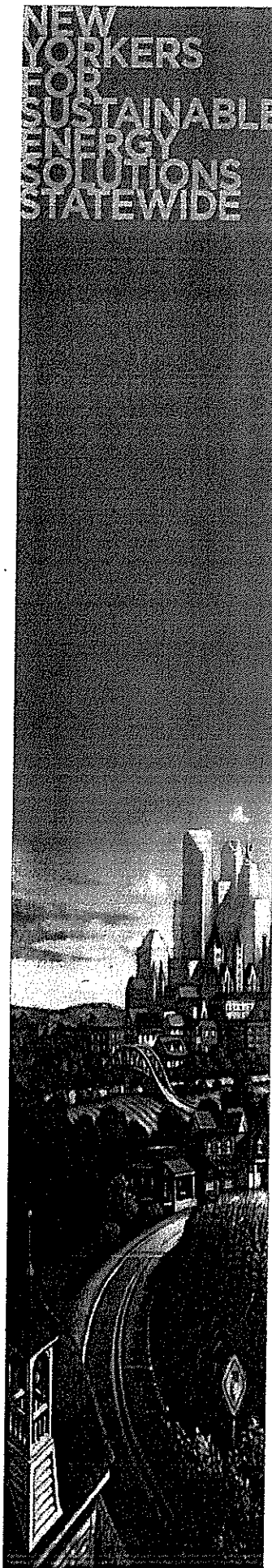
The most tragic example can be found in the town of Dimock. PADEP said there was little to worry about, that remedial procedures were in place. They did not say there was no budget for meaningful enforcement, and with regard to the 8,500 gallon toxic spills at a well site, they were even heard to say that they had to "negotiate" with the polluter. There may be some truth to that as the penalty, at \$56,650, comes out to \$6.74 a gallon.

In closing, our point is simple: we look to you to first and foremost to protect our most precious natural resource—our water, and to assure that we don't foot the bill if and when it becomes compromised.

Thank you.

Michael Lebron

Stanley Scobie, PhD



To: New York City Council
Environmental Protection Committee
Chairman James Gennaro
Special Hearing on Drilling in the NYC Watershed
October 23, 2009

From: Joseph Levine
NYH2O
561 Broadway, New York, 10012
212.219.1038
jlevine@bonelevine.net

Good Morning Chairman Gennaro and Committee Members;

I thank you for holding this Hearing and appreciate the opportunity to speak on the subject of hydraulic fracturing gas extraction and the environmental and health impacts.

I am a co-founder and Chairman of NYH2O, a non-profit grass roots advocacy group based in NYC. We are dedicated to protecting NY's water resources from the threat posed by the gas extraction industry by way of hydraulic fracturing. NYH2O seeks to educate the public concerning the health, environmental and economic impacts of gas drilling as experienced by communities across the country where this intensive industrial activity has taken place. NYH2O will support legislation that safeguards the public from the risk to water resources and air quality that ultimately threatens the health of our community and degrades the natural environment.

As a result of the 2005 Energy Policy Act, hydraulic fracturing was given exemptions from most federal environmental regulations such as the Clean Air Act, Clean Water Act, Safe Drinking Water Act, Emergency Planning and Community Right To Know Act, National Resource Recovery Act, even the Super Fund Act, and others.

Large areas of NY State overlie the Marcellus shale formation including the Southern Tier, the Catskill/Delaware Watershed and the Upper Delaware River Basin. These areas have resources that are absolutely crucial to the health and wealth of our state. Gas drilling is an industrial activity that will turn our beautiful upstate landscape into a sacrificial industrial zone (EWG).

No one should consider this acceptable, but what is of primary importance is the threat to public health from contamination of our water supply. Hydraulic fracturing gas drilling is intrinsically contaminating because the drilling process requires the injection of millions of gallons of fresh water mixed with dangerously toxic chemicals into the ground, which are able to infiltrate groundwater and aquifers. In the concentrated area of the NYC Watershed alone, more than 8 million people depend on this single source of water, as well as the millions more downstream along the Delaware River.

As we meet here today there are far too many instances of water contamination from gas drilling activities across the country and also in our own backyard. Within 40 miles of the Catskill/Delaware Watershed, in Dimock, PA, there has been recent contamination of water

supplies, landscape degradation, gas well explosions, livestock illness and disease. Three chemical spills last month dumped 8,500 gals of fracking fluid into Steven's Creek, which will make its way into the Susquehanna River and down to Chesapeake Bay.

The Pittsburg municipal water supply system, serving 350,000 people, was temporarily shut down this past spring when drilling wastewater was disposed at a water treatment facility on the Monongahela River. This past week (5 months later) reports of exceedingly high levels of TDS's were revealed. South of Pittsburg, along the Pennsylvania and West Virginia border, the present ongoing catastrophe is in the Dunkard Creek Watershed where more than 160 species of aquatic life, including unknown thousands of fish were killed in a 35 mile stretch of one of the most biologically diverse streams in the region. Scientists have commented that the biology of that stream is dead. There are hundreds of these incidents being reported from around the country where hydraulic fracturing is in progress. What all these events also have in common is a total denial of any responsibility from the industry doing this work.

A recent study in DISH, Texas (for EWG performed by Al Armendariz, Ph.D, Dept of Environmental Engineering at SMU) confirmed that as a result of hydraulic fracturing operations, unacceptably high concentrations of volatile organic chemicals, hazardous air pollutants, carcinogenic and neurotoxin compounds were found in ambient air samples near residential properties. MacArthur Genius Award winning chemist Wilma Subra reviewed this study and commented that, "the chemical concentrations in the air exceed both short and long term health values and will have acute impacts to human health." President of the Endocrine Disruption Exchange and award winning environmental health expert, Dr. Theo Colborn has said that based upon models from Colorado and other western states, gas production in upstate NY will cause air pollution and ozone levels in a 200 mile radius, as far away from production areas as NYC, to exceed federal clean air standards.

After 50 years, we're still trying to figure out what to do with the PCB's that were dumped into the Hudson in the 1950's (the plan is to inject them underground in southeastern New Mexico). And as bad as that is, Marcellus shale gas drilling portends to be worse. Gas drilling is a decentralized operation; it requires hundreds, usually thousands of individual wells to make gas extraction economically viable. In NY State 50,000 to 100,000 or more wells is a reasonable estimate based upon the gas industry's existing density models out west, and present NY State gas regulations. A spider web of pipelines, feeder and collecting lines, well pads, waste water pits, and holding ponds, roads, processing plants and sub-stations, truck traffic at the rate of 1000 trailer trucks per well, clear cutting 250,000 to 500,000 acres of land (250 million trees), forest fragmentation and wildlife and livestock impacts - and of course human health.

With all this, no study has been done that attempts to measure the cumulative impacts of drilling. Not the recently released NY State SGEIS. Obedient to the law (with exemptions), well permits are approved one well at a time, and evaluated one at a time. The only aspect of this process that is presented and evaluated cumulatively is money to be made (potential revenue). What is not considered is how much money will be spent in cumulative externalized costs such as reparations, clean up costs, short and long term illness, water filtration (\$10 to \$20 Billion) and maintenance costs (\$150 million annually), loss of revenue from local upstate economies, such as farming and dairy, tourism, outdoor recreation including fishing and hunting (NYS estimated

at \$380 billion over a 20 year period vs \$22 billion for gas). This equals very short term thinking. Townships and communities upstate are not equipped to handle this.

The cumulative impacts on water alone are staggering. In this crucial time of water awareness - probably never greater, this activity requires enormous quantities of fresh water; 3 to 9 million gallons of water for each well. Wells are fracked multiple times—often up to 10 or 15 times or more, and each fracking operation uses another million gallons of water. All of the water is mixed with toxic chemicals used in the drilling and fracking process. The Endocrine Disruption Exchange (TEDX) has documented more than 350 toxic chemicals in use for hydro-fracking. Approximately half the water returns to the surface after use (processed water) – bringing up with it a host of other naturally occurring materials. This list is known to include heavy metals such as uranium, radium, mercury, lead, and carcinogens such as toluene, benzene and scores of others.

What comes back up has to be treated in a specialized treatment facility before the water is put back into the rivers. Industry talks about the “assimilative capacity” of the rivers. This means how much poison is acceptable. The other half of the water remains underground, able to contaminate aquifers through natural active underground migration processes. These chemicals do not biodegrade they bio-accumulate. TEDX has also proven the cause and effect of chemical introduction to the ground water and aquifer systems as a result of hydraulic fracturing, and abnormally high concentrations of health problems downstream.

Theo Colborn has said that there is evidence out West that this flow back material has been spread out on farmland (bio-composting is how the industry sells it). Here, in the Northeast region as much of this material as possible will be left underground by seepage or injection processes. The more left underground the less to dispose of by other means. This has now become a crucial issue or shall I say dilemma; how to dispose of the drilling production “processed” wastewater. Where will all the water go? There are few treatment facilities capable of handling this toxic waste.

The SGEIS documents several water treatment facilities for disposal. However preliminary research reveals that most of the treatment plants identified are not capable of handling this wastewater, and in fact one facility has recently turned waste water hauling trucks away. Many scientists will tell you that this water cannot be effectively treated. Yet it must be disposed of somewhere. One of the facilities on the list is near Hickory, PA, the home of the first Marcellus wells in PA. Right now over 400 homes in Hickory are on water supply because of contaminated wells. Friends of mine have moved off of their farm because of contamination and it has taken 5 years to get proper water testing done, and they're still trying to get legal help. Most attorneys who work in this industry – work for the industry.

The impact of this project for NY is immense: Hundred's of billions of gallons of fresh water mixed with toxic chemicals injected into the ground . 10 to 20 % of the landscape will be bulldozed or otherwise disturbed to facilitate this activity. Even if reparation efforts are made, the destruction of the biodiversity is usually permanent.

I urge you to watch the Josh Fox documentary titled "Rage Against Nature". Filmed in Texas, Colorado and Wyoming, PA and NY. It depicts an assault on the natural environment where we will be taking care of friends or relatives who have tumors, cancer, blood disorders, or some other serious medical condition. The landscape is battered and industrial.

It is critically important to learn from what occurred out west. There are now models and a track record that cannot be ignored. The northeast is the first region that has had the opportunity to address this issue before the damage is done. The only reason to drill is for money. But the cost is way too high. It's fundamentally ridiculous to contemplate destruction of our natural environment and precious water resources for what will amount to only a few years of interim energy supply while we continue to put off meaningful progress on sustainable energy technology.

The 2005 Energy Act also gives the O&G Industry subsidies of about \$13 Billion, making it quite difficult for alternative energy development to compete. The Urban Design Lab and The Earth Institute at Columbia University have collaborated on a brochure called Hancock and the Marcellus Shale – Visioning the Impacts of Natural Gas Extraction Along The Upper Delaware. Hancock, NY is at the epicenter of the Marcellus shale and within a few miles of the Catskill/Delaware reservoir system. The brochure is an important, informative study.

It discusses the PR about energy independence and national security; a charade perpetrated by the Bush Administration and Industry that this will provide both. This is already proving false as evidenced by the purchase of gas leases by foreign companies who prefer to drill here where they will enjoy the lucrative exemptions from regulation that they don't at home.

That's why City Councilman James Gennaro, Chair of the Council's Environmental Protection Committee (and a geologist) has called for a total ban of hydraulic fracturing gas drilling in the NYC watershed, because the risks are too great. That's why Assemblyman James Brennan has early on called for a statewide 2 year moratorium and serious environmental impact study by NYDEC, and has drafted specific legislation now wending it's way through the State Assembly.

Former NYC DEP Commissioner Al Appleton has said in a recent talk; "Industry PR about clean burning natural gas has obscured the dirty and damaging process of extracting it. The industry has the profits to do better and the need to do better if it is to operate successfully not only in New York, but in all of America's shale basins. Once the toxics from fracturing fluids get into water sources, it will be virtually impossible to get them out. Prevention is the only effective strategy."

The NYC DEP has recently presented a status report on the findings of the independent EIS they have commissioned, and this precipitated a letter from the Acting DEP Commissioner Steven Lawitts to the State DEC Commissioner Pete Grannis that in essence said that based upon our study, this activity is too risky to be done anywhere near the NYC Watershed.

And it looks like the Federal EPA is now paying attention to this issue on many fronts: Just last week Reuters reported that the EPA rescinded a Bush memorandum which exempted the gas and

oil industry from regulations requiring multiple emissions sources – under the Clean Air Act – to be aggregated. The September 22nd Ruling, stated that “...regulators should consider criteria for when projects are grouped together for permitting.” One of the 3 criteria listed is “...whether they belong to the same industrial activity.” This one issue, *Aggregation Policy*, might be the single largest issue with respect to any reasonable independent analysis or EIS. That is because this is not about one well – which is how the Industry is currently regulated and how the State EIS proposes to continue to regulate. This is about eventually, ten’s of thousands of wells – factories actually, and the air and water and environmental destruction cumulatively. The recently released NYS SGEIS does more to appease industry in it’s stunning lack of cumulative impact or aggregation requirements. This is being ignored to facilitate drilling. This is a recipe for disaster.

An incredible network of grass roots organizations have sprouted up over this one issue – scores across NYS alone including, and more than 160 recently established groups have determined that the stakes are too high on this issue.

NY State Congressman Maurice Hinchey has noted that there have been more than a thousand documented cases of water contamination and other problems associated with this drilling practice. NYS DEC and Industry together have claimed a perfect record in NY State regarding drilling operations. However a Freedom of Information Request performed by EWG has revealed that the DEC has not kept any records regarding drilling operations. Congressman Hinchey is a sponsor of the FRAC Act, now pending in the US Congress, and NY Senator Charles Schumer is a sponsor of the Senate version.

Manhattan Boro President Scott Stringer, State Senator Tom Duane, and many other elected officials, CB’s and environmental organizations have requested that the NYSDEC hold more statewide hearings on the SGEIS, including hearings in each of the NYC boroughs, and extend the review and comment period from 30 to 120 days so that there is adequate time to review and comment on the documents that will determine and govern if and how we proceed with this project.

The potential downside of this project is unimaginable. The quality of our water and air and upstate environment are at stake.

I have one more comment pertaining to the Resolution that this Council will write on this issue. Figure out a way to protect the entire state. Not just because of the incredible good will it will create, but because NYC thrives on the bounty from Upstate. We won’t be the same without it.

Thank you very much,

Joe Levine
Chair and Co-Founder NYH20

It is a real honor to be able to address this board.

My name is Josh Fox. I am a filmmaker and a resident of Milanville, PA in Wayne County in the Delaware River Basin, not far downstream from the New York City Watershed. My film production studio is in Brooklyn, so if the gas drilling is to go ahead in these sensitive watershed areas I will be affected on both ends of the flow.

In May of 2008 I heard a presentation from Damascus Citizens for Sustainability in Calicoon New York much like the one you have just heard and it completely blew my mind.

I couldn't imagine that the pristine upper Delaware and the New York City watershed could be offered up for this kind of destructive industrial activity known as Hydraulic Fracturing for Natural Gas.

The long list of hazardous and "proprietary" chemicals in the Frack Fluid, the potential for water and air contamination, the immense clearing of land and the risk to public health were almost unbelievable. I didn't want to think that this environmental group could possibly be correct.

Strange thing was I could find no images, and very few stories about the gas drilling issue. If it was true that we were in the largest gas drilling boom in United States history, there must be a lot out there to find.

Now, in October 2009 I have traveled over 16000 miles, visited hundreds of gas drilling sites, conducted hundreds of interviews in over 30 states.

I will now show you some of the images I have collected and narrate as I go, explaining some of the cases of water and air contamination that I have seen. from Arkansas to Texas to New Mexico to Colorado and to Wyoming Louisiana, Pennsylvania and Ohio.

What I learned was beyond my worst nightmare.

In the time I have today I can only show a few of these examples, but in my efforts to create the full length documentary GASLAND I have compiled water and air reports, hundreds of individual water tests, drilling reports, Material Safety Data Sheets, photographs of dead animals poisoned by drilling muds and so on. I would like to make this information available to this board and to anyone else who is interested and I have brought some of this information here with me today to submit.

I have also made several copies of excerpts from my film to submit to the board and I hope that you will watch the segments on them which will supplement what I am showing here.

I want to start off by talking about several kinds of water contamination and give you images that I hope will stick in your minds when you think of hydraulic Fracturing.

The first is the most sensational the migration of natural gas into water supplies in areas where fracking is occurring.

NATURAL GAS MIGRATION

What you see here is migration directly into an aquifer

This is Mike Markham a resident of Weld County Colorado. He and his wife Marsha could light their water on fire after a nearby fracking operation had turned their water a dark murky brown.

This is Amee and Jesse Ellsworth's house, also in Weld County, known as the Red Zone in Colorado because it contains a large amount of gas wells. It is just 45 mins to the north east of Denver.

Now the industry likes to say that this is naturally occurring. That people in this area could light their water on fire for many many years and it has nothing to do with drilling.

But all of these residents claim that the flammable water happened after the upswing in Natural Gas production since 2005

And I will refute the industry further by pointing to Amee Ellsworths gas fingerprint. A gas fingerprint tells us the type of gas in the water and what layer it comes from. This is highly technical information that I can't go into at length now, but basically it boils down to two basic catrgories. Biogenic gas which has high methane and ethane and virtually no butane or propane in it, that type of gas comes from decomposing organic material close to the surface and Thermogenic natural gas which contains significant percentages of butane and propane the heavier gases which can only come from deep layers, the deep layers such as shale that the industry targets when it is fracking and which they would be targeting here. The Colorado Oil and gas Commission verified in march of this year that Amee ellsworth's gas was indeed THERMOGENIC which means it could have only come from a deep layer. And I submit her gas fingerprinting tests to this board. So when the industry, or the PA DEP by the way says that this is not the type of gas we are fracking for, we know that at least in this instance, they are lying.

Gas fingerprinting is also fallible in other ways and I can take questions on that.

I would also note that the gas coming out of these water taps is unfiltered. It has no smell and it contains the volatile organic compounds that are highly carcinogenic such as Benzene Toluene and xylene because this gas has not been processed. So these people are being subject to carcinogens in their homes. And a silent odorless killer that could come up at any time.

Next we have Divide Creek. Near Divide Creek Encana had a well casing failure which was documented by their drilling crew. They went ahead and fracked the well anyway causing the well to blowout and Divide Creek to

flooded with 115 million cubic feet of natural gas. Here you can see the creek bubbling with gas and residents lighting the creek on fire. Encaca was fined 371 thousand dollars for their mistake, but Divide creek suffered another blowout in 2008 which resulted in scores of dead animals and further contamination.

NON FLAMMABLE WATER CONTAMINATION

Here in Booneville Arkansas

Also following a multiple and continual fracking, strange oily red bacteria and rainbow discoloration like what you see here appeared in streams, creeks and runoff.

Several cattle near these water sources died mysteriously and we have pictures of that to submit.

I have to back track here and preface the next example

In 2001 Christie Todd Whitman then head of the EPA responded to a court case in Alabama alleging water contamination from Hydraulic Fracturing. The Bush white house tried to suppress the case saying the EPA should not investigate. But Whitman pressed on and got the study started, which took three years. In 2004 the EPA concluded it's study and a panel found inexplicably that YES toxic material was being injected in the ground and NO they should not investigate. It was later shown that 5 of 7 members of the review panel were from the oil and gas industry and had conflicts of interest. Weston Wilson a geologist from Region 8 in Denver wrote a letter to congress invoking the whistleblower protection act stating that this conclusion was absurd.

But the Bush white house shut down the investigation and shortly thereafter passed the exemptions to the safe drinking water act in the 2005 energy bill.

When I interviewed Weston Wilson for the film he said that after that point "all science and all data stopped."

That is, until the spring of this year. Residents of Pavillion Wyoming, which you see here taking a blowtorch to their water complained to the EPA and they came in and investigated finding significant contamination including elements of the fracking fluid including glycol ethers and 2 BE. I submit that report and some of those water tests to this board, obtained from the residents themselves.

So this case represents the first time EPA has ever conducted a study of fracturing. And they found significant contamination. Here you can see Louis Meeks taking a blowtorch to his water and creating a plasticky film on the burned areas which we suspected to be burned glycol ethers, a liquid component of plastic.

AIR CONTAMINATION

I want to move on to Air contamination. I know that the primary focus of this hearing is Water. And water is a huge issue in New York City, when we are talking about the watershed area.

But this is the environmental board and not the water board and there are very significant risks to New York City as a result of the massive air pollution situation that this drilling will incur if allowed to go ahead in any of the counties near New York city and by this I mean Sullivan County and Chenango County as well as Delaware County.

I have here two air studies which are alarming. The first is from Dr. Al Armendariz at SMU in Dallas. He studied the 7,700 gas wells in the Fort Worth area and concluded that those 7,700 wells produced as much air pollution as all of the cars and trucks in the Dallas Ft Worth Metroplex. That is the 4th largest city in America. Staggering. That is JUST The wells and the condensate tanks.

The report says that Acute impacts to health will occur with these concentrations of chemicals in the air, and that the carcinogens and neurotoxins will also have an impact over the long term.

DISH LIST

What are we talking about here?

The industry plans for 10,000 wells? 20,000 wells? If there was an argument for extending New York City's jurisdiction well beyond just the watershed this is it. And it would make sense that the rest of the residents of New York and PA and the USA should be protected from these harmful air pollutants.

I submit both reports for you today.

Sublette County Wyoming.

Sublette county Wyoming is a county roughly the size of Connecticut but it has air that is worse than LA. Why? Gas Drilling.

LEGAL AND ILLEGAL WATER DISPOSAL

I submit several Sublette county air advisories in which residents were told not to go outside or do strenuous exercise anywhere in the county on certain days.

These are evaporation sprayers. On hot days the industry evaporates it's waste, directly into the air. Water treatment is very expensive, so evaporation sprayers spray the flowback waste, which is water contaminated with fracking fluid and VOCs to get it to evaporate quicker. This is not illegal... it is standard practice.

What is illegal but what is also it seems standard practice is to just drizzle out produced water, or waste water onto roads. We caught a truck doing just that, here in Colorado.

Residents of Dimock PA, in towns in Wyoming, Texas and Arkansas all complain that the trucks are also doing this, drizzling frackwater onto the roads.

With 17 inspectors in NY State don't think that these companies aren't going to do this. They will do it when no one is watching. And this state does not have enough inspectors to monitor this activity. Nowhere near enough to chase all the trucks. And I will remind you that according the NY's own SGEIS it takes 1000 truck trips to haul in and haul out water for EACH WELL. That is 200 to 400 trucks just like that one that someone is going to need to follow to make sure they aren't illegally dumping frackwater on the ground.

And finally EXPLOSIONS

One from a home video in Colorado another that I took myself in Central PA.

These things every once in a while Explode. Sometimes there are people there. Thankfully sometimes there are no people there.

What do all of these things do to you?

ILLNESS

They make you sick. And in the film clips I have submitted you will see a lot of sick people:

I have Kim Weber on tape, a resident of the Grand Mesa

area of Colorado, who lives on the banks of the Colorado river, which supplies water to much of the south west. Her land was contaminated by the drilling process, her water was ruined, and she now suffers from brain lesions caused by toxic poisoning, along with several of her neighbors who also have brain lesions. The ground water in her entire town has been despoiled. I interviewed her neighbor Curtis Meacham who was surrounded by ponds that had turned black. His well water smells like burning plastic and if he waters his plants with it his plants wilt and die. He can no longer sell his property because of the destruction of the water and he is suffering from chronic respiratory illness.

Dee Hoffmeister who was surrounded by a cloud of toxic vapor in her kitchen upon returning home from vacation and collapsed spending 9 months in the hospital.

I interviewed Rick Roles on tape, Rick is a resident of Rifle Colorado, also in the Colorado River watershed. He experienced peripheral neuropathy, an incredibly painful kind of brain damage from the chemicals in his water and air used in the fracking process. His blood tested positive for Ethyl benzines, for Toulene, and for Several Xylene compounds. All chemicals we know are used in the fracking process.

And the list of the sick goes on and on.

These are just a few examples of what I have seen and of what is in my film GASLAND.

I know I've probably spoken longer than my allotted time...

So I will leave it there and take questions if you have them. As I have said, 16000 miles hundreds of interviews and hundreds of sites and hundreds of contamination incidents. I would be happy to take questions now or to work with this board to bring you a fuller understanding of the sights and sounds and consequences of hydraulic fracturing.

I have drill reports, photographs, video, water and air tests, you name it.

And in closing I would just like to say, that all of the people I interviewed out west or in PA or in the south have said, take this information to new York City. Get the major population centers riled up. We need help and it's possible that the only way we will get it is if New York chimes in here and causes the nation to focus on these issues.

I thank you very very much for this opportunity to present this information and I hope that I have the opportunity to work with you and present more of this. As I said the rest of the country is counting on New York to restore sanity to this process.

Jo Hamilton, Chair
Bo Riccobono, First Vice-Chair
Sheelah Feinberg, Second Vice-Chair
Bob Gornley, District Manager

Amanda Kahn-Fried, Treasurer
Susan Kent, Secretary
Elaine Young, Assistant Secretary



COMMUNITY BOARD NO. 2, MANHATTAN
3 WASHINGTON SQUARE VILLAGE
NEW YORK, NY 10012-1899
www.cb2manhattan.org

P: 212-979-2272 F: 212-254-5102 E: info@cb2manhattan.org
Greenwich Village • Little Italy • SoHo • NoHo • Hudson Square • Chinatown • Gansevoort Market

PUBLIC HEARING

Committee on Environmental Protection
The New York City Council
James F. Gennaro, Chair
October 23, 2009, City Hall

Honorable Chair Gennaro and Members of the Committee on Environmental Protection:

Manhattan Community Board No. 2 would like to state our appreciation for your leadership in calling on the New York State Legislature, the New York State Department of Environmental Conservation, and New York State Governor David Paterson to prohibit drilling for natural gas within the boundaries of the watershed of the New York City drinking water supply. And once again, we express our gratitude for Chair Gennaro's persuasive appearance as a panelist at our public hearing on March 9, 2009.

Community Board 2 would like to reiterate that we firmly stand behind you in your efforts to ban this drilling within our watershed. The hydraulic fracturing method of drilling for gas is far too dangerous to the air, water, public health, wildlife and integrity of local communities to be approved by any Federal or New York State entity.

Furthermore, the comment period of only sixty days with just one New York City hearing in only one Borough puts a constraint on public review that cannot possibly allow for valuable input or a fair review process of the 800-page dSGEIS.

Our March 18, 2009 resolution calling for a ban on hydraulic fracturing for natural gas is attached and we continue to stand behind it wholeheartedly.

Respectfully,

Jason Mansfield, Chair
Environment, Public Safety, Public Health Committee

Jo Hamilton, Chair
Manhattan Community Bd. 2



COMMUNITY BOARD NO. 2, MANHATTAN
3 WASHINGTON SQUARE VILLAGE
NEW YORK, NY 10012-1899

www.cb2manhattan.org

P: 212-979-2272 F: 212-254-5102 E: info@cb2manhattan.org

Greenwich Village • Little Italy • SoHo • NoHo • Hudson Square • Chinatown • Gansevoort Market

Environment, Public Health, and Public Safety Committee

March 18, 2009

PUBLIC HEARING

Resolution calling on the New York State Legislature, the New York State Department of Environmental Conservation, and New York State Governor David Paterson to PROHIBIT DRILLING FOR NATURAL GAS WITHIN NEW YORK STATE.

Whereas, Natural gas exploration and production companies, and mineral rights owners, are interested in developing a potentially significant gas resource in the Marcellus Shale through the use of horizontal drilling and a hydraulic fracturing technique known as "slick water fracturing" which requires large volumes of water; and

Whereas, the State Environmental Quality Review Act requires the Department of Environmental Conservation to review the methods used while accessing this natural gas that's located deep within the Earth; and

Whereas; We heard presentations from experts on this issue, among them: James Gennaro, Chair of New York City Council Environmental Protection Committee; Dr. Stephen Corson, Policy Analyst for Manhattan Borough President and lead author of the Borough President's report on this issue; Jared Chasow, Legislative Aide for Senator Tom Duane; Deborah Goldberg, Managing Attorney for Earth Justice's Northeast Office; Craig Michaels, Watershed Program Director for Riverkeeper; and Joe Levine, Co-founder of NY-H2O; and

Whereas, Our committee screened a film segment by Josh Fox showing recent destructive consequences/affects of this process; and

Whereas, Siobhan Watson spoke for New York City Council Speaker Christine Quinn and said the Speaker was keenly aware of this issue and hasn't taken a position yet; and

Whereas, Matthew Borden spoke for New York State Assembly Member Deborah Glick to say she is entirely opposed to this dangerous drilling activity and he distributed copies of her public testimony on the matter; and

Whereas, over 70 people attended this Public Hearing, including board members of Manhattan Community Boards 3, 6, & 7; and

Whereas, Hydraulic Fracturing mixes water with sand and 250+ toxic chemicals; and

Whereas, the 2005 Energy Policy Act exempts companies who employ Hydraulic Fracturing methods from having to comply with many public health laws which were specifically written to protect our natural resources and well being (e.g. Safe Drinking Water Act, Clean Water Act, Emergency Planning & Community Right-to-know Act); and

Whereas, Chapter 376 of the Laws of New York State of 2008 streamlined the permitting process for horizontal wells that use hydraulic fracturing, allowing the development of natural gas drilling sites within Marcellus Shale in New York to proceed more quickly; and

Whereas, the New York State Department of Environmental Conservation Division of Mineral Resources, Bureau of Oil & Gas Regulation held scoping hearings upstate for a Draft Supplemental Generic Environmental Impact Statement, but failed to hold any hearings within New York City despite the fact 90% of our water supply comes from the Catskill and Delaware watersheds; and

Whereas, Chemicals contained in hydraulic fracturing fluids cause a variety of irreversible and catastrophic damages to the air, water, public health, wildlife, and integrity of local communities; and

Whereas, Hydraulic fracturing presents risks of water contamination during drilling operations and during the storage and disposal of millions of gallons of the water and chemical additive mixture required for each well that is created; and

Whereas, Hydraulic fracturing has resulted in contaminated water supplies in other states, including Wyoming and New Mexico; and

Whereas, No amount of careful planning and operation can guarantee that there will be no chemical spills that could flow into reservoirs, underground migration of fracturing fluids toward the water supply, or other accidents resulting from drilling operations; and

Whereas, If the water supply should be contaminated, the City of New York would be required by the Environmental Protection Agency to build and operate a water filtration plant, the cost of which has been estimated to be approximately \$10 billion, which would be borne by New York City taxpayers; and

Whereas, Absolutely no evidence has been shown by any organization that fluids used during Hydraulic Fracturing can be completely filtered out of drinking water; and

Whereas, Council Member Gennaro has introduced Resolution No. 1850 in the New York City Council that calls for a ban for drilling within our Watershed Area; and

Whereas, There is no possible remedy once contamination has occurred; and

Therefore let it be resolved, this method for accessing natural gas is FAR TOO DANGEROUS to the air, water, public health, wildlife and integrity of local communities to be approved by any Federal or New York State entity; and

Therefore be it further resolved, Manhattan Community Board 2 calls on the New York State Legislature, the New York State Department of Environmental Conservation, and New York State Governor David Paterson to prohibit Hydraulic Fracturing drilling for natural gas within New York State.

Committee vote: Unanimous approval

Full board vote: Unanimous approval

Respectfully submitted,



Jason Mansfield
Chair
Environment, Public Safety, Public Health Committee



Brad Hoylman
Chair
Manhattan Community Board 2

New York City Council

Committee on Environmental Protection

October 23, 2009

Thank you Members of the New York City Council and the Committee on Environmental Protection.

My name is Wes Gillingham; I am the Program Director of Catskill Mountainkeeper. Our mission is to protect the ecological integrity of the Catskill Mountain Range and the quality of life of all those who live there. Through a network of concerned citizens, we work to promote sustainable economic growth and the protection of natural resources essential to healthy communities.

Normally we operate in the Catskill region but this issue has taken us way beyond the Catskills to work with groups across the State, in Pennsylvania, with national groups and even with regional groups from Wyoming Colorado, New Mexico and Louisiana. I sat down with people in Washington D.C. from all over the U.S. to start the work on the FRAC Act. This is a national problem and a national question- can we get gas from tight shale safely?

One year ago I testified before the NYS Assembly as we started the process of taking a closer look at unconventional shale gas development, for the record I'm going to read a paragraph from my testimony of one year ago today.

"One of the first things we learned through this process was that New York State has been functioning with a Generic Environmental Impact Statement that is an outdated document. Not only is it missing specific regulations for technologies that have been in use by the industry for ten or fifteen years but there were blatantly incorrect statements such as: "cumulative review is impractical and unnecessary when considering most oil and gas drilling because of the independent nature of each of the wells "Now maybe this was true back in 1988 but anyone who has done any research into shale plays now knows this is not the case.

This statement under cumulative impacts sent up a red flag for us given what has happened across Wyoming, Colorado, parts of Montana, Texas, Louisiana, and Michigan. In each of those places communities are reacting and trying to deal with the cumulative impacts. As the gas industry came into the region, their state regulators told the communities they had everything under control and plenty of experience with the industry. Which turned out to not be true because of the nature of the new gas plays targeting sheet formations with new techniques and at a scale no one had foreseen."

Those two paragraphs still stand true today. What we have with the Draft SGEIS is an incredible example of sticking your head in the sand, and not protecting our state's valuable natural resources. A year and a half ago I was first alarmed by the potential development of the Marcellus Shale by a meeting held by State Assemblywoman Aileen Gunther. The meeting was with quite a few folks from the Mineral Resources Department. At that meeting I brought up my concern about cumulative impacts since this type of development as shown around the country has created a more complete industrialization of the landscape than conventional gas plays.

I expressed my concern and was told by Minerals Dept "we are going to wait and see what happens." Even though it is a year and a half later and the fact is well known about the cumulative impacts from unconventional shale plays it appears the DEC is still going to wait and see what happens. Does anyone here want to wait and see what happens to New York City's water?

This is unacceptable. To say that you cannot foresee where the development will take place is at the very least an admission of the fact that the Dept is understaffed and under funded. Companies applying for leases have a land base of leases they are working with and a business plan and a rough estimation the potential wells they are going to drill. This needs to be part of the public record.

I will read you a few sentences from the Draft Generic Environmental Impact Statement.

"The timing, rate and pattern of development, on either a statewide or the local basis are very difficult to accurately predict. As detailed in section 2.1 .6 of the final scoping document, overall site density is not likely to be greater than was experienced and envisioned when the GEIS and its findings were finalized and certified in 1992."

"Very difficult to accurately predict"! So lets not do it at all? This is ridiculous.

Based on information in the DSGEIS from Chautauqua County there were 1,989 wells put in over a ten-year period. Comparing the impact of a relatively flat landscape with fields and saying that applies to the rest of the state is just plain silly!

Let's take for example Sullivan and Delaware counties - does anyone here really think the impacts of four thousand wells across this region would be the same? This region is predominantly forested with steep slopes and elevations exceeding 3000 feet. A region, which includes the Upper Delaware scenic and recreational river, NYC watershed and The Catskill Forest Preserve.

The Delaware basin supplies water for one in every 20 Americans.

- The study recently completed by Columbia university points out the population that relies on the Delaware basin for its water.
- This breaks down to 35% of New York States population including NYC residents.
- 42% of Pennsylvania's population including Philadelphia
- 34% of New Jersey
- 81.5 percent of Delaware.

The DGEIS makes the claim there will be no more development than was anticipated in 1992. Under the Catskills there are five target formations each having their own spacing units. The wells; access roads feeder pipelines and gravel banks to build roads along with compressor stations and storage facilities are not being considered as part of the development.

The Utica and Marcellus shale's overlap each other and geologists have identified their "fairways" they intersect right over the western Catskills.

The issue of cumulative impact was the first thing I realized was wrong with NYS regulations and is typical of the failure that has played out across the country. Just recently the U.S. Environmental Protection Agency

issued a landmark ruling that oil and gas operations must be held to aggregation safeguards under the Clean Air Act,

Under the Clean Air Act, connected sources of air pollution must be aggregated together when determining what constitutes a single source for permitting purposes. Aggregation is a standard requirement that ensures connected sources of air pollution are not arbitrarily broken down into smaller sources and ensures that polluters secure permits that meet stringent emission control requirements under the Clean Air Act.

Gas operations have hundreds to thousands of polluting pieces of equipment including but not limited to drill rigs, compressor engines, and leaking pipelines, tanks and open pits. In Denver for example, Colorado State inventories show that oil and gas operations in a nearby gas field release more smog forming compounds than all the cars and trucks in the region.

This speaks to the failure of the DEC to take the concerns expressed throughout this process, properly integrate them into a regulatory program that would help mitigate the serious ramifications of this development. They are only considering on site emissions from the trucks as part of the review.

On October 13, 2009 the town of Dish, TX released the results of an air quality study that found seven locations with carcinogenic and neurotoxin emissions that exceed limits set by the state. They spent 15% of their town budget on a study to assess the impact of the compressors; condensate tanks, and pipelines that process and transport gas from the Barnett shale.

The waste water issue is the one thing that should stop this from progressing until there is a clear, long range plan to deal with the millions of gallons of toxic waste coming from thousands of wells across the state. The DEC report on our wastewater infrastructure that came out in March 2008 starts out with saying we will need to spend \$36.2 billion to upgrade and repair facilities to handle municipal wastewater without considering production and flow back water.

Where is that money coming from? How much more do we need to spend to build or upgrade facilities to handle this phenomenal waste stream?

- There is a tracking system for wastewater provided for in the plan, but it's a fact that we do not have the wastewater infrastructure or the money needed to upgrade our deteriorating system to handle today's needs without gas drilling chemicals and brine heading towards our State's rivers and streams.
- There is little clear direction from the state on how to protect publicly owned treatment plants or the public water bodies into which they discharge if a plant chooses to accept the wastewater.
- The DEP Briefing to the NYC Water Board on the Natural Gas Impact Assessment Project, September 25, 2009 concluded that "All the activities required for natural gas drilling involve some risk to the water supply. Many are similar to construction sites but the chemical and wastewater risks are unique to this industry."
- New York State's wastewater infrastructure is in need of huge investment and there are three facilities equipped to handle the drilling waste.

Others have spoken to this issue and as you can see this draft document does not give us a sufficient plan for wastewater or a plan for regulating and enforcement. Right now the wastewater from the Ross well, after traveling 4 hours across the state, was turned around and sent back to sit in the waste pit until they find a place to send it.

Do we have the enough staff to handle this undertaking? I don't think so.

Let's be realistic and acknowledge the growing concern nationally with these new technologies. We have plenty of history with new technologies that come back to bite us. We won't be able to say, "We had no idea".

The DEC was asked to provide information on testing they have done in areas of previous gas drilling to substantiate their claim of no problems. No soil testing, no water well testing no testing.

I want to draw your attention to these Photos I brought they have never gone back and tested soil. Look at this picture we took over Dimock, PA you can see the soil being contaminated by the cuttings. These are the cuttings that _____ from Cornell testified would be the biggest danger to soil contamination. If I had not flown over this, would this landowner ever know his land was being contaminated?

This next picture shows what many of my colleagues have been talking about when they say the DGEIS does not adequately address cumulative impacts.

Again ignoring cumulative impacts will create multiple problems we will have to deal with later. Fifty years down the road and we are still dealing with PCBS. How many times were we told PCBS were safe? Do we want this to be part of our legacy? To let this progress go forward without absolutely every possible protection in place, without protection of special areas, without complete investigation into failures of the industry to protect communities is short sighted.

I will finish with reading the second paragraph on page 6-146 which basically finishes with the sentence "any limitation on the development, aside from the mitigation measures discussed in the next chapter, is more appropriately considered in the context of policy making, primarily at the local level, outside the SGEIS." Did they forget Article 23? This article takes local control away from the local level.

Maybe it is time for ^{NY State} ~~you on this committee~~ to return some of this control back to the local level. Time to go back and give us a document that has more credibility we have a long way to go to protect the people and places of New York State.

Dan Jacoby
47-48 43 St., Woodside, NY 11377
917-667-2756
dan@danjacob.com

Testimony before the
New York City Council
Environmental Protection Committee
James Gennaro, Chair
October 23, 2009

I don't have to detail the dangers of drilling in the Marcellus Shale to this committee, so I'll just refer to the report that I am attaching to this oral testimony.

Resolution 1850 is, on the whole, a good resolution. Banning hydraulic fracturing in the NYC watershed is vital to protecting our water supply. I would strongly recommend two changes in the wording of the resolution. These changes strengthen the resolution without infringing on the rights of landowners in areas of New York where our city has no direct interest.

First, since the chemicals used in hydraulic fracturing are known to travel a long way from where they are inserted into the ground, and since the technique of horizontal drilling is more prevalent than ever, the resolution needs to reflect that by requesting a ban on horizontal, as well as vertical, wells that come anywhere within 25 miles of the NYC watershed. Absent that ban, we are in danger of having our water supply permanently compromised.

Second, the 13th and 14th clauses of the resolution, beginning with, "Whereas, The New York City watershed area represents less than 4 percent..." should be removed. I understand the desire to make clear that we are not trying to tell the rest of the state what to do, but these clauses imply support for hydraulic fracturing outside the NYC watershed. This is both misleading and unnecessary, and these clauses make us appear hypocritical.

Finally, I recommend not passing this resolution in any form until talks have been completed, or nearly completed, with elected officials and community leaders from across the state. We cannot win this fight alone; we must work with others. The draft of the DEC's GEIS has many inaccuracies which, if allowed to remain in the final version, will endanger the health of millions of New Yorkers. Now is the time to work with people from the rest of the state to protect all of us.

Thank you.

Drink Up

by Dan Jacoby

Introduction

Possibly the single most important requirement for a healthy society, both as individuals and as a community, is clean water. Under normal circumstances, human beings must drink about half a gallon of water a day. In addition, we need water for washing, for growing food, and, as the closest thing we have to a "universal solvent," we need water for many other uses.

Clearly, without a sufficient supply of clean water we cannot live. It stands to reason, then, that anything that might threaten our water supply should be vigorously opposed. Such a situation exists right now, right here in New York.

For decades, it has been known that a large supply of natural gas is trapped thousands of feet underground in a rock formation known as "Marcellus shale." This rock formation was created close to 400 million years ago, which is why it is buried so deeply. There is a process that extracts oil and natural gas from a variety of rock formations. Extracting the natural gas from Marcellus shale, however, is difficult and expensive, two reasons why it has not been done.

Until now.

The Problem

With rising energy costs over the past several years (the recent recession-based breakdown notwithstanding), many companies are now willing to spend the money to get at that natural gas. To do this, they use a process known as "hydraulic fracturing," or "hydrofracking." Hydrofracking is a process where a combination of water, sand and chemicals, known as "frac fluid," are injected deep into the earth at high pressure. The frac fluid causes small fractures in the shale to expand, releasing the trapped natural gas, which then rises to the surface where it is captured.

Halliburton, Inc performed the "first commercial fracturing treatment" in 1949.¹ Today, Halliburton leases the use of their process, and sells a lot of frac fluid, to many other companies, mostly in western states and for smaller wells in coal bed formations. The company stands to make a lot of money if hydrofracking is used on Marcellus shale formations, both because it would expand the network of gas wells, and because drilling into Marcellus shale formations requires a lot more frac fluid.

But there is a serious problem. The frac fluid contains hundreds of chemicals, many of which are highly toxic. A 2004 EPA report mysteriously concludes that hydrofracking is not a threat to drinking water, even though it states, on page one of the Executive Summary, that, "The use of diesel fuel in fracturing fluids introduces benzene, toluene, ethylbenzene, and xylenes (BTEX) into [underground sources of drinking water]."²

¹ http://www.halliburton.com/public/pe/contents/Data_Sheets/web/H/H06640.pdf

² http://www.epa.gov/OGWDW/uic/pdfs/cbmstudy_attach_uic_exec_summ.pdf

The Centers for Disease Control has a long list of toxic effects of exposure to benzene. Long-term exposure has the following effect: "Benzene causes harmful effects on the bone marrow and can cause a decrease in red blood cells, leading to anemia. It can also cause excessive bleeding and can affect the immune system, increasing the chance for infection." Also, "The Department of Health and Human Services (DHHS) has determined that benzene causes cancer in humans. Long-term exposure to high levels of benzene in the air can cause leukemia, cancer of the blood-forming organs."³

Toluene isn't quite as toxic as benzene, but it is bad enough. According to the EPA, short-term effects of exposure to toluene levels above 1 part per million (PPM) include "minor nervous system disorders such as fatigue, nausea, weakness, confusion." Long-term effects include "more pronounced nervous disorders such as spasms, tremors, impairment of speech, hearing, vision, memory, coordination; liver and kidney damage."⁴

For exposure to ethylbenzene concentrations above a mere 0.7 PPM, the EPA cites short-term effects including "drowsiness, fatigue, headache and mild eye and respiratory irritation," and long-term effects including "damage to the liver, kidneys, central nervous system and eyes."⁵

Xylene's effects are just as frightening. According to the Occupational Safety and Health Administration, "Ingestion of xylene causes gastrointestinal distress and may cause toxic hepatitis."⁶

Those are the health effects of exposure to just one component of frac fluid; over 200 other chemicals have been identified. The process of identifying the chemicals used in frac fluid is slow and laborious, because the gas drilling industry refuses to divulge the contents of the fluid, claiming it is a trade secret, much like the secret formula used to make Coca-Cola. Of course, before you buy a bottle of Coke you can read the full list of ingredients on the outside of the bottle, but the gas drilling industry doesn't seem to want to live up to the full measure of their own example.

In addition to their ability to hide the contents of their frac fluid, the "Energy Policy Act of 2005" further protects the gas drilling industry by exempting frac fluid used in gas or oil drilling from any consequences should the fluid contaminate public supplies of drinking water.⁷ This enables drillers to set up shop without worrying about whether they are poisoning anyone's water. Furthermore, while this law creates an exemption to the Safe Drinking Water Act, private wells aren't covered under this act, so repealing the gas and oil industry's exemption to the Safe Drinking Water Act won't protect private wells.

³ <http://www.bt.cdc.gov/agent/benzene/basics/facts.asp>

⁴ http://www.epa.gov/OGWDW/contaminants/dw_contamfs/toluene.html

⁵ http://www.epa.gov/OGWDW/contaminants/dw_contamfs/ethylben.html

⁶ <http://www.osha.gov/SLTC/healthguidelines/xylene/recognition.html>

⁷ Public law PL 109-58, section 322, file available at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=109_cong_public_laws&docid=f:publ058.109.pdf

The Whistleblower

In October of 2004, Weston Wilson, a 31-year EPA employee, applied for protection under the federal Whistleblower Protection Act of 1989, detailing a long list of reasons why the EPA report is inaccurate.⁸ Wilson had a long history of demanding more rigorous investigations, and was instrumental in the EPA's "veto" of the Two Forks Dam project in 1990. This project would have supplied water to the metropolitan Denver area, but would have endangered several species of fish and birds, and diminish water supplies elsewhere. Wilson's research found alternate sources for Denver's water supply.

Among the specific charges Wilson levels against the EPA:

- The 11th Circuit Court of Appeals overturned the EPA's claim that hydrofracking need not be regulated under the Safe Drinking Water Act.⁹ (This ruling was later overturned by Congress in the "Energy Policy Act of 2005." More information on that act below.)
- The EPA cut its own study short, without investigating potential cases of hydrofracking-caused contamination of drinking water sources.
- The EPA failed to investigate possible "methane migration," where natural gas moves from gas wells into other, unprotected areas.
- The EPA's "Peer Review Panel," consisting of seven people, had five members who "appear to have conflicts-of-interest." Three of the five were current drilling industry employees, and two others were recent industry employees
- The EPA "did not include its most experienced professional staff" on this review, or on the study itself.

The Expert

The result of the gas drilling industry's refusal to disclose the toxins they are using is that imaginative methods have been employed to identify them. One method available stems from the fact that the Code of Federal Regulations requires publication of standardized federal manifests any times hazardous materials are transported.¹⁰ By examining the manifests for trucks headed to gas wells where hydrofracking is being used, the materials in the frac fluid can be determined. To check this, soil samples have been taken from many accident sites and analyzed for the presence of those toxins.

Dr. Theo Colborn is an expert in endocrinology, toxicology and water chemistry. She has served on advisory panels for the Environmental Protection Agency Science Advisory Board and the Ecosystem Health Committee of the International Joint Commission of the United States and Canada, among others. She is the foremost authority on endocrine disruption, in which long-term exposure to low levels of various toxins have a significant, deleterious effect on a person's health. In 1997, she co-authored the premier book on the subject of endocrine disruption, *Our Stolen Future : How We Are Threatening Our Fertility, Intelligence and Survival*.

⁸ <http://latimes.image2.trb.com/lanews/media/acrobat/2004-10/14647025.pdf>

⁹ http://www.northwestenvironmentaladvocates.org/news/Order_Granteeing_SJ_3-30-05.pdf

¹⁰ 49 CFR 176.30, available at <http://cfr.vlex.com/vid/176-30-dangerous-cargo-manifest-19942871>

Dr. Colborn has been leading the effort to discover the secret chemicals employed by the gas drillers in the hydrofracking process. In 2007, she testified before the House Committee on Oversight and Government Reform (Henry Waxman, Chair). Her testimony details a long list of problems caused by "frac fluid."¹¹ It details a frightening picture of the damage hydrofracking does to the health of anyone who lives in the area. The key parts are in the appendices.

In the first appendix, Dr. Colborn first describes the effects of just one of the chemicals used, 2-butoxy ethanol (2-BE). That one chemical can cause damage to red blood cells, spleen, spinal column, and bone marrow. Women are especially liable to damage, with extra consequences including infertility. Adrenal and liver cancers are other common results of long-term exposure to 2-BE.

In Appendix B, her testimony describes some of the 245 chemicals she has identified as being included in the frac fluid mix in Colorado. She lists, as the four "most common" effects of these chemicals, "sensory organ toxicity, respiratory problems, neurotoxicity, and gastrointestinal and liver damage." She also identifies 56 of the chemicals as carcinogens and 29 as mutagens, which are substances that alter DNA.

What's more frightening, Dr. Colborn states, "The majority have never been tested at realistic, environmentally relevant, chronic exposure levels, or for delayed effects that may not be expressed until long after exposure. Nor have adequate ecological studies been done." In other words, we don't know the full extent of what these chemicals do to us or to our environment.

Dr. Colborn then moves to drilling in Wyoming, where she lists 36 separate chemicals that cause many of the same health problems. Worse, she states, "While this list was compiled from MSDS (Materials Safety Data Sheet – the form filed with the EPA when transporting hazardous materials) information, it is still far from a complete picture of what is in use." She concludes, "From the data in this list, we know for certain that a great deal more than water and soap is being used to drill a natural gas well."

Finally, in New Mexico wells, Dr. Colborn lists 51 toxic chemicals "detected in reserve pits ... that appear on national toxic chemicals lists," including 13 that are being used in excess of state limits. She details the long list of toxic effects of the 175 chemicals she has identified as being used in gas drilling in New Mexico.

Dr. Colborn's testimony adds up to an alarming picture of what gas drilling in western states is doing to the health of the people living in the area. The same drilling methods, using the same frac fluids, with the same toxic chemicals, will be used in New York if permits are issued for drilling in the Marcellus shale region.

While she probably the leading expert on the dangers of hydrofracking, Dr. Colborn isn't the only one finding such dangers. A November 2008 article in *Scientific American*,¹² for example, lists not only the environmental and health problems resulting from hydrofracking in Wyoming, but also the problems proving that the damage done is the direct result of hydrofracking, due in large part to the attempts by gas drillers, especially Halliburton, to keep the contents of their frac fluid secret.

¹¹ http://s3.amazonaws.com/publicassets/natural_gas/colburn_testimony_071025.pdf

¹² <http://www.sciam.com/article.cfm?id=drill-for-natural-gas-pollute-water>

In addition, a February 2009 article in the Christian Science Monitor¹³ details a variety of serious problems caused by hydrofracking in Colorado. The article not only talks about the chemicals used in hydrofracking, but also describes how methane (the main component of natural gas) leaks into water supplies and causes private water wells and pumps to explode. This article also decries the gas drilling industry's refusal to allow proper testing of both the chemicals they use, and the results of their drilling processes.

It is clear, both from case studies and outside data gathering, that hydrofracking poisons water supplies, and the people, animals and plants that live in the area. The only reason that it has not been formally proven is that the industry is protected by federal law from having to come clean about what chemicals and processes they are using, and what those chemicals and processes are doing to the environment, and to the people.

Evidence of Trouble

Josh Fox is one of the founders and artistic director of the International WOW Company, an innovative, international avant-garde theatrical and film production organization. His latest film in progress documents many of the health problems caused by hydrofracking.¹⁴ Among the damage he documents are people who live near hydrofracking wells suffering from:

- Dizziness and migraines, caused by brain lesions;
- Breathing difficulties and seizures;
- Symptoms consistent with multiple sclerosis, rheumatoid arthritis and fibromyalgia;
- Benzene, toluene, ethylbenzene and xylene (BTEX) in the bloodstream; and
- Loss of sense of smell, consistent with constant exposure to hydrogen sulfide.

Fox also talks with experts who point out the unexplained death of a variety of plant life, including trees and crops, and sterility affecting farm animals. These symptoms are consistent with toluene poisoning.

In addition to the people Fox spoke with, there is the mysterious case of Cathy Behr.

On April 17, 2008, Cathy Behr was an emergency-room nurse in Durango, CO. A man came in to the emergency room, claiming to have been in a fracturing-fluid spill. His clothes and boots were covered in an unknown liquid. Cathy Behr was exposed for 10 minutes to the fluid and the fumes coming from it. A few days later, she almost died of multiple organ failure. Her doctors were unable to find out what chemicals were causing the organ failure, because the company running the gas drill, BP, refused to divulge them at the time.

Cathy Behr survived her ordeal after spending 20 hours in intensive care. Weeks later, her doctor was told what chemicals she was exposed to, but is legally prohibited from telling anyone, even Behr, what those chemicals are.¹⁵

¹³ <http://features.csmonitor.com/environment/2009/02/05/boom-in-gas-drilling-fuels-contamination-concerns-in-colorado>

¹⁴ Clips of the film can be viewed at <http://www.waterunderattack.com/>.

¹⁵ Compiled from several sources: <http://www.newsweek.com/id/154394>, <http://www.propublica.org/feature/buried-secrets-is-natural-gas-drilling-endangering-us-water-supplies-1113>, and <http://www.hcn.org/wotr/gas-industry-secrets-and-a-nurses-story>

There doesn't seem to be any information available on what happened to the man whose clothes were soaked with the fracturing-fluid.

Where We Are in New York

Last June, the New York state legislature passed a bill that would allow drillers to begin drilling across the southern tier of New York, including areas around New York City's water supply. Right now, New York City is one of a handful of cities in the United States whose water supply is clean enough not to need an expensive filtration plant. To preserve the cleanliness of the water supply, New York City has purchased huge tracts of land around the upstate reservoirs from which the city draws for its water.

It may not be enough. There are anecdotal reports of frac fluid contamination traveling over 28 miles from the gas drilling wells where the fluid is inserted into the ground.¹⁶ Unfortunately, there have been no studies to determine just how far frac fluids travel underground, possibly affecting distant water supplies.

Many people who will be making final decisions on hydrofracking appear to be misinformed. In October of 2008, New York State Department of Conservation (DEC) Commissioner Alexander "Pete" Grannis testified before the NYS Assembly Committee on Environment Conservation.¹⁷ Some of his testimony demonstrates his lack of understanding of the situation. For example:

- Grannis testified that, "The same geology that has sealed natural gas in the rock for millions of years—together with our strict well casing and cementing requirements—prevents any risk of groundwater contamination from the drilling and fracking operation. As a result, the only likely vector for possible threats to groundwater comes from the surface management of the water used in the drilling and fracking operations." A "Freedom Of Information Law" (FOIL) request by the Environmental Working Group resulted in an admission by the DEC that they hadn't conducted a single test to determine the threat of contamination.¹⁸
- Grannis then testified that, "Although a well is typically fracked only one time..." Wells are typically fracked as many as five times, a fact that Commissioner Grannis should have been aware of, since he testified that, "Each well may use anywhere from one million to five million gallons of water." Since one fracking uses about one million gallons of water, five million gallons would generally mean that a well is fracked five times. As the environment group Earthworks Action reports, "Many wells have to be fractured several times over the course of their lives, further increasing water use."¹⁹
- In a follow-up letter to his testimony,²⁰ Grannis is even more inexplicable. He writes, "We stated that the use of benzene, toluene, ethylbenzene or xylene (BTEX) in Marcellus hydraulic fracturing did not rise to a level of concern **based on the information provided to us by operators.**" (Emphasis mine.) Of course "operators" will say there is no problem, but what is the truth?

¹⁶ <http://www.propublica.org/feature/buried-secrets-is-natural-gas-drilling-endangering-us-water-supplies-1113>

¹⁷ http://www.dec.ny.gov/docs/materials_minerals_pdf/assemblytestimony.pdf

¹⁸ <http://yubanet.com/usa/NY-State-Admits-Ignoring-Threat-to-City-s-Drinking-Water.php>

¹⁹ <http://www.earthworksaaction.org/publications.cfm?pubID=383>

²⁰ <http://www.dec.ny.gov/energy/50286.html>

It is clear that Commissioner Grannis has a lot to learn. Meanwhile, the health of just about everyone across the southern tier of New York is in danger. The Sierra Club reports that we don't know how large the danger is, stating they are "concerned about the environmental effects of drilling. Deep well drilling on such a large scale is a relatively new ... the environmental effects have not been fully evaluated. DEP recently warned of problems associated with violations of environmental requirements."²¹

If hydrofracking is allowed in New York, there is another little-known consequence. It is known as the "compulsory integration law." Under this law, a landowner can be forced to accept gas and oil drilling on his/her property, if nearby lands are being drilled.²² The owner can be forced to pay costs (and accept royalties) for such drilling. This law was passed in 2005, and could be used to override spacing requirements for gas drilling.

We do know that hydrofracking in Marcellus shale formations has already begun – and is already proving to be problematic. In Dimock County, PA, drilling began in 2006, and within two years people had discovered some of the obvious problems, including noise and truck traffic.²³

On January 1, 2009, however, events took a dangerous turn when a water well near the drilling exploded.²⁴ Early tests appear to show that the methane gas that caused the explosion came from the Marcellus shale layer thousands of feet underground, rather than natural gas found closer to the surface. In other words, the drilling caused the explosion. Several drilling sites have been shut down, and people are drinking and washing with bottled water.

Meanwhile, spills of diesel fuel (and possibly other toxic chemicals) are occurring with startling frequency.²⁵ A representative of the drilling company, Cabot Oil and Gas Corp., says, "Accidents such as diesel spills should be expected at industrial sites."²⁶

There is a movement in New York City, led by City Council member and Chair of the Council's Environmental Protection committee James Gennaro, to protect the city's water supply.²⁷ New York City draws its water from reservoirs in the eastern part of the Marcellus shale region; if this water supply is compromised, it could require the city to build a filtration plant that could cost \$20 billion just to keep the water safe.²⁸ Before that plant is built, however, nine million New Yorkers might be forced to drink, cook and wash with bottled water – for years.

²¹ http://pennsylvania.sierraclub.org/PA_Chapter_2008/Take Action/Gas-drilling-threatens-water-supply.html

²² NYS Environmental Protection Law, §23-0901, available at http://law.justia.com/newyork/codes/environmental-conservation/env023-0901_23-0901.html

²³ <http://www.recordonline.com/apps/pbcs.dll/article?AID=/20080713/NEWS/807130330>

²⁴ <http://www.riverreporter.com/issues/09-02-05/news-dimock.html>

²⁵ <http://www.pressconnects.com/article/20090224/NEWS01/902240354&theme=GASLEASE>

²⁶ http://www.citizensvoice.com/articles/2009/02/12/news/wb_voice.20090212.tpg14.cv12cdgasdrilling_s1.2296898_loc.txt

²⁷ A resolution has been introduced (<http://webdocs.nycouncil.info/textfiles/Res%201850-2009.htm>), and a petition is being circulated (<http://citizenspeak.org/node/1436>).

²⁸ http://www.nydailynews.com/ny_local/2008/09/10/2008-09-10_city_pols_call_drilling_plan_a_biodisast.html

Conclusion

As New York looks at the possibility of allowing hydrofracking in the Marcellus shale region, the state's regulators and political leaders should look to what is happening in the western states where hydrofracking has been going on for years. More and more, western states are coming to understand the health dangers, and are adding new regulations on hydrofracking.²⁹ In addition, the new Obama administration is taking a second look at the Bush administration's rush to auction off federal land for drilling.³⁰

Before any hydrofracking is allowed in the Marcellus shale region, several things must be done to protect the health of the people living in the drilling region, and those whose water supplies may be affected. They include:

- Complete disclosure of the chemicals used in frac fluid;
- Total understanding of the health effects of the chemicals used;
- Full tests on the possibility of contamination of water supplies;
- Tests to trace where, how, and how far frac fluid travels after ground insertion; and
- Proven methods developed for capturing 100% of dangerous chemicals and fluids.

Unless all of these steps are taken, no hydrofracking permits can be issued with any reasonable degree of safety. Until the gas drilling industry is required to provide complete transparency, including a full list of all the contents of frac fluid, and all the effects of their actions are fully understood, we cannot allow any drilling in New York, unless we are prepared to consider serious health problems among the people living in or downstream from the drilling areas as an acceptable result.

This report doesn't even address the question of where the water used in the gas drilling will come from, or how it will directly affect private wells. How much deeper will farmers and landowners have to drill their own water wells in order to get the (possibly contaminated) water they need for their own personal use?

Our water supply is both precious and precarious. Without a constant source of fresh, clean water, we cannot function smoothly, either as individuals or as a society. There is a lot of money to be made from drilling for natural gas, but if the cost is our water, and the monetary cost of protecting that water, it will be too high.

Copyright 2009, Dan Jacoby

²⁹ A partial list is available at http://www.earthworksaction.org/oil_and_gas.cfm

³⁰ <http://www.washingtonpost.com/wp-dyn/content/article/2009/02/04/AR2009020401785.html>

FOR THE RECORD

Buck Moorhead
Co-Founder and Board Member
NYH2O
236 West 27th Street / 700 NY NY 10001
212 343 2735

10/23/09

NYC City Council
Public Hearing

Thank you for this opportunity to talk.

I am a thirty-year resident of NYC.

I am a Co-Founder and Board Member of NYH2O, a citizens group formed to protect the drinking water of all residents of NY State from the imminent perils and risks of horizontal hydraulic fracturing.

NYH2O appreciates the focus and attention that the City Council is bringing to this critical matter. We especially appreciate and want to acknowledge Councilman Gennaro's longstanding efforts devoted to this.

NYH2O has obtained resolutions from over 20 NYC community boards, representing at over two million people. In most cases, these resolutions ask Governor Patterson and Commissioner Grannis for a state-wide ban on hydraulic fracturing.

I am an architect practicing in New York City. I have, for about ten years, been involved in land use issues in the Upper Delaware River, a stunning region.

It was at a meeting in the Upper Delaware almost two years ago that I first heard the terms "Marcellus shale" and "hydraulic fracturing"

When I was a kid, I worked as a plumber's helper building a hotel outside Baltimore. One summer morning I heard a bunch of men yelling from the ground, I was on an upper floor.

I walk to the edge of the floor slab and see an un-manned flat bed truck loaded with steel, starting to roll backwards down the road. Several men chasing it down the road, presumably one the driver, trying to catch it before it picked up speed and wrecked some type of havoc down the road. It was an almost flat road, but not flat enough, so the men never caught it as it slowly accelerated, out-of-control.

When I think of that truck, I think of the natural gas extraction and production industry, Teed up and slowly rolling, picking up momentum, imbedded with enormous power, influence, and wealth. The drinking water of NYC, and 29 counties in the State of New York and the public health of a huge percentage of its residents, are what is down the road from the enormous un-manned truck that is gaining speed, pointed directly at us, the New York City and the State of New York

Based on gas industry spacing patterns, there could ultimately be well over 100,000 wells, developed over decades, connected by pipelines, serviced by compressor stations.

Make no mistake about this understanding: this is an enormous industrial activity. The area of the Marcellus shale in New York State, including the NYC watershed will be transformed over time into an industrial landscape.

Do the math: 100,000 wells, each fracked up to 18 times. Almost two million fracking operations, each injecting millions of gallons of toxic water into the earth. Trillions of gallons, ultimately, of contaminated water. Toxic chemicals that bio-accumulate.

There is an unpredictability to this operation. It is not occurring in a controlled laboratory. It is industrial construction and production. Like any construction, there are and will be spills, accidents, short-cuts, fraud, and errors.

Substantial and appalling "red flags" are emerging out in Colorado, Wyoming, New Mexico, Texas, and more recently, West Virginia and Pennsylvania, as list activity moves East to us.

Wyoming example: the EPA, testing for the first time, after residents complaints, found 11 of the 39 wells tests, contaminated by chemicals used in the hydraulic fracturing process. That is over 25% of the wells.

Dunkard Creek, straddling West Virginia and Pennsylvania, over several week period a 38-mile stretch was completely decimated, 160 species of fish and aquatic life erased. It is now an ecological "dead zone", now believed to be caused by illegally dumping waste water from hydraulic fracturing into the creek.

Dimock Pennsylvania. Contaminated water wells, One can light the water coming from the kitchen faucet on fire. It is estimated that it may take up to 100 years, yes, you heard that correctly, 100 years for the contaminated aquifer to repair itself.

How does this activity occur without devastating, negative cumulative impacts on our water, our air, our environment, and public health?

The chemicals in the hydraulic fracturing bio-accumulate. Almost two million fracking operations. Trillions of gallons of contaminated water.

Who can say when the farmer's water in Chemung Co, or the water of the homeowner

with a small lot outside Ithaca, or the City of Binghamton's residents, or my neighbors in lower Manhattan turn on the faucet in their kitchen and the water is not safe to drink?

When will that be? One month after drilling commences, one year? Ten years? Or never? Who is to going to guarantee that that will never be the case, that the drinking water of All NYC residents and all NY State residents will never be jeopardized or threatened or tainted by the chemicals employed in hydraulic fracturing? Does this seem like too much to ask? To be able to open a faucet in any kitchen in New York State and have a glass of water, and not worry that we are risking the health of our family, our children, our friends in our own homes. Because it is as simple as that.

Toxic water will effect the food production of upstate farmers. When will we doubt our ability to eat a NY apple.?

With respect to the NYS DEC's dSGEIS, we need the City Council's support on three matters:

1. Extend the comment period, minimally for an additional 60 days, therefore not ending on Nov 30, but rather Jan 30, 2010.
2. Provide additional public hearings in NYC, one in each borough
3. Cumulative Impacts. Inadequately addressed, must be faced square-on.

Of 809 pages in the dSGEIS prepared by the NYS Department of Environmental Conservation, cumulative impacts got all of maybe five pages. Five pages! If that much.

It is the most significant, granddaddy of all issues.

QUOTE from dSGEIS: "The rate of development cannot be predicated with any certainty...nor is it possible to define the threshold at which development results in unacceptable adverse noise, visual and community character impacts... There is no way to objectify these inherently subjective perspectives (and) ... there is no sound basis for an administrative determination limiting the shale development at this time"

There was an expression in college, when someone gave up on a test or a course:

"They punted" Copped out....
That is what this reminds me of.

The industry has a business plan. They have some projected idea of how many wells they need to develop to break even, and how many to profit..

This form of hydraulic fracturing has been going on since 1999. There are patterns of development that have emerged. Sure, it might be somewhat different here, but to "punt", to say this impossible to estimate or anticipate, I am incredulous.

This is the essential question: what are the cumulative impacts?

An alternative conclusion could have been reached:

Because there is such uncertainty about the nature and the extent of the cumulative impacts, but it is clear there will be some, there is no sound basis for an administrative determination permitting the shale development to proceed at this time, until those impacts are better understood.

This question of cumulative impacts can not, must not be brushed aside and ignored, as it has been in the dSGEIS.

So back to the flat-bed truck.

We in New York City have a responsibility to remove us to safety, to get the residents of New York City and New York State out of the pathway of this about-to-be runaway truck, hydraulic fracturing.

All of us in this room need to work collaboratively in this effort. Let us know how we can help you.

Thanks you for this opportunity to speak.

Buck Moorhead
NYH2O

Mav Moorhead

Co-Founder and Board Member, NYH2O

2 Jane Street, NY, NY 10014

917.923.2118

10/23/09

NYC City Council Public Hearing

Thank you for this opportunity to speak.

It is with impassioned voice that I stand before you at this critical time in our nation's realization that energy is at a pivotal juncture, never before confronted with so many choices and yet clinging to the past century's behemoth fossil fuel sources. When these sources appeared limitless for what was the moderate consumption of the past and the concept of global warming wasn't considered, the oil, coal and natural gas fuels were freely considered de rigueur. Protecting the environment didn't have relevance because there was so much vastness to our environment that any waste and pollutants simply diluted into the unknown back roads, mountainous regions and what seemed unlimited pure water flowing endlessly in our rivers. Those days of ignorance and shortsightedness are at an end. We have now definitive studies and countless accounts regarding the ills of the processes that explore for these sources of energy.

My focus today is on the effects of the flawed process of gas extraction known as Hydraulic Fracturing/ Horizontal Drilling, a process devised by Halliburton in the 50's but was knighted for national widespread use with the Energy Act of 2005. The Energy Act

rescinded the Clean Water Act, The Clean Air Act, The Right to Clean Drinking Water Act and The Superfund Act to name only a few of its exemptions. It gave the green light to the gas companies, presently drilling in 32 states, to drill with immunity to laws that were lifted to eradicate liability on the part of the gas companies. They are the only industry excluded from these protections to our environment. Because these provisions have been rescinded the gas companies are now relieved of any responsibility, be it financial and environmental. They pay nominal taxes, if that, and are free from creating appropriate infrastructure to support their thousands of heavy industrial truck trips per well, bringing in water, trucking out toxic pollutants 24/7. They don't divulge the fracking fluids in their chemical solution. They claim this is "propriety information" like that of Coca Cola. But this isn't soda pop. There are over 400 chemicals, hundreds of which are carcinogenic, endocrine disruptors, and heavy metals ingredients that are not required by law to be disclosed.

There is no known technology to remove all these chemicals from the produced water or wastewater that is injected into the ground 8,000-10,000 ft past aquifers and heavy shale deposits. Some numbers for quick review are as follows: each well uses 3-5 million gallons of clean water taken from rivers and streams per frack for each well. Each well can be fracked up to 18 times. There are 50,000 to 100,000 wells planned for New York State turning it into an industrial zone, the likes of which we've never seen before in New York State. The frack brew is a mixture of water, sand and approximately 1% seriously toxic chemicals injected under extreme pressure to create explosions and fissures in the shale, breaking and dissolving it, allowing the gas along with heavy metals and natural occurring radiation to escape. 84% OF THE CHEMICALS DETECTED IN THE PITS ARE ON THE CERCLA SUPERFUND LIST. 70% of this toxic water stays underground in cavities that have never seen such volumes and huge weight of caustic water in the fissure ridden cavity underground. These

resultant fissures create new avenues of exit for the underground contaminated water. This migration occurs without any knowledge by the gas company or government agency as to the path it will take. By simple logic, it can be deemed "a loose cannon" in terms of identifying where these contaminants will end up. It could be an immediate detectable contamination of an aquifer or groundwater or a slower steady leakage in the fissures to miles away carrying the contaminants to streams, rivers and ground waters killing with it livestock, poisoning crops we depend on and ruining the very water we drink , wash and bath in.

Through osmosis and the drilling pressure 30% of the toxic fluids comes back up and is stored in open wastewater pits which evaporate into the air. They often leak or get flooded and openly contaminate surroundings. Many accidents, spills and sometimes intentional leakage occur so as to defray some of the wastewater disposal problems which are ever present. Another means of wastewater storage is the "injection well" which disposes of the vast volumes of polluted water. These can be dud wells that are filled with contaminated water and capped "forever". Their claim that the casings used to funnel the waste will last forever but as we all know there is a certain risk that any number of events could present leakage and migration. Seismic shift from drilling itself has been known to occur thereby causing rupture of the well not to mention fissures in the cavity itself to mention only a couple of events. The problem here is that all the contaminants injected and lying underground with no oversight or true understanding of each unique setting in the mountainous northeast region can allow for migration of the chemicals into unknown territory. This all, of course, poses irreversible health issues to literally millions of people in its wake as no treatment plant can remove much of the contamination since the molecules in many of these injected chemical brew are too small to filter out.

The deceptively benign terminology used by the gas companies leads us to believe that the process is harmless. "Produced Water"-water now laced with chemicals then "treated"-only parts of the contamination are removed and then "reintroduced"-dumped back into the rivers and our drinking water supply also called "dilution", "play"-gas field ready for exploration all represent the harmless face by the gas companies that is placed on this extremely toxic flawed process of exploration.

At what point does the cumulative reintroduced water cross the safe threshold of acceptable levels of toxins in the water supply and at that point is there a viable means to reverse the damage done to the drinking supply of millions of people? Damage done to private wells, aquifers, ground water and streams is irreversible. Any treatment plants that would be constructed would take years to complete. The Croton Water Filtration Plant started 3 years ago at the cost estimate of \$1.3B and with cost overruns is now at \$3.3B Billion and not complete and an emergency event hasn't even taken place yet. A 1990's estimate of \$10B for a water treatment plant for New York City alone is now estimated to be at \$20B with \$100M/year to maintain it. This cost of water would be borne to the taxpayer as things stand now. We currently have a Filtration Avoidance Status in New York City, an enviable and unique position in the world today thanks to early and brilliant planning. This would come to a final and abrupt end with the inception of this flawed process of Hydraulic Fracturing/Horizontal Drilling.

Our critical water supply infrastructure, water quality and available water supply hang in the balance with the prospect of this potential tsunami of calamity that faces New York water resource as a whole. The consequences of this process are dire. With the sweep of a pen all that we have attained and nurtured in terms of a clean water supply could be wiped out. Life would become unalterably changed for every single person in this state. Water affects our very staff of life.

In Conclusion:

- **The gas companies are now poised to start drilling. We could see this drilling process begin in a very few months.**
- **There are countless accounts from 32 states of blowouts, explosions, water and air contamination. A heat sensitive camera will display what can't be seen with the naked eye, the air contamination constantly venting 24/7 by the tons every year, streaming out from the compression tanks at each operational unit. This can migrate hundreds of miles causing deadly irreversible health consequences.**
- **The onus of responsibility lies with the gas industry to prove that every aspect of the process of Hydraulic Fracturing, Horizontal Drilling is a safe and harmless process. Currently, the onus is on the public to prove that Hydraulic Fracturing, Horizontal Drilling is unsafe.**
- **All rescinded provisions in the Energy Act of 2005 to protect our water, air, rights and superfund ability for reclamation and other safeguards to our environment must be immediately restored to their original protection intents. The FRAC Act is a good first step towards this goal but more legislation must be enacted to achieve positive protective actions.**
- **Immediate proactive actions must be taken with stringent rules and regulations regarding oversight of already contaminated areas throughout the country to avoid further migration of toxic "produced water" (gas company terminology for contaminated toxic water) and avoid "dilution" of these chemicals back into our rivers , streams, groundwater and aquifers.**

- **The gas companies claim they don't have any accounts of contaminated water reports where they've drilled because there is no record keeping implementation in place to collect this information.**
- **People don't have the knowledge of ingredients to test for because they don't know what is in the fracking fluids used to drill. But they know their water is now unusable and they have to install very complex filtration systems in their houses or get the gas companies to supply water for them which has happened on several accounts. But they still get sick.**
- **All, not part or abbreviated, listed components of the fracking fluids including ALL toxic materials must be disclosed to the public and all governing agencies: EPA, DEP, DEC, DRBC, etc. WE NEED FULL DISCLOSURE OF ALL CHEMICALS USED IN HYDRAULIC FRACTURING, HORIZONTAL DRILLING.**
- **All applications regarding Hydraulic Fracturing, Horizontal Drilling must be submitted for an area as one submission for a 10 year plan so that a cumulative study can be enacted. Presently the gas companies apply for 1 well permit at a time to avoid cumulative scrutiny.**
- **All wells must have proper oversight by qualified DEC inspectors including oversight of those huge water withdrawals, drilling, waste water removal by trucks and wastewater storage. There should be round the clock over site of each individual well with at least 3 persons assigned respectively. Spot checks by independent inspectors should be mandatory. Cameras should be mandatory. Phones should be installed to report emergencies.**
- **"Reintroduced" wastewater should be prohibited from being dumped into our rivers, streams, groundwater and aquifers.**
- **Serious meaningful fines should be levied on infractions such as reintroduced water, spills, leaks, fires or other accidents not specified here. The frivolous fines that were just imposed yesterday on the Cabot spills at the Heitsman Well in Pa. of over**

8000 gallons that polluted Stevens Creek and nearby wetlands (\$56,650) created little punitive damage and were simply a slap on the wrist and fit into the category of the cost of doing business for the gas companies.

- **Original baseline predrilling water testing should be done at the expense of the gas companies if any landowner in New York State sees fit to want it done to assure that his water is not contaminated before drilling proceeds in the state. This includes private wells in remote areas as well. Everyone is entitled to clean water.**
- **Water testing at every drill pad is mandatory at each site every day.**
- **All responsibility for contamination lies with the gas companies and must correct any and all damage wrought by the drilling.**
- **All responsibility for infrastructure used by the gas companies in cities, towns and hamlets, including but not limited to, bridges, roads, water usage, etc. should be taxed and bonded to cover current and foreseeable damage to mitigate any increase in taxes for landowners.**
- **THIS IS A HEALTH ISSUE OF UNPRECEDENTED PROPORTIONS NEVER WITNESSED IN THIS COUNTRY BEFORE. WE MUST MOVE WITH ALACRITY TO PREVENT THE TOXIC SPILLS, BLOWOUTS, FIRES BURNING FOR DAYS ON END, EXPLOSIONS, HEAVY WELL CONTAMINATION, INJURY, BRAIN LESIONS, CANCER, PERMANENT NEUROPATHIES, FATIGUE, EXHAUSTION, CARDIOVASCULAR, KIDNEY AND IMMUNE SYSTEM CHANGES, MEMORY LOSS, BLACKOUTS, REPRODUCTIVE ORGAN DAMAGE, ENDOCRINE DISRUPTION, LOSS OF SMELL AND TASTE, NAUSEA, VOMITING, DEATH, LIVESTOCK & CROP SICKNESS, FAILURE AND DEATH. Gas companies should be responsible for loss of property and livelihood, and health related issues as a result of contamination and negligence.**

- **IN ADDITION, FUTURE REAL ESTATE VALUES WOULD PLUMMET WITH THIS ISSUE LOOMING. THERE WOULD BE A SEVERE DEGRADATION OF LANDSCAPE, TOURISM AND RECREATION.**
- **We cannot and will not afford to withstand the current gas company climate of arrogant disregard to the communities that they have every intention to exploit for profit and leave in its wake ruin of water, air, livestock, crops , real estate, landscape and health.**
- **NOONE SHOULD BE FORCED TO TAKE A SHOWER IN METHANE, WASH CLOTHES IN TOLUENE, OR DRINK ETHYL BENZENE AND LOSE THE ESSENTIAL BUILDING BLOCK FOR LIFE AS WE KNOW IT BECAUSE OUR GOVERNMENT HASN'T TAKEN STEPS TO SAFEGARD OUR MOST BASE OF ALL NEEDS, CLEAN DRINKING WATER.**

Copies of a copious number of Borough Presidents Letters and Resolutions, New York City Community Board Resolutions and related Senator, Attorney and expert communications relating serious concern regarding Hydraulic Fracturing/Horizontal Drilling are included in my comments provided here.

Thank you very much for considering my comments.

Mav Moorhead

Co-Founder and Board Member

NYH2O

917.923.2118

COMMITTEES

Housing
Environmental Conservation
Labor
Corporations, Authorities, and Commissions
Election Law
Cities

TASK FORCE

Puerto Rican / Hispanic Task Force

REPRESENTING

The Lower East Side, Union Square
Gramercy, Stuyvesant Town
Peter Cooper Village, Waterside Plaza
Kips Bay, Murray Hill, Tudor City



OFFICE OF
NEW YORK STATE
ASSEMBLY MEMBER
BRIAN KAVANAGH
74TH DISTRICT

DISTRICT OFFICE

237 First Avenue, Suite 407
New York, New York 10003
(corner of East 14th Street)
212-979-9696
FAX 212-979-0594

CAPITAL OFFICE

Legislative Office Building, Suite 431
Albany, New York 12248
518-455-5506
FAX 518-455-4801

EMAIL

kavanaghb@assembly.state.ny.us

October 19, 2009

Alexander B. Grannis
Commissioner
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-1010

By FAX (518-402-8541), Email (petegrannis@gw.dec.state.ny.us), and U.S. Mail

Dear Commissioner Grannis:

Thank you again for the expert testimony you provided at the Assembly Standing Committee on Environmental Conservation's public hearing on October 15th on the Department of Environmental Conservation's draft SGEIS regarding natural gas drilling in the Marcellus shale formation.

I write to formally reiterate and make more specific my request that DEC extend the deadline for public comments on the document. The current sixty-day comment period is too brief for the many officials, advocates, and citizens who wish to deliberate and weigh in on such a comprehensive and complicated document, the approval of which would have such a great impact on our State's economy and environment. I therefore would like to request that the comment period be extended an additional 60 days, making the end-date January 29, 2010. As I mentioned to you at the hearing, the extension to the comment period would be most valuable if announced promptly.

If you or your staff would like to discuss this matter further, please do not hesitate to contact me directly, or Cameron Peterson in my district office at 212-979-9696.

Sincerely,

A handwritten signature in black ink, appearing to read "B. Kavanagh".

Brian Kavanagh



THE CITY OF NEW YORK
OFFICE OF THE PRESIDENT
BOROUGH OF MANHATTAN

SCOTT M. STRINGER
BOROUGH PRESIDENT

**MANHATTAN BOROUGH BOARD RESOLUTION
IN SUPPORT OF THE PROHIBITION OF HYDRAULIC
FRACTURING IN THE NEW YORK CITY WATERSHED**

WHEREAS, On July 23, 2008 Governor David Patterson signed A10526/S08169 into law, a bill setting certain technical requirements pertaining to well spacing which will facilitate the use of hydraulic fracturing for natural gas recovery in an under ground geological formation known as the Marcellus Shale;

WHEREAS, hydraulic fracturing has a controversial history in the United States with documented incidences of leaks, spills, explosions and water pollution in nine different states which have resulted in the contamination of local point sources of water;

WHEREAS, hydraulic fracturing requires a mix of chemicals, including known carcinogens, that are injected into the earth at extreme pressure and whose compositions and concentrations are not publicly disclosed and which under certain circumstances could pose a serious risk to local point sources of water;

WHEREAS, serious deficiencies in a review of the effects of hydraulic fracturing on drinking water supplies conducted by the U.S. Environmental Protection Agency (EPA) have been raised, including the alleged removal of key passages in that document by officials from the Office of Vice President Dick Cheney, as reported on October 14, 2004 by the Los Angeles Times, and the characterization of the report as "scientifically unsound" by an internal EPA whistleblower;

WHEREAS, a Freedom of Information Law request submitted by the Washington D.C. based non-profit organization Environmental Working Group indicates that the New York State Department of Environmental Conservation has conducted no independent testing to determine whether there are significant risks to drinking water supplies from hydraulic fracturing and has by default relied on the aforementioned EPA report to on at least two occasions to publicly state that hydraulic fracturing poses no threat to drinking water supplies;

WHEREAS, ninety percent of the New York City water supply originates from the Catskill/Delaware watershed, which is within the boundaries of the Marcellus Shale, and is delivered to the city without filtration, making this water extraordinarily susceptible to contamination from hydraulic fracturing should an accident occur within the boundaries of the New York City watershed;

WHEREAS, in his July 23, 2008 press release announcing the new law, Governor Patterson ordered a new Supplemental Generic Environmental Impact Statement that "will occur as part of a public process that ensures that concerns raised by residents who could be affected by drilling activities are heard and considered";

WHEREAS, the New York State Department of Environmental Conservation held the first of two rounds of public meetings on hydraulic fracturing in Allegany, Bath, Elmira, Binghamton, Oneonta and Lake Sheldrake but held no public meetings in New York City;

THEREFORE, BE IT RESOLVED that the Manhattan Borough Board unequivocally urges the New York State Department of Environmental Conservation to prohibit the use of hydraulic fracturing in the New York City watershed;

THEREFORE, BE IT FURTHER RESOLVED that the chemical ingredients used in hydraulic fracturing sites in New York State should be disseminated among all environmental regulatory agencies, water treatment facilities and first responders in the vicinity of the drilling site in order to mitigate potential damages that may arise should accidents occur;

THEREFORE, BE IT FURTHER RESOLVED that the New York State Department of Environmental Conservation should mandate the inclusion of "tracers" in hydraulic fracturing fluids which would allow emergency responders to track fracturing fluids should leaks, spills or contaminations occur. Additionally, the New York State Department of Environmental Conservation should mandate the use of the most environmentally benign fracturing fluids available, using off-shore hydraulic fracturing applications as a model;

THEREFORE, BE IT FURTHER RESOLVED that the New York State Department of Environmental Conservation is strongly urged to schedule public hearings in each of New York City's five boroughs during the second commenting period leading up to the issuance of the Supplemental Generic Environmental Impact Statement in late 2009;

THEREFORE, BE IT FURTHER RESOLVED that the State of New York must ensure the adequate regulation, monitoring and supervision of all hydraulic fracturing sites by providing a budget to the New York State Department of Environmental Conservation that will ensure adequate personnel levels can be recruited and retain in order to achieve this goal.



BRONX BOROUGH PRESIDENT RUBEN DIAZ, JR.

851 GRAND CONCOURSE, BRONX, NEW YORK 10451

BRONX BOROUGH BOARD

May 2009

**BRONX BOROUGH BOARD RESOLUTION IN SUPPORT OF THE
PROHIBITION OF HYDRAULIC FRACTURING IN THE STATE OF
NEW YORK**

WHEREAS, the Bronx Borough Board has grave concerns regarding the dangers posed by hydraulic fracturing methods of natural gas extraction to ground water supplies, public health and natural habitat;

WHEREAS, the New York State Department of Environmental Conservation has undertaken a Supplemental Generic Environmental Impact Statement on the potential impacts of drilling permits, but has not held public hearings within the City of New York;

WHEREAS, the 2005 Energy Act contained exemptions to the federal Clean Water and Clean Air Acts that removed certain regulatory protections from energy extraction operations;

WHEREAS, the United States Environmental Protection Agency has agreed to reassess the environmental implications of hydraulic fracturing extraction methods;

THEREFORE, BE IT RESOLVED that the Bronx Borough Board unequivocally urges Governor Patterson, the New York State Legislature and the New York State Department of Environmental Conservation to prohibit the use of hydraulic fracturing in the State of New York;

THEREFORE, BE IT FURTHER RESOLVED that the Bronx Borough Board strongly urges New York State Department of Environmental Conservation, during the second comment period leading up to the issuance of the Supplemental Generic Environmental Impact Statement, to hold public hearings in each of New York City's five boroughs;

THEREFORE, BE IT FURTHER RESOLVED that the Bronx Borough Board supports federal legislation rescinding exemptions to the Clean Air and Clean Water Acts included in the 2005 Energy Act, and calls upon New York's representatives in Congress to work towards the enactment of such legislation.



THE CITY OF NEW YORK
OFFICE OF THE PRESIDENT
BOROUGH OF MANHATTAN

SCOTT M. STRINGER
BOROUGH PRESIDENT

**MANHATTAN BOROUGH BOARD RESOLUTION
IN SUPPORT OF THE PROHIBITION OF HYDRAULIC
FRACTURING IN THE NEW YORK CITY WATERSHED**

WHEREAS, On July 23, 2008 Governor David Patterson signed A10526/S08169 into law, a bill setting certain technical requirements pertaining to well spacing which will facilitate the use of hydraulic fracturing for natural gas recovery in an under ground geological formation known as the Marcellus Shale;

WHEREAS, hydraulic fracturing has a controversial history in the United States with documented incidences of leaks, spills, explosions and water pollution in nine different states which have resulted in the contamination of local point sources of water;

WHEREAS, hydraulic fracturing requires a mix of chemicals, including known carcinogens, that are injected into the earth at extreme pressure and whose compositions and concentrations are not publicly disclosed and which under certain circumstances could pose a serious risk to local point sources of water;

WHEREAS, serious deficiencies in a review of the effects of hydraulic fracturing on drinking water supplies conducted by the U.S. Environmental Protection Agency (EPA) have been raised, including the alleged removal of key passages in that document by officials from the Office of Vice President Dick Cheney, as reported on October 14, 2004 by the Los Angeles Times, and the characterization of the report as "scientifically unsound" by an internal EPA whistleblower;

WHEREAS, a Freedom of Information Law request submitted by the Washington D.C. based non-profit organization Environmental Working Group indicates that the New York State Department of Environmental Conservation has conducted no independent testing to determine whether there are significant risks to drinking water supplies from hydraulic fracturing and has by default relied on the aforementioned EPA report to on at least two occasions to publicly state that hydraulic fracturing poses no threat to drinking water supplies;

WHEREAS, ninety percent of the New York City water supply originates from the Catskill/Delaware watershed, which is within the boundaries of the Marcellus Shale, and is delivered to the city without filtration, making this water extraordinarily susceptible to contamination from hydraulic fracturing should an accident occur within the boundaries of the New York City watershed;

WHEREAS, in his July 23, 2008 press release announcing the new law, Governor Patterson ordered a new Supplemental Generic Environmental Impact Statement that “will occur as part of a public process that ensures that concerns raised by residents who could be affected by drilling activities are heard and considered”;

WHEREAS, the New York State Department of Environmental Conservation held the first of two rounds of public meetings on hydraulic fracturing in Allegany, Bath, Elmira, Binghamton, Oneonta and Lake Sheldrake but held no public meetings in New York City;

THEREFORE, BE IT RESOLVED that the Manhattan Borough Board unequivocally urges the New York State Department of Environmental Conservation to prohibit the use of hydraulic fracturing in the New York City watershed;

THEREFORE, BE IT FURTHER RESOLVED that the chemical ingredients used in hydraulic fracturing sites in New York State should be disseminated among all environmental regulatory agencies, water treatment facilities and first responders in the vicinity of the drilling site in order to mitigate potential damages that may arise should accidents occur;

THEREFORE, BE IT FURTHER RESOLVED that the New York State Department of Environmental Conservation should mandate the inclusion of “tracers” in hydraulic fracturing fluids which would allow emergency responders to track fracturing fluids should leaks, spills or contaminations occur. Additionally, the New York State Department of Environmental Conservation should mandate the use of the most environmentally benign fracturing fluids available, using off-shore hydraulic fracturing applications as a model;

THEREFORE, BE IT FURTHER RESOLVED that the New York State Department of Environmental Conservation is strongly urged to schedule public hearings in each of New York City’s five boroughs during the second commenting period leading up to the issuance of the Supplemental Generic Environmental Impact Statement in late 2009;

THEREFORE, BE IT FURTHER RESOLVED that the State of New York must ensure the adequate regulation, monitoring and supervision of all hydraulic fracturing sites by providing a budget to the New York State Department of Environmental Conservation that will ensure adequate personnel levels can be recruited and retain in order to achieve this goal.



OFFICE OF THE BRONX BOROUGH PRESIDENT
THE BRONX COUNTY BUILDING
851 GRAND CONCOURSE
BRONX, NEW YORK 10451

RUBEN DIAZ, JR.
BOROUGH PRESIDENT

TEL 718-590-3500
FAX 718-590-3537
E-MAIL: rdiazjr@bronxbp.nyc.gov

June 22, 2009

Commissioner Pete Grannis
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-1011

Dear Commissioner Grannis: *Pete*

I write to inform you of a resolution recently passed by the Bronx Borough Board on the subject of hydraulic fracturing. As you well know, the hydraulic fracturing method of natural gas extraction has raised numerous concerns about potential environmental degradation and public health impacts, particularly in relation to the contamination of groundwater. The Bronx Borough Board is deeply concerned about the possibility of this type of natural gas drilling in New York State and in New York City's Catskill/Delaware Watershed, the primary source of drinking water for the over 8 million people. The Board passed a resolution on May 28, 2009 (see enclosed) opposing such drilling and calling for the following:

1. Prohibition of hydraulic fracturing in New York;
2. Public hearings and/or borough town halls in New York City on drilling permit impacts;
3. Rescission of exemptions to the federal Clean Air and Clean Water Acts.

I respectfully request that your agency not issue any permits for hydraulic fracturing in the New York City Watershed or anyplace else in the state of New York, and ask for a response to the Bronx Borough Board regarding your agency's position on this issue.

Sincerely,

Ruben Diaz, Jr.
Ruben Diaz, Jr.

Enc.
copy: Suzanne Mattei, NYSDEC Region 2 Director
Steven Lawitts, NYCDEP Acting Commissioner

RD:p&d/l



Office of the Brooklyn Borough President

July 9, 2009

Steven W. Lawitts
Acting Commissioner
NYC Department of Environmental Protection
59-17 Junction Boulevard
Flushing, NY 11373

Dear Commissioner Lawitts:

The NYS Department of Environmental Conservation is currently preparing a supplement to the Generic Environmental Impact Statement (GEIS) which assesses issues unique to horizontal drilling and high-volume hydraulic fracturing of the Marcellus Shale and other low permeability reservoirs near the Delaware River Valley and the Catskill watershed. Many Brooklyn residents have contacted me expressing their grave concern that gas well development by high-volume hydraulic fracturing may have a negative impact on New York City's drinking water supply which is located upstate.

Since your agency's Bureau of Water Supply is charged with protecting New York City's upstate water supply system, I am seeking the Department of Environmental Protection's position on the draft GEIS. More specifically, I am most curious to know if permitting hydraulic fracturing in the Marcellus formation would jeopardize NYC's filtration avoidance status, which is due to our water supply's exceptional purity, high quality and protected environment.

I look forward to your agency's response on this very serious matter. I know you share my concern for protecting the upstate supply system that provides drinking water to more than nine million New Yorkers.

Sincerely,



Marty Markowitz

MM/ee
BBPO# 2009-0427-020



COMMITTEE OF ORIGIN: PLANNING AND COMMUNITY INFRASTRUCTURE

COMMITTEE VOTE:	8 In Favor	0 Opposed	0 Abstained	0 Recused
PUBLIC MEMBERS:	2 In Favor	0 Opposed	0 Abstained	0 Recused
BOARD VOTE:	30 In Favor	0 Opposed	0 Abstained	0 Recused

RE: Hydraulic Fracturing in the New York City Watershed

WHEREAS: On July 23, 2008 Governor David Patterson signed A10526/S08169 into law, a bill setting certain technical requirements pertaining to well spacing which will facilitate the use of hydraulic fracturing for natural gas recovery in an underground geological formation known as the Marcellus Shale, and

WHEREAS: Hydraulic fracturing has a controversial history in the United States with documented incidences of leaks, spills, explosions and water pollution in nine different states which have resulted in the contamination of local point sources of water, and

WHEREAS: Hydraulic fracturing requires a mix of chemicals, including known carcinogens, that are injected into the earth at extreme pressure and whose compositions and concentrations are not publicly disclosed and which under certain circumstances could pose a serious risk to local point sources of water, and

WHEREAS: Serious deficiencies in a review of the effects of hydraulic fracturing on drinking water supplies conducted by the U.S. Environmental Protection Agency (EPA) have been raised, including the alleged removal of key passages in that document by officials from the Office of Vice President Dick Cheney, as reported on October 14, 2004 by the Los Angeles Times, and the characterization of the report as "scientifically unsound" by an internal EPA whistleblower, and



WHEREAS: A Freedom of Information Law request submitted by the Washington D.C. based non-profit organization Environmental Working Group indicates that the New York State Department of Environmental Conservation ("NYS DEC") has conducted no independent testing to determine whether there are significant risks to drinking water supplies from hydraulic fracturing and has by default relied on the aforementioned EPA report to on at least two occasions to publicly state that hydraulic fracturing poses no threat to drinking water supplies, and

WHEREAS: Ninety percent of the New York City water supply originates from the Catskill/Delaware watershed, which is within the boundaries of the Marcellus Shale, and is delivered to the city without filtration, making this water extraordinarily susceptible to contamination from hydraulic fracturing should an accident occur within the boundaries of the New York City watershed, and

WHEREAS: In his July 23, 2008 press release announcing the new law, Governor Patterson ordered a new Supplemental Generic Environmental Impact Statement that "will occur as part of a public process that ensures that concerns raised by residents who could be affected by drilling activities are heard and considered", and

WHEREAS: NYS DEC held the first of two rounds of public meetings on hydraulic fracturing in Allegany, Bath, Elmira, Binghamton, Oneonta and Lake Sheldrake but held no public meetings in New York City; now

THEREFORE

BE IT

RESOLVED

THAT: CB#1 unequivocally urges NYS DEC to prohibit the use of hydraulic fracturing in the New York City watershed, and

THEREFORE

BE IT

RESOLVED

THAT: CB#1 unequivocally urges NYS DEC to prohibit the use of hydraulic fracturing in the New York City watershed, and

BE IT

FURTHER

RESOLVED

THAT: NYS DEC is strongly urged to schedule public hearings in each of New York City's five boroughs during the commenting period following the issuance of the draft Supplemental Generic Environmental Impact

Statement in late 2009, and that such commenting period be at least ninety (90) days in duration, and

BE IT
FURTHER
RESOLVED
THAT:

In the event that NYS DEC decides to continue to consider permitting hydraulic fracturing within New York State, and

(a) NYS DEC should require that the chemical ingredients used in hydraulic fracturing sites in New York State be disseminated among all environmental regulatory agencies, water treatment facilities and first responders in the vicinity of the proposed drilling site in order to mitigate potential damages that may arise should accidents occur;

(b) NYS DEC should mandate the inclusion of "tracers" in hydraulic fracturing fluids which would allow emergency responders to track fracturing fluids should leaks, spills or contaminations occur;

(c) NYS DEC should mandate the use of the most environmentally benign fracturing fluids available, using off-shore hydraulic fracturing applications as a model;

(d) The State of New York must ensure the adequate regulation, monitoring and supervision of all hydraulic fracturing sites by providing a budget to NYS DEC that will ensure adequate personnel levels can be recruited and retain in order to achieve this goal.



COMMUNITY BOARD NO. 2, MANHATTAN

3 WASHINGTON SQUARE VILLAGE

NEW YORK, NY 10012-1899

www.cb2manhattan.org

P: 212-979-2272 F: 212-254-5102 E: info@cb2manhattan.org

Greenwich Village • Little Italy • SoHo • NoHo • Hudson Square • Chinatown • Gansevoort Market

Environment, Public Health, and Public Safety Committee

March 18, 2009

PUBLIC HEARING

Resolution calling on the New York State Legislature, the New York State Department of Environmental Conservation, and New York State Governor David Paterson to PROHIBIT DRILLING FOR NATURAL GAS WITHIN NEW YORK STATE.

Whereas, Natural gas exploration and production companies, and mineral rights owners, are interested in developing a potentially significant gas resource in the Marcellus Shale through the use of horizontal drilling and a hydraulic fracturing technique known as "slick water fracturing" which requires large volumes of water; and

Whereas, the State Environmental Quality Review Act requires the Department of Environmental Conservation to review the methods used while accessing this natural gas that's located deep within the Earth; and

Whereas; We heard presentations from experts on this issue, among them: James Gennaro, Chair of New York City Council Environmental Protection Committee; Dr. Stephen Corson, Policy Analyst for Manhattan Borough President and lead author of the Borough President's report on this issue; Jared Chasow, Legislative Aide for Senator Tom Duane; Deborah Goldberg, Managing Attorney for Earth Justice's Northeast Office; Craig Michaels, Watershed Program Director for Riverkeeper; and Joe Levine, Co-founder of NY-H2O; and

Whereas, Our committee screened a film segment by Josh Fox showing recent destructive consequences/affects of this process; and

Whereas, Siobhan Watson spoke for New York City Council Speaker Christine Quinn and said the Speaker was keenly aware of this issue and hasn't taken a position yet; and

Whereas, Matthew Borden spoke for New York State Assembly Member Deborah Glick to say she is entirely opposed to this dangerous drilling activity and he distributed copies of her public testimony on the matter; and

Whereas, over 70 people attended this Public Hearing, including board members of Manhattan Community Boards 3, 6, & 7; and

Whereas, Hydraulic Fracturing mixes water with sand and 250+ toxic chemicals; and

Whereas, the 2005 Energy Policy Act exempts companies who employ Hydraulic Fracturing methods from having to comply with many public health laws which were specifically written to protect our natural resources and well being (e.g. Safe Drinking Water Act, Clean Water Act, Emergency Planning & Community Right-to-know Act); and

Whereas, Chapter 376 of the Laws of New York State of 2008 streamlined the permitting process for horizontal wells that use hydraulic fracturing, allowing the development of natural gas drilling sites within Marcellus Shale in New York to proceed more quickly; and

Whereas, the New York State Department of Environmental Conservation Division of Mineral Resources, Bureau of Oil & Gas Regulation held scoping hearings upstate for a Draft Supplemental Generic Environmental Impact Statement, but failed to hold any hearings within New York City despite the fact 90% of our water supply comes from the Catskill and Delaware watersheds; and

Whereas, Chemicals contained in hydraulic fracturing fluids cause a variety of irreversible and catastrophic damages to the air, water, public health, wildlife, and integrity of local communities; and

Whereas, Hydraulic fracturing presents risks of water contamination during drilling operations and during the storage and disposal of millions of gallons of the water and chemical additive mixture required for each well that is created; and

Whereas, Hydraulic fracturing has resulted in contaminated water supplies in other states, including Wyoming and New Mexico; and

Whereas, No amount of careful planning and operation can guarantee that there will be no chemical spills that could flow into reservoirs, underground migration of fracturing fluids toward the water supply, or other accidents resulting from drilling operations; and

Whereas, If the water supply should be contaminated, the City of New York would be required by the Environmental Protection Agency to build and operate a water filtration plant, the cost of which has been estimated to be approximately \$10 billion, which would be borne by New York City taxpayers; and

Whereas, Absolutely no evidence has been shown by any organization that fluids used during Hydraulic Fracturing can be completely filtered out of drinking water; and

Whereas, Council Member Gennaro has introduced Resolution No. 1850 in the New York City Council that calls for a ban for drilling within our Watershed Area; and

Whereas, There is no possible remedy once contamination has occurred; and

Therefore let it be resolved, this method for accessing natural gas is FAR TOO DANGEROUS to the air, water, public health, wildlife and integrity of local communities to be approved by any Federal or New York State entity; and

Therefore be it further resolved, Manhattan Community Board 2 calls on the New York State Legislature, the New York State Department of Environmental Conservation, and New York State Governor David Paterson to prohibit Hydraulic Fracturing drilling for natural gas within New York State.

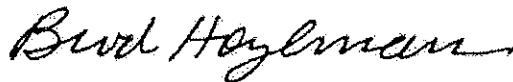
Committee vote: Unanimous approval

Full board vote: Unanimous approval

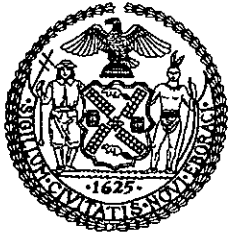
Respectfully submitted,



Jason Mansfield
Chair
Environment, Public Safety, Public Health Committee



Brad Hoylman
Chair
Manhattan Community Board 2



THE CITY OF NEW YORK
MANHATTAN COMMUNITY BOARD NO. 3
59 EAST 4TH STREET - NEW YORK, NY 10003
PHONE: (212) 533-5300 - FAX: (212) 533-3659
WWW.CB3MANHATTAN.ORG - INFO@CB3MANHATTAN.ORG

Dominic Pisciotta, Board Chair

Susan Stetzer, District Manager

May 8, 2009

Hon. Scott Stringer
Manhattan Borough President
Municipal Building, 19th Floor
One Centre Street
New York, NY 10007

Dear Manhattan Borough President Stringer:

At its April 2009 monthly meeting, Community Board #3 passed the following resolution:

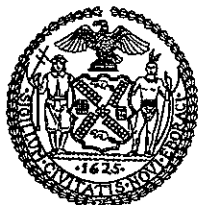
WHEREAS, On July 23, 2008 Governor David Patterson signed A10526/S08169 into law, a bill setting certain technical requirements pertaining to well spacing which will facilitate the use of hydraulic fracturing for natural gas recovery in an under ground geological formation known as the Marcellus Shale; and

WHEREAS, hydraulic fracturing has a controversial history in the United States with documented incidences of leaks, spills, explosions and water pollution in nine different states which have resulted in the contamination of local point sources of water; and

WHEREAS, hydraulic fracturing requires a mix of chemicals, including known carcinogens, that are injected into the earth at extreme pressure and whose compositions and concentrations are not publicly disclosed and which under certain circumstances could pose a serious risk to local point sources of water; and

WHEREAS, serious deficiencies in a review of the effects of hydraulic fracturing on drinking water supplies conducted by the U.S. Environmental Protection Agency (EPA) have been raised, including the alleged removal of key passages in that document by officials from the Office of Vice President Dick Cheney, as reported on October 14, 2004 by the Los Angeles Times, and the characterization of the report as "scientifically unsound" by an internal EPA whistleblower;

WHEREAS, a Freedom of Information Law request submitted by the Washington D.C. based non-profit organization Environmental Working Group indicates that the New York State Department of Environmental Conservation has conducted no independent testing to determine whether there are significant risks to drinking water supplies from hydraulic fracturing and has by default relied on the aforementioned EPA report to on at least two occasions to publicly state that hydraulic fracturing poses no threat to drinking water supplies; and



CITY OF NEW YORK
MANHATTAN COMMUNITY BOARD FOUR

330 West 42nd Street, 26th floor New York, NY 10036
tel: 212-736-4536 fax: 212-947-9512
www.ManhattanCB4.org

JEAN-DANIEL NOLAND
Chair

ROBERT J. BENFATTO, JR., ESQ.
District Manager

May 14, 2009

Hon David Paterson
Governor of the State of New York
Executive Chamber
Albany, New York 12224

Hon Pete Grannis
Commissioner
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-1011

Re: Hydraulic fracturing gas drilling in the watershed area

Dear Governor Paterson and Commissioner Grannis:

It has come to the attention of Manhattan Community Board No 4, located in New York City, that a proposal to extract natural gas from large areas in New York State known as the Marcellus Shale region using a method called "hydraulic fracturing" is being considered by New York State and New York State Department of Environmental Conservation (NYS DEC). As the area encompasses the watershed area that provides most of New York City's drinking water supply, this proposal is of grave concern for the residents of Manhattan Community District No 4, not to mention the entire population of New York City. Evidence that has been presented to this board from several sources, including reports from other states where this method has been used, indicate that there are many potential dangers associated with the hydraulic fracturing method of extracting natural gas, and we strongly urge you, in your respective roles as Governor of New York and Commissioner of NYS DEC, to prohibit any such drilling operations using hydraulic fracturing in or near the watershed areas that supply our drinking water, as well as other areas in New York State, until and/or unless certain actions or conditions, outlined below, have been met to ensure public safety.

- Public hearing in NYC
- Independent safety study
- Knowledge of chemicals used

Public hearing in NYC

First of all, we understand that NYS DEC held public scoping hearings in upstate New York for a Draft Supplemental Generic EIS regarding this methodology, but did not hold any hearings in New York City, despite the fact that 90% of our drinking water comes from watersheds that are adjacent to, or encompassed by the Marcellus Shale area where this proposed drilling is to take place. Our understanding of this method is that huge volumes of water mixed with sand and chemicals, some of which are known to be carcinogenic, are pumped into the earth to create fractures that allow the release of the natural gas, and that this creates a tremendous run-off of contaminated waste water. Since this has the potential to affect our drinking water, it is clear that residents of New York City need an opportunity to understand the risks and the possible consequences better, and that, therefore, it is imperative that NYS DEC schedule similar hearings on the Draft Supplemental Generic EIS in New York City, and extend the public comment period appropriately, before any conclusions are reached.

Independent safety study

It is our understanding that no independent studies of the potential for contamination, the effectiveness of any filtering, or other side effects of this methodology have been conducted by New York State. At the same time, evidence from other states where this type of drilling has been implemented indicates that problems can be expected. Manhattan Community Board No 4 strongly urges NYS DEC to implement a series of such studies using independent accredited institutions before any permits for this type of drilling are approved, especially in the watershed that supplies NYC. It is also unknown how far underground contaminated water may travel, and thus it is impossible to determine with accuracy how much of a buffer zone might be needed to protect our drinking water supply.

Knowledge of chemicals used

We understand that more than 240 chemicals are used in this process, of which 90% are considered toxic, and that the mix is considered to be a proprietary "trade secret" by the manufacturers. Clearly, when public safety is involved, there must be disclosure of the chemicals used, and we call on NYS DEC and the Governor's office to insist that a complete list of the chemicals involved be made available to the public, and thus available to such testing organizations as may be employed, as recommended above, before any permits are granted.

Conclusion

Manhattan Community Board No 4 understands the environmental benefits of the use of natural gas for energy needs, as opposed to burning oil or coal. We also understand the need for New York State to be able to benefit from the revenues from the mining of natural gas, especially in these difficult economic times. However, we strongly believe that the potential for serious harm to public health, especially to our drinking water supply, needs to be weighed carefully, and studied thoroughly, and the dangers better understood, before any decisions to use hydraulic fracturing drilling are made in New York State.

Sincerely,



Jean-Daniel Noland, Chair Manhattan Community Board 4



Capt. John Doswell, Co-Chair
Waterfronts & Parks Committee



John D. Lamb, Co-Chair
Waterfront & Parks Committee

c.c.

New York Senator Frank Padavan
Joe Levine, NY-H20
Speaker Christine Quinn
Borough President Scott Stringer
Assembly member Richard Gottfried
Senator Thomas Duane
Council member Gale Brewer



MANHATTAN COMMUNITY BOARD SIX

866 United Nations Plaza – Ste. 308, New York, NY 10017

Phone: (212) 319-3750 - Fax: (212) 319-3772

e-mail mn06@cb.nyc.gov

Website cb6mny.org

Lyle Frank
Chair

Toni Carlina
District Manager

April 2009

RE: Prohibit natural gas drilling within the boundaries of the watershed of the New York City drinking water supply.

Whereas, The New York City (NYC) drinking water supply is one of our most vital resources; and

Whereas, the high quality of the water supplied to NYC from the Catskill and Delaware watersheds, with actions being taken by the City of New York to preserve and improve the quality of that water, has earned a Filtration Avoidance Determination from the United States Environmental Protection Agency (EPA), making it one of five unfiltered drinking water supplies to serve a major United States city; and

Whereas, the entire Catskill and Delaware watersheds, which provide approximately 90% of the City's daily water supply, sit atop the Marcellus Shale geological formation, containing large deposits of natural gas; and

Whereas, rising natural gas prices and new developments in gas recovery technology have recently made drilling for natural gas in the Marcellus Shale formation economically viable; and

Whereas, New York State laws (A10526/S08169) has streamlined the permitting process for horizontal wells that use hydraulic fracturing, allowing the development of natural gas drilling sites within Marcellus Shale in New York to proceed more quickly; and

Whereas, natural gas exploration and production companies, and mineral rights owners, are interested in developing a potentially significant gas resource in the Marcellus Shale through the use of horizontal drilling and a hydraulic fracturing technique known as "slick water fracturing" which requires millions of gallons of water, combined with multiple chemical additives, many of which are known to be toxic, which has been linked to a variety of public health risks, including developmental delays and cancers; and

Whereas, hydraulic fracturing has resulted in documented incidences of leaks, spills, explosions and contaminating water supplies in nine different states, including Wyoming and New Mexico; and

Whereas, No amount of careful planning and operation can guarantee that there will be no chemical spills that could flow into reservoirs, underground migration of fracturing fluids toward the water supply, or other accidents resulting from drilling operations; and Whereas, If the water supply should be contaminated, the City of New York would be required by the Environmental Protection Agency to build and operate a water filtration plant, the cost of which has been estimated to be approximately \$10 billion, which would be borne by New York City taxpayers; and

Whereas, absolutely no evidence has been shown by any organization that fluids used during Hydraulic Fracturing can be completely filtered out of drinking water; and

Whereas, in granting NYC the ten-year Filtration Avoidance Determination (FAD) for the Catskill and Delaware Watersheds, the EPA recognized the robustness of DEP Water Protection Program, a major part is land acquisition. Should gas exploration proceed, land owners near our watershed may be less likely to sell if

they can sell natural gas leases with the potential for future royalties; potential for natural gas could drive up appraisals and cost of obtaining land from owners who are willing to sell; and

Whereas, another risk of unintended consequences of gas exploration would be future gas pipelines in close proximity to our watershed and/or water tunnels, including the Millennium Pipeline currently under construction, and the high quality of the extracted gas, which allows it to be piped without refinement, could pose a threat to our water supply should any part of the gas pipeline rupture; and

Whereas, the State Environmental Quality Review Act requires the New York State Department of Environmental Conservation (DEC) to review the methods used while accessing this natural gas that's located deep within the Earth; and

Whereas, the 2005 Energy Policy Act exempts companies who employ Hydraulic Fracturing methods from having to comply with many public health laws which were specifically written to protect our natural resources and well being (e.g. Safe Drinking Water Act, Clean Water Act, Emergency Planning & Community Right-to-know Act); and

Whereas, serious deficiencies in a review of the effects of hydraulic fracturing on drinking water supplies conducted by the EPA have been raised, including the alleged removal of key passage in that document by officials from the Office of Vice President Dick Cheney, as reported on October 14, 2004 by the Los Angeles Times, and the characterization of the report as "scientifically unsound" by an internal EPA whistleblower; and

Whereas, a Freedom of Information Law request submitted by the Washington D.C. based non-profit organization Environmental Working Group indicates that the New York State DEC has conducted no independent testing to determine whether there are significant risks to drinking water supplies from hydraulic fracturing and has by default relied on the aforementioned EPA report to a at least two occasions to publicly state that hydraulic fracturing poses no threat to drinking water supplies; and

Whereas, the New York State Department of Environmental Conservation Division of Mineral Resources, Bureau of Oil & Gas Regulation held scoping hearings upstate for a Draft Supplemental Generic Environmental Impact Statement, but failed to hold any hearings within New York City despite the fact 90% of our water supply comes from the Catskill and Delaware watersheds; and

Whereas, Council Member Gennaro has introduced Resolution No. 1850 in the New York City Council that calls for a ban for drilling within our Watershed Area; now

Therefore, be it

Resolved, Manhattan Community Board Six calls on the New York State Legislature, the New York State Department of Environmental Conservation, and New York State Governor David Paterson to prohibit Hydraulic Fracturing drilling for natural gas within New York State;

Be it further resolved, that the list of chemical ingredients used in hydraulic fracturing sites in the United States should be disseminated among all environmental regulatory agencies, water treatment facilities and first responders in the vicinity of the drilling site in order to mitigate potential damages that may arise should accidents occur;

VOTE: 34 in Favor 1 Opposed 2 Abstention 0 Not Entitled



THE CITY OF NEW YORK
BOROUGH OF THE BRONX
COMMUNITY BOARD 7



GREGORY W. FAULKNER, CHAIRPERSON

FERNANDO P. TIRADO, DISTRICT MANAGER

June 1, 2009

Hon. David A. Patterson
NYS Governor
State Capitol
Albany, NY 12224

Dear Governor Patterson,

At the May General Board meeting of Bronx Community Board 7, residents, activists, and Board members voiced their concern regarding the introduction of hydraulic fracturing in the Delaware/Catskills Watershed as a means to extract natural gas. It is the Board's understanding that this drilling process injects water under extreme pressure, mixed with toxic chemicals, into the ground in order to break up the rock formations and permit the extraction of natural gas.

The Delaware/Catskills Watershed produces 90% of NYC's drinking water and provides unfiltered water to more than 9 million people in the region. The Board unanimously believes that the continued safety and purity of that drinking supply is threatened by the introduction into the watershed of "hydraulic fracturing," and presents an unacceptable risk of contamination of the aquifers and damage to our water supply.

THEREFORE, BE IT RESOLVED THAT Bronx Community Board 7 strongly urges your office and the NYS department of Environmental Conservation to ban such drilling in the Delaware/Catskills Watershed and in aquifers and watersheds elsewhere in New York State.

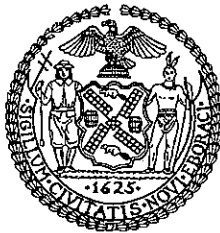
Sincerely,

Fernando P. Tirado
District Manager

Cc: Pete Grannis, Commissioner, NYS DEC
Hon. Pedro Espada, NYS Senator, 33rd District
Hon. Jose Rivera, NYS Assemblyman, 78th District
Hon. Naomi Rivera, NYS Assemblywoman, 80th District
Hon. Jeffery Dinowitz, NYS Assemblyman, 81st District
Marco A. Carrión, Regional Representative, NYS Governor's Office

Jacqueline Ludorf
Chair

Latha Thompson
District Manager



505 Park Avenue, Suite 620
New York, N.Y. 10022-1106
(212) 758-4340
(212) 758-4616 (Fax)
www.cb8m.com - Website
info@cb8m.com - E-Mail

The City of New York Manhattan Community Board 8

May 21, 2009

Pete Grannis, Commissioner
NYS Department of Environmental Conservation
625 Broadway
Albany, NY 12233-1010

Steven W. Lawitts, Acting Commissioner
NYC Department of Environmental Protection
59-17 Junction Boulevard, 19th Floor
Flushing, NY 11373

Dear Commissioners Grannis and Lawitts:

At the May 20, 2009 Full Board Committee Meeting of Community Board 8M, the following resolution was adopted by a vote of 38 in favor, 0 opposed, and 2 abstentions:

WHEREAS, the NYC Department of Environmental Protection (DEP) reports in its NYC 2007 Drinking Water Supply and Quality Report that in 2007, 90% of NYC's water came from the Catskill/Delaware System, located in Delaware, Greene, Schoharie, Sullivan, and Ulster counties, west of the Hudson River;

WHEREAS, in 1997 the City of New York entered into a Watershed Agreement and Filtration Avoidance Determination (FAD) to reduce the susceptibility of the Cat/Del System to contamination through implementation of an extensive series of programs, and which is maintained under the close scrutiny of both the NY State Dept of Health and the U.S. Environmental Protection Agency;

WHEREAS, the Manhattan Borough President issued a February 2009 report entitled *UNCALCULATED RISK: How plans to drill for gas in Upstate New York could threaten New York City's water system*;

WHEREAS, the Borough President's report highlights environmental, public health and economic risks of drilling for natural gas through a process called "hydraulic fracturing," which could proceed this year pending the Environmental Impact Statement under development by the NYS Department of Environmental Conservation (DEC);

WHEREAS, NYC Council Resolution No. 1850 calls upon the NY State Legislature, DEC, and Governor Paterson to prohibit drilling for natural gas within the boundaries of the watershed that supplies New York City's drinking water;

WHEREAS, various environmental advocacy organizations including the NY League of Conservation Voters, Sierra Club, Natural Resources Defense Council, Riverkeeper, and NY-H2O are opposed to hydraulic fracturing gas drilling in New York State;

WHEREAS, DEC has convened public meetings in NYS but not in NYC to discuss environmental impacts of hydraulic fracturing;

WHEREAS, Manhattan Community Board 8 (CB8) convened a public forum on April 28, 2009 where information and views were shared by staff of elected officials, environmental advocacy organizations, industry, and the general public;

THEREFORE BE IT RESOLVED that:

- 1) CB8 calls for a moratorium on gas drilling by means of hydraulic fracturing at least within the Catskill/Delaware watershed region, unless and until it may be determined by DEC and other decision makers that hydraulic fracturing is safe to practice within NYS, including posing no threat to NYC's water supply.
- 2) NYS DEC should convene one or more public meetings in New York City, including in Manhattan CB8, to discuss environmental impacts of hydraulic fracturing; and
- 3) NYC DEP should report upon the possible risk of hydraulic fracturing on the NYC drinking water supply, including in context of the 1997 Watershed Agreement and Filtration Avoidance Determination.

Please advise this office of any action taken regarding this matter.

Sincerely,

Jacqueline Ludorf
Chair

Dave Kleckner & Debra Teitelbaum
Co-Chairs, Environment and Sanitation Committee

cc: Hon. Michael Bloomberg, Mayor of the City of New York
Hon. Scott M. Stringer, Manhattan Borough President
Hon. Rose Pierre-Louis, Deputy Manhattan Borough President
Hon. Carolyn Maloney, United States Congress Member
Hon. Liz Krueger, New York State Senator
Hon. Jonathan Bing, New York State Assembly Member
Hon. Micah Kellner, New York State Assembly Member
Hon. Daniel Garodnick, New York City Council Member
Hon. Jessica Lappin, New York City Council Member
Richard F. Daines, MD., Commissioner, NYS Department of Health
George Pavlou, Acting Regional Administrator, Environmental Protection Agency, Region 2

**CB9M**

16-18 Old Broadway
New York, New York 10027
(212) 864-6200/Fax # 662-7396

COMMUNITY BOARD #9, MANHATTAN

Scott Stringer
President, Borough of Manhattan

Patricia A. Jones
Chair

Carolyn R. Thompson
First Vice-Chair

Yvonne Stennett
Second Vice-Chair

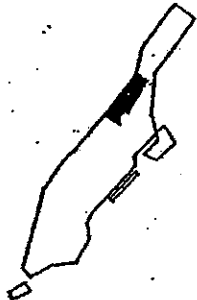
Anthony Fletcher
Treasurer

Diane Wilson
Assistant Treasurer

Theodore Kovaleff
Secretary

Jane Arrendell
Assistant Secretary

Eulha Prince
District Manager



**MANHATTAN COMMUNITY BOARD 9 RESOLUTION
IN SUPPORT OF THE PROHIBITION OF HYDRAULIC FRACTURING
IN NEW YORK STATE**

At its regularly scheduled General Board Meeting held on Thursday, April 16, 2009 Community Board No. 9 Manhattan approved the following resolution in support of the Prohibition of Hydraulic Fracturing in New York State by a vote of 37 in favor, 0 opposed, 0 abstention, and 1 present not entitled to vote:

WHEREAS, On July 23, 2008, Governor David Paterson signed A10526/S08169 into law, a bill setting certain technical requirements pertaining to well spacing which will facilitate the use of hydraulic fracturing for natural gas recovery in an under ground geological formation known as the Marcellus Shale;

WHEREAS, hydraulic fracturing has a controversial history in the United States with documented incidences of leaks, spills, explosions, and water pollution in nine different states which have resulted in the contamination of local point sources of water;

WHEREAS, hydraulic fracturing requires a mix of chemicals, including known carcinogens that are injected into the earth at extreme pressure and whose compositions and concentrations are not publicly disclosed and which under certain circumstances could pose a serious risk to local point sources of water;

WHEREAS, ninety percent of the New York City water supply originates from the Catskill / Delaware watershed, which is within the boundaries of the Marcellus Shale, and is delivered to the city without filtration, making this water extraordinarily susceptible to contamination from hydraulic fracturing should an accident occur within the boundaries of the New York City watershed;

THEREFORE, BE IT RESOLVED that Manhattan Community Board 9 urges the New York State Department of Environmental Conservation, the New York State Legislature, and Governor David Paterson prohibit the use of hydraulic fracturing in New York State.

Respectfully Submitted by,

Patricia Jones
Chair

On April 20, 2009

SERVING HAMILTON HEIGHTS/MANHATTANVILLE & MORNINGSIDE HEIGHTS



Community Board No. 10 - Manhattan

215 West 125th Street - 4th Floor
Harlem, New York 10027
(212) 749-3105
Fax: (212) 662-4215

SCOTT M. STRINGER
Borough President

W. FRANC PERRY
Chairman

GENEVA T. BAIN
District Manager

June 11, 2009

Hon Peter Grannis
Commissioner
New York State Department of Environmental Conservation
625 Broadway
Albany, NY 12233-1011

Re: Watershed area and hydraulic gas drilling

Dear Commissioner Grannis:

It has come to the attention of Manhattan Community Board No 10, located in New York City, that a proposal to extract natural gas from large areas in New York State known as the Marcellus Shale region using a method called "hydraulic fracturing" is being considered by New York State and New York State Department of Environmental Conservation (NYS DEC). As the area encompasses the watershed area that provides most of New York City's drinking water supply, this proposal is of grave concern for the residents of Manhattan Community District No 10, not to mention the entire population of New York City. Evidence that has been presented to this board from several sources, including reports from other states where this method has been used, indicate that there are many potential dangers associated with the hydraulic fracturing method of extracting natural gas, and we strongly urge you, in your respective roles as Governor of New York and Commissioner of NYS DEC, to prohibit any such drilling operations using hydraulic fracturing in or near the watershed areas that supply our drinking water, as well as other areas in New York State, until and/or unless certain actions or conditions, outlined below, have been met to ensure public safety.

Public hearing

First of all, we understand that NYS DEC held public scoping hearings in upstate New York for a Draft Supplemental Generic EIS regarding this methodology, but did not hold any hearings in New York City, despite the fact that 90% of our drinking water comes from watersheds that are adjacent to, or encompassed by the Marcellus Shale area where this proposed drilling is to take place. Our understanding of this method is that huge volumes of water mixed with sand and chemicals, some of which are known to be carcinogenic, are pumped into the earth to create fractures that allow the release of the natural gas, and that this creates a tremendous run-off of potentially contaminated waste water. Since this has the potential to affect our drinking water, it is clear that residents of New York City need an opportunity to understand the risks and the possible consequences better, and that, therefore, it is imperative that NYS DEC schedule similar hearings on the Draft Supplemental Generic EIS in New York City before any conclusions are reached.

Independent safety study

It is our understanding that no independent studies of the potential for contamination, the effectiveness of any filtering, or other side effects of this methodology have been conducted by New York State. At the same time, evidence from other states where this type of drilling has been implemented indicates that problems may actually exist. Manhattan Community Board No 4 strongly urges NYS DEC to implement a series of such studies using independent accredited institutions before any permits for this type of drilling are approved, especially in the watershed that supplies NYC. It is also unknown how far underground contaminated water may travel, and thus it is impossible to determine with accuracy how much of a buffer zone might be needed to protect our drinking water supply.

Knowledge of chemicals used

We understand that more than 240 chemicals are used in this process, of which 90% are considered toxic, and that the mix is considered to be a proprietary "trade secret" by the manufacturers. Clearly, when public safety is involved, there must be disclosure of the chemicals used, and we call on NYS DEC and the Governor's office to insist that a complete list of the chemicals involved be made available to the public, and thus available to such testing organizations as may be employed, as recommended above, before any permits are granted.

Conclusion

Manhattan Community Board No 10 understands the environmental benefits of the use of natural gas for energy needs, as opposed to burning oil or coal. We also understand the need for New York State to be able to benefit from the revenues from the mining of natural gas, especially in these difficult economic times. However, we strongly believe that the potential for harm to public health, especially to our drinking water supply is critical. To be weighed carefully, and studied thoroughly.

We also request to extend the comment period to the SupGIES Study to 120 minimum days.

Further, we request to have hearings in all 5 boroughs of New York City.

Sincerely,

Deborah Gilliard,
Parks Recreation
Committee Chairs, Community Board #10

Joseph Wardally
Transportation

Cc: Hon David Paterson



Robert Rodriguez
Chair

George Sarkissian
District Manager

COMMUNITY BOARD ELEVEN

BOROUGH OF MANHATTAN
1664 PARK AVENUE
NEW YORK, NEW YORK 10035
TEL: (212) 831-8929/30
FAX: (212) 369-3571
www.cb11m.org

May 27, 2009

Governor David Paterson
633 Third Avenue – 38th Floor
New York, NY 10017

Hon. Jose M. Serrano
28th Senatorial District
157 East 103rd Street
New York, NY 10029

Hon. Adam Clayton Powell IV
68th Assembly District
87 East 116th Street
New York, NY 10029

Hon. Bill Perkins
29th Senatorial District
163 West 125th Street – Suite 932
New York, NY 10027

Hon. Keith Wright
70th Assembly District
163 West 125th Street – Suite 920
New York, NY 10027

Resolution calling on the New York State Legislature, the New York State Department of Environmental Conservation and New York State Governor David Paterson to **PROHIBIT DRILLING FOR NATURAL GAS WITHIN NEW YORK STATE.**

Whereas, Natural gas exploration and production companies, and mineral rights owners, are interested in developing a potentially significant gas resource in the Marcellus Shale through the use of horizontal drilling and a hydraulic fracturing technique known as “slick water fracturing” which requires large volumes of water; and

Whereas, The State Environmental Quality Review Act requires the Department of Environmental Conservation to review the methods used while accessing this natural gas that’s located deep within the Earth; and

Whereas, Hydraulic Fracturing mixes water with sand and 250+ toxic chemicals; and

Whereas, The 2005 Energy Policy Act exempts companies who employ Hydraulic Fracturing methods from having to comply with many public health laws which were specifically written to protect our natural resources and well being (e.g. Safe Drinking Water Act, Clean Water Act, Emergency Planning & Community Right-to-know Act); and

Whereas, Chapter 376 of the Laws of New York State of 2008 streamlined the permitting process for horizontal wells that use hydraulic fracturing, allowing the development of natural gas drilling sites within Marcellus Shale in New York to proceed more quickly; and

Whereas, The New York State Department of Environmental Conservation Division of Mineral Resources, Bureau of Oil & Gas Regulation held scoping hearings upstate for a Draft Supplemental Generic Environmental Impact Statement, but failed to hold any hearings within New York City despite the fact 90% of our water supply comes from the Catskill and Delaware watersheds; and

Whereas, Chemicals contained in hydraulic fracturing fluids cause a variety of irreversible and catastrophic damages to the air, water, public health, wildlife, and integrity of local communities; and

Whereas, Hydraulic fracturing presents risks of water contamination during drilling operations and during the storage and disposal of millions of gallons of the water and chemical additive mixture required for each well that is created; and

Whereas, Hydraulic fracturing has resulted in contaminated water supplies in other states, including Wyoming and New Mexico; and

Whereas, No amount of careful planning and operation can guarantee that there will be no chemical spills that could flow into reservoirs, underground migration of fracturing fluids toward the water supply, or other accidents resulting from drilling operations, and

Whereas, If the water supply should be contaminated, the City of New York would be required by the Environmental Protection Agency to build and operate a water filtration plant, the cost of which has been estimated to be approximately \$10 billion, which would be borne by New York City taxpayers; and

Whereas, Absolutely no evidence has been shown by any organization that fluids used during Hydraulic Fracturing can be completely filtered out of drinking water; and

Whereas, Council Member Gennaro has introduced Resolution No. 1850 in the New York City Council that calls for a ban for drilling within our Watershed Area; and

Whereas; There is no possible remedy once contamination has occurred; and

Therefore let it be resolved, this method for accessing natural gas is FAR TOO DANGEROUS to the air, water, public health, wildlife and integrity of local communities to be approved by any Federal or New York State entity; and

Therefore be it further resolved, Manhattan Community Board 11 calls on the New York State Legislature, the New York State Department of Environmental Conservation, and New York State Governor David Paterson to prohibit Hydraulic Fracturing drilling for natural gas within

New York State and immediately hold a Public Hearing in New York City to solicit public comments on the matter.

Sincerely,

A handwritten signature in black ink, appearing to read "Robert Rodriguez", with a stylized, flowing script.

Robert Rodriguez
Chair
Community Board Eleven



Community Board 12M

711 West 168th Street – New York, NY 10032

Phone (212) 568-8500 Fax (212) 740-8197

www.nyc.gov/mcb12

Manny Velazquez, Chairman
Ebenezer Smith, District Manager

July 24, 2009

Hon. David Paterson
Governor
Executive Chamber
Albany, New York 12224

Hon. Alexander B. Grannis
Commissioner
NYS Department of Environmental Conservation
625 Broadway
Albany, NY 12233-1011

Dear Governor Paterson & Commissioner Grannis:

Please be advised that Community Board 12 – Manhattan passed the following resolution by a vote of 30-0-1 at its General Meeting on June 23, 2009

Whereas, The high quality of New York City's water supply from the Catskills-Delaware watershed is protected by actions taken by the City and State, which earned a Filtration Avoidance Determination from the U.S. Environmental Protection Agency, making it one of only five unfiltered drinking water supplies to serve a major U.S. city; and

Whereas, The Catskills-Delaware watershed lies above the Marcellus Shale geological formation, which is deep within the ground and contains large deposits of natural gas accessible by hydraulic fracturing, a gas drilling process using over 250 chemicals, many of them toxic, including formulas that are proprietary secrets; and

Whereas, The N.Y. State Department of Environmental Conservation held scoping hearings upstate for a Draft Supplemental Generic Environmental Impact Statement (DSGEIS) on this toxic gas drilling process, but failed to hold hearings within New York City, despite the fact that 90% of the City's water supply comes from this watershed; and

Whereas, The U.S. 2005 Energy Policy Act outrageously exempts gas and oil companies employing hydraulic fracturing from the major U.S. environmental laws that protect the public's health (e.g., the Safe Drinking Water Act, the Clean Water Act, the Emergency Planning & Community Right-to-Know Act); and

Whereas, Hydraulic fracturing presents risks of water contamination during the drilling operations as well as the storage and disposal of millions of gallons of water mixed with chemical additives required for each well that is created, and reportedly has resulted in contaminated water supplies in nine states; and

Whereas, No amount of careful planning and operation can guarantee that there will not be underground migration of the fracturing fluid into underground tributaries and aquifers, including from drilling sites at a distance from the City's water supply; now, therefore,

Be It Resolved, Community Board 12-Manhattan calls upon the Governor, the N.Y. State Department of Environmental Conservation (DEC) and the State Legislature to prohibit hydraulic fracturing gas drilling in or adjacent to the New York City watershed, including other lands that may lead to contamination of underground tributaries and aquifers; and

Be It Further Resolved, Community Board 12- Manhattan calls upon the Governor and DEC to authorize a thorough study of hydraulic fracturing by an independent scientific firm or institution with no ties to energy companies and their subsidiaries; and

Be It Finally Resolved, Community Board 12- Manhattan urges the DEC to conduct hearings in New York City following the release of the DSGEIS and, in the event it is released during the summer, extend the comment period to 120 days to permit full review by the Community Boards and other interested parties.

Thank you for your consideration of this resolution. We look forward to your response

Sincerely,

Manny Velazquez
Chairman

Cc: Hon. Michael Bloomberg, Mayor
Hon. Betsy Gotbaum, Public Advocate
Hon. Scott Stringer, Manhattan Borough President
Hon. Charles Rangel, Congressman
Hon. Eric Schneiderman, State Senator
Hon. Bill Perkins, State Senator
Hon. Herman D. Farrell, Jr., Assembly Member
Hon. Adriano Espaillat, Assembly Member
Hon. Robert Jackson, Council Member
Suzanne Mattei, DEC Regional Director

**THE CITY OF NEW YORK
COMMUNITY BOARD #2, STATEN ISLAND**

**Resolution urging banning of drilling for natural gas in the New York State
until the impacts of the process chemicals are disclosed and evaluated.**

Whereas: CB#2 believes that there is a national benefit derived from the extraction of natural gas from the various gas-bearing shale formations throughout the country; and

Whereas: The current “hydraulic fracturing” method of extraction utilizes an undisclosed combination of chemicals to facilitate gas retrieval; and

Whereas: Such chemicals are reported to include volatile, toxic and carcinogenic substances and have been reported to have detrimental effects on water supply sources in several other states where “hydraulic fracturing” methods have been applied; and

Whereas: Such substances have the great potential for irreparably damaging surface and underground drinking water supplies; and

Whereas: Gas retrieval companies and the “hydraulic fracturing” methods for gas extraction have been exempted from certain requirements of the Federal Clean Water Act, Clean Air Act and Safe Drinking Water Act by an act of Congress; and

Whereas: New York City has spent many years and several hundred millions of dollars to attain a “filtration avoidance” status from the US EPA for the surface water supply in the Delaware/Catskill watersheds that serves New York City; and

Whereas: The drinking water supplied to New York City from the upstate system is of award winning quality and among the best in the world; and

Whereas: Uncontrolled and unmanaged drilling for natural gas in New York State using the “hydraulic fracturing” method has a great potential to remove this “filtration avoidance” status requiring the construction of a water supply treatment plant at a cost of tens of billions of dollars and a related substantial increase in the water use rates within the City; and

Whereas: Governor Patterson, following the signing of bill A10526/S08169 in July, 2008, directed NYS DEC to prepare a Supplemental Generic Environmental Impact Statement (SGEIS) for the purpose of considering concerns of the residents regarding “hydraulic fracturing”; and

Whereas: DEC held its first round of hearings only in up-state communities but held no hearings within New York City; and

Whereas: There is a need for balancing the national interests and the protection of all of our water supply resources; now

**THE CITY OF NEW YORK
COMMUNITY BOARD #2, STATEN ISLAND**

**Resolution urging banning of drilling for natural gas in the New York State
until the impacts of the process chemicals are disclosed and evaluated.**

THEREFORE, BE IT RESOLVED: Staten Island CB#2 urges the cessation of drilling and gas extraction in New York State by "hydraulic fracturing" until the permit process under the jurisdiction of NYS DEC requires the disclosure of the drilling methods and chemical compounds used in this or any other process and that drilling companies provide information on the potential impacts on the environment of the chemical compounds and the full range of impacts on the communities for the entire process and methods where the drilling activities are conducted; and

THEREFORE, BE IT FURTHER RESOLVED: That NYS DEC conduct hearings within each of the five Boroughs of New York City related to the Supplemental Generic Environmental Impact Statement and that the comment period be extended from 30 days to 120 days.

Dated June 16, 2009

*The
City
of
New York*



**BOROUGH OF STATEN ISLAND
COMMUNITY BOARD 3**

655-218 Rossville Avenue, Staten Island, N. Y. 10309

Telephone: (718) 356-7900

Fax: (718) 966-9013

Email: sicb3@cb.nyc.gov

Website: www.nyc.gov/sicb3

**THE CITY OF NEW YORK
COMMUNITY BOARD #3, STATEN ISLAND**

**Resolution urging banning of drilling for natural gas in the New York State
until the impacts of the process chemicals are disclosed and evaluated.**

Whereas: CB#3 believes that there is a national benefit derived from the extraction of natural gas from the various gas-bearing shale formations throughout the country; and

Whereas: The current "hydraulic fracturing" method of extraction utilizes an undisclosed combination of chemicals to facilitate gas retrieval; and

Whereas: Such chemicals are reported to include volatile, toxic and carcinogenic substances and have been reported to have detrimental effects on water supply sources in several other states where "hydraulic fracturing" methods have been applied; and

Whereas: Such substances have the great potential for irreparably damaging surface and underground drinking water supplies; and

Whereas: Gas retrieval companies and the "hydraulic fracturing" methods for gas extraction have been exempted from certain requirements of the Federal Clean Water Act, Clean Air Act and Safe Drinking Water Act by an act of Congress; and

Whereas: New York City has spent many years and several hundred millions of dollars to attain a "filtration avoidance" status from the US EPA for the surface water supply in the Delaware/Catskill watersheds that serves New York City; and

Whereas: The drinking water supplied to New York City from the upstate system is of award winning quality and among the best in the world; and

Whereas: Uncontrolled and unmanaged drilling for natural gas in New York State using the "hydraulic fracturing" method has a great potential to remove this "filtration avoidance" status requiring the construction of a water supply treatment plant at a cost of tens of billions of dollars and a related substantial increase in the water use rates within the City; and

Whereas: Governor Patterson, following the signing of bill A10526/S08169 in July, 2008, directed NYS DEC to prepare a Supplemental Generic Environmental Impact Statement (SGEIS) for the purpose of considering concerns of the residents regarding “hydraulic fracturing”; and

Whereas: DEC held its first round of hearings only in up-state communities but held no hearings within New York City; and

Whereas: There is a need for balancing the national interests and the protection of all of our water supply resources; now

THEREFORE, BE IT RESOLVED: Staten Island CB#3 urges the cessation of drilling and gas extraction in New York State by “hydraulic fracturing” until the permit process under the jurisdiction of NYS DEC requires the disclosure of the drilling methods and chemical compounds used in this or any other process and that drilling companies provide information on the potential impacts on the environment of the chemical compounds and the full range of impacts on the communities for the entire process and methods where the drilling activities are conducted; and

THEREFORE, BE IT FURTHER RESOLVED: That NYS DEC conduct hearings within each of the five Boroughs of New York City related to the Supplemental Generic Environmental Impact Statement and that the comment period be extended from 30 days to 120 days.

Dated June 30, 2009



BRONX COMMUNITY BOARD # 1

3024 THIRD AVENUE

BRONX, NEW YORK 10455

(718) 585 - 7117 * Fax (718) 292 - 0558 * E-mail brxch1@optonline.net

*SERVING PORT MORRIS * MOTT HAVEN * MELROSE*



RUBEN DIAZ, JR.
BOROUGH PRESIDENT

October 23, 2009

CEDRIC L. LOFTIN
DISTRICT MANAGER

GEORGE L. RODRIQUEZ
CHAIRPERSON

To: The Council of the City of New York
The Committee on Environmental Protection
Committee Room- City Hall

Resolution of Bronx Community Board One

In connection herewith, members of Bronx Community Board One offered the following Resolution:

Resolution disapproving the matter of large scale gas drilling in New York State, in the general public Catskill region, the New York City Watershed, the Catskill Park and in other environmentally sensitive areas.

Whereas: Oil and Gas operations in the multi- state Marcellus and Devonian Shale deposit areas release toxic contaminants that have potential health impacts on adjacent residents; and due to run off could leach into local and distant ground water and surface water;

Whereas: Natural Gas and Oil companies have leased over 54,000 acres of land in New York State, including a 8.7% land mass in Otsego County for the purpose of advancing shale extraction through Horizontal High Volume Hydraulic Fracturing drilling;

Whereas: It has been determined through scientific analysis that drilling for natural Gas in this manner creates severe and adverse environmental impacts, including air pollution, water pollution, soil contamination, erosion, and runoff;

Whereas: The recent New York State Department of Environmental Conservation study proposes new rules supporting the commencement in 2010 of large scale gas drilling in the state, including within the New York City Watershed;

Whereas: Bronx Community Board One has considered the adverse community impact of natural gas and oil drilling on the ecosystem while contributing to the accumulation of greenhouse gas emissions in the global atmosphere, and believes the highest and best use of these resources should be for preservation not for privatization;

Therefore be Resolved:

Bronx Community Board One finds that the present and continued drilling for Natural Gas and Oil in New York State will impair and arrest the sound maintenance and growth of neighborhoods statewide, including New York City area, disapprove natural gas drilling in the Marcellus shale area of New York State.

BRONX COMMUNITY BOARD #2

Bronx Borough President Ruben Diaz, Jr.

1029 East 163rd St.

Bronx, NY 10459

718-328-9125 • 718-991-4974 Fax

E-mail: brxcb2@optonline.net

www.bronxcb2.org



Roberto S. Garcia
Chairperson



John Robert
District Manager

June 30, 2009

Honorable David Paterson
Governor
NYS Executive Chamber
Albany, NY 12224

Dear Governor Patterson,

Please be advised that at our regularly scheduled General Board Meeting held on Wednesday, May 27, 2009, Bronx Community Board #2 unanimously approved a resolution in support of the Prohibition of Hydraulic Fracturing in New York State.

This action was taken because New York State laws (A10526/S08169) have streamlined the permitting process for horizontal wells that utilize hydraulic fracturing, facilitating the development of natural gas drilling sites within the Marcellus Shale in New York. Hydraulic fracturing has a controversial history in the United States with documented incidences of leaks, spills, explosions, and water pollution in nine different states which have resulted in the contamination of local point sources of water.

Approximately 90% of the New York City water supply originates from the Catskill / Delaware watershed, which is within the boundaries of the Marcellus Shale, and is delivered to the city without filtration, making this water extraordinarily susceptible to contamination from hydraulic fracturing should an accident occur within the boundaries of the New York City watershed.

Be it resolved that Bronx Community Board #2 calls on the New York State Legislature, the New York State Department of Environmental Conservation, and New York State Governor David Patterson to prohibit the use of Hydraulic fracturing drilling within NYS.

Sincerely,

A handwritten signature in black ink, appearing to read "Roberto S. Garcia".

Roberto S. Garcia
Chairperson

C. Pete Grannis, Commissioner, New York State DEC



**THE CITY OF NEW YORK BOROUGH OF THE BRONX
COMMUNITY BOARD 5**

Honorable Ruben Diaz, Jr., Bronx Borough President

Chairperson
Dr. Bola Omotosho

District Manager
Xavier Rodriguez

June 12, 2009

Hon. David Patterson
Governor of the State of New York
Executive Chamber
Albany, New York 12224

RE: Prohibit natural gas drilling within the boundaries of the watershed of the New York City drinking water supply.

Dear Governor Patterson:

At the May 27th, Full Board meeting of Community Board 5 the following resolution was adopted:

Whereas, The New York City (NYC) drinking water supply is one of our most vital resources; and

Whereas, the high quality of the water supplied to NYC from the Catskill and Delaware watersheds, with actions being taken by the City of New York to preserve and improve the quality of that water, has earned a Filtration Avoidance Determination from the United States Environmental Protection Agency (EPA), making it one of five unfiltered drinking water supplies to serve a major United States city; and

Whereas, the entire Catskill and Delaware watersheds, which provide approximately 90% of the City's daily water supply, sit atop the Marcellus Shale geological formation, containing large deposits of natural gas; and

Whereas, rising natural gas prices and new developments in gas recovery technology have recently made drilling for natural gas in the Marcellus Shale formation economically viable; and

Whereas, New York State laws (A10526/S08169) has streamlined the permitting process for horizontal wells that use hydraulic fracturing, allowing the development of natural gas drilling sites within Marcellus Shale in New York to proceed more quickly; and

BCC Campus • McCracken Hall, Rms. 12 & 13 • W. 181st Street & Dr. Martin Luther King, Jr. Blvd. • Bronx, New York 10453
Telephone (718) 364-2030 • Facsimile (718) 220-1767 • Facsimile (718) 220-8426 • brxcb5@optonline.net

Serving these Neighborhoods:
Fordham, Morris Heights, Mount Hope, University Heights

Whereas, natural gas exploration and production companies, and mineral rights owners, are interested in developing a potentially significant gas resource in the Marcellus Shale through the use of horizontal drilling and a hydraulic fracturing technique known as "slick water fracturing" which requires millions of gallons of water, combined with multiple chemical additives, many of which are known to be toxic, which has been linked to a variety of public health risks, including developmental delays and cancers; and

Whereas, hydraulic fracturing has resulted in documented incidences of leaks, spills, explosions and contaminating water supplies in nine different states, including Wyoming and New Mexico; and

Whereas, No amount of careful planning and operation can guarantee that there will be no chemical spills that could flow into reservoirs, underground migration of fracturing fluids toward the water supply, or other accidents resulting from drilling operations; and **Whereas**, If the water supply should be contaminated, the City of New York would be required by the Environmental Protection Agency to build and operate a water filtration plant, the cost of which has been estimated to be approximately \$10 billion, which would be borne by New York City taxpayers; and

Whereas, absolutely no evidence has been shown by any organization that fluids used during Hydraulic Fracturing can be completely filtered out of drinking water; and

Whereas, in granting NYC the ten-year Filtration Avoidance Determination (FAD) for the Catskill and Delaware Watersheds, the EPA recognized the robustness of DEP Water Protection Program, a major part is land acquisition. Should gas exploration proceed, land owners near our watershed may be less likely to sell if they can sell natural gas leases with the potential for future royalties; potential for natural gas could drive up appraisals and cost of obtaining land from owners who are willing to sell; and

Whereas, another risk of unintended consequences of gas exploration would be future gas pipelines in close proximity to our watershed and/or water tunnels, including the Millennium Pipeline currently under construction, and the high quality of the extracted gas, which allows it to be piped without refinement, could pose a threat to our water supply should any part of the gas pipeline rupture; and

Whereas, the State Environmental Quality Review Act requires the New York State Department of Environmental Conservation (DEC) to review the methods used while accessing this natural gas that's located deep within the Earth; and

Whereas, the 2005 Energy Policy Act exempts companies who employ Hydraulic Fracturing methods from having to comply with many public health laws which were specifically written to protect our natural resources and well being (e.g. Safe Drinking Water Act, Clean Water Act, Emergency Planning & Community Right-to-know Act); and

Whereas, serious deficiencies in a review of the effects of hydraulic fracturing on drinking water supplies conducted by the EPA have been raised, including the alleged removal of key passage in that document by officials from the Office of Vice President Dick Cheney, as reported on October 14, 2004 by the Los Angeles Times, and the characterization of the report as "scientifically unsound" by an internal EPA whistleblower; and

Whereas, a Freedom of Information Law request submitted by the Washington D.C. based non-profit organization Environmental Working Group indicates that the New York State DEC has conducted no independent testing to determine whether there are significant risks to drinking water supplies from hydraulic fracturing and has by default relied on the aforementioned EPA report to a at

least two occasions to publicly state that hydraulic fracturing poses no threat to drinking water supplies; and

Whereas, the New York State Department of Environmental Conservation Division of Mineral Resources, Bureau of Oil & Gas Regulation held scoping hearings upstate for a Draft Supplemental Generic Environmental Impact Statement, but failed to hold any hearings within New York City despite the fact 90% of our water supply comes from the Catskill and Delaware watersheds; and

Whereas, Council Member Gennaro has introduced Resolution No. 1850 in the New York City Council that calls for a ban for drilling within our Watershed Area; now

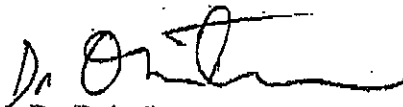
Therefore, be it

Resolved, Bronx Community Board 5 calls on the New York State Legislature, the New York State Department of Environmental Conservation, and New York State Governor David Paterson to prohibit Hydraulic Fracturing drilling for natural gas within New York State;

Be it further resolved, that the list of chemical ingredients used in hydraulic fracturing sites in the United States should be disseminated among all environmental regulatory agencies, water treatment facilities and first responders in the vicinity of the drilling site in order to mitigate potential damages that may arise should accidents occur;

VOTE: Unanimous

Yours truly,



Dr. Bola Omotosho
Chairperson

Cc: Hon. Kirsten Gillibrand
Hon. Charles Schumer
Hon. Ruben Diaz, Jr.
Hon. Jose E. Serrano
Hon. Pedro Espada, Jr.
Hon. Jose Marco Serrano
Hon. Vanessa L. Gibson
Hon. Michael Benjamin
Hon. Nelson L. Castro

Hon. Joel Rivera
Hon. Maria Baez
Hon. Helen D. Foster
Suzanne Mattei - NYS DEC
Kate Sinding - NRDC
Shams Tarek
Fred Arcaro



THE CITY OF NEW YORK
BOROUGH OF THE BRONX
COMMUNITY BOARD 7



GREGORY W. FAULKNER, CHAIRPERSON

FERNANDO P. TIRADO, DISTRICT MANAGER

June 1, 2009

Hon. David A. Patterson
NYS Governor
State Capitol
Albany, NY 12224

Dear Governor Patterson,

At the May General Board meeting of Bronx Community Board 7, residents, activists, and Board members voiced their concern regarding the introduction of hydraulic fracturing in the Delaware/Catskills Watershed as a means to extract natural gas. It is the Board's understanding that this drilling process injects water under extreme pressure, mixed with toxic chemicals, into the ground in order to break up the rock formations and permit the extraction of natural gas.

The Delaware/Catskills Watershed produces 90% of NYC's drinking water and provides unfiltered water to more than 9 million people in the region. The Board unanimously believes that the continued safety and purity of that drinking supply is threatened by the introduction into the watershed of "hydraulic fracturing," and presents an unacceptable risk of contamination of the aquifers and damage to our water supply.

THEREFORE, BE IT RESOLVED THAT Bronx Community Board 7 strongly urges your office and the NYS department of Environmental Conservation to ban such drilling in the Delaware/Catskills Watershed and in aquifers and watersheds elsewhere in New York State.

Sincerely,

Fernando P. Tirado
District Manager

Cc: Pete Grannis, Commissioner, NYS DEC
Hon. Pedro Espada, NYS Senator, 33rd District
Hon. Jose Rivera, NYS Assemblyman, 78th District
Hon. Naomi Rivera, NYS Assemblywoman, 80th District
Hon. Jeffery Dinowitz, NYS Assemblyman, 81st District
Marco A. Carrión, Regional Representative, NYS Governor's Office



COMMUNITY BOARD NO. 8 BRONX

5676 Riverdale Avenue, Suite 100 • Bronx, New York 10471-2194

Telephone: 718-884-3959 • Fax: 718-796-2763

E-Mail: brxcb8@optonline.net

Website: www.nyc.gov/brxcb8

Honorable Ruben Diaz, Jr.
Bronx Borough President

OFFICERS:

Chairperson
Damian McShane

District Manager
Nicole M. Stent

Vice Chairperson
Bradford Trebach

June 19, 2009

Secretary
Joyce M. Pilsner

Treasurer
Julie Reyes

Honorable David A. Paterson
Governor of the State of New York
State Capitol
Albany, NY 12224

COMMITTEE CHAIRS:

Aging
Karen Pesce

Dear Governor Paterson:

Budget
Ken A. O'Brien

Re: Resolution Prohibiting Hydraulic Fracturing and Horizontal
Drilling for Natural Gas in New York State

Economic Development
Robert Fanuzzi

Dear Governor Paterson,

Education
Debbie Bowden

At its regular Board Meeting held on June 9, 2009, Bronx Community Board
No. 8 passed the following resolution by a unanimous vote:

Environment & Sanitation
Saul Scheinbach

Whereas, energy companies, and land owners, are interested in extracting a
potentially significant source of natural gas located underground in a layer of
rock known as the Marcellus Shale through the use of horizontal drilling
hydraulic fracturing, which requires millions of gallons of water; and

**Health, Hospitals &
Social Services**
Vacant

Whereas, the State Environmental Quality Review Act requires the
Department of Environmental Conservation to review the methods used while
accessing natural gas located deep underground; and

Housing
Thomas C. Durham

Whereas, hydraulic fracturing requires huge volumes of water laced with
chemicals, many of them potentially hazardous; and

Land Use
Charles G. Moerdler

Whereas, the 2005 Energy Policy Act exempts companies who employ
hydraulic fracturing methods from having to comply with certain requirements
of the the Safe Drinking Water Act; and

Law, Rules & Ethics
Vacant

Libraries & Cultural Affairs
Robert G. Abbott

Whereas, chapter 376 of the laws of New York State of 2008 streamlined the
permitting process for hydraulic fracturing, allowing the development of natural
gas drilling sites within Marcellus Shale in New York to proceed more quickly;
and

Parks & Recreation
Bob Bender

Public Safety
Arlene Garbett Feldmeier

Traffic & Transportation
Anthony Perez Cassino

Youth
Cassandra Prentice

Community Board 9

1967 Turnbull Avenue
Bronx, New York 10473

Suite 7

718 823-3034 718 823-6461 fax

Francisco M. Gonzalez
District Manager

Enrique Vega
Chairman

Let it be known that Community Board 9 at our June 2009 has hereby Resolve that:

Whereas, Community Board 9 has grave concerns regarding the dangers posed by hydraulic fracturing methods of natural gas extraction to ground water supplies, public health and natural habitat:

Whereas, the New York State Department of Environmental Conservation has undertaken a Supplemental Generic Environmental Impact Statement on the potential impacts of drilling permits, but has not held hearings within the City of New York;

Whereas, the 2005 Energy Act contained exemptions to the federal Clean Water and Clean Air Acts that removed certain regulatory protections from energy extraction operations;

Therefore, Be It Resolved that the Bronx Borough Board unequivocally urges Governor Patterson, the New York State Legislature and the New York State Department of Environmental Conservation to prohibit the use of hydraulic fracturing in the State of New York;

Therefore, Be It Resolved that the Bronx Borough Board strongly urges New York State Department of Environmental Conservation, during the second comment period leading up to the issuance of the Supplemental Generic Environmental Impact Statement, to hold public hearings in each of New York City's five boroughs.

Therefore, Be It Further Resolved that the Bronx Borough Board supports federal legislation rescinding exemptions to the Clean Air and Clean Water Acts included in the 2005 Energy Act, and calls upon New York's representatives in Congress to work towards the enactment of such legislation.



COMMUNITY BOARD # 4Q

Serving: Corona, Corona Heights, and Elmhurst

46-11 104th Street

Corona, New York 11368-2882

Telephone: 718-760-3141 Fax: 718-760-5971

e-mail: cb4q@nyc.rr.com

Helen Marshall
Borough President

Louis Walker
Chairperson

Karen Koslowitz
Director of Community Boards

Richard Italiano
District Manager

June 08, 2009

Honorable David Paterson
Governor of the New York State
Executive Chamber
Albany, NY 12224

Honorable Peter Grannis
Commissioner
NYS Department of Environmental Conservation
625 Broadway
Albany, NY 12233

Re: Natural Gas Drilling in New York City Watershed and elsewhere in New York State

Dear Governor Paterson and Commissioner Grannis,

The Delaware and Catskill Watershed together provide approximately 90% of New York City's water supply. New York City's water is known for its excellent quality and can not be jeopardized by the prospect of allowing drilling for natural gas using the hydraulic fracturing method. This method has resulted in contaminated water supplies in other states.

Water contamination during drilling operations and during the storage and disposal of millions of gallons of the water and chemical additive used in the process can threaten the safety and purity of New York City's water supply.

At the June 02, 2009 meeting of Community Board #4Q the membership entered a motion to oppose the practice of the hydraulic fracturing method of obtaining natural gas in the Delaware and Catskill watershed areas as well as anywhere in the State of New York. The motion to oppose hydraulic fracturing drilling passed, by a unanimous vote of a quorum present at the meeting.

We urge the Governor of New York State and the Environmental Conservation Commissioner of New York State to protect the City of New York's water supply by prohibiting hydraulic fracturing drilling for natural gas within New York State.

Sincerely,

Richard Italiano
District Manager, CB #4Q

The City of New York
Queens Community Board No. 5

**Resolution regarding drilling in Marcellus Shale and impact on the both the NYS
and NYC drinking water supply**

WHEREAS, the Marcellus Shale geological formation has been identified as a formation potentially containing a significant amount of natural gas deemed by the oil and gas industry worthy of development and extraction;

WHEREAS, a number of companies engaged in businesses related to the recovery of oil and gas have developed techniques to extract natural gas from the naturally-occurring, porous shales comprising the Marcellus Shale geological formation;

WHEREAS, these techniques involve, among other things, horizontal deep-well drilling combined with pressurized hydraulic fracturing, sometimes referred to as "hydro-fracturing," "hydro-fracking" or "fracking";

WHEREAS, these techniques involve the use of millions of gallons of water into which numerous toxic chemicals are added to increase the efficiency of such techniques;

WHEREAS, Dr. Theo Colborn, PhD testified to the House Committee on Oversight and Government Reform on October 25, 2007 that the toxic chemicals used in connection with drilling and hydraulic fracturing to recover natural gas contain, among other things, numerous carcinogens and endocrine interrupters in high concentrations, potentially causing Cancers, Illnesses, Morbidity, and Birth Defects having life long implications to millions of people.;

WHEREAS, Albert F. Appleton testified on June 4, 2009 to the Subcommittee on Energy and Mineral Resources that many of the toxic chemicals used in hydraulic fracturing solutions are not bio-degradable, bio-accumulate in the environment and, because of their high specific gravity and molecular attributes, confound any presently known means of water filtration;

WHEREAS, the Marcellus Shale formation, which underlies a vast portion of the eastern United States, lies beneath and above many aquifers and within the watersheds of several rivers and tributaries flowing toward the Atlantic ocean and a number of population centers with millions of citizens including but not limited to New York City and the surrounding counties;

WHEREAS, portions of the Marcellus Shale formation lie directly below large portions of the Delaware and Catskill watersheds, which supply 90% of the drinking water to New York City and several surrounding counties;

WHEREAS, presently, these watersheds provide 90% of the drinking water to New York City and the surrounding counties without the use of pumps or filtration;

WHEREAS, numerous persons and entities seeking to profit from natural gas recovery have obtained and continue to seek leases of large tracts of land within the aforementioned watersheds for the purpose of exploring, drilling and extracting natural gas from the Marcellus Shale formation;

WHEREAS, a mere 30% to 70% of the chemical-containing fluids used in the hydraulic fracturing process are recovered from each gas well;

WHEREAS, the remainder of these chemical-containing fluids remain below ground, free to travel in a plume in whatever direction allowed by the surrounding geologic layers and conditions;

WHEREAS, to the extent chemical-containing fluids are successfully recovered from gas wells, they are then stored in large, above ground reservoirs for eventual disposal without isolation from rainwater and other runoff;

WHEREAS, excessive rain events, improper construction of concrete casings, damage to concrete casings due to natural geologic shifts, human error, and lack of sufficient oversight could lead to accidental leakage of toxic chemicals from the waste water storage containers into surface water bodies, open land and into shallow groundwater aquifers;

WHEREAS, persons and entities seeking to profit from the extraction of natural gas from the Marcellus Shale deposit have disclosed plans to drill some 40,000 to 50,000 wells in New York State alone, each with a 20 to 50 year operating life and each occupying approximately 5-acres of cleared land and requiring pipelines for transport across the state;

WHEREAS, the massive scale of such drilling and its implications on wildlife habitat, the environment and rural countryside have never been experienced in New York state;

WHEREAS, leakage from waste water storage facilities will flow into rivers and estuaries destroying wildlife, contaminating water supplies and causing detrimental impacts to human health and the environment for years to come;

WHEREAS, piercing the aquifer layer of the geological substrate is necessary and by definition contaminates the aquifer;

WHEREAS, in addition to the chemicals added to the hydraulic fracturing fluids, the process of hydraulic fracturing will disturb naturally occurring and normally inert toxic compounds that exist in the lower level of the substrate such as benzene, toluene, ethyl benzyn and xylene referred to as Volatile Organic Compounds or VOCs;

WHEREAS, hydraulic fracturing will, among other things, result in additional green house gas emissions due to the inadvertent release of VOCs and methane, referred to as

“fugitive” methane, as well as nitrogen oxide from diesel burning drill equipment which runs continuously once the wells are in production, twenty-four hours a day, seven days a week;

WHEREAS, to date there have been no public hearings within New York City, the citizens of which are the largest stakeholders in the Delaware and Catskill watershed area;

WHEREAS; the proposed 30-day comment period after the Supplemental Generic Environmental Impact Statement is insufficient to allow for proper analysis, debate and consideration of the determination;

It is hereby

RESOLVED; that Queens Community Board No. 5 adopts Councilmember Gennaro’s resolution in its entirety;

RESOLVED; that Queens Community Board No. 5 urges the New York State Department of Environmental Protection institute a complete ban on further or future gas drilling in New York State utilizing any form of hydraulic fracturing;

RESOLVED; that Queens Community Board No. 5 urges the New York State Department of Environmental Protection hold public hearings concerning Marcellus drilling within the each of the five boroughs of New York City;

RESOLVED; that Queens Community Board No. 5 urges the lengthening of the comment period regarding the Supplemental Generic Environmental Impact Statement to no less than 120 days;

RESOLVED; that Queens Community Board No. 5 urges the New York State Department of Environmental Protection to:

(i) require, without regard to any claim of trade secret protection, that any person or entity holding or seeking to hold leases, licenses or permissions of any type or description to engage in activities comprising or relating to: natural gas well drilling; the use of hydraulic fracturing techniques of any type or description; the recovery, storage, transportation or transmission of natural gas extracted from wells within New York State; and activities comprising or relating to the transportation, transmission, storage and use of any chemical substances relating to such natural gas extraction within New York State, to disclose to the New York State Department of Environmental Protection the exact chemical composition of said substances including, but not limited to, the concentration levels of each chemical within said substances; and

(ii) provide to the public upon request pursuant to the Freedom of Information Act any information disclosed to the New York State Department of Environmental Protection in conformity with the foregoing sub-paragraph.



Community Board 6, Queens

73-05 Yellowstone Boulevard ♦ Forest Hills, N.Y. 11375-4136

Tel.: (718) 263-9250 ♦ Fax: (718) 263-2211

E mail: cb6q@nyc.rr.com

www.queenscb6.org



Helen M. Marshall
Queens Borough President

Joseph C. Henneasy
Chairman

Frank P. Gullusio
District Manager

Gail M. Gordon
1st Vice Chairwoman

Steven Goldberg
2nd Vice Chairman

Elizabeth Anderson
Vice Chairwoman - Secretary

Todd Reisman
Vice Chairman - Finance

Norman Tepper, P.E.
Vice Chairman - Land Use

Lynn C. Schulman
Vice Chairwoman - Shopping

April 17, 2009

Corey Bearak
Queens Civic Congress
P.O. Box 238
Flushing, NY 11363

Dear Mr. Bearak:

At its regularly scheduled meeting on February 11, 2009
Community Board #6 passed the following motion:

1. In order to keep our water safe, funds should be allocated to improve the quality of our water, to maintain and upgrade our water treatment plants, and to insure safe disposal of sludge.
2. Request that the City Council implement a Senior Citizen Exemption on all water increases for Senior Citizens, similar to SCRIE.
3. The Queens United Civic Congress requested that our sewer and catch basins be kept in good condition. We agree.
4. Request that DEP examine and possibly rewrite the way they issue permits.
5. Ban inappropriate gas and oil drilling in the NYC Watershed and invest in land purchases in the NYC Watershed for cost effective source water protection.

Corey Bearak

April 17, 2009

6. Request that water rates not be set prior to the adoption of the city budget.

Motion passed on a roll call vote 24 in favor, 2 abstentions.

Very truly yours,

Todd Reisman pp

Todd Reisman
Chair, Environmental Protection/
Sanitation Committee

CC Councilmember James Gennaro
Councilmember Melinda Katz
State Senator Toby Stavisky
State Senator Shirley Huntley
Fay Muir, President, Croton Watershed Clean Water Coalition
Suzanna Glidden, Dir., Croton Watershed Clean Water Coalition

City of New York



COMMUNITY BOARD NO.9

Queens Borough Hall

(718) 286-2686

120-55 Queens Boulevard, Room 310-A

Fax (718) 286-2685

Kew Gardens, NY 11424

Meeting Hotline (718) 286-2689

Email communitybd9@nyc.rr.com

Andrea Crawford, Chairperson * Mary Ann Carey, District Manager * Helen Marshall, Borough President

March 18, 2009

Mr. James F. Gennaro, Chairman
NYC Council Environmental Protection Committee
City Hall
New York, NY 10007

RE: Res. No. 1850 Ban on Watershed Gas Drilling

Dear Councilmember Gennaro:

Please be advised that at it's meeting of Tuesday, March 10, 2009 this board voted to support the above captioned resolution opposing natural gas drilling within the boundaries of the watershed of the New York City drinking water supply. The vote was 27 in favor and 1 opposed.

If there are any questions feel free to contact me at the above telephone number.

Sincerely,


Andrea Crawford
Chairperson



COMMUNITY BOARD NO. 3
1360 Fulton Street, Brooklyn, NY 11216
Henry L. Butler, Chairperson

**RESOLUTION REGARDING DRILLING IN MARCELLUS
SHALE AND IMPACT ON NYS WATER SUPPLY**

WHEREAS, on July 23, 2008 Governor David Paterson signed A10526/S08169 into law, a bill setting certain technical requirements pertaining to well spacing which will facilitate the use of hydraulic fracturing for natural gas recovery in an underground geological formation known as the Marcellus Shale; and

WHEREAS, hydraulic fracturing has a controversial history in the United States with documented incidences of leaks, spills, explosions and water pollution in nine different states which have resulted in the contamination of local point sources of water; and

WHEREAS, hydraulic fracturing requires a mix of chemicals, including known carcinogens, that are injected into the earth at extreme pressure and whose compositions and concentrations are not publicly disclosed and which under certain circumstances could pose a serious risk to local point sources of water; and

WHEREAS, serious deficiencies in a review of the effects of hydraulic fracturing on drinking water supplies conducted by the U.S. Environmental Protection Agency (EPA) have been raised, including the alleged removal of key passages in that document by officials from the Office of vice President Dick Cheney, as reported on October 14, 2004 by the Los Angeles times, and the characterization of the report as "scientifically unsound" by an internal EPA whistleblower;

WHEREAS, a Freedom of Information Law request submitted by the Washington D.C. based non-profit organization Environmental Working Group indicates that the New York State Department of Environmental Conservation has conducted no independent testing to determine whether there are significant risks to drinking water supplies from hydraulic fracturing and has relied on the aforementioned EPA report to publicly state that hydraulic fracturing poses no threat to drinking water supplies; and

WHEREAS, ninety percent of the New York City water supply originates from the Catskill/Delaware watershed, which is within the boundaries of the Marcellus Shale, and is delivered to the city without filtration, making this water extraordinarily susceptible to contamination from hydraulic fracturing should an accident occur within the boundaries of the New York City watershed; and

WHEARAS, in his July 23, 2008 press release announcing the new law, Governor Paterson ordered a new Supplemental Generic Environmental Impact Statement that "will occur as part of a public process that ensures that concerns raised by residents who could be affected by drilling activities are heard and considered;; and

WHEREAS, the New York State Department of Environmental Conservation held the first of two rounds of public meetings on hydraulic fracturing in Allegany, Bath, Elmira, Binghamton, Oneonta and Lake Sheldrake but held no public meetings in New York City; now

THEREFORE, BE IT RESOLVED that Brooklyn Community Board No. 3 unequivocally urges the New York State Department of Environmental Conservation to prohibit the use of hydraulic fracturing in New York State and within the New York City watershed; and

THEREFORE, BE IT FURTHER RESOLVED that the New York State Department of Environmental Conservation is strongly urged to schedule public hearings in each of New York City's five boroughs during the second commenting period leading up to the issuance of the supplemental Generic Environmental Impact Statement in 2009; and that these public hearings require a minimum of 120 day comment period.

Henry L. Butler
Chairperson, Community Board 3



Community Board Ten

8119 5th Avenue • Brooklyn, N.Y. 11209
(718) 745-6827 • Fax (718) 836-2447
Communitybd10@nyc.rr.com

MARY ANN WALSH
Vice Chairperson
RONALD GROSS
Secretary
BRIAN KIERAN
Treasurer

DEAN RASINYA
Chairperson

JOSEPHINE BECKMANN
District Manager

March 5, 2009

Hon. David Paterson
New York State Governor
Executive Chamber
State Capitol
Albany, NY 12224

Dear Governor Paterson:

At a duly publicized meeting held on Monday, February 23, 2009, members voted overwhelmingly in support of a motion to support a ban on natural gas drilling in upstate New York watershed areas in Rockland and Ulster counties.

I have enclosed a copy of the Community Board's Environmental Committee Report which explains our concerns on the environmental consequences of developing gas wells near our watersheds that provide drinking water to over eight million New York City residents. The Committee reviewed reports that described problems with the drilling process and the strong possibility of contamination.

In light of the above, the members of Brooklyn Community Board Ten urge that you support a ban on all drilling for natural gas in the upstate New York watershed areas.

Sincerely,

Dean Rasinya
Chairperson

cc: Hon. Marty Markowitz
Hon. Martin J. Golden
Hon. Diane Savino
Hon. Peter Abbate
Hon. Alec Brook-Krasny
Hon. Janele Hyer-Spencer
Hon. Felix Ortiz
Hon. Dov Hikind
Hon. Vincent Gentile

COMM DP #10 FAX #10-000-0000 JUN 10 2003 04:24PM P003/000

**Environmental Committee
Community Board Ten
February 4, 2009**

Present: Greg Ahl, Allen Bortnick Anna DeMetz, Ron Gross, Mary Nolan, Larry Stelter
Fran Vella-Marrone, Dean Rasinya, CB10 Chair

Excused: Kevin Peter Carroll, Mary Ann Walsh

Absent: Tim Cross, Scott Klein, Stella Kokolis

A quorum was met.

Susan Tirotta, a representative from Assemblywoman Janelle Hyer-Spencer's office, and
Stephanie Giovino, a representative from the office of Councilman Vincent Gentile's
office were also present.

Meeting Location: Community Board 10 Office

The Meeting commenced at 7:00 p.m.

1.

We are all aware that America is facing an energy crisis with regard to oil. A shift to
natural gas for home heating and industrial use is already in play.

Chesapeake is an energy company that plans to drill in upstate, New York. The locations
that they have chosen are in the New York City Watershed area, in Rockland and Ulster
County. This threatens our drinking water.

New York City's drinking water is of such a high quality, that we have a 10-year special
permit, which exempts us from filtering our water supply. Permits for this type of
drilling would bring in one billion dollars a year to State Coffers. Having to filter our
water would cost 10 billion dollars to implement.

Environmental consequences of developing gas wells could be severe. Getting the gas
involves a process called hydrofracking. They want to drill down a mile away from the
reservoir, and then they can drill laterally for miles to find the gas. They then shoot off
millions of gallons of water and chemicals at explosive pressure deep underground to
release the gas. What comes up with the gas is all the now contaminated water and
chemicals (whose chemical makeup is protected as a trade secret), making it difficult to
assess the possible environmental damage.

An investigation by ProPublica WNYC public radio found New York State had not
adequately assessed possible risks and did not have a complete regulatory structure in
place to determine where the water used would come from or how it would be disposed

of it after it was used. It found that New York State did not know the chemical contents of drilling fluids or the level of contamination.

Allen Bortnick brought this to our attention and has asked all community board and citizens to sign the petition asking for a 2 year ban on drilling, to give us the ability to access the possible damage. This petition is now available online.

Motion:

Community Board 10 supports a permanent ban on all drilling in upstate New York watershed areas and asks that this motion be sent to all of our political representatives.

2.

Biodiesel is a renewable fuel that is most commonly made from domestically grown soybeans or palm; however it can also be produced from non-food crops and waste sources such as used restaurant grease. When used to replace petroleum-based diesel, Biodiesel significantly reduces greenhouse gas emissions.

Heating New York City alone with Biodiesel fuel would eliminate over 700,000 metric tons of carbon dioxide per year, which is equal to approximately three times the proposed Congestion Pricing plan. Due to the fact that it can be produced locally, which cuts down on emissions from shipping.

On a more personal level, New York State offers homeowners tax credits of up to 20 cents per gallon for using Biodiesel blends, which is comparable with the current price for tradition petroleum based diesel. In addition, due to the fact that it will decrease emissions from shipping, Biodiesel produces cleaner air and lower asthma rates for New York City children.

Council Member David Yassky is proposing a bill that would require all home heating oil sold in New York City to be 20% biodiesel blend by the year 2012. By doing this, New York City's carbon emissions would be reduced by even more than congestion pricing. The price of biodiesel would be driven down and New York City homes would be not only be heated for cheaper prices, but they would be greener.

COMM. BY #10
DRAFT: Resolution

To support introduction No.599 – Use of Bioheat in New York City

Whereas replacing 20% of the City's heating oil with Biodiesel fuel will eliminate more than 700,000 metric tons of carbon dioxide per year; and

Whereas the use of Biodiesel fuel will reduce our nation's dependence on foreign sources of fossil fuels; and

Whereas the present technology incorporated in boilers and furnaces allows for the use of up to 20% biodiesel fuels without any modifications to the technology; and

Whereas Biodiesel fuel is already available for purchase from companies which service all of New York; and

Whereas the use of soybeans in the production of biodiesel has minimal, if any, effects on the food supply: more than 80% of each soybean is still used for animal feed or food; and

Whereas New York State offers a tax credit of up to 20 cents per gallon for using biodiesel blended fuels; now, therefore be it

Resolved, That the community board 10 calls on the Council of the City of New York to adopt Introduction No. 599 – Use of Bioheat in New York City, cited as " Bioheat Act of 2007"

February 23, 2009:

The committee voted unanimously to support this resolution and write a letter confirming such.

3.

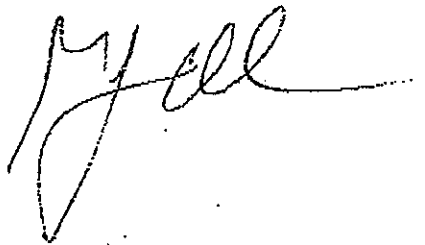
The issue concerning solid roll down gates has been talked about for years. I and many others have requested legislation that would ban solid gates and the city council is now studying this issue

Proposed intro #138 has been watered down (now 138-A) and now "grandfathers" in all existing gates. This change would make the conversion of solid gates a process that would take decades to complete.

Councilman Vallone feels that this change would be too heavy a cost. Upon researching this, I have found the average price to convert existing gates to be about \$400. I would like the new regulation to limit solid portions of a gate to be 5% rather than 30%. This would eliminate the occurrence of graffiti.

I would also like any gates being replaced or repaired to be see-thru gates. In addition any new tenant or building owner would have to convert existing gates to be see-thru.

Respectfully Submitted,
Gregory J. Ahl

A handwritten signature in dark ink, appearing to read 'G. Ahl', written over a horizontal line.

III – IMPACT OF FRACK-WATER WITHDRAWAL

Background – Three to five million gallons of fresh water will be used for the hydraulic fracturing of each horizontal gas-well lateral. The SRBC and DRBC have protocols that cover the regulation and permitting of surface-water withdrawals to be used for frack water in their respective river drainage basins. Similar regulations and protocols are not in place in the Marcellus-Utica play area outside of the Susquehanna and Delaware River basins.

Proposal – The USGS proposes to develop statistical and GIS tools and data bases to help the NYSDEC Divisions of Water and Mineral Resources evaluate single and cumulative impacts of surface-water withdrawals for frack-water use in the Marcellus-Utica play area outside of the Susquehanna and Delaware River basins.

Benefit – This project will provide important tools and information for the NYSDEC to make scientifically based decisions concerning surface-water withdrawals associated with hydraulic fracturing of shale-gas wells.

IV – GEOCHEMICAL AND RADIOCHEMICAL CHARACTERIZATION OF FLUIDS AND SOLIDS

Background – Large volumes of fluids and solids with a range of toxicity will be generated during shale-gas development activities. These fluids and solids include formation brines, drill cuttings, and frack and flowback waters. The geochemical and radiochemical characteristics of these fluids and solids are not well documented

Proposal – The USGS proposes to first compile existing geochemical and radiochemical data, and then based on those results, sample and analyze formation, frack, and flowback fluids and drill cuttings at representative shale-gas well sites.

Benefit – This project would provide information needed to properly handle and regulate the fluids and solids associated with shale-gas development. In addition, it will provide the fluid and solids characterization necessary to focus water-quality monitoring activities.

V – WATER-RESOURCE IMPACT ASSESSMENT OF DRILLING PADS

Background – The proposed development of large (5 acre) drilling pads that would support multiple horizontal gas-well laterals in the Marcellus-Utica shale play area will concentrate shale-gas development activities. While this will reduce the number of surface locations and associated land disturbances, it also concentrates the potential for water-resource impacts.

Proposal – The USGS proposes to develop a generic surface- and ground-water monitoring design for large drilling pads. The design would include 1) unconsolidated and bedrock well inventory and installation and ground-water-level and -quality monitoring; 2) surface-water inventory, flow measurement, and water-quality monitoring (springs and seeps, streams, ponds, and wetlands); and 3) stormwater and sediment runoff monitoring. The monitoring program will be implemented at

VII - CHARACTERIZATION OF HYDRAULIC PROPERTIES AND FORMATION WATERS OF DEEP SALINE AQUIFERS THROUGH GAS WELL DRILLING

Background - Deep saline aquifers have been proposed as potential horizons for 1) disposing of wastewaters produced by hydraulic fracturing and production of gas wells and 2) sequestering CO₂ captured from power-plant emissions. Little public information is available, however, concerning the hydraulic properties of these aquifers and the chemistry of the formation waters within them.

Proposal - The USGS proposes to collect information from past and current drilling operations to characterize the hydraulic properties of deep saline aquifers and the chemistry of formation waters within both saline aquifers and gas production zones. The study requires the participation of gas-production companies to obtain this information in a cost-effective manner, by allowing inspection of well completion records and access to boreholes to conduct drill-stem tests (DSTs). In the first phase of the study, gas-production companies will be contacted to determine the amount of existing information available and to identify two to four potential partners for conducting tests during drilling of planned boreholes. Well completion records and geophysical logs will be reviewed to determine the number of saline water-bearing zones intercepted by drilling, and the quantity of water produced by each zone. Formation waters from gas-producing zones will be sampled from above-ground storage tanks and analyzed for dissolved constituents, including major ions, trace elements, and stable isotopes.

In the second phase, potential disposal horizons will be tested by coordinating the services of well-testing companies with ongoing drilling operations. When a saline aquifer is encountered in a borehole, drilling operations will temporarily cease, and a DST will be conducted and a water-quality sample will be collected. The pressure-buildup data will be analyzed to determine the ambient hydraulic head and transmissivity of the test zone, and the water-quality sample will be analyzed for the same constituents as above.

Benefit - This project would provide the information required to assess the potential storage capability of saline aquifers, and to predict chemical reactions that could result from injection of wastewater or CO₂.

For more information please contact:

John Williams (518) 285-5670 jhwillia@usgs.gov or
Bill Kappel (607) 266-0217 ext 3013 wkappel@usgs.gov

representative shale-gas development sites. The monitoring network would be ongoing prior to any site development activities, and would continue through the drilling, hydraulic-fracturing, and production phases.

Benefit – The water-resource monitoring would provide information on impacts of the site development, horizontal well drilling, hydraulic fracturing, and production activities. The results would help guide and streamline future programs to focus on the critical elements needed to be monitored

VI - WASTEWATER/BIOSOLIDS AND RECEIVING-WATER MONITORING

Background - Wastewater treatment plants are being considered for treatment of frack-flowback water with subsequent disposal to surface water. It is unclear how the chemistry and volume of the frack-flowback water will impact the operation of the treatment plants, the quality of the plant discharge water, and, ultimately, the quality of the receiving stream or river. The Monongahela River in western Pennsylvania, which recently had started to receive treated frack-flowback water from multiple municipal plants, showed dissolved solid concentrations significantly above past documented levels during this year's low flow.

Proposal – The USGS proposes at representative wastewater treatment plants to: 1) assess the quality of the frack-fluid flowback prior to treatment; 2) evaluate the current capability of the wastewater plant to treat both normal wastewater and flowback fluids; 3) monitor discharges from the wastewater plant as the fluids pass through the system; and 4) monitor the bio-solid residuals from wastewater treatment to determine their quality, especially if they are land applied and monitor surface- and ground-water quality in such application areas.

In addition, the USGS proposes to monitor the quality of receiving streams and rivers at selected existing gaging stations through continuous collection of specific-conductance data. Flow data are already collected and reported in near-real time, and the addition of specific-conductance measurements, which are directly related to dissolved solids concentrations, would provide the basic data needed to evaluate baseline conditions and future changes in surface-water quality.

Benefit – Monitoring of the wastewater plants would allow for evaluation of treatment, and protect the receiving-water quality downstream of the facility. Such an understanding would protect the State's water resources. The quality of land-applied bio-solids would be assessed to assure that any potential chemical residuals do not get into the food chain or the State's water resources.

Monitoring the basic water-quality of a number of streams across the state (at a minimum, specific conductance) will establish a baseline from which to assess future high salinity water (flow-back/formation water) as it passes through wastewater treatment plants. These data will also provide a means to assess the possible impact of this high conductivity flow on the ecology of these receiving water bodies.

Zimmerman & Associates

Environmental Litigation, Mediation, Enforcement & Compliance, Counseling

July 10, 2009

Pamela M. Bush, Esq.
Commission Secretary
Delaware River Basin Commission
25 State Police Drive
P.O. Box 7360
West Trenton, NJ 08628-0360

Re: Request for Postponement of Commission Consideration of
Chesapeake Appalachia, LLC D-2009-20-1.

Dear Ms. Bush:

On behalf of Damascus Citizens for Sustainability, Inc. I am writing to request a postponement of consideration by the Commission of Docket D-2009-20-1 to allow additional time for review of the proposed project and its potential effects on the environment and the water resources of the Delaware River Basin by the Commission staff and the public prior to any action by the Commission.

The proposed project is for a surface water withdrawal of up to 1 million gallons per day from the West Branch of the Delaware River (WBDR) to a property located on the west bank and just downstream from the Route 191 bridge between Buckingham Township, PA and Hancock, NY. The docket describes that applicant, Chesapeake Appalachia, LLC (Chesapeake), intends to use the water withdrawn from the WBDR elsewhere in the Delaware River Basin to support its natural gas development and extraction activities from proposed natural gas wells drilled into the Marcellus Shale and other shale deposits "in the areas within the Commonwealth of Pennsylvania and the State of New York." Chesapeake's projected uses of the withdrawn water include well drilling, hydraulic fracturing well stimulation, vehicle tire cleaning and dust control, but the docket indicates that 90% of the usage will be for hydro-fracturing.

The docket document contains only the most limited identification of offsite and onsite water quality and quantity matters. Clearly, the use of the withdrawn water for hydro-fracturing of gas production wells is identified but no other information is provided about where or how the withdrawn water will be used other than "within the Delaware River Basin somewhere in Pennsylvania or New York. The other offsite issue briefly mentioned is the treatment of wastewaters produced by the gas extraction activities, for which it is noted that

Zimmerman & Associates

Pamela M. Bush

July 10, 2009

Page 2

the docket notes that the water withdrawal site is located in the drainage area of the Special Protection Waters. It also mentions that a non-point source pollution control plan must be submitted and approved by DRBC, but note that the applicant only submitted a general plan rather than anything specific for the water withdrawal site and nothing for the water use (i.e. gas extraction) service area of sites.

The environmental evaluation record for this water withdrawal application is both scientifically and legally deficient. It has been reported that somewhere between 10,000 and 40,000 gas extraction wells are projected to be developed in the Delaware River basin. The proposed docket is only for water withdrawal for use in natural gas extraction activities in the basin. The withdrawal project is inherently and inextricably connected to the gas extraction activities. Consequently, one cannot be approved without the other. Unless gas extraction projects are also approved by DRBC there is no independent rationale for DRBC to approve this or any other water withdrawal application. Of course, any gas extraction projects are subject to the executive director's May 19, 2009, determination and would be subject to full project review under Section 3.8 of the Compact.

As the first water withdrawal in support of gas extraction projects to come before the DRBC for approval, now is the time for DRBC to conduct a full programmatic environmental review of the cumulative impacts of the full range of gas extraction activities (including water withdrawals) that will affect the basin. If the DRBC approves this docket without having first examined and evaluated the environmental impacts from the full scope of the projected development, it will be violating the National Environmental Policy Act (NEPA), 42 U.S.C. 4321, et seq., the Council on Environmental Quality's regulations implementing the environmental review provisions of NEPA, 40 C.F.R. Parts 1500 – 1508, CEQ guidance on assessing cumulative impacts, "Considering Cumulative Effects under the National Environmental Policy Act" (CEQ 1997), the U.S. Environmental Protection Agency's cumulative effects assessment guidance, "Consideration of Cumulative Impacts in EPA Review of NEPA Documents" EPA 315-R-99-002/May 1999, and DRBC's own environmental review procedures.

If the Commission limits its review simply to this single water withdrawal application, it will be engaging in inappropriate piecemeal segmentation that impermissibly constricts the scope of the necessary environmental review. The CEQ regulations and established NEPA caselaw preclude breaking down a project into smaller parts to avoid reviewing the cumulative impacts of the overall project or program. *See*, 40 C.F.R. Sec. 1508.25

Zimmerman & Associates

Pamela M. Bush

July 10, 2009

Page 3

and 1508.7. See also, eg., *City of Tenakee Springs v. Clough*, 915 F. 2d 1308, 1313 (9th Cir. 1990); *Scientists' Institute for Public Information v. Atomic Energy Commission*, 481 F. 2d 1079, 1087-88 (D.C. Cir. 1973).

In addition to the failure to assess the overall environmental impacts of gas extraction and water withdrawal projects in the basin, the docket for this particular water withdrawal presently is deficient in a number of areas. There is no discussion whatsoever in the docket about the potential environmental impacts of the water intake structures planned for the project. The docket indicates that a pump station set on a gravel pad will be connected to a flexible rubber hose with an intake screen on the end of the hose that is submerged above the bottom of the river and held in place by crossed logs. Although it is not specified in the docket, we assume that the intake end of the hose will be located in the deepest part of the channel at the intake location. There is no discussion at all in the docket about the potential for entrainment of fish and other aquatic life on the intake screen and the impact of such entrainment on this aquatic life. The docket does indicate that the applicant will be required to assure a minimum pass-by flow of 48 cfs and cease withdrawals if this flow drops below 48 cfs. However, in periods of low flow it is assumed as part of the conservation releases in the flow management program in effect for the WBDR and Upper Main Stem that during periods of low flow and/or elevated water temperatures the fish in the river will move upstream to seek refuge in the colder and/or deeper channel areas of the WBDR. There is no discussion in the docket of any assessment of what impacts or impediments there may be to such fish movement because of the pumping of water from the river and the presence of the hose and supporting structures in the deeper channel of the river at this point.

There also is no identification or evaluation of the potential environmental consequences of the onshore activities associated with the handling and distribution of the withdrawn water. The docket indicates that the applicant will be limited to a withdrawal rate of 1000 gallons per minute and a daily withdrawal of 1 million gallons. The docket states that the onshore facilities will include 6 water storage tanks with a capacity of 21,000 gallons each and a series of hydrants to transfer water from these tanks to trucks that will haul the water to gas extraction well sites. At the maximum allowed daily withdrawal of 1 million gallons and a pumping rate of 1000 gallons per minute, it will take 16 2/3 hours to withdraw the 1 million gallon daily limit. Of course, the six tanks can only hold 126,000 gallons so they will have to be filled and emptied almost 8 times a day to accommodate the full 1 million gallons per day. Presuming that each truck will have a capacity of about 5,000 gallons, 200 truck loads of withdrawn water would leave the site every day year round. If these trucks leave the site 24

Zimmerman & Associates

Pamela M. Bush

July 10, 2009

Page 4

hours per day, there will be one truck leaving about every 7 minutes. If travel is restricted for a period of the day, for example during overnight hours, then truck departures will need to be more frequent during the allowed hours of operation. Of course, the storage capacity limitation of 126,000 gallons means that truck trips can only be suspended for a little over 2 hours in any 24 hour period in order to keep up with the 1 million gallon per day withdrawal rate.

The relevant point regarding the truck traffic discussion above is that there is no mention of this whatsoever in the proposed docket. There is no evaluation of what the environmental impacts will be on the communities around the withdrawal site and along the routes that these trucks will travel hauling water to the extraction well sites. There is also no discussion of the potential infrastructure impacts on the road system leading from this site. The vicinity of the withdrawal site is largely rural in character with a considerable tourism component to the local economy. There is no evidence in the docket that there has been any consideration not only of these infrastructure impacts but also any consideration of how the development of the area for natural gas production will affect tourism in the area. These would all be aspects of an appropriate environmental impact evaluation in a programmatic environmental impact statement on natural gas development in the Delaware River basin.

Further, the applicant has not submitted a site specific non-point source pollution control plan (NPSPCP) for either the proposed withdrawal location or for the area to be served by the withdrawn water (i.e. the gas extraction sites). The docket proposes to have the applicant submit a site specific NPSPCP for approval by the executive director after the docket is approved. This approach deprives the public and the commissioners of the opportunity to evaluate the adequacy of the site specific plan in connection with consideration of this docket. Of course, at this time it is not possible to prepare a site specific NPSPCP for the area to be served by the withdrawal because no site specific information more precise than "somewhere in the Pennsylvania or New York portions of the basin" is provided in the docket. Other plans not yet submitted by the applicant (an operations plan, a water conservation plan and a drought emergency plan) are similarly not yet available so these cannot be evaluated as part of the consideration of the present docket. This docket should be postponed until these materials are made available for both the commissioners and the public to review prior to any decision.

The docket currently also is devoid of any discussion or even mention of potential impacts on the water resources of the basin that might occur if the area to be used in connection with the water withdrawal (i.e. the pad, tanks, trucks and other onshore facilities) should flood. The property where the onshore facilities would be located is very low in elevation relative to the

Zimmerman & Associates

Pamela M. Bush

July 10, 2009

Page 5

river. While it is not mentioned anywhere in the docket, it is logical to presume that motor fuels will be stored on the site to refuel the trucks that will be making the 200 trips to and from the site each day. It would not be surprising there might also be some repair facilities located on the site to perform at least limited maintenance on the trucks. Such refueling and maintenance facilities could pose an environmental contamination threat downstream from the site in the event that the site is flooded. There is absolutely no analysis in the docket of the possible water quality impacts that might result from inundation of the project site by flooding on the WBDR.

The docket raises, but fails to consider, the out of basin diversion that is contemplated by the applicant for the wastewaters that will be produced by the gas extraction operations to be served by water withdrawn from the WBDR under this proposal. The docket does point out that all of these wastewaters will be sent to treatment plants outside the basin and considers the withdrawn water to be 100% consumptively used, but makes no mention of the fact that this constitutes an out-of-basin diversion. Under Commission rules and procedures, proposals for diversions into or out of the basin must examine alternatives that would not involve such diversions and present a rationale for why the diversion should be pursued rather than an alternative that does not require any diversion.

Finally, the docket fails to consider in any way the potential impact of water withdrawals for gas extraction projects from the West Branch, East Branch or the Upper Main Stem of the River on the flow management program for the New York City reservoirs on the East Branch and the West Branch under the 1954 Supreme Court Decree in *State of New Jersey v. State of New York and City of New York*, 347 U.S. 995, the DRBC Water Code, or the Flexible Flow Management Program. Each well that is hydro-fractured requires approximately 4 -5 million gallons of water for each fracturing event. Even if every well that will eventually be located in the Delaware River basin requires only one fracturing event, the total amount of water that would be withdrawn from these three parts of the river would be between 40 billion gallons and 200 billion gallons, based on the potential range of 10,000 to 40,000 wells. Obviously, the full scope of gas extraction development involving hydro-fracturing will occur over a number of years. However, water withdrawal demand of the potential size for this development will certainly have some impact of flows and directed release requirements for the river. These potential impacts should be identified and considered before, rather than after, these withdrawals begin.

For the reasons stated above, Damascus Citizens for Sustainability respectfully requests that the Commission postpone its consideration of this docket until the evaluations and

Zimmerman & Associates

Pamela M. Bush

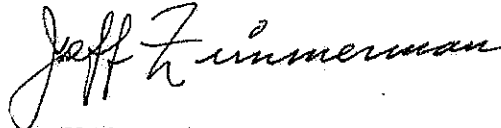
July 10, 2009

Page 6

investigation described above have been completed and the resultant materials made available to the public and the commissioners for their consideration.

If you have any questions concerning this request for postponement, please contact me at your convenience by telephone at (240) 912-6685 or by email at jjzimmerman@comcast.net.

Sincerely,

A handwritten signature in cursive script that reads "Jeff Zimmerman". The signature is written in dark ink and is positioned above the printed name.

Jeff Zimmerman

Letter to the Editor

As a longtime resident of Binghamton, I am very aware of the issue of gas drilling in the Southern Tier. I have been following the issue online (now living on the west coast). Certain friends of mine in the Binghamton area are also hoping to "cash in." What can I do out here in Seattle? Not much. American politics doesn't work that way. Your elected officials will not listen to someone who doesn't vote for them. But they will listen to you (New York residents), provided you make your message to them loud and clear. Allow this to happen and you are out of office. Destroy our watersheds and we will see that you never work for us again. By the way, we will be also be suing you for damages. Get a lawyer while you're off getting rich.

Everyone in power hopes that you will not use your power, i.e., that you will remain polite and diplomatic. Nonsense. When the future is being screwed, it is legitimate to scream rape. It is reasonable self-defense to scratch their eyes out. From everything that I have seen and read so far, you people are much too polite. You are hoping this is an issue about the facts, when the only fact that matters here is greed.

This is a Gold Rush. Winner takes all. Like wind, and solar, and all of the rest of the so-called "sustainable" solutions, there is nothing "green" about this form of natural gas drilling. It all depends on taxpayer subsidies. Huge ones. The authorities are merely hoping to snow everyone by using the word green.

Inform the taxpayers what that really means. They are being forced to subsidize the destruction of their communities. Green is the new Ku Klux Klan. If you don't play ball, we will hang you off a windmill. Call these people what they are—speculators and gangsters, not environmentalists.

You will get press, believe me. Do it with a smile on your face, yes, but do it. Don't let the opposition define the language. DON'T say this about INDIVIDUALS, but of course. Those kinds of accusations are actionable. But you can say anything about a group that you want. How is it green to destroy our watersheds, Governor? Are you working for us, or a bunch of gangsters?

Years ago, I worked for Nancy Ayers, then president of the Susquehanna Conservation Council. Do yourself a favor and go back to the Binghamton

Press and Sun-Bulletin for the 1960s and early 1970s. Notice how she drew attention to herself—and the issues—without getting personal but with a sense of humor. She loved lavender and dressed entirely in shades of purple—hat, blouse, skirt, gloves, shoes, stockings, lipstick. The media started calling her “the purple grackle.” However, when she entered a room, the politicians shuddered. You need leaders who will make your media and the politicians shudder. A final assignment. Read Dyana Furmansky’s new book ROSALIE EDGE, HAWK OF MERCY: THE ACTIVIST WHO SAVED NATURE FROM THE CONSERVATIONISTS. If the Sierra Club will not help you, include them on your hit list. Write Carl Pope and tell him he is a hypocrite for believing that the destruction of watersheds ever justifies “clean” energy. More to the point, make sure that your criticism is public criticism. Copy all of your letters to members of the press. If Carl Pope will not answer you, make him answer them—and lose thousands of members if he answers wrong.

Finally, make sure that the people of New York City know what the gas companies will shortly be sending them—horribly polluted and carcinogenic water. Make sure the governor is not your governor the next time around. I hate to say it, but you do this by losing friends and making enemies. Unfortunately, no prophet is ever honored past Palm Sunday. After this, you will know who your real friends are.

I certainly found out just teaching the truth in a major university. People don’t want the truth. That is how we got into this Depression. Many are now hoping that natural gas drilling is their way out. You will be standing between them and MONEY. In those instances, the facts by themselves are beside the point. As they see it (as in West Virginia mountaintop mining), because they are suddenly millionaires they can always move. You have to hold accountable the people who need your support. It starts with Albany and Harrisburg, then with New York City and Washington, D.C. If you get the voters mad, there is hope. If you stay polite and “play within the system,” you will be crushed by them. The only expense the “system” understands is lawsuits. There, make it clear again. Whatever you do will result in a lawsuit. Similarly, we will challenge every environmental impact statement that says “no impact.” If you make decisions based on greed and ignorance, you can always count on hearing from us.

From what I have seen so far, you personally have what it takes. You will simply have to decide how far you are willing to go. I note that some are

already discounting good science as just your "opinion." Whenever you hear that, you know you are drawing blood. Fortunately, there is a bright side in all of this. Every Gold Rush ends the same. The easily skimmed gold goes first. As the search gets more expensive, many projects die. Believe me. Long before the Southern Tier is a forest of drilling rigs, there will be thousands of lawsuits filed and politicians ruined. Why? Because the science is true—and because you are not Texas. People live in the Northeast and need clean water to do so. Meanwhile, huge pipelines are being planned and laid even as we speak that are tied into more easily accessible gas fields. The market is flooding with gas right now. All you have to do is fight hard and win the proper delays. The gas companies will begin walking away as soon as THEY realize you are not Texas. Right now, they hear greed; they don't see the population or the numbers of people willing to fight. When they do, Alaska and northern Canada will look better all the time. Gold is no longer mined in California, either.

Alfred Runte, Ph.D.
Seattle, Washington

The New York Times

Putting Water Ahead of Natural Gas

By PETER APPLEBOME

Published: August 9, 2008

It wasn't quite Barack Obama in Berlin, just a city councilman from Queens standing behind a makeshift lectern on the sidewalk outside his office and trying to talk to four reporters, most of them from small news outlets, over the sound of buses wheezing along Union Turnpike.

But if Councilman James F. Gennaro's press conference Friday with two environmental leaders barely moved the needle on the summer news meter, it almost certainly was a window onto the biggest environmental issue almost no one in New York City is paying attention to.

It has slowly dawned on people, among them Mr. Gennaro, chairman of the Council's Environmental Protection Committee, that there's one very big local angle to the distant and still exotic notion of major energy companies descending on upstate New York to drill for natural gas in the Marcellus Shale formation.

A large chunk of that area is the 2,000-square-mile watershed where New York City gets its water, which comes unfiltered through the city's reservoirs and aqueducts to nine million people, or roughly half the state's residents. That raises the obvious questions: Should there be gas drilling in the watershed and, if so, can it be done without imperiling the federal waiver that has allowed New York to avoid building a filtration plant that would cost \$10 billion to \$12 billion?

Mr. Gennaro, a geologist who has studied petroleum engineering, said the answers are an emphatic "no" and "no." And he said that the State Legislature and Gov. David A. Paterson, dazzled by the prospect of gas-industry riches, have been negligent in not ruling out development in the watershed. Sophisticated new wells using hydraulic fracturing use a million gallons of chemically treated water to break up subterranean shale and release the gas inside. Over the next two decades, there could be thousands of wells upstate.

"This is an activity that is completely and utterly inconsistent with a drinking water supply," he said. "This cannot happen. This would destroy the New York City watershed, and for what? For short-term gains on natural gas? We're not saying no exploration for natural gas anywhere in New York State. We're saying the part of New York State that is the New York City reservoir system should be off limits to this kind of activity."

Mr. Gennaro, who appeared with officials from the environmental groups Riverkeeper and the Natural Resources Defense Council, is one small player in a very big game. (Riverkeeper called for a permanent ban on drilling in the watershed.) But he seems intent on ringing the bell loudly over an issue that so far has been the subject of quiet, low-profile discussion between city and state agencies, but of very little public discussion.

He is calling for a yearlong moratorium on gas drilling in and around the watershed and plans to hold public hearings on the issue in early September. He has also asked the Environmental Protection Agency to render a formal opinion on whether gas drilling could put the city's filtration waiver at risk.

There are more than three dimensions of chess in gaming this out.

There is the utterly fortuitous prospect of a lucrative gas boom coming at a time when New York is desperate for new revenue, and upstate is equally desperate for new economic activity. There is the national energy crunch to push for domestic exploration. There is the eternal conflict between upstate and downstate over water issues and land rights. There are conflicting instincts among landowners: hope of winning the gas lottery versus fear about the consequences for the environment and on the quality of life in their communities.

Industry officials, who have largely kept a low profile, say that they welcome state oversight and that the industry has a track record of being environmentally responsible. But they also warn that a drilling moratorium or undue regulation could discourage production.

"New York has to be careful how it deals with these issues so it doesn't send a negative signal to the industry that chills the interest in the play in New York State," said Tom West, an Albany lawyer who represents several gas companies. "These companies have limited investment dollars, and they're going to invest them where the natural gas opportunities exist and where there's a regulatory climate that promotes it."

This is all early. State officials say there are only six drilling proposals on file, none of them in the watershed. No one knows how much gas will be found upstate. Most of the gas-rich areas are outside the watershed, so companies may just avoid areas where the environmental bar is highest. And Judith Enck, Mr. Paterson's deputy secretary for the environment, said an updated environmental impact review demanded by the governor would ensure that all drilling proposals get a thorough analysis.

But asked about declaring the watershed off limits, she said: "We're not willing to say that a large piece of geography should be off the table. The governor agrees that the New York City watershed is absolutely critical and must be protected, but he also believes you can have economic development and protect the watershed at the same time."

Mr. Gennaro said that's too much to take on faith. "Unlike natural gas, which we can get from other places in the Marcellus Shale, we have no other place to go for our drinking water. This is it. We have one and only one drinking water system."

Email: peappl@nytimes.com

14 July 2008

Mr. Clark Rupert
P.O. Box 7360
Delaware River Basin Commission
West Trenton, NJ
08628-0360

Subject: Gas Well Drilling in the Upper Delaware

Dear Mr. Rupert:

As a summer resident of the Upper Delaware Watershed (DeNoie residence, Damascus, PA), well owner, and professional hydrogeologist, this letter conveys my concerns regarding proposed gas well drilling in the Upper Delaware watershed. As you are well aware, the Upper Delaware is rich with intrinsic values of wildlife habitat, recreation and, importantly, water supply. The proposed gas drilling will significantly alter land use, with the potential to adversely affect the quality of groundwater that provides baseflow to the river and, on a short-term basis, the quantity as well (due to water withdrawals during the drilling operations).

The majority of residents in this rural area rely on wells drilled in bedrock formations that the gas drilling operations will drill through to access the Marcellus Shale. While the gas well industry is undoubtedly prepared with many Best Management Practices (BMPs) to protect against groundwater contamination, I know from experience that unexpected subsurface conditions can render the most-thoughtful plans and BMPs irrelevant, with severe consequences, including impaired groundwater quality. For the vast majority of well-owners in this region, there are no public water-supply lines available to replace a well lost due to contamination or impaired yield (capacity). In essence, the bedrock formations that supply water to these wells are the sole source of water available to most owners. Secondly, contaminant plumes are seldom sufficiently narrow that a replacement well can be sited outside of the limits of the contamination. The DRBC and other regulatory entities should require a commitment from the companies responsible for drilling to pursue access agreements to drill wells and pipe water from distant locations outside of the zone of contamination because, in the event of a dispute, the average property owner in this economically-depressed region is unlikely to summon the resources to take an energy company to court to force them to such actions.

The oil and gas industries enjoy many exceptions from environmental regulations that our federal government has granted in an effort to encourage domestic production of fossil fuels. Accordingly, the residents of the Upper Delaware and, indeed the river itself, depend largely on DRBC to protect water resources from this significant change in use. According to the DRBC Water Quality Regulations (18 CFR Part 410), Section 3.10.3(A)(2), waters within the Upper Delaware are Special Protection Waters (SPW) because they fall within the boundaries of "a national wild, scenic, and recreational rivers system." It is, therefore, within DRBC's mandate to protect these waters from adverse changes to existing water quality of the river itself, as well as tributary streams and groundwater. Section B. under the Stream Quality Objectives of the Manual clearly states "The waters of the Basin shall not contain substances attributable to municipal, industrial, or other discharges in concentrations or amounts sufficient to preclude the specified water uses to be protected." Similarly, Section 3.40.4(B), under Ground Water Quality Objectives, states

- "It is the policy of the Commission to prevent degradation of ground water quality."
- "No quality change will be considered which, in the judgment of the Commission, may be injurious to any designated present or future ground or surface water use."

Further, Section 4.40, Ground Water Quality Requirements, states: "No person, firm, partnership, corporation, association, or other entity, including any of the signatory parties, any political subdivision, agency, department, or instrumentality of any of them, shall cause or permit any pollution of ground waters or violate the ground water quality objectives or control requirements imposed by or determined pursuant to this Section or Section 3.40."

In conclusion, as a concerned resident of the watershed and well owner, with over 20 years of experience in groundwater analysis, I urge the DRBC to employ the power afforded by its regulations and policies to demand that gas drilling interests maintain the quality and quantity of groundwater and surface water resources in the Upper Delaware. This should include requiring the industry to demonstrate, through work plans and environmental impact studies as necessary, that they are prepared to protect the resources through means and methods that equal or exceed the state of the practice, to monitor water resources to prove that those methods are effective, and to remedy or replace loss of water uses resulting from the drilling. Feel free to contact me at 857-498-1231 should you wish to discuss this issue in more detail, and I thank you in advance for your efforts.

Sincerely yours,



John R. Kastanos, Professional Geologist P.G.001872G (Commonwealth of Pennsylvania),
Professional Hydrogeologist P.HG 1145 (American Institute of Hydrology)

Susan J. Rosenthal
345 W. 88th St. #8-A
New York, NY 10024
Email: srosenthal48@gmail.com
917 494-9410

(Country: 51 Old River Rd., Damascus, Pa. 570 224-4815)

Council Member James Gennaro
Committee on Environment Protection
NYC Council Public Hearing

October 23, 2009

Re: Natural Gas Extraction – DSEIS/ Ban Natural Gas
Drilling in Watershed/ Clean technology needed

Dear Council Member Gennaro and Members of the Committee on Environmental
Protections:

The following is written testimony I gave orally at the July 15th meeting of the Delaware
River Basin Commission (DRBC) in Bethlehem, Pa. It is entirely transferable to the issue
you address today in NYC.

July 15th testimony:

I want to thank the DRBC for their commitment to fact-finding relating to the impact of
natural gas well fracing in the area of the Special Water Protections of the Delaware
River Basin.

I will preface my testimony with two comments:

*** An EIS, not Piecemeal Approach:** Approval to commence with natural gas
extraction/ fracing should be denied as it is a piecemeal approach that by-passes the
need for a comprehensive Environmental Impact Statement on the projected
development of gas wells, water withdrawal and disposal of toxic waters in the area of
the Delaware River Basin – Special Waters Protections over the next 20 years.

*** Product Safety :**Included in my testimony was the suggestion that a similar
mechanism the Food and Drug Administration (FDA) uses to analyze a new
pharmaceutical drug for safety, etc.— where companies have keen proprietary interest -
— be set up to analyze and review for safety the formulas energy companies use for
natural gas extraction/fracing. Because there is no tracking recorded, the actual fracing
fluid, both pre and post frac and air quality (radiation and diesel truck traffic) should be
independently analyzed. The FDA points the way to methods for keeping proprietary
information confidential.



(Testimony, July 15, 2009, on next page)

DRBC Testimony July 15, 2009

My name is Susan Rosenthal. I have spent 27 years in Damascus Township, Wayne County, PA. — twelve years as a renter and fifteen years as a property owner. I live and work in NYC. I am obligated to give testimony on natural gas extracting by fracing in the Delaware River Basin as it is not an abstract or theoretical issue for me.

When I started reading about the rush to natural gas extraction by fracing the Marcellus Shale, almost two years ago, I immediately learned that this procedure received exemption from the Clean Water and Clean Air Act of 2005 and the fracing fluid formulas were protected from review for "proprietary" reasons. I did some more research and learned that radiation, benzene and dioxin (among other products and by-products) are implicated in fracing. I was terrified. Why?

I am a 28 year, very rare survivor of Acute Myelogenous Leukemia (AML). This type of leukemia is considered an environmental leukemia and is highly associated with radiation, benzene and dioxin. So try to imagine me as a 32 year old, bald, with a tube coming out of my chest, two months in hospital isolation and three years of massive chemotherapy. And, now 28 years later, the survivor statistics continue to be lousy. Maybe instead of a 9 month remission, more people might get a 2 ½ year remission.

No one wants to be one of the decision makers that contribute to their children, grandchildren, family or friends getting AML or the many lymphomas and other blood and solid cancers that are sensitive to environmental pollutants. All the money in the world cannot reverse or heal this kind of suffering and loss. Our farmers know about chemical exposure through their work...but we all know more now and we are responsible for this knowledge and how we best use it in decision-making.

If we get this wrong, we cannot just say oops.

Throughout this testimony today, speakers have referred to the farmer as an "endangered species", our upstate townships as "dead" or a "heartbeat away". Some people think that those who look at environmental issues focus exclusively on negative outcomes for our earth and that somehow our fates are not interconnected.

Lewis Thomas wrote a book in 1978, entitled "Lives of a Cell: Notes of a Biology Watcher." He said, "It is not the earth, our world that is fragile; it is, in large part, the decisions we make that determine whether the earth will be able to sustain us, human beings, living on the earth."

So, we are all on the same side. We don't want farmers, townships or human beings to become endangered species that can no longer be sustained by mother earth. There are lots of ways we can enliven this remarkable area as we figure out what is truly life supporting.



Thank you.
Susan Rosenthal

September/October 2009

Dear All,

Take a moment to get caught up on the latest gas drilling research from DCS. Find out who's involved from New York to Colorado. Here are some of the topics included: SGEIS news, hearings in NYC and around the state, DRBC, Democracy Now, NPR, WNYC; Josh Fox, FRAC ACT, PADEP, NYDEC, cumulative impacts, wastewater disposal, water, land and soil contamination around the US, compressor stations, water depletion, EPA, editorials, energy politics and more. Thanks for staying informed.

Jane skates@yahoo.com *Are You Ready to Move?*

Please support the Fear-Fest Fundraiser on Oct. 31st

Visit www.DamascusCitizens.org for details and more breaking news.

Jane Cyphers 646-594-7311 / 570-729-0005

NEW YORK TIMES SGEIS

NEW YORK TIMES October 17, 2009 EDITORIAL Shale and Our Water New York State's environmental regulators have proposed rules to govern drilling in the Marcellus Shale — a subterranean layer of rock curving northward from **West Virginia through Ohio and Pennsylvania to New York's** southern tier. The shale contains enormous deposits of natural gas that could add to the region's energy supplies and lift New York's upstate economy. If done carefully — and in carefully selected places — drilling should cause minimal environmental harm. But regulators must amend the rules to bar drilling in the **New York City watershed**: a million acres of forests and farmlands whose streams supply the reservoirs that send drinking water to eight million people. Accidental leaks could threaten public health and require a filtration system the city can ill afford. Natural gas is vital to the nation's energy needs and can be an important bridge between dirty coal and renewable alternatives. The process of extracting it, however, **is not risk-free**. Known as hydraulic fracturing, it involves shooting a mix of water, sand and chemicals — many of them highly toxic — into the ground at very high pressure to break down the rock formations and free the gas. The technique is used in 90 percent of the oil and gas operations in the United States. And while most drilling occurs without incident, "fracking" has been implicated in hundreds of cases of impaired or polluted drinking water supplies in states from **Alabama to Wyoming**. The dangers are particularly acute in the Marcellus Shale, which, unlike the relatively shallow formations found elsewhere, lies miles underground. Getting the gas out will require far more water and heavy doses of chemicals. While the rules would require drillers to take special precautions in the watershed, there are too many points — from the delivery of the fluid to the drilling site to the removal of spent fluid after it surfaces — where poisoned water could escape into the water supplies. Quarantining the watershed also makes economic sense. The shale contains only one-tenth of the gas in the southern tier. One big accident could undo everything the city and state have done — buying up property, creating buffer zones around the reservoirs — to protect the watershed from development and pollution. State officials worry that if they deny landowners the right to lease the mineral resources under their property — 70 percent of the watershed is privately owned — they will face expensive "takings" claims. But the state has a right and responsibility to prevent drilling that poses a clear danger to public health. The state insists it has made a good-faith effort to assess the hazards, and its 800-page report is replete with scientific analysis. But it is the state's analysis. What the state has not done, and what it must do, is give those who have serious doubts about drilling in the watershed a fair chance to state their case. **New York City's acting environmental commissioner, Steven Lawitts**, has warned of "chronic and acute impacts to water quality." **Senator Kirsten Gillibrand and the Manhattan borough president, Scott Stringer**, have asked the state for extensive public hearings. **Mayor Michael Bloomberg** has commissioned an independent scientific study of the risks to the watershed. A fair review will not be possible unless the state's absurdly quick Nov. 30 deadline for public comment is extended. The mayor's study will not even be completed until mid-December. It is dangerously irresponsible to rush this decision.

James Gennaro to hold a hearing on the NY state's proposal Oct. 23 at 10 a.m. in City Hall

10_15_09 NEW YORK POST Gennaro Rips Upstate Drilling Plan City Councilman James Gennaro (D-Fresh Meadows) said the state's recent proposal not to ban drilling in the upstate area that provides drinking water for city residents could cost New Yorkers billions of dollars and is urging the public to voice its thoughts on the matter at a public hearing he will hold Oct. 23. "If drilling is allowed in the watershed, we'd be forced to construct a water filtration plant, which could cost between \$10 billion and \$20 billion and would cost about a billion dollars a year to operate," said Gennaro, head of the Council Committee on Environmental Protection. "It would be untold billions of dollars paid by water and sewer ratepayers." At the end of September the state Department of Environmental Conservation released its draft environmental impact statement on the natural gas drilling activities in the Marcellus Shale formation, which runs for about 600 miles through New York, Pennsylvania, Ohio and Virginia. The statement did not ban gas drilling in the 1 million-acre watershed area that provides drinking water for more than 8 million city residents and 1 million people in Westchester and other counties, but it does set rules as to where wells may be drilled and requires gas companies to publicly disclose which chemicals they use while extracting the gas. "Anything that would allow gas drilling within the confines of New York City's upstate watershed is unacceptable," Gennaro said. Gennaro will hold a hearing on the state's proposal Oct. 23 at 10 a.m. in City Hall. Council Speaker Christine Quinn (D-Manhattan) and Councilman Tony Avella (D-Bayside) have also lambasted the state's decision, which will be publicly reviewed until the end of November. "We simply cannot afford to jeopardize the health and financial well-being of New Yorkers by allowing the natural gas industry to undertake large-scale developments in the Catskill and Delaware watershed," Quinn and Gennaro said in a joint statement. Avella introduced a resolution in the Council the day the state came out with its proposal, calling on the state Legislature, DEC and Gov. David Paterson to prohibit the practice of hydraulic fracturing, a process of extracting natural gas that entails injecting up to 5 million gallons of water laced with chemicals into the ground at high pressure to break the rock. The method has been criticized by officials and environmentalists. "Numerous toxic spills have happened across the country as a result of this type of natural gas drilling, and I am asking the state to prohibit this dangerous practice in order to preserve our most precious natural resource," Avella said. Last summer the U.S. Land Management Bureau documented that groundwater in Sublette County, Wyo., which has one of the country's largest natural gas fields and where hydraulic fracturing is commonly employed, had been contaminated with benzene, a substance that has been linked to cancer and nervous system disorders. Reach reporter Anna Gustafson by e-mail at agustafson@cnglocal.com or by phone at 718-229-0300, Ext. 174.

COMMENTS ON NY DEC SGEIS

DEC gas rules get scrutinized By Dan Hust SULLIVAN COUNTY NY — The Democrat requested comment from a variety of interested and involved parties regarding the NYS Dept. of Environmental Conservation's (DEC's) draft Supplemental Generic Environmental Impact Statement (SGEIS) — new rules proposed to regulate gas drilling statewide. Formal written comments from these groups are likely to be made to the DEC by the current November 30 deadline, and submission guidelines (and the draft SGEIS itself) can be found at www.dec.ny.gov/energy/58440.html. Since Tuesday's initial article, Damascus Citizens for Sustainability has provided a response, which is included in this followup. As a reminder, Assemblywoman Aileen Gunther has scheduled a public hearing on the matter before the NYS Assembly, set for Thursday, October 15 at 9 a.m. in Room 306 of the State Capitol in Albany. Following is a roundup of the remarks made by other groups and individuals: **Catskill Mountainkeeper** "Unless Pressure is Brought to Bear, The Just Released DEC Environmental Statement Clears the Way for Gas Drilling Without Adequate Protection and Controls," says the headline from Catskill Mountainkeeper's latest press release. In particular, Sullivan County's most visible environmental advocacy group worries that the draft SGEIS inadequately protects local and NYC watersheds, makes no provision for studying the cumulative impacts of multiple wells on multiple properties, doesn't stipulate how wastewater treatment — or any other areas requiring DEC oversight — will be handled with current staff and deteriorating infrastructure, and falls short of offering enough public participation. "While we are appreciative of the few new controls and protections the DEC report offers, overall it is dramatically inadequate in offering reasonable solutions that the public deserves," stated Ramsay Adams, executive director of Catskill Mountainkeeper. "Unless elected officials, the media and especially the public speak out powerfully

and quickly, the entire State of New York and our region, in particular, is going to be put at extreme and unnecessary levels of risk.” Adams sees this as the area’s final opportunity to mitigate impacts. “When the trucks are rolling, it will be too late to begin to understand the reality of what we’ve allowed ourselves to get into,” he said. “We have to act now. This is our last chance to do something to mitigate or stop gas drilling.” **Senator John Bonacic** The region’s representative on the NYS Senate, **John Bonacic**, offered the following take: “Energy independence is key to both our national security and to reducing the high cost of energy. Exploring for new energy and efficiently using existing energy sources will help meet those goals. “My initial reaction, however, is that the DEC is trying to strike an appropriate balance between the environment and our energy needs with these regulations. I would rather see the safe use of natural gas, extracted under the always watchful eye of the DEC, than give another excuse to companies like **NYRI** to claim there is a shortage of energy.” **Maurice**

Hinchey Congressman Maurice Hinchey, whose 22nd District includes Sullivan County, has been advocating for a federal study on hydraulic fracturing and increased oversight of fracking as it pertains to drinking water supplies. In fact, he has proposed legislation to address that, called the **FRAC Act**. “New York may soon see an extensive level of natural gas drilling, and it’s imperative that we take every step possible to ensure the protection of the environment from the potentially harmful practice of hydraulic fracturing,” Hinchey commented. “We cannot afford to make a mistake that could result in irreparable damage being done to our drinking water supplies and the overall environment. “As I begin to carefully read through the draft report, I’m hopeful it will be abundantly clear that the DEC is doing everything within its power to protect our state’s residents, their drinking water supplies, and the environment as a whole,” he added.” **damascus citizens for sustainability** “Gas drilling is an industrial activity that will turn our beautiful upstate landscape into a toxic industrial zone,” said Joe Levine, co-founder of **Damascus Citizens for Sustainability**, a nearby Pennsylvania group that is also active in opposing gas drilling in New York State. “No one should consider this acceptable, but what is of primary importance is the threat to public health from contamination of our water supply. Hydraulic fracturing gas drilling is intrinsically contaminating because the process requires the injection of millions of gallons of fresh water mixed with dangerously toxic chemicals into the ground, which are able to infiltrate groundwater and aquifers. “In the concentrated area of the NYC watershed alone, more than 9 million people depend on this single source of water. “Add to this the yet unresolved drilling production wastewater disposal dilemma,” he remarked. “Where will all the water go? There are few treatment facilities capable of handling this toxic stuff.” **Trout Unlimited** Trout Unlimited (TU), which focuses on fishing in the region, joined with others in pushing for the written comment period to be extended from 60 to 90 days. Other than that, its leaders’ comments were cautiously complimentary. “To date, New York State’s approach has been both cautionary and proactive,” said **Elizabeth Maclin**, TU’s Vice President for Eastern Conservation. “Unlike other states in the Marcellus Shale region, New York has not jumped the gun on gas drilling and has required a thorough regulatory analysis prior to allowing any gas company to drill in the state. **Trout Unlimited and its New York Council** commend the state for this.” “Drilling for gas in the Marcellus Shale is one of the most – if not the most – significant issues to impact New York’s native and wild trout fisheries in decades as well as local drinking water supplies. It is critical that it be done in a way that protects these resources for future generations of sportsmen,” said **Ron Urban**, TU’s New York Council Chair. “As with any regulations, careful analysis is required to determine exactly how strong the protections will be for New York’s expansive resources,” said Maclin. “Trout Unlimited and its 7,500 New York members look forward to carefully reviewing and commenting on the state’s draft report.”

DEC SGEIS HEARINGS

Loch Sheldrake in Sullivan County on October 28, in New York City on November 10

DEC schedules hearings on SGEIS ALBANY, NY — The New York State Department of Environmental Conservation (DEC) has announced details of upcoming public comment sessions on the draft **Supplemental Generic Environmental Impact Statement (SGEIS)** governing potential natural gas drilling activities in the Marcellus Shale. The meetings will be held in **Loch Sheldrake in Sullivan County on October 28, in New York City on November 10 and Chenango Bridge in Broome County on November 12**. A fourth meeting is being planned for the **Elmira-Corning area**. DEC staff will be available prior to the start of each session to answer individual questions about the format and contents of the draft SGEIS. The following procedures will guide the public hearings: • Individuals intending to speak will be required to sign in upon arrival and will be called in the order registered. To accommodate as many people as possible, there will be a five-minute limit on oral presentations. • Speakers may supplement their oral presentations with written comments. Written and oral comments receive equal consideration.

The Sullivan County session will be held at **Sullivan County Community College**. Doors will open at 6:00 p.m. for individual questions and speaker sign up. The public comment session will start at 7:00 p.m. Interested parties should check the DEC website, www.dec.ny.gov, for possible changes in time or location, and also for a copy of the SGEIS.

DEC SGEIS HEARINGS- EARTHJUSTICE COMMENTS

Why the big rush toward gas drilling? By **DEBORAH GOLDBERG** October 20, 2009 New York recently released a long-awaited review of how the drilling of thousands of gas wells into the Marcellus Shale might affect our state and our future. The 800-page draft environmental impact statement discusses threats to everything from the water you drink and the air you breathe to the roads you travel and the vacations you take. It is essential that New Yorkers have adequate time to understand it all. The Department of Environmental Conservation should extend the period for public comment on the draft for another 30 to 60 days so residents can properly comprehend information that could directly impact their health and the natural resources they leave to their children.....In New York, DEC's Division of Mineral Resources officials say that their proposals will adequately protect drinking water and other natural resources of this state. They are saying this even though they have not proposed a single new regulation to prevent serious environmental problems. They say we should trust them to place protective conditions in drilling permits and should not ask for enforceable rules. Before New Yorkers give state officials such discretion over gas drilling, they need time to read the environmental review for themselves. They should not have to rush through 800 pages and make up their minds before Thanksgiving.....They should have a full 90-120 days to digest the technical analysis, think critically about the agency's claims, and speak their views in hearings around the state. We shouldn't cut corners when it comes to public participation. At stake is the water we drink, the air we breathe, the soil in which we grow our food and the scenic landscapes that feed our spirit. The cost of protecting them now is far lower than the cost of cleaning them up, as New Yorkers should know from Love Canal. We must do all we can to protect what we have. We do not want to be mourning what we have lost later.-Deborah Goldberg is managing attorney for **Earthjustice Northeast**, a nonprofit, public-interest law firm. Times Union

PATTERSON SUPPORTS GAS DRILLING_COMMENT FROM JOE LEVINE DCS

Drill Baby Drill By **MAX SCHULZ** October 20, 2009 NEW YORK POST The Paterson administration has finally given a green light to proposed drilling in the Marcellus Shale, considered by many to be the nation's largest natural-gas reservoir. Covering several states and extending more than 600 miles, the basin may contain as much as six decades' worth of US natural-gas needs. Drilling is already under way in Pennsylvania and other Marcellus states.....This is good news, given the perilous state of the New York economy. A drilling boom in the New York portion of the Marcellus Shale will mean job creation. How many jobs? Hard to tell, but Pennsylvania officials think that drilling has helped create nearly 100,000 jobs in their state. Marcellus Shale activity could be worth upward of \$25 billion for the Keystone State over the next decade. The Paterson administration's regulations should be finalized shortly after a 60-day comment period ends. Natural-gas production in New York's portion of the Marcellus could begin early next year. It can't happen soon enough. *Max Schulz is a senior fellow at the Manhattan Institute.*

Comments from Joe Levine Damascus Citizens for Sustainability Re drill baby drill, it is an amazing event when someone representing an organization called the **Manhattan Institute** concludes that a policy that would cost Manhattan and the other boroughs of **New York City** billions of dollars in water and sewer rate increases to pay for water pollution control technologies solely to benefit a narrow sliver of natural gas corporations is a good idea. At the Manhattan Institute, the Bush economics that produced the today's great recession, i.e. corporate profits at any price, including complete indifference to the facts and the risks, are apparently alive and well. The author's certitude that a gas drilling process that uses dozens of unpronounceable toxic chemicals presents no risk to pristine drinking water is so breathtaking that it would embarrass even the natural gas industry. Given the author's unhesitating willingness to sacrifice the interests of the Manhattan water drinker and rate payer to the upstate natural gas industry, the anti-Manhattan Institute would seem a more accurate name for his organization.

Joe Levine

SGEIS NEW RULES

River Reporter October 1-7, 2009 DEC unveils new rules for gas drilling Well testing mandated By FRITZ MAYER ALBANY, NY — The long-awaited draft of new rules regarding gas drilling in the Marcellus Shale were unveiled on September 30, and include some new environmental protections. The NYS Department of Environmental Conservation (DEC) issued a press release saying that the draft of the Supplemental Generic Environmental Impact States (SGEIS) "addresses the range of potential impacts of shale gas development using horizontal drilling and high-volume hydraulic fracturing and outlines safety measures, protection standards and mitigation strategies that operators would have to follow to obtain permits." One of the most significant new requirements will be that drilling companies will have to reveal the contents of fracking fluids, and the percentages to be used for each well. The drillers will also be required to test private water wells for baseline information for wells within 1,000 feet of each well, and allow for ongoing monitoring. If there are no wells within 1000 feet, the distance expands to 2,000 feet. Also, drillers will not only have to follow **Susquehanna River Basin Commission and Delaware River Basin Commission** protocols for water withdrawal where applicable, but also must complete a more stringent and protective stream-flow analysis in regards to water withdrawal plans anywhere in the state. In regards to storing contaminated fluids that flow back out of the well in the drilling process, drillers who choose to store those fluids on site must use steel tanks, rather than open pits. And the use of plastic-lined pits to hold reserves of fracking fluid will be prohibited.....lawmaker **David Sager** said that he thought officials in Albany had gotten the message that the public wants to see that the environment is protected. **Kate Sinding**, a senior attorney with the **Natural Resources Defense Council**, said the DEC is putting forward the point that the state is going farther than any other to protect the environment from the possible harms of gas drilling but, she said, that is a very low bar. She also said that there is ongoing concern that the DEC will not have adequate resources to enforce the new regulations. There is a comment period on the SGEIS that ends on November 30.The SGEIS and related documents can be found at www.dec.ny.gov/energy/46288.html

October 1, 2009 State Issues Rules on Upstate Natural Gas Drilling Near City's Water By JAD MOUAWADSome critics of drilling said that they recognized that the regulators had made an effort to address some of their concerns and that drillers would have to comply with more stringent rules in New York than in other parts of the country. Still, they expressed some dissatisfaction. "We need to have a zero-risk policy here, and it is not appropriate to allow drilling in such a unique and extraordinarily valuable resource," said **Kate Sinding**, a senior attorney at the **Natural Resources Defense Council**. "The record in other states is so abysmal, and it doesn't take much to do better than other states." About 8.5 percent of the Marcellus Shale within the state of New York is located under the New York City watershed, **Ms. Sinding** said. The Manhattan Borough President, **Scott M. Stringer**, said the protections outlined did not go far enough and could expose the city to billions of dollars of expenses if it needed to invest in water filtration plants to counter contamination. "A buffer zone is not a ban," he said. "Quite frankly, a lot of these are half-baked measures that put the watershed at risk." Mr. Stringer said that he was asking that the public comment period be extended to at least 90 days and that he had secured a commitment from both Mr. Paterson and the state environmental department's commissioner, **Pete Grannis**, that a hearing on the proposed rules would be held in New York City. There are already about 13,000 active oil and gas wells in New York, about half of them already using hydraulic fracturing. In drilling through shale, a great deal more water is needed to crack the rocks. While a conventional well requires using about 80,000 to 100,000 gallons of water, shale rocks require anywhere between three million to five million gallons per well. *Mireya Navarro contributed reporting.*

SPEAK OUT AT SGEIS HEARINGS

Catskillmountainkeeper.org Protect the Catskill Mountains and Delaware Watershed and the southern tier of NY from Natural Gas Drilling The proposed natural gas drilling that will use hydraulic fracturing gravely threatens the Catskill Mountains, individual landowners, communities and the water supplies that originate here including the Delaware River, which is the source of drinking water for 17 million Americans.

Some issues to discuss in your letter or at the hearing: Effect of the 200-plus chemicals found in hydraulic fracturing fluids (which are currently exempt from Federal Clean Water Act and Safe Drinking Water Act standards) on drinking water supplies, including the Delaware River.

Disposal of used fracturing fluids and gas drilling "sludge," which is laced with heavy metals, chemicals, even radio active materials. The potential of runoff into water supplies.

Effect of drawing potentially tens of millions of gallons of water each day from the Delaware River watershed for gas drilling.

Effect of large scale industrialization of the Catskill Mountains that would include air, water, noise and light pollution; exponential increase of heavy truck traffic—including trucks hauling hazardous waste; loss of wildlife habitat; negative effect on property values; increases in crime.

Tell them to complete the democratic process by having extended comment period and at least 7 public meetings including NYC. (Go to the website for a sample letter. Here are the co-sponsors) **Binghamton Regional Sustainability Coalition * Catskill Citizens for Safe Energy * Catskill Mountainkeeper * Chenango Delaware Otsego Gas * Citizens Campaign for the Environment * Damascus Citizens for Sustainability * Delaware Riverkeeper Network * Earthjustice * Environmental Advocates of New York * Natural Resources Defense Council * NYH20 * New York Public Interest Research Group * New Yorkers for Sustainable Energy Solutions Statewide * Otsego County Gas Group * Otsego County Conservation Association * Riverkeeper, Inc. * Shaleshock Citizen's Action Coalition * Sierra Club Atlantic Chapter * The League of Women Voters of New York * Theodore Gordon Flyfishers, Inc. *** You can also help by contacting the following officials: **New York Department of Environmental Conservation Commissioner Alexander "Pete" Grannis** Commissioner Pete Grannis New York State Department of Environmental Conservation 625 Broadway Albany, New York 12233-0001 To Email Commissioner Grannis: <http://www.dec.ny.gov/about/407.html> **New York Governor David Patterson David A. Paterson** State Capitol Albany, NY 12224 To email the Governor: <http://161.11.121.121/govemail> **Delaware River Basin Commissioner Carol Collier** 25 State Police Drive P.O. Box 7360 West Trenton, NJ 08628-0360 carol.collier@drbc.state.nj.us

SGEIS – PARTICIPATE IN COMMENT PERIOD

October 1-7, 2009 Local gas study urges swift action Multi-municipal effort completed with UDC grant By SANDY LONG NARROWSBURG, NY In September, 2008, the UDC awarded a \$12,000 Technical Assistance Grant to the **Towns of Tusten, Cochection, Delaware and Highland** to undertake the study, "Managing Natural Gas Development Impacts: Strategies to Protect Town Infrastructure and Land Use." The UDC member towns of Lumberland, Fremont and Callicoon subsequently joined in the \$31,800 project. With thousands of gas leases signed throughout the Upper Delaware region, and the release of the **New York Department of Environmental Conservation's (DEC) draft Supplemental Generic Environmental Impact Statement (GEIS)**, Pammer noted "time is of the essence" for local municipalities to put protective measures into place. The study recognizes that "while gas development offers potential economic gains for property owners and local governments, municipalities need to plan for expected impacts to their land uses and capital assets." It recommends specific actions to implement before the end of 2009 and beyond. The DEC has authority over the issuance and monitoring of gas drilling permits, while the Delaware River Basin Commission (DRBC) has jurisdiction over water withdrawal requests. That leaves local municipalities with limited authority. The study cites two major areas in which towns can exert influence. The first is to actively participate in the DEC's update of the **1992 Generic Environmental Impact Statement (GEIS) for the Gas, Oil and Solution Mining Regulatory Program under the State Environmental Quality Review (SEQR) Act**. The draft Supplemental GEIS was scheduled for release earlier this week. "This event is an important opportunity for towns throughout the state to propose, articulate, and influence new regulations needed to address environmental impacts of the hydro-fracking process," the report states. Pammer told the committee, "It is key that municipalities participate in the comments period. The report also recommends preparing for impacts to local roadways, bridges and culverts by establishing a Road Use Agreement (RUA) framework. As experienced in other areas where natural gas extraction is occurring, traffic associated with the construction and operation of gas well sites could overwhelm local roads not designed to handle a large volume of industrial trucks carrying heavy loads of materials and water. **RIVER REPORTER**

DRBC

10_21_09 This email is directed to persons who have expressed interest in being updated on new information regarding natural gas extraction in the Delaware River Basin and/or to persons who submitted public comment on the draft docket D-2009-20-1: Proposed Surface Water Withdrawal Project - Chesapeake Appalachia, LLC. Chesapeake Appalachia has notified the DRBC that it is rescinding its application for approval of a surface water withdrawal project to supply a maximum of 29.99 mg/30 days of water for the applicant's exploration and development of natural gas wells in the State of New York and the Commonwealth of Pennsylvania. Surface water was proposed to be withdrawn from the West Branch of the Delaware River at a location known as the Cutrone Site in Buckingham Township, Wayne County, Pennsylvania. Additional information can be found on the DRBC web site at <http://www.nj.gov/drbc/dockets/D-2009-20-1.htm>. If you would like to be removed from this notification list, please reply to this email with your request. Thank you. Denise McHugh [Denise.McHugh@drbc.state.nj.us]

Hearing delayed on withdrawal of water from Delaware By Stephen Sacco Times Herald-Record 9_21_2009 The Delaware River Basin Commission has announced it will reschedule the public hearing set for Wednesday on the first application to withdraw water from the Upper Delaware for natural-gas drilling. **Chesapeake Energy** requested to use 1 million gallons of water per day in the federally protected waters in nearby Wayne County, Pa. The DRBC says the delay is at the request of Chesapeake to let the company and the public review changes in the proposal made by the commission after taking into account public comments. The hearing will be set for a later date, and public comments are requested on those aspects of the proposal that have been changed. The changes can be found on the DRBC Web site at www.state.nj.us/drbc/. Comments should be mailed to Commission Secretary, DRBC, P.O. Box 7360, 25 State Police Drive, West Trenton, NJ 08628. They also may be faxed to "Attn: Commission Secretary" at 609-883-9522 or e-mailed to paula.schmitt@drbc.state.nj.us. Comments should include your name, address and affiliation, along with "Chesapeake Withdrawal" in the subject line.

The revised proposed Docket No. D-2009-20-1* will remain posted on the Commission's web site;

The public comment period on the revised draft will remain open beyond September 30;

The dates for a new hearing and close of the public comment period will be announced as soon as a new hearing date is determined; and

The Commission will not be considering the Chesapeake docket at its October 22 business meeting.

Urban Design Program at Columbia University Produces Publication

River Reporter October 1-7, 2009 'HANCOCK & THE MARCELLUS SHALE' AVAILABLE REGION: A new publication that examines the impacts and opportunities of natural gas extraction along the Upper Delaware River has been released. Completed as a collaborative effort by many organizations and individuals, the project focused on the Town of Hancock, New York, where 25 percent of the acreage is under lease to gas companies. Full-color aerial photography by J. Henry Fair illuminates the drilling landscape in Dimock, PA, only 35 miles away. The project is the fourth document focused on environmental issues facing the region, produced by a graduate level seminar within the Urban Design Program at Columbia University. To obtain a copy, contact The Open Space Institute, Inc., at 212/290-8200 or email your name and mailing address to webmaster@osiny.org. <http://www.riverreporter.com/issues/09-10-01/images/news-gas.jpg>

DEMOCRACY NOW 10_6_09

http://www.democracynow.org/2009/10/6/environmental_battle_brews_in_new_york

Albert Appleton, Former commissioner of the New York City Department of Environmental Protection and former director of the New York City Water and Sewer System. Teaches courses in sustainability and economics at Hunter College and Cooper Union. Brad Gill, Executive director of the Independent Oil and Gas Association of New York, an oil industry trade group which supports drilling in the Marcellus Shale. Joe Levine, co-founder of the groups Damascus Citizens for Sustainability and NY-H2O

DEMOCRACY NOW 9_3_09

http://www.democracynow.org/2009/9/3/fracking_and_the_environment_natural_gas Fracking and the Environment: Natural Gas Drilling, Hydraulic Fracturing and Water Contamination
Gas drilling companies such as Halliburton say the gas drilling technique known as hydraulic fracturing, or "fracking,"

is safe, but opponents contend it pollutes groundwater with dangerous substances. Now, new evidence has emerged possibly linking natural gas drilling to groundwater contamination. ProPublica journalist Abraham Lustgarten reports federal officials in Wyoming have found that at least three water wells contain chemicals used in hydraulic fracturing. [includes rush transcript]

NPR and JOSH FOX

Interview With Josh Fox on NPR ~Tells the Whole Story

Another Look at Clean Energy http://thestory.org/archive/the_story_869_Josh_Fox.mp3

Consider a contribution to www.WaterUnderAttack.com

JOSH FOX IN NARROWSBURG NY

By Stephen Sacco Times Herald-Record Posted: October 11, 2009 **NARROWSBURG** — On a crisp September day near the interstate bridge in Narrowsburg, theater director-turned-filmmaker **Josh Fox** showed his film, "**Water Under Attack**," on the back of a 1973 mobile home transformed into moveable movie theater.....For Fox's part, the notices to lease the family land have gone in the trash. "We have something that money can't buy," Fox said. "We have an unbelievably beautiful river basin, a place that's worth being and when you bring gas drilling into town, you have an industrial zone. ssacco@th-record.com

Brian Lehrer WNYC (public radio in NYC) 10_6_09

<http://www.wnyc.org/shows/bl/episodes/2009/10/06/segments/142070#leaveComment>

Make this one of the 30 issues in 30 days before the mayoral election!

Misleading Report from NPR Natural Gas Drilling in the Marcellus Shale 9_22_09

Misleading Report from NPR I'm a frequent listener to NPR, and I count on it for much of my news, as do many people in our area. My local station is **WSKG**. So I was shocked to hear a report this morning that was so egregiously misleading, that I had to write in to NPR as well as WSKG. I suggest you do, too. The more response we get on this, the better. This is what I sent to NPR as a correction to it's report on "**Morning Edition**" and as a comment to WSKG this morning: We've just been stabbed in the back by, of all sources, **National Public Radio**. On **Tuesday, September 22, 2009 at about 6:30 in the morning (EST)**, a host of "**Morning Edition**" aired a report that was so biased in favor of the natural gas industry and it's drilling in the Marcellus Shale, that it might have been a paid advertisement. (As soon as NPR puts it online, you should be able to listen to it at:

<http://www.npr.org/templates/story/story.php?storyId=113043935>)

One glaring error was the statement by the reporter that what is used to fracture the shale deep underground is "water."

According to **endocrinologist Dr. Theo Colburn**, "215 or more products are used to drill the wells, fracture the rock, and process the gas. These products contain at least 278 chemicals, of which 93 percent are known to have adverse health effects" http://www.tiogagaslease.org/images/BVW_02_06_09.pdf) Calling the poisonous fluid used to fracture shale "water" is like calling a drill rig a "Christmas tree." (Hey, wait – the industry actually *does* that!) When the liars in the industry start drinking the stuff, I'll start calling it water. Another misleading aspect of the report was that it mentioned that environmentalists are championing gas as favorable to coal. The truth is that some environmentalists have caved in to the hype that gas is a "bridge" solution to our energy needs. Real environmentalists, though, are actually more concerned with the environment than what is at best a band-aid solution for a critical injury. It's unfathomable that NPR and "Morning Edition" just swallowed the industry propaganda hook, line and sinker, without checking facts. I hope we see a critical look at this in one of your more accurate programs, "**On the Media**." I strongly suggest that you review the remaining segments of your presentation on natural gas before you air them. Disclaimer: I live in the heart of the Marcellus Shale region, and stand to make some money if I capitulate to the industry land men who are promising "free money" to local landowners. But, like many responsible local residents, I will not collaborate with this not-ready-for-prime-time scheme. Brian Foley Otego, NY <http://otegony.com> To submit your comment to WSKG go to <http://www.wskg.org/forms/comment-line.aspx> (at the time of this writing that page is having technical problems) or call them to submit your comment at (607) 729-0200. If you live in the **Southern Tier or Leatherstocking area of NY State**, it's probably more effective to call or write your local station (like WSKG above) than to contact NPR directly. Of course, it couldn't hurt to do both: Here is the link for the show <http://www.npr.org/templates/story/story.php?storyId=113043935> Here is the link to contact

them help.npr.org/ics/support/default.asp?deptID=5670&task=ticket **How do I contact NPR?** E-mail via the Contact Form. Phone Numbers: Listener Services: (202) 513-3232 (Hours: 10am to 5pm ET, Monday through Friday) NPR Staff Directory: (202) 513-2000 Corporate Sponsorship: (202) 513-2093 NPR Foundation: (202) 513-2073 Main Fax: (202) 513-3329 Mailing Address: NPR 635 Massachusetts Avenue, NW Washington, DC 2000

NPR

Millie Cassese NPR Gas Drilling Series I just wrote to NPR regarding the worst piece of reporting I have ever heard from them. I am sure many of you heard it also these last few days. I urge you all to write to them if you haven't already. Maybe some of our letters will be read on air. With a piece like that, the other side **MUST** be heard.
Udcommunitynetwork

After the second day of this one-sided series, **NPR's Morning Edition** had received about 100 emails stating the negative effects of drilling. Or so Ghelten (the reporter -- I'm not sure of the spelling) said during the slightly less one-sided but still biased panel discussion on this week's **Diane Rehm** show. I sent numerous emails to both shows. Perhaps if NPR gets inundated enough, it will do a follow-up series, using another reporter-- **Alice Zinnes**

NPR

I phoned **Alicia Shepherd**, the **NPR ombudsman for the Tom G series**. She is not yet very knowledgeable on gas drilling issues, but is very nice, very eager to learn, and asked a lot of questions. (She was also interested in why this series caused me disappointment with NPR.) I explained some of the gas drilling basics to her, but she has a long way to go. I promoted the idea of doing an additional series on the horrors of gas drilling. She needed visuals of how it works, so I gave her the un-naturalgas.org website. She would probably benefit from more calls. **Her number is 202-513-3245. Sarah MacArthur**

FRAC ACT/CHEMICAL DISCLOSURE

160 groups support the FRAC Act nationwide By FRITZ MAYER UNITED STATES — Local groups pushing for increased regulation of gas drilling in the Upper Delaware Valley have gained high profiles in recent months; groups such as **Damascus Citizens for Sustainability**, **Catskill Mountainkeeper** and **Catskill Citizens for Safe Energy** have often found their way into the news. But the issue of gas drilling and its impact on the environment spreads well beyond this region into states like Texas, Colorado and New Mexico. In fact, the issue is so widely recognized as important that when environmental groups went looking to find support for a letter they intended to send to congress, they gathered 160 different national and community groups across the country to sign. The letter essentially urged congress to pass the **Fracturing Responsibility and Awareness of Chemicals Act (FRAC Act)**, which was introduced in the House by representatives **Maurice Hinchey**, **Diana DeGette** and **Jared Polis**, and in the Senate by senators **Bob Casey** and **Chuck Schumer**..... Also on the conference call was **Bruce Baizel**, a senior staff attorney with **Earthworks' Oil & Gas Accountability Project**, based in **Durango, CO**. He said, "Recent hearings in **Colorado** showed that the oil and gas industry has caused more than 300 instances of contaminated water in **Colorado** since 2003 and more than 700 instances in **New Mexico**, and no one has thoroughly investigated whether contamination is linked to hydraulic fracturing. As we continue to produce oil and gas throughout the Rockies, in Texas and Arkansas and now in **Pennsylvania**, **West Virginia** and **New York**, we need to put in place the safeguards for our communities and the water they depend on," he said. "We don't want 10 to 15 years of natural gas production to leave us with a lifetime legacy of contaminated water." The letter and the list of signatories can be found at earthworksaaction.org/pubs/FRACactLetter9-10.pdf. **River Reporter Sept. 23-30, 2009**

The **FRAC Act** would require the process of fracking to be covered by the **Safe Drinking Water Act**, and would require drilling companies to disclose the chemicals in fracking, but not the formulae used to create the fluids. On a conference call with reporters on September 16, **Amy Mall of the Natural Resources Defense Council** was asked about the claim by the gas industry that revealing the chemicals used in fracking would be giving away trade secrets that would harm individual companies in a competitive market. Mall responded that if a person buys a can of Coke, the buyer gets to see the list of ingredients on the label but not the formula. The **FRAC Act** would have the same impact on fracking fluids. **FRITZ MAYER River Reporter 9_23_09**

TAX BREAKS FOR OIL AND GAS PRODUCERS 9/25/2009 New York Times 9_25_09 Bipartisan Senate Group Wants Climate Bill to Boost Natural Gas By BEN GEMAN of Greenwire The lawmakers say the climate bill should steer clear of removing tax breaks for natural gas producers. **President Obama's** congressional budget request calls for ending billions of dollars in tax breaks for oil and gas producers. The letter calls for maintaining the percentage depletion credit and deductions for so-called intangible drilling cost, in particular.

JOHN SALAZAR IN COLORADO By David Williams 9/15/09 U.S. Rep. John Salazar, already taking heat of late for his **no vote on the Waxman-Markey climate change bill**, may also be hearing it from his constituents in Third Congressional District over his **lack of support for Congresswoman Diana DeGette's FRAC Act**. The survey, conducted by **Harstad Strategic Research** and released Tuesday, was done by phone July 28-30 using a voter list in the Third District, which includes heavily drilled Garfield County. A total of 504 random telephone interviews were conducted, with an accuracy rate of plus or minus 4.4 percent. Although he supported federal hydraulic fracturing legislation last year, Salazar has shied away this year, perhaps with an eye toward re-election in 2010: "I believe that developers may have legitimate concerns about the impact that removing the exemption may have on their ability to find and extract oil and gas," he told Pro Publica in May. "But ... the current regulatory approach is probably not sustainable and will probably need to be revised in some way." ... And 63 percent of the households that rely on farming and ranching support the bill; while 61 percent of the voters who hunt or fish support it. Salazar comes from a long line of ranching families in southern Colorado. His brother Ken, a former Colorado senator, is Secretary of the Interior. The Colorado Independent

PA DEP OVERSITE

Environmental concerns subject of public forum 9_23_09 Craig Lobins, DEP Northwest Regional Manager for the Oil and Gas Program, addressed DEP's drilling requirements which the gas companies have to follow. His office in Meadville, has been responsible for issuing permits for all of the counties north of I-80, and he acknowledged that since 2003 his office has seen about a 25 percent a year increase in permit applications. He noted that from around 1998 until 2003, DEP issued about 1100 permits a year. He said that the following year was when the first Marcellus well was drilled. Some 476 wells were permitted across Pennsylvania in 2008 and he projected that by year's end 1200 permits would be issued in 2009. The distinction between the "old" days and at present is that to get to the gas in the Marcellus requires up to 4-5 million gallons of water to be used in a fracking process. The two-hour program stretch for another 90 minutes as audience members asked questions of the experts. Lobins, for instance, was pointedly asked on a scale of 1-10 with 10 being the greatest level, how confident was he that DEP could handle the workload as the industry quickly develops. He said a '5' was about right, which caused one audience member to ask, "Do you think we could hold off granting permits until you have enough employees?" Lobins said, "I cannot deny a permit for not having enough staff." He acknowledged that the only way the industry could be halted was if the governor issued a moratorium, and he said rather matter of factly that was very, very unlikely. Lobins added, "I think we're all worried about something that is a very rare occurrence." At the same time he acknowledged the bottleneck of finding a way to deal with fracked water that is being generated faster than it is being treated. "Fracking fluid should never touch the groundwater table," he said. The words were perhaps prophetic, as just about 20 miles away and earlier in the day in Dimock Township, about 8,000 gallons of a fracking gel spilled onto the ground at a gas drilling site. WCEXaminer Wyoming/Pa

PA DEP OVERSITE

Pennsylvania DEP's oil and gas investigation unit is understaffed, and individual citizens are having to monitor drilling activities. **Craig Lobins, DEP Northwest Regional Manager for the Oil and Gas Program** recently explained to citizens at a meeting in Forest City, PA how the department is unable to fully monitor all drilling sites: "Let's be realistic about it, they drill 24-7, and I don't think anyone expects someone to stand on a rig 24 hours a day 7 days a week." Mr. Lobins explained to the crowd of over 100 concerned citizens who attended the meeting hosted by the group R.E.S.C.U.E. "And if we did expect them to stand there all day, imagine how expensive that would be. At a meeting of the **Oil and Gas Advisory Technical Board on October 30 of 2008**, official notes state that Mr. Lobins "expressed the need for more Oil and Gas Inspectors. He said even if there is no projected increase in permitting, DEP is still understaffed in this area." But, when Mr. Lobins was asked at the recent Forest City meeting on Sept 16, if he supported a moratorium on drilling until the DEP had enough staff and local oversight of drilling activity, he responded "No." Instead of hiring more investigators, Lobins told the citizens at the Forest City meeting that local residents should be "the eyes of the

DEP". Citizens who followed Mr. Lobins suggestion were subsequently told by agents of the DEP that they can't be trespassing onto gas leased land to monitor these sites for illegal activity. **Joanne Fiorito**, acting as the eyes of the DEP, recently discovered a waste spill at a drilling site just off RT 29 and upon reporting the spill was warned not to trespass. "If the DEP can't monitor these sites on their own," said **Ms. Joanne Fiorito** "and then the DEP tells us that we cannot trespass after we found a spill on the **Grimsley** well pad site that wasn't reported to the DEP by Cabot, well then, where does this leave the citizens of PA who are dependent on the DEP doing its job? It has gotten to the point where I and others will have to do it ourselves, and I personally don't care if they arrest me for civil disobedience, because this land, air and water is what keeps us all alive." **Vera Scroggins, 58**, a public broadcast reporter for **Binghamton's Open2Everyone TV** filmed the Grimsley well pad site discovery spill as well as **Cabot's Cranberry Pipeline's** bentonite spills with Ms. Fiorito. Her video will be broadcast in the Binghamton, NY region on Channel 4 on September 28 and October 5, 2009. You can request a copy for your local public broadcast channel by contacting **Open 2 Everyone TV Binghamton** O2ETV.info@gmail.com | 09.28.2009 PHILLYIMC.org

DEP/WILLIAMSPORT PA

NEW S R E L E A S E COMMONWEALTH OF PENNSYLVANIA Dept. of Environmental Protection Northcentral Regional Office 208 West Third Street, Suite 101 Williamsport, PA 17701 FOR IMMEDIATE RELEASE 9/25/2009 CONTACT: **Daniel T. Spadoni** Phone: (570) 327-3659 DEP ORDERS CABOT OIL AND GAS TO CEASE ALL GAS WELL FRACKING IN SUSQUEHANNA COUNTY WILLIAMSPORT - The Department of Environmental Protection has ordered **Cabot Oil and Gas Corporation** to cease all natural gas well hydro fracking operations in Susquehanna County until the company completes a number of important engineering and safety tasks. "The department took this action because of our concern about Cabot's current fracking process and to ensure that the environment in **Susquehanna County** is properly protected," **DEP Northcentral Regional Director Robert Yowell** said.

PA DEP

Steve McConnell 9_22_09 Wayne Independent A spokesperson for the state **Department of Environmental Protection (DEP)** confirmed that **Cabot Oil & Gas**, who is engaging in extensive drilling operations in the small community, spilled "hundreds of gallons" of the volatile chemical mixture Tuesday morning..... The chemical that illegally entered the environment, off **Troy Road**, is a "liquid gel concentrate," a "potential carcinogen" that is combustible. The chemical spilled is a fracturing fluid, according to interviews with DEP staff. It can cause headache, dizziness, or other central nervous system effects, according to the material safety data sheet obtained by *The Wayne Independent*. Inhalation may "cause respiratory irritation ... chemical pneumonia ... slurred speech, giddiness and unconsciousness." The material safety data sheet, a document that details general chemical information and human-health hazards, lists **Halliburton**, a company often used by the industry to develop natural gas wells. The spill was apparently a mixture of a majority of water and the chemical, said **Spadoni**. Pending lab results, DEP may require that the soil in the area is excavated. It is also not known, as of this report, whether the spill contaminated local groundwater.

Comments

Jim Barth WHAT'S THE PROBLEM? MARIAN SAYS THIS STUFF IS UNDER ALL OUR SINKS; IN OUR KITCHENS, IN OUR BATHROOMS, WE DRINK IT EVERY DAY, EVERY DAY! GOOD LUCK TO US ALL! GLUB, GLUB, GLUB. IT'S ONLY WATER AND SAND! FOR CRYING OUT LOUD, WHAT ARE YOU A WHINER? IT'S OUR LAND AND WE CAN DO WHATEVER WE WANT! GET OUT OF THE WAY!!! Thank you, **Steve McConnell**, for reporting again, in a timely fashion. Soon, people may have to say more to me in response than, 'same old baloney'. But, I'm not counting on it, right 'Richie A'? It would be nice if the **Wayne Independent** also did a report on that **Dunkard Creek** spill that I keep inserting into the comments, then I wouldn't have to keep inserting it. That one is a whopper to make these three look tame. Maybe **Cabot** should be given a 'Good Housekeeping' award for only spilling 8,000 plus 'hundreds of gallons'? But enough fun. Will those who have leased their land for drilling, please stop rolling out the red carpet? Will you please help support the **DRBC** and the **NYSDEC** and **PADEP** do their jobs? Please stop pressuring them to fast track and get out of the way? Ad nauseam

AP News 9_22_09 Department of Environmental Protection official **Robert Yowell** said Tuesday the agency is very concerned about the spills in Susquehanna County. Information provided by **Halliburton Co.**, which supplies the lubricant, says the chemicals in the product called **LGC-35** are potentially cancer causing.

DEP/DCNR/BUDGET CUTS/PA

By Donald S. Welsh, President & CEO, Pennsylvania Environmental Council The debate surrounding a natural gas severance tax has become the latest political football in budget battles in Harrisburg ; one that sidesteps a much deeper and more serious issue: the more than \$385 million in additional budget cuts for environmental programs now being discussed in the State Capitol. These cuts would not only set back Pennsylvania's cleanup efforts by more than a decade, they would erode the right of every Pennsylvanian to a clean environment uniquely guaranteed by our state constitution. Even in difficult economic times, there is a line between fiscal belt tightening and undermining the state's capacity to operate at levels sufficient to meet state and federal requirements. **The Department of Environmental Protection and Department of Conservation & Natural Resources** are being pushed past that brink now. **The latest proposed budgetary cuts would be in addition to the \$784 million in funding already diverted or cut from environmental programs this decade alone, including programs to support wastewater treatment plant operations, for staff that review permits and do inspections, insurance to cleanup storage tank spills, local recycling programs, support for watershed restoration and abandoned mine reclamation projects, and revenues diverted from State Parks and Forests and recreation programs.** 9/21/2009 PA Environment Digest.

TROUT UNLIMITED-CHANGING THE LANDSCAPE-CUMULATIVE IMPACTS

Trout Unlimited angles on gas impacts World class fisher and television host filmed on the Delaware By **SANDY LONG UPPER DELAWARE REGION**—"It's changed the region where I live in Colorado entirely within a * decade," said **Frank Smethurst**, on the topic of **natural gas extraction**. **Host of Trout Unlimited's (TU) "On the Rise,"** a nationally broadcast television show that airs on the **Sportsman Channel**, Smethurst spent three days along the **Upper Delaware River** last week, casting in the clear waters and filming for a future segment to be broadcast next April. Such impacts will also affect sportsmen. "We expect to see a lot of disruption of habitat that will have a significant impact on hunting and fishing," said **Maclin**. "It will radically change their experience. Thousands who come for this may no longer want to. Some of the best habitat is targeted for exploration and extraction." Maclin said that TU is working with many diverse partners, such as sportsman groups, the Natural Resources Defense Council, Earthjustice and others. She urged fishermen to make their voices heard by contacting their state representatives and getting involved with the efforts of groups like TU to advocate for appropriate regulatory measures and increased funding for enforcement of those regulations. "We're aggressively raising funds to hire someone to work full time on this," she said. **TU staffer Deb Nardone has been lobbying in support of the S. 1215**, commonly called the **FRAC** act, a bill to amend the **Safe Drinking Water Act** to repeal a certain exemption for hydraulic fracturing. "It's a huge issue for TU, to effect change on this," said Maclin. And while she noted that sportsmen are generally well informed on this issue, she said that they aren't as engaged as they could be. "We hope to provide support for them to do so," she added. Smethurst, who has lived with gas exploration near his home in **Telluride, CO** for the past 10 years, * acknowledged the lure of the windfall that accompanies natural gas development. "Some profit immensely; some not at all," he said. "It's not hard to identify with these landowners, yet it's such a toxic process." **"We used to have these wide open spaces; now there are gas wells everywhere,"** Smethurst said. **"It's so altered, so permanent. It changed the landscape practically overnight."** Maclin explained that the Upper Delaware region is in the early stages of what will ultimately be a long period of development. "We're not talking about a short-term event here," she said. "They're projecting a 100-year process." Earlier this year, TU issued a white paper detailing its concerns about development of the Marcellus Shale. Visit www.riverreporter.com/issues/09-03-12/MarcellusTU.pdf to see this document. Additional information will be available on October 28, when the Lackawaxen River Conservancy hosts "Gas Drilling in Wayne and Pike - Implications for Water Resources" at the Wayne County Chamber of Commerce at 32 Commercial Street at 7:00 p.m. in Honesdale, PA. Tracy Carluccio, a water-quality specialist and deputy director of the Delaware Riverkeeper Network, will be the guest speaker. The Pike/Wayne chapter of TU is co-sponsoring the event. For more on this issue see www.fieldandstream.com/articles/fishing/trout-fishing/where-fish-trout/2009/07/natural-gas-extraction-threatens-appalachian#.

CUMULATIVE IMPACT OF GAS DRILLING

Drilling regs hearing will reveal issues By **Steve Israel** Times Herald-Record October 12, 2009 "The whole cumulative impact is a glaring problem," says **Wes Gillingham, program director of Sullivan County's Catskill Mountainkeeper**. "Each company knows how much land they've leased. One well leads to another and another. And how will the state control the impact of all that waste?" Not surprisingly, a gas industry representative disagrees. Not only

*cum
impact*

does he say the new precautions to safeguard the environment are "unprecedented," he claims it's virtually impossible to come up with regulations for the impact of several wells. "I don't know how that would even be feasible," says **John Conrad of Poughkeepsie, a hydrologist** and environmental consultant. "I don't know how anyone could take the next step and come up with a set of future guidelines when you don't know how all the drilling will play out."

WASTEWATER DISPOSAL

What can be done with wastewater? Rapid expansion of gas drilling has led to problems with disposal, contamination Sunday, October 4, 2009 By Joaquin Sapien, ProPublica. Workers at a steel mill and a power plant were the first to notice something strange about the Monongahela River last summer. The water that U.S. Steel in Clairton and Allegheny Energy in Greene County used to power their plants contained so much salty sediment that it was corroding their machinery. Nearby residents saw something odd, too. Dishwashers were malfunctioning, and plates were coming out with spots that couldn't be rinsed off easily. Pennsylvania's Department of Environmental Protection soon identified the likely cause and came up with a quick fix. The **Monongahela River**, a drinking water source for 350,000 people, apparently had been contaminated by chemically tainted wastewater from the state's growing natural gas industry. So the DEP reduced the amount of drilling wastewater that was being discharged into the river and unlocked dams upstream to dilute the contamination. But questions raised by the incident on the Monongahela haven't gone away. In August, contamination levels in the river spiked again, and the DEP still doesn't know exactly why. And in September, the DEP began investigating whether drilling wastewater caused the death of 10,000 fish on a 33-mile stretch of **Dunkard Creek**, which winds through West Virginia and feeds into the **Monongahela**. A spate of other water contamination problems also have been linked to gas drilling in Pennsylvania, including methane leaks that have affected drinking water in at least seven counties. Pennsylvania is at the forefront of the nation's gas drilling boom, with at least 4,000 new oil and gas wells drilled here last year alone, more than in any other state except Texas. This rapid expansion has forced state regulators to confront a problem that has been overlooked as gas drilling accelerates nationwide: How will the industry dispose of the enormous amount of wastewater it produces? Oil and gas wells disgorge about 9 million gallons of wastewater a day in Pennsylvania, according to industry estimates used by the DEP. By 2011 that figure is expected to rise to at least 19 million gallons, enough to fill almost 29 Olympic-sized swimming pools every day. That's more than all the state's waterways, combined, can safely absorb, DEP officials say.

Some citizens have been concerned that workers may be poking holes into the plastic sheets that line the bottom of the liquid waste pits, allowing the liquids to drain into the soil and saving the company the expense of disposal at expensive hazardous waste facilities. A landowner told Indymedia that he has watched the levels in waste water pits steadily decrease after they were filled up.....Municipal water treatment plants are already so overburdened and unable to filter out toxins from our drinking water that on September 12, the New York Times reported "the nation's water does not meet public health goals, and enforcement of water pollution laws is unacceptably low."

by Nastassja Noell | 09.28.2009 PHILLYIMC.org

WASTEWATER -CHEMUNG COUNTY NY

Natural gas quest: DEC investigating disposal of fluids by drilling vendor 10_3_09 BY G. JEFFREY AARON • New York state Department of Environmental Conservation is investigating how employees at an Ashland warehouse are handling and storing potentially hazardous materials. The owner and operator of the facility is a Houston-based natural gas drilling fluid vendor. An anonymous complaint about the disposal of fluids at the **Chemung County** site brought the DEC to the **Baker-Hughes/NEMSCo warehouse on Lower Maple Avenue** a few weeks ago. At this point, Lt. Peter Barton of the DEC's Avon office said no major violations have been discovered. However, the company is building a secondary containment area for the chemicals stored outdoors. "If there's a failure in the primary storage area, secondary containment, like an earthen dike or some other sealed-off area, would prevent the material from being released into the environment," Baker-Hughes spokesman Gary Flaharty said. "It's a requirement when chemicals are stored outdoors, so those chemicals have been moved indoors until the new storage area is completed." DEC also investigated complaints about the company spray washing its delivery trucks after they returned from **Pennsylvania** drilling sites, sometimes carrying material spilled from their loads or dried mud from the drilling site that could contain hazardous chemicals. During these spray cleanings, the run-off from the trucks went onto bare ground.

CHESAPEAKE - FRACING FLUIDS and WASTEWATER

Natgas execs seek disclosure of Marcellus drilling chemicals By Matt Daily NEW YORK, Sept 24 (Reuters) "We as an industry need to demystify (hydrofracturing)," **Aubrey McClendon**, chief executive and chairman of **Chesapeake**, told an energy conference this week. "We need to disclose the chemicals that we are using and search for alternatives to the chemicals we are using," he said. Scientists have yet to find definitive evidence that drilling chemicals have seeped into ground, but dozens of anecdotal accounts have emerged that water supplies in gas-producing areas have been tainted. People in gas-drilling areas say their well water has become discolored or foul-smelling, killing pets and farm animals who drink it and causing children to suffer from diarrhea and vomiting. On Tuesday, **Pennsylvania** regulators cited **Cabot Oil & Gas** for spilling chemicals at a natural gas well. [ID:N22368094] Environmentalists have complained that the energy companies refuse to disclose the specific chemicals used in the fluids that are injected into wells and then later stored in pools before undergoing treatment. That lack of disclosure prevents them from testing water and soil samples for specific incidents of pollution. **John Pinkerton**, chief executive of **Range Resources Corp (RRC.N: Quote, Profile, Research, Stock Buzz)**, one of the first energy companies to enter the Marcellus, said producers' disclosures were limited by the oilfield service companies who do not want to release what they consider to be commercially sensitive information. "We're under confidentiality contracts with the service companies," he told Reuters. "I've basically told them that this is not acceptable. It's a little silly to be honest." Oilfield service companies such as **Schlumberger Ltd (SLB.N: Quote, Profile, Research, Stock Buzz)**, **Halliburton Co (HAL.N: Quote, Profile, Research, Stock Buzz)** and **BJ Services (BJS.N: Quote, Profile, Research, Stock Buzz)** all provide hydrofracturing services to the companies. A spokesman for Schlumberger said it and the chemical companies that provide the fluids release lists of chemicals, acids and salts typically used in the process, but that the chemical companies will not give more details. "When it comes down to the different chemical makeup of these compounds, that's where it gets into proprietary third party information," the spokesman, **Stephen Harris**, said. Halliburton said 99 percent of its fluid was made up of sand and water, and the remaining chemicals complied with state and federal regulations. "We make a significant investment in developing effective fracturing fluid systems and we are careful to protect the fruits of the company's research and development efforts," Halliburton spokeswoman **Cathy Mann** said in an email. **Louis Baldwin**, chief financial officer of **XTO Energy (XTO.N: Quote, Profile, Research, Stock Buzz)**, said the number of incidents of spills or leakage was "infinitesimally small" given the thousands of wells in which hydrofracturing had been used.

BRADFORD TOWNSHIP PA-INJECTION WELLS-WASTEWATER DISPOSAL

From: albeehill@aol.com Sent: 4, 18, 2009 Subject: A Few Notes on Meeting re: Injection Disposal Wells in Bradford Co. ,PA 4/14/09 Speakers: Tom Murphy --Penn State Coop Ext Tom Rice-Consulting Geologist Karen Johnson-EPA (out of Phila.) Dan Dalet (sp?)—DEP This is some of what they said..... Bradford County is in the midst of the gas boom. Downturn in the economy is slowing it only somewhat...There are 71,000 oil and gas wells in PA. 4,200 new wells. 476 are Marcellus. They expect the pace to increase. PA expects applications for 7,000 permits in 2009 and 12,000 in 2010. There are 8 deep injection disposal wells in PA now. (no horizontals yet) There are 6 in NY. Deep injection disposal is the PREFERRED method of disposal, because effective treatment is TOO EXPENSIVE. They expect one disposal well for every 100 gas wells! These disposal wells are treated like a leasing issue. Landowners should be realistic about all the activity. 100 trucks per day. 24/7/365 Average payment for having one of these on your property is \$10,000 per acre. In Texas it's 10X that. The area effected by the underground pressure from one of these is between 1/2 to 1 1/2 mile radius. The EPA "regulates" UI wells. **Safe Drinking Water Act** applies here. They rely on industry to pick a good location. 3-D seismic is not required. A big danger are any unplugged or poorly plugged existing gas wells. It's up to industry to take care of these. The Geologist highly recommended that these disposal wells are placed only UNDER the Marcellus formation, not above. EPA requires data from industry on casing cementing, pressures and mechanical integrity. EPA inspects every 5 years. When asked if EPA has enough staff.....she could barely reply. There must be public notification before one of these is started (after an initial test proves it 'suitable') Public objection has to be technically based. Due to the 2005 Exemptions of the oil and gas industry for all the air and water acts.....**hydrofracking is not considered deep well injection**. When asked if there had been any comprehensive study on deep injection disposal wells throughout the county—the answer was: they have lots of data (industry provided) but no studies. There you have it.....our future unless we stop it.

*injects
wells*

Anyone else have something to add?

WASTEWATER DISPOSAL PA

Surge in gas drilling amplifies debate over water treatment rules in Pennsylvania Joe Napsha TRIBUNE-REVIEW Sunday, 9_6_09 Demand for treating wastewater from oil and gas production in the state is expected to reach about **nine million** gallons a day this year, according to a state Department of Environmental Protection report. It is projected to increase to **16 million** gallons next year and **19 million** gallons a day in 2011, when new standards limiting such pollution would take effect. By comparison, the current level is only about 5 percent of the 200 million gallons of residential and industrial wastewater generated daily in **Pittsburgh** and 82 other communities in **Allegheny County** and treated by **Alcosan**, which does not accept the oil and gas well wastewater. Eleven of 13 other treatment plants in Western Pennsylvania are under state orders to limit the amount of drilling wastewater they treat, most at levels no more than 1 percent of daily flow..... The levels of dissolved solids in water flowing back from a well can range from 2,000 milligrams per liter to 200,000 milligrams per liter, depending upon the rock formation that is broken in the fracturing process, said **Jeanne M. VanBriesen**, director of the **Center for Water Quality in Urban Environmental Systems at Carnegie Mellon University**. That far exceeds the 500 milligram per liter standard for drinking water under the federal Safe Drinking Water Act, she said..... The amount of gas and oil well wastewater is so great because each drilling operation can use between 80,000 gallons for shallow wells – about 4,000 feet – and from one million to seven million gallons of water for Marcellus Shale wells that might run 6,000 feet underground. The chemical additives in the hydraulic fracking fluid typically account for less than 0.5 of a percentage point of total volume, depending on the geologic conditions, the industry contends. Yet, even with that small percentage of chemical additives, the additives in three million gallons of fracking fluid used at one well would result in about 15,000 gallons of the chemicals in the wastewater, according to a U.S. Geological Survey report issued in May....., "the jury's still out" on the toxicity of the flowback water, said **Bryan Swistock**, a water resources extension associate for the **Penn State Institute of Energy and the Environment**. Testing has determined there are measurable amounts of toxic chemicals, such as benzene and hydrochloric acid, Swistock said. "There can be no full assessment of human and ecological risk without more sampling data on brine waters. Theoretically, there should be differing concentrations of arsenic, manganese, copper and cobalt, depending on the formation," said **Conrad Daniel Volz**, the director of the **Center for Healthy Environments and Communities at the University of Pittsburgh's Graduate School of Public Health**. Joe Napsha can be reached at jnapsha@tribweb.com 724-836-5252.

WASTEWATER TREATMENT IN EATON TOWNSHIP PA

October 14, 2009 Mauri Rapp Abington Journal Correspondent On Oct. 6, the, **Department of Environmental Protection** conducted a public meeting and hearing as part of the application process for **North Branch Processing LLC**, a local corporation looking to construct a wastewater treatment plant along the **Susquehanna River in Eaton Township** ... Many attendees remained unconvinced that the plant could adequately treat wastewater, including Dr. Richard Fitzsimmons, a Falls resident and former Wyoming County Commissioner who currently serves on the county's planning commission. "We have an awful lot of people who use the water here on a regular basis, and that use has grown exponentially," **Dr. Fitzsimmons**, said during the meeting, adding that there are kayaks on the river on a regular basis. During the public hearing portion, Dr. Fitzsimmons asked the DEP to consider not only halting the application permit for the treatment plant but also natural gas drilling in the area, likening the potential environmental damage to that incurred by the area during its anthracite mining days. **Dr. Jere Reisinger**, a liaison between the U.S. government and the **Iroquois and Shoshone Native American nations**, was concerned about sacred burial sites being disrupted by the construction of the treatment plant. Dr. Reisinger said he was already concerned about the impact of natural gas drilling on the water table and the artesian wells on his property. "This is just the beginning of the invasion into our water supply," he said. **Peter Petokas**, an aquatic stream ecologist for **Lycoming College's Clean Water Institute**, said that any wastewater discharge into the Susquehanna River would worsen the river's water quality. Resident **Scott Davis** said that he was not necessarily against the treatment plant but realized that the owners would need to perform operations in a manner that would make them a profit. However, Davis also pointed out that neither the meeting nor hearing was attended by natural gas drilling companies or landowners who had already signed leases. "There's something wrong with this when the folks that are making so much are dumping this on the rest of this," he said. **DEP spokesman Mark Carmon** said that the public comment period will be open until the close of business on Oct. 16. An outline of the DEP's permit process is available on their Web site at www.depweb.state.pa.us. Carmon said that another public hearing will be held on Oct. 20 for an application submitted by **Wyoming Somerset**

Regional Water Resources Corp., which hopes to construct a similar wastewater treatment plant in Lemon Township along Meshoppen Creek. **TIMES LEADER ABINGTON JOURNAL**

WATER CONTAMINATION IN DUNKARD CREEK WEST VIRGINIA/PA

River Reporter October 1-7, 2009 What killed the fish? Pollution, algae, coal mines, gas drilling fingered in **Western Pennsylvania fishkill** By FRITZ MAYER PENNSYLVANIA & WEST VIRGINIA — There is no question that many fish have been killed in **Dunkard Creek** since September 1. But there is still a question of exactly what is responsible for the environmental carnage..... A bloom of toxic alien algae is being blamed for killing many of the fish. One official at WVDEP said the algae were able to thrive because of high levels of substances such as chlorides and other dissolved solids. So what caused those high levels of pollutants? According to a news release from WVDEP, two coal mines, if involved in the activity at all, are not entirely to blame. The agency wrote in a release on September 26, "Because of heavy mining activity in the area, the industry was an early suspect. In fact, after conferring with the WVDEP, **Consol Energy**, the company which operates an active mine in **Blacksville, WV**, agreed to shut off its discharge into **Dunkard Creek** at its **Blacksville No. 2** site. However, at the same time Consol was shutting off its pumps, dead fish were found upstream from its outlet, indicating that the outlet at that site is not the sole cause for the dead fish." Furthermore, gas-related activities were thought to be involved because "the agencies have received reports from area residents suspecting tanker trucks of dumping wastewater from oil and gas drilling activities into **Dunkard Creek**. Various agencies continue to investigate those reports." According to one official, some of the trucks were found to be withdrawing water from the creek rather than dumping wastewater. However, on September 18, staff members from **WVDEP** flew over the area in a helicopter to see if there was anything they could see from the air that they missed on the ground. The staff noted the stream was clouded with a rust color from the Pennsylvania border upstream to a beaver dam in the **South Fork of the West Virginia Fork of Dunkard**. As a result, additional staff was brought in to take samples along a 25-mile stretch of the river. Still another cause of the pollution, according to news reports, could be leakage from a borehole that is being used as a conduit to inject wastewater from gas drilling operations into an old mine. According to an article in the **Pittsburg Post-Gazette**, the only injection well in the area with a permit is operated by The story says, "Because of violations at that injection facility from September 2007 to March 2009, **CNX was fined \$157,500** for violating provisions of the federal **Safe Drinking Water Act**, including accepting at least 100 truckloads of wastewater with total dissolved solids levels 'significantly higher' than its federal permit allowed."

WATER AND SOIL CONTAMINATION FROM BRINE WATER

Chloride- West Virginia has existing water quality standards for **MANAGEMENT chloride** (using those from a 1988 US EPA study)¹ and its General Water Pollution Control Permit² (hereafter called General Permit) for oil and gas waste disposal by landspraying has chloride concentration requirements. Chlorides have a number of biological and non-biological effects. **Chloride is persistent (chlorides take the form of sodium chloride, calcium chloride, magnesium chloride or potassium chloride) and doesn't degrade.**³ Chloride ions pass readily through soil and will eventually enter surface water. Because chloride moves through soil at the same rate as water it shares the same hydrologic cycle as water. This means chloride deposited on soil's surface can also enter ground water.⁴ Chloride mobilizes heavy metals such as cadmium and can act as a transport helping to deliver these metals to surface or ground water. This is one of the two major non-biological effects of chloride (though these metals can have a profound biological effect). Another effect of chloride is how it alters the density of water. This means that for lakes and ponds, when enough chloride is present, intermixing of water layers won't occur. Chloride concentrations can become quite high at the bottom layer and wetlands are most vulnerable. When delivered to soil as sodium chloride serious negative effects to soil structure occur. These effects are persistent since the sodium ion will remain in the soil when the chloride ion leaves with water. Sodium chloride is inhibiting to soil bacteria at about 50 mg/l. High concentrations of chloride will damage or kill leaves or buds when delivered as a spray. Concentrations first will affect sensitive vegetation and trees (such as beech). High enough concentrations will sterilize soil and prohibit any growth. Adverse effects have been noted when sodium chloride is applied to roots at 280 mg/l or greater concentration. Vegetation will start to show the effects of sodium chloride spray at 1,000 mg/l. Pine mortality has a threshold of 13,000 ppm chloride. Our discussion below will focus on the state's program of landspraying liquid oil and gas well pit waste which can have very high chloride concentrations. While the intent is, by landspraying only on vegetation, to deal with chloride through plant uptake, it's hard to see how the program can be effective if the vegetation is killed. **Sodium chloride is a registered herbicide.**⁵ **members.citynet.net/sootyapaws**

DUNKARD CREEK

Toxins tied to fish kill may have hitchhiked *Investigators weigh whether mining equipment is culprit*
Sunday, October 4, 2009 By Don Hopey, Pittsburgh Post-Gazette Bob Donaldson/Post-Gazette

Dead fish rot on a rock where the water of Dunkard Creek left them near the village of Brave in Greene County. An invasive toxic algae, blamed for contributing to the massive Dunkard Creek fish kill along the Pennsylvania-West Virginia border, may have hitchhiked to the region aboard equipment used in Marcellus shale drilling. That kind of transregional travel could put fish and aquatic life in the states' other creeks and watersheds at risk in coming years as thousands of new wells are drilled into the thick and gaseous layer of shale that lies a mile deep under much of Pennsylvania and the northern Appalachians. It has been more than a month since fish started going belly-up on **Dunkard Creek**, and officials with federal and state environmental and fisheries agencies have yet to identify what killed the fish or assign blame. The only official explanation has come from the West Virginia Department of Environmental Protection, which last week blamed alien golden algae for wiping out thousands of fish, mussels and other aquatic life in 35 miles of what had been one of the most biologically diverse creeks in either state. But the West Virginia agency doesn't know how the algae got into the creek. "We might never know how it got there," said spokeswoman Kathy Cosco. "We are trying to determine if it's present already in other water bodies or has spread."

Investigators also are looking at the possibility that someone illegally dumped drilling wastewater into the creek. The algae-as-hitchhiker theory is one being considered by federal investigators. It's part of the big puzzle federal and state agencies are trying to solve as they attempt to identify what many investigators say are "complex and multiple" causes for the ecological destruction. **The investigation continues to focus on extremely high levels of dissolved solids and chloride found in discharges from two Consol Energy mine-water treatment facilities on the creek, and low flow conditions -- possibly exacerbated by tanker trucks that local residents have said they often saw withdrawing water from the creek.** That combination created an aquatic environment conducive to growth of the algae. "We do believe there is golden algae in the creek, but for it to thrive there must be a lot of stuff in the creek that shouldn't be there," said David Sternberg, a U.S. Environmental Protection Agency spokesman. "There are other contributing factors." Golden algae is one of a group of algae known as chrysophytes that are usually found in hotter, sometimes coastal, environments of the Southwest and South. It is the only chrysophyte algae that produces toxins lethal to fish, mussels, salamanders and other aquatic life. "Our biggest concern is how the conditions were created in Dunkard Creek that allowed that algae to thrive," Mr. Sternberg said. "If we see a saltwater algae in a freshwater creek, we know there must be something very wrong." **The EPA also is "very concerned" that golden algae could spread throughout the northern Appalachian region where it might devastate other fisheries,** Mr. Sternberg said. **Dr. John Rodgers, a professor at Clemson University who has researched invasive freshwater algae, made the initial identification of the algae in Dunkard Creek for Consol. He said its spores could be transported by animals, in boats, on people's shoes, in blown dust or in industrial equipment."**[Drilling equipment] is certainly something you will want to look at. This is not an organism you want to trifle with," he said, adding that it has been blamed for wiping out bass populations in Texas. "Certainly you want to think through the pathways it took to that stream and start working on it as fast as you can." **Last week, a long-awaited 18-month state environmental review of Marcellus shale drilling issues in New York said that floating and submerged aquatic plants could be transported by a variety of equipment used in the deep shale drilling and hydraulic fracturing processes to crack the shale layer and release the gas it contains.**"Invasive species may potentially be transferred to a new area or watershed if unused water containing such species is later discharged at another location," the report said. "Other potential mechanisms for the possible transfer of invasive aquatic species may include trucks, hoses, pipelines and other equipment used for water withdrawal and transport." **Texas origins? The algae, *prymnesium parvum*, has been known to kill fish in Texas, Arizona and New Mexico since it first showed up in 1985 in the Pecos River in Texas. It also has been found in the Brazos River in Texas where gas well drilling companies are advised not to draw from the river during the algae's winter blooming season. But the algae had not been found around the Mason-Dixon Line before. It is not known if Texas drilling equipment was moved to Pennsylvania; no states track the movement of drill rigs and tanker trucks. Leroy Young, fisheries bureau director for the Pennsylvania Fish and Boat Commission, declined to provide details about the commission's ongoing criminal investigation of the Dunkard Creek fish kill. But he said the golden algae is a concern."**... Any kind of invasive is a concern," Mr. Young said. "This is a new thing and we'll be looking hard at it." Matt Pitzarella, a spokesman for Texas-based Range Resources, one of the biggest drilling companies operating in the Marcellus shale, said Range hasn't moved any drilling rigs from Texas to Pennsylvania. Its water-transport equipment is based in Pennsylvania, and it has no wells in Greene County or West Virginia.

DUNKARD CREEK 9/21/2009 Pittsburgh Post-Gazette of 9/20/09. 'Just 20 days ago, Dunkard Creek, which meanders lazily back and forth across the border of Pennsylvania and West Virginia, was one of the most ecologically diverse streams in both states, containing freshwater mussels, mudpuppy salamanders and a host of fish species from minnows to 3-foot-long muskies...But today, the 38-mile creek is all but dead, its 161 species of fish, mussels, salamanders, crayfish and aquatic insects killed by mysterious pollutants coming from sources state and federal agencies have yet to pinpoint despite aggressive field work...'We've just been decimated down here. Everything is being killed almost from the headwaters of the creek to where it flows into the Monongahela River,' said Betty Wiley, president of the Dunkard Creek Watershed Association. 'It's such a tragedy for the creek. An ecosystem has been destroyed.'...Environmental agencies are treating the creek as a crime scene. Longtime environmental and fisheries officials say the fish kill, which preliminary counts have put at more than 10,000, is one of the worst they've seen...The Pennsylvania Department of Environmental Protection on Friday said more than 30 miles of the stream have been damaged by the discharge. It has killed 18 species of fish and at least 16 species of freshwater mussels, including the salamander mussel and the snuffbox mussel -- both candidates for federal listings as endangered species...An early and continuing focus of the investigation has been discharges from a mine water treatment facility located at Consol Energy's Blacksville No. 2 mine in West Virginia...But state and federal investigators are confounded because chemical analysis shows the creek water at the treatment facility site contains extremely high total dissolved solids, or TDS, and chlorides -- properties found in wastewater from Marcellus Shale gas well drilling operations but not mine water. Total dissolved solids may include metals, salts and other elements... Disposal of wastewater from the wells has caused problems throughout Pennsylvania, including TDS readings that exceeded federal safe drinking water standards in the Monongahela River last winter and this year... The state agencies now are looking at the possibility that someone has illegally dumped drilling wastewater into the creek to avoid the expense of complying with laws governing its disposal. The water must be treated in Pennsylvania or injected deep underground in West Virginia...The West Virginia DEP on Friday sent a helicopter to fly over the creek to look for unauthorized discharges and places where tanker trucks could pull up and dump drilling wastewater...'The elevated levels of TDS and chlorides in the creek indicates oil and gas drilling wastewater,' Ms. Cosco said. 'We are following up on every lead that people give us. If they saw a truck pull up to the creek and put a hose in, we want to know about it. We want the name on the truck, a license plate number, anything we can use to identify it.' Comment- Is this what we want in Wayne County? James Barth

DUNKARD CREEK 9/21/2009 Washington Observer-Reporter (PA) 9/21/2009 Dunkard fish kill reaction too slow *This article has been read 468 times.* When we first wrote about the discovery of the fish kill in Dunkard Creek about two weeks ago, we assumed it would be a matter of days before the source of this aquatic disaster would be discovered. Well, 18 days after the kill was first reported, on Sept. 1 near Pentress, W.Va., it seems state and federal agencies are still not sure what happened, Environmental Protection has a "hypothesis." Kathy Cosco, a spokeswoman for that agency, said last week, "We are acknowledging the hypothesis that at least part of the problem came from the outlet of the Blacksville No. 2 Mine." She went on to say, "It's still a hypothesis. But it's the only reasonable hypothesis we have right now." ...It seems to us there is tragedy here on two levels - one, the number of fish that have died, and second, the inability of these agencies to identify the source of the pollutants and what specific toxins caused this massive fish kill. **Moreover, neither the West Virginia DEP, the Pennsylvania DEP nor the federal Environmental Protection Agency seem willing to accept responsibility as the lead investigating agency in this matter.** One of the possible pollutants the agencies are now considering is total dissolved solids. High levels of total dissolved solids have been found in the water, particularly in the West Virginia portion of the stream. The solids included high levels of chlorides, which is an indicator of mine discharge. Numerous water samples have been taken and while certain pollutants have been discovered, it apparently is difficult to determine if those particular poisons caused the fish to die. It seems that some type of necro analysis of the fish should identify what killed them, and

once that is known, finding the source should be relatively simple. But we are not scientists and therefore, like many others saddened by this environmental mess, can only express frustration over what seems like a long time for these agencies to reach a conclusion. If there were laws violated in this matter, we hope that the proper authorities will hold accountable those responsible. The writer of a letter to the editor published here today who has fished in the creek since his youth, wrote that it will take many years for the creek to recover. And that's perhaps the tragedy of it all. - **3 comments a layman view**: 9/21/2009 figure it must be cheaper to dump into WV streams than process wastes in PA just an obvious thought

Uh-huh : 9/21/2009 Not to mention the pollutants in the soil now and possibly leaching into other bodies, tributaries or water systems. Truly and literally sickening.

Let's be honest : 9/21/2009 I'm impressed by the OR's attention to the fish kill in Dunkard Creek -- both by the excellent articles by **Bob Niedbala** and today's editorial. However, let's be honest here: the pollutants that have been identified in **Dunkard Creek** do not originate from coal mining -- they originate from gas drilling. TDS and chlorides identified from Dunkard Creek are characteristic of waste "fracking fluids" used by drilling operations. The only thing that remains unresolved is whether this material originated from the legal dumping facility that CNX operates at the former mine **Blacksville No. 1 shaft** or if they originate from illegal dumping. In either case, the problem is the fault of the natural gas industry and they should step forward to take responsibility for this. Furthermore, DEP obviously needs to step-up their monitoring of waste disposal operations and they need to conduct an extensive survey of the extent of these toxins in the aquifers that we rely upon for drinking water. If drilling cannot be carried out without some reasonable level of environmental safety, then it should stop.

Andrew Liebhold

DUNKARD CREEK 9/20/2009 Dominion Post (WV) Dead Fish Found Upstream: Mine May Not Be Responsible for Fouling Dunkard 9_20_09 (Source: The Dominion Post (**Morgantown , W.Va.**))By Tracy Eddy, The Dominion Post, Morgantown , W.Va. Sep. 20--More dead fish have been found in Dunkard Creek -- only this time about 1.5 miles upstream from the Blacksville No. 2 coal mine. The discovery has officials doubting that the mine is solely responsible for the kill. West Virginia DEP spokeswoman Kathy Cosco said the mining operation could still be contributing to the pollution that may be killing fish in more than 20 miles of the creek. However, the dead fish that were found upstream "makes us think there's something more to it than that," she said. Hundreds of dead fish and other wildlife have been reported by residents living along **Dunkard Creek** -- in **West Virginia and Pennsylvania** -- since Sept. 3. DEP officials are still investigating, Cosco said. On Friday, investigators flew over the area in a helicopter to see if they could notice something they'd missed on the ground. "We've not come to any conclusion yet," she said. "It's a unique situation. There are so many different factors that play into this." Earlier this week, **Cosco said West Virginia DEP** officials had a "hypothesis" that the pollution is coming from an outlet at the **Blacksville No. 2 mine**. CONSOL is also investigating. The Blacksville mine is in western Monongalia County near the Pennsylvania border. Longwall production at the mine resumed in late August after being idle for about two months because of a decrease in demand. Several agencies, including the Pennsylvania and West Virginia DEPs and the West Virginia DNR have been testing creek water -- and fish blood, tissue and organ samples -- to determine the cause of the kill. Some residents have reported seeing large orange tanker trucks parked in **Brave, Pa.** , with hoses running into the creek. But **Pennsylvania DEP Spokeswoman Katy Gresh** said the trucks were withdrawing water, not dumping into the creek. "It was not any illegal activity," she said. Inspectors did ask the company to stop withdrawing water from the creek until the fish kill is resolved, Gresh said, because of residents' concerns about the "suspicious" activity.

DUNKARD CREEK DEP expands probe of fish kill 10/10/2009 Bob Niedbala, Staff writer Observer-Reporter MORGANTOWN, W.Va. - Concerned it could spread to other streams, environmental officials are working to gain additional information on the golden algae believed to have caused the fish kill in Dunkard Creek. One stream that officials in Pennsylvania are particularly keeping an eye on is Whiteley Creek, said **Ron Schwartz**, acting regional director for the state **Department of Environmental Protection's** southwest region. Speaking Friday at a water quality forum sponsored

by the **Upper Monongahela River Association**, Schwartz said DEP began taking water samples from Whiteley Creek to test for the algae after conditions similar to those in Dunkard Creek were found there. Tests conducted in **Whiteley Creek** measuring conductivity, an indicator of total dissolved solids, found levels in the range of those in Dunkard Creek, about 7,000 microsiemens per centimeter, Schwartz said. High levels of TDS are believed to contribute to the growth of golden algae.....As final answers are still being sought, there have been a few common threads of speculation. Low water levels, high chloride and the theory that links drilling related equipment to spreading algae or contaminants from sewage. What can be tied to all the above? Tanker trucks! Residual Waste tankers to be exact, the same ones that pump out septic tanks, and are also used to withdraw water from local streams for use in fracturing gas wells. These same tankers are used to haul wastewater away from drilling sites. Scores of 4,200 gallon tanker trucks can be seen everyday on Interstate 79 hauling wastewater for long distances. It is entirely possible they are the link everyone is looking for, even without considering that some of them may be doing some illegal "midnight dumping" of wastewater into streams on back roads. There need to be better records kept on these **Residual Waste** haulers and the liquids they haul "from cradle to grave" – for fresh water that would be exactly how many gallons and where it came from. For the drilling wastewater, how many gallons and where it gets disposed of. And it shouldn't be the drilling companies entrusted with the record-keeping, it should be an open system that provides public access and monitoring by authorities. It also wouldn't hurt for the **State Police** to begin safety inspections on these trucks as they travel our interstates with 72,000 lbs GVWs. Some of the trucks come into **Pennsylvania** from **West Virginia** and other states, and may not be up to snuff.

PG video: Dunkard Creek turned into environmental disaster scene

DIMOCK PA

River Reporter October 1-7, 2009 DEP ORDERS CABOT TO CEASE ALL GAS WELL FRACKING IN SUSQUEHANNA COUNTY The Department of Environmental Protection has ordered **Cabot Oil and Gas Corporation** to cease all natural gas well hydrofracking operations in **Susquehanna County** until the company completes a number of important engineering and safety tasks. The department took the action because of its concern about **Cabot's** current fracking process. Cabot voluntarily shut down fracking operations at the **Heitsman well in Dimock Township** following three separate spills there in less than one week. The company is currently drilling seven new wells in the county that will require fracking. The order requires Cabot to develop within 14 days an updated and accurate Pollution Prevention and Contingency Plan and Control and Disposal Plan for all permitted well pad sites in the county. The company must conduct an engineering study of all equipment and work practices associated with hydraulic fracturing at all well sites in the county within 21 days. The engineering study must include a detailed evaluation and explanation of the causes of the three spills that occurred and establish corrective measures that Cabot will use to prevent similar releases.

9_17_09 DIMOCK, Pa. -- Between 6,000 and 8,000 gallons of an agent used to stimulate natural gas production leaked from a pipe at a drilling operation and contaminated a nearby wetland and stream in **Susquehanna County**, according to information from the state Department of Environmental Protection. DEP staff were working with contractors hired by **Cabot Oil & Gas** to contain and evaluate the spill, about 25 miles south of **Binghamton**, said **Mark Carmon**, a DEP spokesman. The spill occurred Wednesday at the **Heitsman Well** and flowed into **Stevens Creek** and a nearby wetland. Cabot operates the well and dozens of others in the area. Contractors working at the site during the spill included **Halliburton and Baker Tanks**, **Cabot spokesman Ken Komorowski** said. Neither **Carmon** nor **Komorowski** could identify the chemical composition of the material as of Thursday. It's used as a lubricant to reduce resistance of chemical solutions pumped under high pressure to fracture bedrock and release gas, **Komorowski** said. **Ron and Jean Carter**, live in a trailer home across from **Brown**. The family, for which the road is named, sold much of its land over the years to pay for expenses, but still owns 75 acres. **Ron and Jean**, second-generation landowners, are well beyond the age of retirement, and gas royalties carry the promise of providing some additional comforts and security beyond what they can muster on a fixed income. The first check of \$4,400, for a well-established well on less than half of the remaining **Carter** property, "was nothing to sneeze at," **Ron Carter** said. It helped make it worth the commotion of round-the-clock drilling he had endured for a year within 100 yards of his front window. But monthly royalty payments have declined steadily, and problems have mount. He paid several thousand dollars for a sophisticated filter system when his water turned foul shortly after the drilling began. "We don't drink with it, we don't cook with it, and I don't give it to my doggy," said **Jean Carter**, standing on the porch with a puppy frolicking at her feet. Cabot has refused to truck in a fresh water supply for the home. "They say they don't know where (the problem) came from," **Jean** continued. "We know where it came from. It came from the gas well."

TWILBER@GANNETT.COM Marcellus Shale: A tale of two cities

Water problems have become more commonplace since the drilling began ramping up last year in Dimock's quiet countryside. Methane -- which the DEP has linked to Cabot operations -- has contaminated the aquifer supplying water to residents along Carter Road. Four wells have been taken offline to prevent explosions and at least a dozen are being tested regularly. The company has installed systems in some homes to take out natural gas or other contamination linked to drilling. Meanwhile, the DEP is investigating the impact of an 8,000-gallon spill on the water table, after a drilling agent used to stimulate well production leaked from a pipe last week. Cabot has compensated some residents with water problems around drilling sites but has refused responsibility for others. Norma Fiorentino lives on 3 acres less than a mile from the Carters. She cannot afford a system to clean her water. She has been afraid to drink it since Jan. 1, when an explosion shattered an 8-foot-wide cement slab covering her well. The incident triggered the DEP investigation throughout the area that found methane in the aquifer related to drilling. Fiorentino lives in a bungalow brimming with family pictures and memorabilia. Her husband Joe died two years ago while he was on his way to help their sons with quarry work. "All we want is a decent place to live and decent water," said Fiorentino, whose royalty payments have averaged less than \$300 a month. "Why do some people get water and compensation, and others don't?" **TWILBER@GANNETT.COM** Marcellus Shale: A tale of two cities

MT PLEASANT TOWNSHIP- HICKORY PA

Gas boom a bust for Mt. Pleasant man 10/4/2009 Observer-Reporter By Christie Campbell, Staff Writer
HICKORY - All Ron Gulla wanted was some free gas for his home. Instead, his life is far different than it was four years ago, when gas wells were drilled on his property. "They have changed the world I once knew. Nothing is the same, nothing," he said from his farm in Mt. Pleasant Township where Range Resources has drilled four natural gas wells. Gulla has yet to receive the free gas he claims was promised to him when he signed a lease with the drilling company. He has been told his gas is too wet to adequately burn in a home furnace. He refers to company representatives as "liars." "Once you sign a lease, you've signed your land over to them. You've signed the rights of your land over to them, and they can do whatever the hell they want to do," he said. Gulla is in litigation with Range. A company spokesman said the lawsuit involves the sale of his property, not damage to it. Gulla claims things started to go wrong as soon as the company began site preparation in July 2005. Access roads he said he was never told would be built suddenly appeared. Drilling has led to erosion that has ruined his chances of farming. He contends chemicals from hydrofracturing have damaged a large pond, and pointed out where vegetation that used to grow in abundance died this year. The water also has taken on a greenish hue. **Matt Pitzarella, a Range Resource spokesman**, said Gulla's pond has been tested by the state Department of Environmental Protection and no contaminants have been found. Further, **Pitzarella** said, the company had a sales agreement with Gulla to purchase his property for \$1.5 million, but Gulla backed out of the deal and now is trying to divert attention from that. Gulla said Range ruined the agreement when it offered him another farm but failed to add that it was slated for drilling. Gulla said he wants people to know oil and gas drillers are exempt from certain federal legislation designed to safeguard clean air and water. In January, environmental groups filed a lawsuit against the U.S. Environmental Protection Agency for failing to keep pace with gas and oil drilling by not updating clean air regulations under the Clean Air Act. Other groups are urging passage of the **Fracturing Responsibility and Awareness of Chemicals, or FRAC, Act** to close loopholes in the **Safe Drinking Water Act**. Last year, Gulla received a letter from the EPA stating that Range was fined \$24,600, in part for failing to maintain adequate erosion controls on Gulla's land. "It's not a perfect process," explained **Pitzarella**, but he insisted the company makes every effort to remediate a person's property. Gulla's willingness to talk about his experiences has landed him in front of audiences in other areas where the Marcellus Shale will be drilled, such as **Binghamton and Endicott, N.Y., and in Pike County**. **Clean Water Action** recently filmed on his property for an upcoming documentary. "People need to know the truth. I will not stop talking. They will not buy me out," he said.

PA CONTAMINATION FROM GAS DRILLING CLEARVILLE PA

PA A large compressor sitting on top of a 12-billion cubic feet underground natural gas storage field in Clearville, PA, went into emergency shutdown on a quiet Sunday afternoon with a noise that "sounded like a jet aircraft coming in for a crash landing," according to **Clearville property owner Dick Eckman**. An alarm sounded for approximately 20-30 minutes, according to **Julie Kuhne**, whose Clearville property, among others, was showered with a contaminant

described as "oily mist" while her four children were in the yard. Company officials say a natural gas leak caused the shutdown. According to **Clearville property owner George Kuhne**, however, "It has been obvious to us that the overall strategy for the incident on Spectra's part is to downplay and deny." Three days passed before **Houston-based Spectra Energy** communicated with residents telling them not to eat vegetables from their gardens. The emergency shutdown and shower of contaminant on nearby properties occurred on Sunday afternoon (August 23). Property owners did not hear anything from Spectra Energy representatives until Wednesday evening (August 26). Some residents were not contacted until the following day (August 27).8_9_09 2009 Spectra Energy Watch Blog

ENVIRONMENTAL IMPACTS- OREGON TOWNSHIP PA

ENVIRONMENTAL COMPLAINT FILED ON OREGON TOWNSHIP DRILL SITE Damascus Citizens for Sustainability has filed a complaint with the State Department of Environmental Protection

By Steve McConnell Wayne Independent Wed Oct 21, 2009, A local environmental watchdog has filed a complaint with the state Department of Environmental Protection urging the government agency to conduct an investigation into the "potential" release of pollutants from a natural gas drill site in Oregon Township. Filed by a lawyer representing Damascus Citizens for Sustainability, the nine-page complaint is based on aerial and ground photographs taken in July, August and September providing circumstantial evidence "that fluid materials containing substances that may be toxic ... may have been released from this site killing several trees" in the nearby vicinity.

Robson drill site contaminated? OREGON TOWNSHIP — Aerial photos of the Robson drill site on Fox Hill Road, which were taken on August 20, and were submitted to The River Reporter, show a section of trees and vegetation at the at the south end of the drill site appear to be damaged and dying. The activist who took the photos said that it was evident that the storage pit that was to contain the drilling fluid did not function properly, and that run-off occurred which was killing the trees. There are strict regulations as to the method the gas companies must use to collect any effluent and cart it off to be treated. **Chesapeake Appalachia, LLC**, the company that owned the well, did not respond to several phone calls seeking comment. The Pennsylvania Department of Environmental Conservation (DEP) would not comment on the matter. "It would be improper for us to comment on the photos without a thorough investigation into the matter," said **Mark Carmon of DEP**. Carmon said his agency will look into the allegations. **River Reporter 9_10_09**

WATER WITHDRAWALS DuBois PA

Courier-Express (DuBois, PA) State bans residents from using water, yet well-drillers take millions of gallons 10/09/2009 PENFIELD - Resident **Glenn Lucore** asked the **Huston Township Supervisors** Monday about a certified letter he received from **Western Land Service of Canonsburg**. "We (residents of **Mt. Pleasant Road**) received certified letters from **Western Land Services** and in this it states they would use up to 171,000 gallons per day from **Bennetts Branch 1** of **Sinnemahoning Creek** and 152,000 gallons per day from **Bennetts Branch 2**," Lucore said. "I'd like to know who approved this." According to the letter, Western Land Services has filed a notice of intent for consumptive water use on behalf of **EOG Resources** who will be drilling and developing natural gas wells in **Fox Township**. **Chairwoman Nellie Bundy** said to her knowledge, both of the withdrawal sites are in **Jay Township**. "It doesn't specify where they're taking the water from," Lucore said. Lucore said his concern is that in 1999 the **Department of Environmental Protection**, then known as **DER**, "raised all kinds of devil with us" because the township was using too much water from the creek and there was a fear the fish population in **Chesapeake Bay** would be harmed. "I'm not against the drilling, but it just burns me that they forced the people here, more or less forced us, to go to **Jay Township** because we were using too much water," Lucore said. "If you remember, we had to spend a lot of money from the water company to drill wells that were no good. Then, they had to sign us to go down to **Jay Township**. Now, everyone on the hill (**Mt. Pleasant**) gets one of these letters." "It just burnt me when I read it that they could authorize this much water out of this creek when we weren't allowed to use it to drink," Lucore said. On another note, Lucore requested comments from township residents or any other person who comes to the meetings be put in the minutes. Currently, comments are not recorded in the meeting minutes. Supervisor **Tamra McClintick** said that decision is up to the supervisors and such information doesn't have to be included in the minutes.

Items the supervisors vote or make motions on are all that needs to be included in the minutes, according to **McClintick**. "I think you should have a record of what people request or want, so two months down the road if something comes up you can't say they didn't request that, we didn't know anything about it or vice versa," Lucore said. "It goes both ways." Reported by **Katie Weidenboerner**, staff writer. Email: katiew@thecourierexpress.com.

ECONOMIC IMPACT TO TOURISM IN PA - 2 BEST THINGS IN PA ARE THE STATE PARKS AND FORESTS

Video Blog: [Curt Ashenfelter, Keystone Trails Association](#)

"Hiking trails are in danger, in particular due to the leasing of State Forest land for natural gas drilling," said Ashenfelter because they break up the forest land with four acre drilling sites.

Video Blog: [Patricia Tomes, Rails-To-Trails Conservancy](#)

"The Oil Heritage Region in Northwest Pennsylvania realizes an economic impact of more than \$4 million per year from rails-to-trails," said Tomes. "Our recent survey of the Pine Creek Rail Trail in Northcentral Pennsylvania, indicates the valley enjoys an estimated \$5 million in additional revenue from rail users. Current surveys of the Great Allegheny Passage indicate the economic impact for that region could be as much as \$20 million per year."

[Curt Ashenfelter, Keystone Trails Association](#), said there are 3,000 miles of hiking trails in Pennsylvania used by some 3.5 million hikers every year.

[Judith Schwank, 10,000 Friends of Pennsylvania](#), said State Parks and Forests have a significant impact on the quality of life for state residents and make Pennsylvania attractive for businesses seeking to relocate to the state.

Video Blog: [Judith Schwank, 10,000 Friends of PA](#)

Schwank noted programs like the Conservation Landscape Initiative by the Department of Conservation and Natural Resources leverage natural resources in entire regions for economic development and tourism. "Investments in State Parks and Forest pay big dividends," said Schwank.

[Cynthia Carrow, Western PA Conservancy](#), said her group has been instrumental in creating some of the state's largest State Parks with the help of millions of dollars in private donations.

Video Blog: [Cynthia Carrow, Western PA Conservancy](#)

She called the State Park system the crown jewels of the state noting Pennsylvania's 117 State Parks, 2.1 million acres of State Forest land and 35.5 million annual visitors yield more than \$656 million in economic value to the state's economy. *

[Donna Morrelli, Alliance for the Chesapeake Bay](#), said tax money spent on forests and parks is money spent wisely because they help protect water supplies and water quality.

Video Blog: [Donna Morrelli, Alliance for the Chesapeake Bay](#)

She noted the Chesapeake Bay Executive Council has called for the preservation of 83,000 acres of forest land in the Pennsylvania portion of the Bay watershed by 2020, but with the cuts proposed in the state budget, Pennsylvania risks rolling back years of progress for short term economic gain.

[Robert Griffith, PA Recreation and Parks Society](#), said the two very best things in Pennsylvania are the State Parks and Forests and while the state did an excellent job in creating the system, it has not provided adequate operation and maintenance funding.

Video Blog: [Robert Griffith, PA Recreation and Parks Society](#)

Griffith also expressed concern about the potential impact of leasing thousands of acres of State Forest land for natural gas drilling saying the drilling has the potential to pollute local landscapes and water sources. He recommended the state adopt a natural gas severance tax, rather than accelerate leasing to provide revenue to environmental programs.

For more information, visit the [PA Parks and Forests Foundation website](#). Also read the letter from [Lock Haven Mayor Rick Vilello](#).

DRILLING IN PA STATE FORESTS

More Pa. House Dems oppose drilling in forests 9_25_09 MARC LEVY The Associated Press HARRISBURG, Pa. - A top state House Democrat said Friday that more than two

dozen of his colleagues signed a letter to caucus leaders expressing grave concerns over a plan to expand gas drilling in state forests. **Finance Committee Chairman David Levodansky** said he did not want to release a copy of the letter or disclose who signed it. He said the letter was signed by 28 representatives, including himself, and three other House Democrats added their signatures after the original was sent. "Raping our state forest system is not a wise fiscal or environmental choice, and we're sending the message that it needs to be fixed, and it can be," Levodansky said. The week-old deal struck by **Democratic Gov. Ed**

Rendell and leaders of three of the Legislature's four caucuses includes leasing more land in state forests to gas drilling companies to help fill a multibillion-dollar revenue shortfall. The agreement anticipates \$115 million in revenue from leasing land over two years.

(AP) —Environmental groups worry about Pa. budget impact **MARC LEVY 9_14_09**
HARRISBURG, Pa. -The integrity of our publicly owned state forests should not be sacrificed to fill a budget gap," more than 20 conservation groups, including PennEnvironment and the Sierra Club, wrote in a letter to legislators. PennLive.com

SHORT TERM ECONOMIC GAIN FROM GAS DRILLING

Short-term gains from gas drilling hurt state in long run **Heather Long 9_17_09** **John Quigley, acting secretary of DCNR**, says drilling on that scale "would forever alter the character of our state forests." Some 660,000 acres of state forest land already are open to oil and gas drilling, and any further expansion of fossil fuel extraction within Pennsylvania's public land must be based on study and a full understanding of the environmental, fiscal and community impacts, not as a hurried budget-plugging measure. The impacts likely will be substantial, as our colleagues in conservation and environmental organizations have argued. The Web site **Drilling Has Consequences (www.landandwater.org)**, maintained by **Pennsylvania Land Trust Association** on behalf of 90 supporting organizations, lists the potential impacts as: "pipelines, drilling pads and wastewater pits scarring our landscapes, air pollution from every stage of production, heavy rigs damaging our roads, billions of gallons of water taken from our streams, and operational errors contaminating our land and water." As an organization that promotes land-use policies to help the state build a competitive economy, 10,000 Friends of Pennsylvania supports well-planned strategic use of irreplaceable resources, both environmental and fiscal. We also understand and respect Pennsylvania's long tradition of managing state forests for multiple use. The issue here is not whether we should use our valuable state land for economic purposes, but how we should do so. **Trading public land for unproved, short-term economic gain would continue an unfortunate practice that has degraded Pennsylvania in many well-documented ways.** Wholesale gas drilling on state forests also would undermine the commonwealth's recent investments in economic development. Outdoor recreation is the fastest-growing segment of the tourism market, and increasing numbers of visitors are attracted to Pennsylvania's vast forest lands. In light of this fact, **DCNR** is working with other agencies to implement a series of conservation landscape initiatives designed to leverage the tourism value of our public land. In one part of the state, the 12-county Pennsylvania Wilds region of north central Pennsylvania, **DCNR** has spent more than \$140 million over six years to construct elk-watching facilities, build trails, upgrade state parks and enhance the experience of visitors to the region. **Edward Wilson** is vice president of 10,000 Friends of Pennsylvania, the state's leading voice for great places to live and work. PennLive.com

ECONOMIC IMPACT IN PA-SUSQUEHANNA COUNTY

They keep hammering away at this. I don't see it. Yes we have some job ads around here now for rig floor tenders, \$14 bucks an hour (a fortune here!) for a dangerous, dirty job. I suppose truck drivers will be busy as soon as they figure out where to get or put the water required for this. A lot of the current workers were brought in with the companies from Texas and places south. The drilling related jobs evaporate when the drilling stops. I visited the local satellite office of the **Luzerne County Community College in New Milford, PA** and spoke to their rep. He informed me of the job projections as provided to the college by the gas companies. LCCC has a program specifically designed for well tenders. It prepares people for this job and offers an internship with some of the gas companies. The industry informed the college that in the next year they expect to drill 300-500 wells in **Susquehanna County**, 1000 wells in the next three years, and 1500 wells in the next five years. One well tender is responsible for 10-15 wells, for a whopping 150 jobs for an expected term of 20 years (well production estimate, also from the industry) Hardly a boom in employment for a county that has 46,000 people. Other business related growth? We have a local lawyer who does title and deed searches as well as writes leases for landowners. Nice tidy little sum there. Rent for rooms, houses and apartments have skyrocketed. In **Montrose** furnished rooms with a bath or small efficiency apartments are now going for \$400 to \$500 dollars a month or \$100 a week for a room in a former derelict hotel. This is in a county where there are not enough rental units for low-income residents already. Restaurants are not booming from what I can see, they change hands or close down often. My neighbor started a lunch truck business for **Cabot** owned well sites, he is doing great. The workers work long shifts and like to have the food brought to them. Local bars have landmen and rig workers in them. Some big boom...and likely to bust at some future point. **Author unknown**

GAS DRILLING IMPACTS MONTROSE AND DIMOCK

By Steve Israel Times Herald-Record Posted: October 18, 2009 - 2:00 AM Steel yourself, Sullivan County. When the natural gas rush hits the Catskills — and it will — your life and land will profoundly change. This is the inevitable conclusion to be drawn from the drilling boom in neighboring Susquehanna County, Pa., an area that sits on the same gas-rich Marcellus shale formation as Sullivan. If communities like **Dimock and Montrose, Pa.**, are any indication, gas drilling will alter everything from Sullivan's country roads and pristine vistas to its struggling work force and pure water....."They will eventually take over the whole area," says **Bill Douglass**, executive director of the Upper Delaware Council. And even though New York has just proposed new drilling regulations, gas companies would still have to jump through more regulatory hoops to build an office building in a particular town than they would to drill in that town, says **Douglass' Upper Delaware Council** colleague, senior resource specialist **Dave Soete**. "There's no way you can really stop or plan for this," says Soete. "It will change the character of everything."..... Even gas-drilling cheerleaders like Lockhart readily acknowledge that the drilling boom has meant water problems for some, and worries for just about everyone.....Down the road from Brooks, **Victoria Switzer and her husband, Jim**, have seen the dream home they're building turn into the proverbial nightmare as the methane in their well water tripled. It bubbles when they turn on the tap. This is why they now drink bottled water. So even though they leased their land and even though they get royalties that started at \$2,400 and dropped to \$1,000 per month for gas that's been found beneath their land, they've soured on drilling. "We thought this was a great opportunity," says Switzer, a retired teacher. "But we gave up our water and our property values for what?"

BINGHAMTON AND BROOME COUNTY NY-CUMULATIVE IMPACT

<http://gobroomecounty.org/countvexec/broome-county-releases-natural-gas-economic-impact-study> I have just begun reading the report--I haven't finished it yet. However, there is one passage in particular that I wanted to quote right away, just so everyone understands what we're talking about. This is from page 5 of the report: "In order to calculate the potential economic and fiscal impacts of shale development, we first need to estimate the maximum number of wells than can be drilled in **Broome County**. Drilling companies divide fields into 640-acre 'sections.' **Chesapeake Energy**, currently the largest producer in the Marcellus Shale, drills six wells per section. If we divide Broome County into 716 sections (458,000 acres/ 640 acres), and we posit six wells per section, that calculation suggests the Marcellus Shale in Broome County could hypothetically support 4,296 natural gas wells. Since drilling is not likely to occur in downtown Binghamton or the town squares of other communities in Broome County, we will use a maximum well count of 4,000." "It should be kept in mind, however, that with new horizontal drilling methods, production can occur in densely populated or developed areas with minimal economic or environmental disruption." So in order to calculate the maximum number of wells that can be drilled in the county, they assumed **that IN ALMOST EVERY SQUARE MILE OF THE COUNTY THERE WOULD BE 6 GAS WELLS**. The only places left unscathed in this estimate are downtown Binghamton and the town squares of other communities, and, as the footnote cheerfully points out, we could even end up with wells in downtown **Binghamton** and the "town squares." The other possibility considered in the report is that "only" half as many wells would be drilled--i.e. 3 wells in every square mile of the county. I imagine I will have more to say about this report later, but you really don't have to read any further than the assumed well density to be very, very concerned about the future of **Broome County**.

MILLENNIUM PIPELINE NY- ' You know how many times a week they hear that someone is going to sue?

Millennium Pipeline's wake RIVER VALLEY by **FRITZ MAYER**—"If we broke it, we'll fix it." That was the promise Millennium Pipeline's director of external affairs **Mike Armiak** uttered last year, and as recently as the spring of this year, when the company was putting the finishing work on its newly upgraded gas pipeline. But six months on, some people who were on the receiving end of that promise have said the company has not come through.....Perhaps most frustrated are **Bill Zelop and his partner Anna Marie Anderson** who live on 11 acres on Hungry Hill Road in **Hancock, NY**. But worst of all, according to Zelop, their septic system was ruined in August of 2008 because of the pipeline work, and now more than a year later, it's still not working. The company did replace the couple's septic system with a brand-new septic system that was a purported to be state of the art. However, the system is now oozing up raw sewage onto the lawn, and black liquid seeps into the tub if you leave the water running too long..... The couple has filed a lawsuit, but according to Zelop, that has little meaning to Millennium. "They basically said to us, 'go ahead and sue us.' You know how many times a week they hear that someone is going to sue?" he asked. **RIVER REPORTER**
10_8_09

DRILLING IN WEST VIRGINIA

Natural Gas Drilling Threatens Communities in Northeastern United States by Nastassja Noell | 09.28.2009

Natural Gas Drilling is forcing residents in West Virginia to put spikes in the roads to stop drilling trucks from destroying their land, water, and air. In Pennsylvania rural folks are trespassing in order to document toxic natural gas production waste spills.

DRILLING ACCIDENT IN GUERNSEY COUNTY OHIO

1 Killed, 4 Wounded In Gas Well Accident Video: <http://www.wtov9.com/news/20837210/detail.html>

OHIO September 10, 2009 One person was killed and four others injured after a gas leak at a well in **Guernsey County**. Officials said the men were working on a gas rig, preparing to cap the well, when they were overtaken by a poisonous hydrogen-sulfide gas mixture. The accident happened near **Londonderry** at the intersection of **Skull Fork Road and Ginger Road**. A spokesperson for **Antrim Volunteer Fire Department** said one man went down and the others tried to rescue him. Three victims were transported to **Cambridge Hospital** for treatment. One person was transported by medical helicopter to another **Ohio** hospital. Officials said one of the victims is in critical condition. The gas the men encountered is commonly referred to as "poison gas" or "sour gas" and is common in natural gas drilling. The men were wearing the proper meters to check for gas, officials said. "It happens all over. It's something they're trained to deal with but, sometimes it happens so fast that their protective clothing doesn't warn them quick enough and they're unable to deal with it," said **Antrim Volunteer Fire Department Chief Don Warnock**. The men are employed for **Chipco Oil and Gas**

DISH TEXAS- Air Contamination in BARNETT SHALE

Gas drilling in the air Texas town study triggers debate By FRITZ MAYER TEXAS While concern has been raised about the contamination of water supplies in connection with gas drilling, a recent study, commissioned by a town in Texas, shows that the air surrounding gas drilling activities may also be a cause for worry..... Samples were taken at seven locations on August 17 and 18 by a company called **Wolf Eagle Environmental** and the report was released in September. A sentence at the conclusion of the report said, "Air analysis in the **Town of DISH** confirmed the presence in high concentrations of carcinogenic and neurotoxin compounds in ambient air near and/or on residential properties." The chemicals found at high levels were sometimes in such large quantities that they were 10 times the recommended safe level for short-term exposure. **Mayor Calvin Tillman**, who has been waging a campaign against the drilling companies for the past year or so, told the **Fort Worth Star Telegram** that the study shows the need for state regulators to step up to the plate on the matter, and the article said the **Texas Commission on Environmental Quality** plans to test the air there..... Another **Barnett Shale** study, conducted by **Al Armendariz**, a Ph.D at **Southern Methodist University** and released in January, concluded that gas- and oil-related activities throw many pollutants into the air. The study said, "The emission rate of air toxic compounds (like benzene and formaldehyde) from **Barnett Shale** activities was predicted to be approximately six tons per day on an annual average and 17 tons per day during peak summer days." While the study covered gas and oil activities, the processes that cause the most pollution, such as the use of diesel engines, the use of condensate tanks and the use of compression stations, are part of both the gas drilling and oil drilling process.

Air-quality tests raise questions about natural gas wells in the Barnett Shale

Posted Saturday, Oct. 03, 2009 BY CHRIS VAUGHN cvaughn@star-telegram.com **WESTWORTH VILLAGE** — On 20 acres all but hidden between the flows of both **Texas 183 and Farmers Branch Creek**, **Deborah Rogers** runs a farm, complete with dozens of goats, a few chickens, dogs, even peacocks, all of whom live peaceably in the shade of giant oak stands. It has been an idyllic existence for her. Until this year. The change came in the form of two laboratory reports she commissioned this spring and summer showing toxic and irritant pollutants on her property. Carbon disulfide. Dimethyl disulfide. Methyl ethyl disulfide. Methyl propyl disulfide. In a lengthy lab report that also detailed the presence of toxins such as benzene, chloroform and toluene, nine specific disulfides stood out because they far exceeded the state's levels for investigating adverse effects, both for short-term and long-term exposure. "This didn't mean anything to me in the beginning," Rogers said. "I didn't know exactly what I was looking at." Rogers, along with some air-quality experts, now question whether those

disulfide compounds are a byproduct of nearby natural gas drilling operations, such as when gas is released into the air throughthe U.S. Environmental Protection Agency considers carbon disulfide to be associated with natural gas production. And the reports commissioned by Rogers and the city of Dish are generating questions from some residents about the volume and variety of pollutants emitted by the natural gas industry and whether more testing should be done.....Unlike ozone and some industrial pollutants, the low-level presence of disulfides in the air has not been studied well enough to know what effects they might have on human health, experts said.....Dr. Roxana Witter, a physician and clinical instructor in the Colorado School of Public Health in Denver, was a principal investigator on a study published in 2008 that found elevated levels of pollutants in one Western Slope county with thousands of gas wells. But carbon disulfide and related compounds were not part of her study, and like Texas, the state of Colorado does not regularly monitor emissions from gas wells. "Natural gas is such a unique industry in that there are tens of thousands of point sources, hundreds of thousands across the country," Witter said. "They are essentially hundreds of thousands of factories. The industry is completely different in terms of monitoring or regulating it because it is not like a single, stationary factory or refinery. "I don't think public-health researchers or the regulatory agencies have gotten their hands around that problem.".....

WATER AND AIR CONTAMINATION IN DISH & MIDLAND TEXAS

September 25, 2009 DISH Air Study The Town of DISH has spent a great deal of time and money to have an independent air study performed around a large natural gas compression facility in our community. The results of this study is posted at the town's website at www.townofdish.com. This was accomplished after the owner's of the compressor site performed a study, that showed nothing.....Calvin Tillman Mayor, DISH, TX

Erin Brockovich Does Midland, TX. A Community Fracked by Big Oil by TXsharon Fri Jul 10, 2009 Imagine waking up one morning and having no safe water at all. In a recent radio program about Peak Water, Maude Barlow said: *The day will come--mark my words--when every single thing we do will be measured against what it does to water.* For people in Midland, Texas, that day is here. Hexavalent Chromium contamination is spreading in the groundwater used by some Midland, Texas residents and environmental investigators say the mounting evidence points to the oil and gas industry. Affected residents say they have proof that hydraulic fracture giant Schlumberger is responsible.

TEXAS Water not all well By Brandon Evans 9_20_09 When it comes to the taste of Boyd's well water, most residents consider the glass half empty. Although the water is safe to drink, it has been drawing a lot of criticism recently from residents due to its taste and odor. In response, Susan Roth, a water consultant and engineer from Austin, recently conducted a thorough study on the quality of Boyd's water at the behest of the city council. Her study found very high levels of sodium, chloride and total dissolved solids. WCMessenger.com

WATER CONTAMINATION IN COLORADO

Fears of tainted water well up in western Colorado

By Nancy Lofholm Denver Post Staff Writer Posted: 10/11/2009 01:00:00 AM MDT Outfitter Ned Prather, left, with his brother Dick, smells a cup of water from his spring northeast of DeBeque that is contaminated with toxins found in oil and gas production. (William Woody, Special to The Denver Post) LOGAN MOUNTAIN — Ned Prather can't forget that awful drink of water. He was thirsty the afternoon of May 30, 2008, after he and his wife, Dollie, drove up the dusty, steeply kinked road to their cabin an hour northeast of DeBeque. He went to the sink and filled a glass with water. "I tipped it up just like this and just started guzzling — like an idiot. I didn't know it was bad until I drank two-thirds of the cup," said the 61-year-old outfitter as he retraced his actions that day. His throat burned. His head pounded. His stomach hurt. He felt like he was going to suffocate. Tests would show the water from a spring he has drank from for decades was heavily contaminated with a carcinogenic and nervous system-damaging chemical stew known as BTEX — benzene, toluene, ethylbenzene and xylene. BTEX and other volatile organic compounds come to the surface in the production water from oil and gas wells. Prather may be the only victim of oil-and-gas-field contamination to guzzle a glass of toxin-laced water. But last year, there were 206 spills in Colorado connected to or suspected in 48 cases of water contamination. Since 2003, there have been around 300 cases. State records show BTEX has seeped into water wells when the casings designed to keep oil and gas wells from contaminating groundwater have given way..... Prather hasn't talked publicly until now about his nasty drink or his frustration in getting the problem solved. He has always been a supporter of the

energy industry. In fact, he and his three brothers used to work for Occidental Petroleum, a company under notice for allegedly contaminating a spring that runs on the other side of his cabin. But 16 months after his nasty drink, no source has been pinned down for the contamination. The spring water still reeks with an odor somewhere between diesel fuel and permanent-wave solution. And Prather has had enough. "I've always stuck up for oil and gas, but now when we need them to stand up and do what's right, they won't," Prather said. "If I was asked what has made me the maddest in all this, it's the oil and gas commission not doing what they are supposed to do." Three companies operating in the area — Marathon Oil Co., Petroleum Development Corp. and Nonsuch Natural Gas — have been released from notices of alleged violation. Williams Production has been released from a notice on one drill site but is still being investigated on another site above the Prathers' place. The oil and gas commission has spent \$129,000 on the services of four environmental contractors and two chemistry laboratories and a still untallied amount on hundreds of hours of staff time and travel. The commission also ordered the oil and gas companies to provide alternative drinking water for the Prathers' cabin and to put up a fence between the spring and the cabin. The commission had the companies locate a new spring to supply the cabin, but the Prathers are afraid to drink the water from it. The four companies initially suspected in the contamination of Prather's drinking water formed a group to investigate the problem. They installed 44 groundwater monitoring wells and 37 soil gas probes. As he stood out in the middle of the monitoring pipes that bristle up the draw from the Prathers' spring, attorney Richard Djokic, who represents the Prathers, called the commission's actions thus far "enforcement by negotiation" and likened the self-investigation to a bungled crime scene. "Imagine you have a body on the ground here, and we're all standing around holding guns. A cop comes and says, 'Figure out amongst yourselves who did this and let me know.'" Neslin argued with that analogy. He said the commission staff reviews all the companies' studies and raw data. The companies doing the studies aren't admitting blame. Williams Production issued a prepared statement saying, "None of the data we have collected and analyzed indicates the condensate is coming from Williams Production or its facilities." Djokic said legal action on the matter has not been ruled out. There is still the unknown issue of effects on Prather's health. And there is a given: Bad water has decimated his outfitting business. Hunters don't want to stay in a cabin with suspect water or to harvest deer and elk they fear could be drinking contaminated water. Prather said in the past several years he has taken in more than \$100,000 in the outfitting business he built up over 40 years. This year he had to borrow money to return deposits from hunters who changed their minds. And his children and grandchildren no longer want to come to the cabin. "This is the thing," Prather said, "Me and Dollie, we were going to leave this to our grandkids one day." When it comes to his own health, Prather has no idea what to expect. "Not that many people have turned up a glass and drank that much benzene at one time," he said. Prather said after he drank the water, he hopped on a four-wheeler and took a bottle of the stuff to a nearby well where he asked workers, "what did I just drink?" They didn't know, but they sniffed it and took pity on him. They gave him bottled water to ease his burning throat. Prather's wife drove him to St. Mary's Hospital in Grand Junction. Doctors took multiple blood samples and did an EKG to test his heart. He wouldn't know for 18 days, after the oil and gas commission tested the water, what he drank. The sample from the spring contained 100 micrograms per liter of BTEX. Five micrograms is the safety threshold for groundwater. A toxicologist with the oil and gas commission told him to get continued blood tests to check for liver or kidney damage. So far, the tests show no damage. But Prather has suffered unexplained health problems dating back before the drink. His hands and head shake. The tremors have worsened lately.

*
Wild
West
Josh Fox's
Film
No different
in Dimock
or Snyder
NY

WATER AND AIR CONTAMINATION IN COLORADO

Closing the Halliburton Loophole by Will Sands Four Corners resident Shirley McNall is no stranger to oil and gas drilling. While McNall and her husband live inside Aztec city limits, their home is also in close proximity to 9 different natural gas wells. In recent years, she's seen gas leaking from production tanks; bubbling well heads submerged in deep water; and "foul-smelling, dark-colored fluid" running off a well pad, down a gully and puddling 500 feet from subdivision homes. The dirty list goes on to include things like split pit liners, noxious fumes and trucks deliberately dumping hundreds of gallons of hydraulic fracturing fluid into arroyos. "We've got nine wells surrounding our property, and of the nine, only one's not been a problem," McNall said. The situation is especially distressing for McNall because she knows that much more than natural gas is finding its way into the air, the ground, the watershed and the neighborhood. "All these episodes happened right here under our noses and inside Aztec city limits," she said. "Can you imagine what's happening on well pads and drilling operations out in the middle of nowhere?" Members of the U.S. Legislature are currently working to close the "Halliburton Loophole" and shed a little light on drilling practices. New legislation named the FRAC Act — Fracturing Responsibility and Awareness of Chemicals Act — would repeal a Safe Drinking Water Act exemption provided for the oil and gas industry. It would also require oil and gas companies to disclose

the chemicals they use in their hydraulic fracturing processes, where a stew of unknown chemicals is injected underground to break up oil and gas deposits. While Rep. Diana DeGette, D-Colo., introduced the House bill as an attempt to level the playing field, Colborn and Joswick noted that such a law would only be the beginning. "The theme is that we need full disclosure," Colborn said. "The DeGette bill is a beginning. It gets a foot in the door. The problem is that it only goes after one thing – hydraulic fracturing." *The Durango Telegraph* Oct. 1, 2009

CONTAMINATION FROM GAS DRILLING in NM

Episode 4: Range Wars Rage On, Video NEW MEXICO

<http://www.sierraclub.org/scp/chronicles/episode4.aspx>

In the West, The Bureau of Land Management has allowed increased drilling and allowing drilling practices that are killing ranchers' cattle. Now, a coalition of ranchers including Republicans and Bush supporters are fighting back. A traditional New Mexico ranching couple **Tweeti and Linn Blancett**, lead their cattle up a slope, past a natural gas drilling platform and around industrial equipment that occupies the once-pristine public land where their cattle used to graze undisturbed. Now they can't believe what they see: a natural gas clean up crew ripping the lining of a waste pit, allowing toxic, industrial waste water to seep into the land. This is a blatant violation of the environmental rules that govern the use of public lands. **Chris Velasquez**, a fellow rancher shares this same bond to the land and he is just as furious as to what is going on. **Ray Sanchez**, the **BLM's Northern New Mexico** spokesperson, tells us that the fact that the land is publicly owned and managed by the federal government, gives the Department of the Interior the right to lease the subsurface mineral rights to oil and natural gas companies. This creates a tricky situation in which these public lands have "dual lessors" - the ranchers who graze their cattle on the land, and the oil and gas companies that drill for oil and minerals beneath the surface of the land. The Blancetts and Velasquez share something else in common - their cattle are becoming sick and they are dying. After some reconnaissance they found strange spills near the drilling platforms that peppered their grazing lands. They quickly concluded that their cattle must be drinking the chemical waste spilled by the oil and gas companies.

WELL WATER CONTAMINATION in PAVILLION WYOMING

As many of you know **EPA, region 8**, is investigating water well contamination in **Pavillion, Wyoming**. **Louis and Donna Meeks** have been advised to not use their well water in their home because their water well is severely contaminated. Their well water is no longer hooked up to their house. **EnCana** has been furnishing the **Meeks** with water for over 2 years, which is hauled to their home, stored in 2 tanks, which each hold 2400 gallons, and pumped into their house. Although **Louis and Donna** haul their own drinking water, the water from **EnCana** is for household use; washing clothes, dishes, bathing, flushing toilets, and most importantly, the hot water heating system for their home. This morning **Randy Teeuwen, EnCana**, 307-851-8519, called **Louis** to inform him that **EnCana** will be removing the **Meeks'** water system on Monday, Sept 14, at 9:00 AM. The company who contracts the water tanks is **H & B Rentals, Riverton, WY**, 307-856-9761. **Deb Thomas, Organizer Powder River Basin Resource Council**

NOISE CONTAMINATION FROM COMPRESSOR STATIONS IN VIRGINIA

Dryden keeping an ear on gas compression station

By Stacey Shackford sshackford@gannett.com August 19, 2009 DRYDEN — Town officials are urging **Dominion** gas company to be good neighbors by reducing noise at the **Borger** natural gas compression station. Responding to a petition signed by more than 60 **Ellis Hollow** residents, the **Dryden Town Board** has drafted a letter to the **Virginia**-based company and the **Federal Energy Regulatory Commission**, which is reviewing an application for a \$25 million upgrade to the facility. **Dominion** plans to replace one of three aging turbines at the **Ellis Hollow Creek Road** site to increase capacity and reduce potentially harmful emissions. Neighbors were told that all of the turbines would be fitted with noise-silencing technology to suppress some of the ear-splitting sounds made when gas is released under high pressure, and that other operating noises would also be mitigated. But they petitioned the **FERC** for better sound control, testing and enforcement, and the federal agency responded by incorporating some of their requests in its environmental

assessment issued last month. "We believe that minimizing noise would be the neighborly thing to do and that Government intervention should not be necessary," says a letter the town plans to send to the FERC this week. "However, we reserve the right to take action if no satisfactory resolution is reached." They added that they were "troubled" by a written statement made by Dominion which said the station was located outside any municipal boundaries and therefore not subject to any local noise ordinances or regulations. "Borger Station is, in fact, within the municipal boundaries of the Town of Dryden and the Town has the authority to enact a noise ordinance," the town board letter states.

WATER

THE TRUE COST OF WATER

"We need a new water policy in the United States. Americans do not pay the real cost of the water that we use. In fact, we don't pay for water at all. The check that citizens write to their municipal water department or private water company covers only the cost of service, plus a small profit for the private company. There is no charge for the water itself. Last summer, as the price of gas inched up over \$4 a gallon, Toyota dealers couldn't keep fuel-efficient Priuses in stock. We should apply that pricing lesson if we want to conserve water, using increasing block rates to discourage profligate water use. Tucson does that and adds a surcharge for excessive use in the summer, when water mostly goes to fill swimming pools and irrigate landscaping. The idea of charging for water offends many people who think that would be like charging for air. Is it immoral to extract fees for an essential resource? Precisely because water is a public -- and exhaustible -- resource, the government has an obligation to manage it wisely. Think of our water supply as a giant milkshake, and think of each demand for water as a straw in the glass. Most states permit a limitless number of straws -- and that has to change". Robert Glennon is a professor of law at the University of Arizona and the author of "Unquenchable: America's Water Crisis and What to Do About It." (He is also on the staff of American Rivers.) Forwarded by Bob Boyle

EDITORIAL ON WATER BY DICK RISELING

Dick Riseling appear every Friday in *The Sullivan County Democrat* #134 Gas Drilling Versus the Rights and Powers of the People and the Land

.....Take the issues of water. We are all familiar with the claim that water is an even greater challenge to the economy than our addiction to oil. Water is not a matter of choice or addition. A lack of water in sufficient supply, access and quality is essential for human and planetary life.

The Delaware River has been identified as the main source for water to be used in gas drilling. Gas drilling will produce almost a similar amount of intensely polluted water which has to be disposed of. The Delaware River is one of the rare water supply systems in the entire world that does not require an expensive multi-billion dollar filtration and mechanical pumping system are assigned no value. This results in a vast corporate taking of wealth from the people. The polluted water is added to economic growth and the profits of a few as it is disposed of somewhere, somehow, at great economic cost in dollars and environmental and human health. This is terrible economics.

90% of the people of New York City, 35% of all the people in New York State, 42% of all the people in Pennsylvania, 34% of all the people in New Jersey, 81% of all the people in Delaware -- 1 in 20 of all the people in the nation -- depend on this single source of water. A reasonable conclusion is that creating potential problems with access to water or pollution of water is a far greater threat than terrorism.

Many of our towns and villages depend on groundwater for our individual domestic wells. The key sectors of local economic activity, agriculture, resort, recreation and hunting will be negatively affected by this drawn down and companies looking for places to locate business enterprise are far more likely in the new economy to avoid our area for the very reason that it has chosen to follow the national addiction to carbon fuels rather than preserve and enhance its natural beauty and health.

In this very brief first discussion of the impacts of gas drilling, I also want to squeeze in at least the mention of the fact that we do not get a chance to vote yes or no. The people have been deprived of their sovereign right by governmental and corporate fiat, to vote on what is sustainable, what is necessary for our safety, health and economic sufficiency. The loss of such protections and rights is vastly more important than the possibility of 10 years of natural gas. Gas drilling in the Catskill/Delaware watershed is a ghastly affair.

N.B. Readers are urged to obtain a copy of Hancock and the Marcellus Shale available by e-mail to webmaster@osiny.org, which provides essential information without taking a position for or against gas drilling.

WATER and T BOONE PICKENS

T. Boone Pickens Taps Water & Wind For Land Grab

June 20, 08 According to Business Week, Pickens owns more water than any other individual in the country through water rights in the **Ogallala aquifer** under the same land he is putting turbines up on. And now Pickens is working to get a deal to transport both his wind and water over to Dallas..... His wind and water have the same problem: no nearby buyers. Building both electrical transmission lines and a water pipeline to Dallas would require negotiations with hundreds of inconveniently situated landowners. Not just anyone can exercise the right of eminent domain. According to BW, Pickens had his lobbyists exert pressure on the Texas legislature to give joint energy and water transmission lines right-of-way. To get the power of eminent domain Pickens formed his own eight-acre water district on his property and now has the power to annex land "for the common good.".... In April Pickens sent 1,100 letters out to landowners along the 250-mile corridor he wants to build on. Pickens is confident he'll be able to get all the land he needs for about \$30 million and plans to start building a \$1.5 billion water pipeline with a \$2 billion electrical transmission line above. But Pickens's lobbying powers aren't limited to the Lone Star state. Pickens testified yesterday in front of the Senate Energy and Natural Resources Committee. Pickens told Congress to expand the scope of eminent domain and right-of-way, which are currently controlled at the state level, so companies like his Mesa Wind and Water can operate across state lines. "All I'm doing is selling surplus water," Pickens tells Business Week. COMMENT FROM DON YOUNG And to think a lot of people want to glorify this man for helping save the planet with his wind energy proposal hidden inside a natural gas- filled Trojan Horse. He even got the ear of Obama and other high ranking Dems. I have never liked Pickens since he started buying up water rights in west Texas back in the 1980's. He's a liar, the worst kind. I rank him as the lowest form of humanity who deserves a front row seat in the lower depths of Dante's Inferno. DY

WATER CRISIS IN US

Our Water Supply, Down the Drain By Robert Glennon Sunday, August 23, 2009 TUCSON In the United States, we constantly fret about running out of oil. But we should be paying more attention to another limited natural resource: water. A water crisis is threatening many parts of the country -- not just the arid West. In 2008, metro **Atlanta** (home to nearly 5 million people) came within 90 days of seeing its principal water supply, **Lake Lanier**, dry up. Rainstorms eased the drought, but last month a federal judge ruled that **Georgia** may no longer use the lake as a municipal supply. The state is now scrambling to overturn that ruling; but **Alabama and Florida will oppose Georgia's efforts**. In **Florida**, excessive groundwater pumping has dried up scores of lakes. In **South Carolina**, a paper company recently furloughed hundreds of workers because low river flows prevented the company from discharging its wastewater. That state's battle with **North Carolina** over the **Catawba River** has reached the **U.S. Supreme Court**. Water has become so contentious nationwide that more than 30 states are fighting with their neighbors over water. **Lake Superior**, the largest of the **Great Lakes**, is too shallow to float fully loaded freighters, dramatically increasing shipping costs. North of **Boston**, the **Ipswich River** has gone dry in five of the past eight years. In 2007, the hamlet of **Orme, Tenn.**, ran out of water entirely, forcing it to truck in supplies from **Alabama**. Droughts make matters worse, but the real problem isn't shrinking water levels. It's population growth. Since **California's** last major drought ended in 1992, the state's population has surged by a staggering 7 million people. Some 100,000 people move to the **Atlanta** area every year. Over the next four decades, the country will add 120 million people, the equivalent of one person every 11 seconds. **WASHINGTON POST**

EPA- NEW YORK TIMES-TOXIC WATER

September 13, 2009 TOXIC WATERS Clean Water Laws Are Neglected, at a Cost in Suffering By

CHARLES DUHIGG In the last five years alone, chemical factories, manufacturing plants and other workplaces have violated water pollution laws more than half a million times. The violations range from failing to report emissions to dumping toxins at concentrations regulators say might contribute to cancer, birth defects and other illnesses. However, the vast majority of those polluters have escaped punishment. State officials have repeatedly ignored obvious illegal dumping, and the Environmental Protection Agency, which can prosecute polluters when states fail to act, has often declined to intervene. Because it is difficult to determine what causes diseases like cancer, it is impossible to know how many illnesses are the result of water pollution, or contaminants' role in the health problems of specific individuals. But concerns over these toxins are great enough that Congress and the E.P.A. regulate more than 100 pollutants through the Clean Water Act and strictly limit 91 chemicals or contaminants in tap water through the Safe Drinking Water Act. Regulators themselves acknowledge lapses. The new E.P.A. administrator, Lisa P. Jackson, said in an interview that despite many successes since the Clean Water Act was passed in 1972, today the nation's water does not meet public health goals, and enforcement of water pollution laws is unacceptably low. She added that strengthening water protections is among her top priorities. State regulators say they are doing their best with insufficient resources. The Times obtained hundreds of thousands of water pollution records through Freedom of Information Act requests to every state and the E.P.A., and compiled a national database of water pollution violations that is more comprehensive than those maintained by states or the E.P.A. (For an interactive version, which can show violations in any community, visit www.nytimes.com/toxicwaters.)

September 13, 2009 TOXIC WATERS Clean Water Laws Are Neglected, at a Cost in Suffering By CHARLES DUHIGG In addition, The Times interviewed more than 250 state and federal regulators, water-system managers, environmental advocates and scientists. That research shows that an estimated one in 10 Americans have been exposed to drinking water that contains dangerous chemicals or fails to meet a federal health benchmark in other ways. Those exposures include carcinogens in the tap water of major American cities and unsafe chemicals in drinking-water wells. Wells, which are not typically regulated by the Safe Drinking Water Act, are more likely to contain contaminants than municipal water systems. Because most of today's water pollution has no scent or taste, many people who consume dangerous chemicals do not realize it, even after they become sick, researchers say. But an estimated 19.5 million Americans fall ill each year from drinking water contaminated with parasites, bacteria or viruses, according to a study published last year in the scientific journal *Reviews of Environmental Contamination and Toxicology*..... Drinking water in parts of New Jersey, New York, Arizona and Massachusetts shows some of the highest concentrations of tetrachloroethylene, a dry cleaning solvent that has been linked to kidney damage and cancer. The Times's research also shows that last year, 40 percent of the nation's community water systems violated the Safe Drinking Water Act at least once, according to an analysis of E.P.A. data. Those violations ranged from failing to maintain proper paperwork to allowing carcinogens into tap water. More than 23 million people received drinking water from municipal systems that violated a health-based standard. In some cases, people got sick right away. **In other situations, pollutants like chemicals, inorganic toxins and heavy metals can accumulate in the body for years or decades before they cause problems.** Some of the most frequently detected contaminants have been linked to cancer, birth defects and neurological disorders. Records analyzed by The Times indicate that the **Clean Water Act has been violated more than 506,000 times since 2004**, by more than 23,000 companies and other facilities, according to reports submitted by polluters themselves. Companies sometimes test what they are dumping only once a quarter, so the actual number of days when they broke the law is often far higher. And some companies illegally avoid reporting their emissions, say officials, so infractions go unrecorded. **Environmental groups say the number of Clean Water Act violations has increased significantly in the last decade.** Comprehensive data go back only five years but show that the number of facilities violating the Clean Water Act grew more than 16 percent from 2004 to 2007, the most recent year with complete data. Polluters include small companies, like gas stations, dry cleaners, shopping malls and the Friendly Acres Mobile Home Park in Laporte, Ind., which acknowledged to regulators that it had dumped human waste into a nearby river for three years. **They also include large operations, like chemical factories, power plants, sewage treatment centers and one of the biggest zinc smelters, the Horsehead Corporation of Pennsylvania, which has dumped illegal concentrations of copper, lead, zinc, chlorine and selenium into the Ohio River. Those chemicals can contribute to mental retardation and cancer.**..... "I don't think anyone realized how bad things have become," said Representative James L. Oberstar, a Minnesota Democrat, when told of The Times's findings. Mr. Oberstar is chairman of the House Transportation and Infrastructure Committee, which has jurisdiction over many water-quality issues. "The E.P.A. and states have completely dropped the ball," he said. "Without oversight and enforcement, companies will use our lakes and rivers as dumping grounds — and that's exactly what is apparently going on." After E.P.A. officials received detailed questions from **The New York Times** in June, Ms. Jackson sent a **memo to her enforcement deputy noting that the E.P.A. is "falling short of this administration's expectations for the effectiveness of our clean water enforcement programs.** Data available to E.P.A. shows that, in many parts of the country, the level of

significant noncompliance with permitting requirements is unacceptably high and the level of enforcement activity is unacceptably low.”..... In New York, for example, the number of regulated polluters has almost doubled to 19,000 in the last decade, but the number of inspections each year has remained about the same..... The Times’s investigation shows that in West Virginia and other states, powerful industries have often successfully lobbied to undermine effective regulation.

September 13, 2009 TOXIC WATERS Clean Water Laws Are Neglected, at a Cost in Suffering By **CHARLES DUHIGG** **The mountains surrounding the home of Mrs. Hall-Massey’s family and West Virginia’s nearby capital have long been mined for coal. And for years, the area enjoyed clean well water. But starting about a decade ago, awful smells began coming from local taps.** The water was sometimes gray, cloudy and oily. Bathtubs and washers developed rust-colored rings that scrubbing could not remove. When Mrs. Hall-Massey’s husband installed industrial water filters, they quickly turned black. Tests showed that their water contained toxic amounts of lead, manganese, barium and other metals that can contribute to organ failure or developmental problems. **Around that time, nearby coal companies had begun pumping industrial waste into the ground.** Mining companies often wash their coal to remove impurities. The leftover liquid — a black fluid containing dissolved minerals and chemicals, known as sludge or slurry — is often disposed of in vast lagoons or through injection into abandoned mines. The liquid in those lagoons and shafts can flow through cracks in the earth into water supplies. Companies must regularly send samples of the injected liquid to labs, which provide reports that are forwarded to state regulators. In the eight miles surrounding Mrs. Hall-Massey’s home, coal companies have injected more than 1.9 billion gallons of coal slurry and sludge into the ground since 2004, according to a review of thousands of state records. Millions more gallons have been dumped into lagoons. **These underground injections have contained chemicals at concentrations that pose serious health risks, and thousands of injections have violated state regulations and the Safe Drinking Water Act, according to reports sent to the state by companies themselves.** For instance, three coal companies — **Loadout, Remington Coal and Pine Ridge**, a subsidiary of **Peabody Energy**, one of the largest coal companies in the world — reported to state officials that 93 percent of the waste they injected near this community had illegal concentrations of chemicals including arsenic, lead, chromium, beryllium or nickel. Sometimes those concentrations exceeded legal limits by as much as 1,000 percent. Those chemicals have been shown to contribute to cancer, organ failures and other diseases. But those companies were never fined or punished for those illegal injections, according to state records. **They were never even warned that their activities had been noticed.** Remington Coal declined to comment..... West Virginia officials, when asked about these violations, said regulators had accidentally overlooked many pollution records the companies submitted until after the statute of limitations had passed, so no action was taken. They also said their studies indicated that those injections could not have affected drinking water in the area and that other injections also had no detectable effect..... More than 350 other companies and facilities in West Virginia have also violated the Clean Water Act in recent years, records show. **Those infractions include releasing illegal concentrations of iron, manganese, aluminum and other chemicals into lakes and rivers. As the water in Mrs. Hall-Massey’s community continued to worsen, residents began complaining of increased health problems. Gall bladder diseases, fertility problems, miscarriages and kidney and thyroid issues became common, according to interviews. . A survey of more than 100 residents conducted by a nurse hired by Mrs. Hall-Massey’s lawyer indicated that as many as 30 percent of people in this area have had their gallbladders removed, and as many as half the residents have significant tooth enamel damage, chronic stomach problems and other illnesses.** That research was confirmed through interviews with residents. It is difficult to determine which companies, if any, are responsible for the contamination that made its way into tap water or to conclude which specific chemicals, if any, are responsible for particular health problems. Many coal companies say they did not pollute the area’s drinking water and chose injection sites that flowed away from nearby homes. **An independent study by a university researcher challenges some of those claims. “I don’t know what else could be polluting these wells,” said Ben Stout, a biology professor at Wheeling Jesuit University who tested the water in this community and elsewhere in West Virginia. “The chemicals coming out of people’s taps are identical to the chemicals the coal companies are pumping into the ground.”**

EPA –MATTHEW CRUM IS DISMISSED

September 13, 2009 TOXIC WATERS Clean Water Laws Are Neglected, at a Cost in Suffering By **CHARLES DUHIGG** **Matthew Crum, a 43-year-old lawyer, wanted to protect people like Mrs. Hall-Massey. That is why he joined West Virginia’s environmental protection agency in 2001, when it became clear that the state’s and nation’s streams and rivers were becoming more**

polluted. But he said he quickly learned that good intentions could not compete with intimidating politicians and a fearful bureaucracy. Mr. Crum grew up during a golden age of environmental activism. He was in elementary school when Congress passed the Clean Water Act of 1972 in response to environmental disasters, including a fire on the polluted Cuyahoga River in Cleveland. The act's goal was to eliminate most water pollution by 1985 and prohibit the "discharge of toxic pollutants in toxic amounts." "There were a bunch of us that were raised with the example of the Clean Water Act as inspiration," he said. "I wanted to be part of that fight." In the two decades after the act's passage, the nation's waters grew much healthier. The **Cuyahoga River, West Virginia's Kanawha River** and hundreds of other beaches, streams and ponds were revitalized. But in the late 1990s, some states' enforcement of pollution laws began tapering off, according to regulators and environmentalists. Soon the E.P.A. started reporting that the nation's rivers, lakes and estuaries were becoming dirtier again. Mr. Crum, after a stint in Washington with the Justice Department and the birth of his first child, joined West Virginia's Department of Environmental Protection, where new leadership was committed to revitalizing the Clean Water Act. He said his idealism was tested within two weeks, when he was called to a huge coal spill into a stream. "I met our inspector at the spill site, and we had this really awkward conversation," Mr. Crum recalled. "I said we should shut down the mine until everything was cleaned up. The inspector agreed, but he said if he issued that order, he was scared of getting demoted or transferred to the middle of nowhere. Everyone was terrified of doing their job." Mr. Crum temporarily shut the mine. In the next two years, he shut many polluting mines until they changed their ways. **His tough approach raised his profile around the state. Mining companies, worried about attracting Mr. Crum's attention, began improving their waste disposal practices, executives from that period said. But they also began complaining to their friends in the state's legislature, they recalled in interviews, and started a whisper campaign accusing Mr. Crum of vendettas against particular companies — though those same** In 2003, a new director, Stephanie Timmermeyer, was nominated to run the Department of Environmental Protection. One of West Virginia's most powerful state lawmakers, Eustace Frederick, said she would be confirmed, but only if she agreed to fire Mr. Crum, according to several people who said they witnessed the conversation. She was given the job and soon summoned Mr. Crum to her office. He was dismissed two weeks after his second child's birth. Ms. Timmermeyer, who resigned in 2008, did not return calls. Mr. Frederick died last year....."If you don't have vigorous oversight by the feds, then everything just goes limp," said Mr. Crum. "Regulators can't afford to have some backbone unless they know Washington or the governor's office will back them up." It took Mr. Crum a while to recover from his firing. He moved to Virginia to work at the Nature Conservancy, an environmental conservation group. Today, he is in private practice and works on the occasional environmental lawsuit. "We're moving backwards," he said, "and it's heartbreaking."

E.P.A.-FOR THE LAST 8 YEARS MY HANDS HAVE BEEN TIED

September 13, 2009 **TOXIC WATERS** Clean Water Laws Are Neglected, at a Cost in Suffering By CHARLES DUHIGG The memos are marked "DO NOT DISTRIBUTE." They were written this year by E.P.A. staff, the culmination of a five-year investigation of states' enforcement of federal pollution laws. And in bland, bureaucratic terms, they describe a regulatory system — at the E.P.A. and among state agencies — that in many ways simply does not work. For years, according to one memo, federal regulators knew that more than 30 states had major problems documenting which companies were violating pollution laws. Another notes that states' "personnel lack direction, ability or training" to levy fines large enough to deter polluters. But often, the memos say, the E.P.A. never corrected those problems even though they were widely acknowledged. The E.P.A. "may hesitate to push the states" out of "fear of risking their relationships," one report reads. Another notes that E.P.A. offices lack "a consistent national oversight strategy." **Some of those memos, part of an effort known as the State Review Framework, were obtained from agency employees who asked for anonymity, and others through Freedom of Information Act requests. Enforcement lapses were particularly bad under the administration of President George W. Bush, employees say. "For the last eight years, my hands have been tied," said one E.P.A. official who requested anonymity for fear of retribution. "We were told to take our clean water and clean air cases, put them in a box, and lock it shut. Everyone knew polluters were getting away with murder. But these polluters are some of the biggest campaign contributors in town, so no one really cared if they were dumping poisons into streams."** The E.P.A. administrators during the last eight years — Christine Todd Whitman, Michael O. Leavitt and Stephen L. Johnson — all declined to comment. When President Obama chose Ms. Jackson to head the E.P.A., many environmentalists and agency employees were encouraged. **During his campaign, Mr. Obama promised to "reinvigorate the drinking water standards that have been weakened under the Bush administration and update them to address new threats." He pledged to regulate water pollution from livestock operations and push for amendments to the Clean Water Act.**

EPA- CHEMICALS IN OUR WATER

August 23, 2009 Debating How Much Weed Killer Is Safe in Your Water Glass By **CHARLES DUHIGG** For decades, farmers, lawn care workers and professional green thumbs have relied on the popular weed killer atrazine to protect their crops, golf courses and manicured lawns..... Laboratory experiments suggest that when animals are exposed to brief doses of atrazine before birth, they may become more vulnerable to cancer later..... Interviews with local water officials indicate that many of them are unaware that atrazine concentrations have sometimes jumped sharply in their communities. But other officials are concerned. **Forty-three water systems in six states — Illinois, Indiana, Iowa, Kansas, Mississippi and Ohio** — recently sued atrazine's manufacturers to force them to pay for removing the chemical from drinking water. "Atrazine is obviously very controversial and in widespread use, and it's one of a number of substances that we'll be taking a hard look at," said Stephen A. Owens, who was recently confirmed as the E.P.A.'s assistant administrator for prevention, pesticides and toxic substances..... Critics contend that atrazine is just one of the many chemicals the E.P.A. has not regulated with sufficient caution. The **Natural Resources Defense Council**, an environmental advocacy group, is expected to release a report on Monday saying that weak E.P.A. regulation of atrazine poses risks to humans and the environment. Other organizations have made similar charges about a variety of chemicals, including fuel additives, dry cleaning and manufacturing solvents, and **industrial waste dumped into water supplies**. "There's pretty broad consensus that the laws regarding toxic substances need to be modernized and overhauled, and that the E.P.A. needs more resources," said Mr. Olson of Pew, who added that the agency's new leadership had begun addressing many issues. "But in the meantime, people are getting exposed to dangerous chemicals," Mr. Olson said. "And the E.P.A. isn't responding swiftly enough."

< How Safe Is Your Drinking Water? FRESH AIR TERRY GROSS HOST

<http://www.npr.org/templates/story/story.php?storyId=113927993> **Charles Duhigg**: So one of the really scary things about water pollution, is that it doesn't stay where you put it. It can move all over the nation..... So you can have essentially what is the equivalent of, say, a thimble full of chemical in a swimming pool's worth of water, and that can actually be enormously dangerous; can be linked to cancers, can be linked to birth defects and other problems. But it's so small, and it's so potent that you just don't realize it's there. And so as a result, even though a number of contaminants and a number of types of water pollution are much more prevalent now, most people just don't realize it because you don't see it when you turn on the tap..... If arsenic gets into your water supply, we know from studies, that it can cause cancer. It can cause cancer of the stomach, of the throat, of the bladder. Basically anything that it comes into contact with can develop cancer, but sometimes it can take years to develop. **GROSS**: And another scary thing is that it doesn't have a color or a shape. It doesn't even necessarily have a smell or a taste. So if you're drinking chemically polluted water, you don't know it.

EPA LISA JACKSON

If you missed **Lisa Jackson**, EPA Administrator, on **Bill Maher** last night, here are a few highlights: LJ: "In 1 to 2 years China will clean our clocks on clean energy." "The president has said this economy has to make the transition to clean energy." "We have to send a clear signal that we are on the path to clean energy....That's where the jobs are. That's where the nation's security can be had." BM: "Our water is making us sick (pharmaceuticals, etc.)." LJ: "Synthetic organic chemicals are showing up in our water because they are not treated by the systems we set up to treat water in this country. We should be concerned. Strides we made back in the 70s and 80s with the Clean Water Act... We have kind of been treading water since then." BM: "You ran the superfund for a while." LJ: "We are cleaning up, we are not preventing."

EDITORIALS ABOUT GAS DRILLING

EDITORIAL PA

LETTER - TO THE RIVER REPORTER EDITOR: Noel van Swol is quoted in the September 24, 2009 issue of **The River Reporter** saying, "this area is little Texas". So I decided to learn more, and I googled "*Texas has the highest*." I cut-and-paste the results here. Texas has the highest poverty rate in the nation. Texas has the highest rate of child hunger in America. Texas has the highest teen birth rate in the U.S. Texas has the highest rate of

repeat teen births. Texas has the highest number of uninsured citizens. Texas has the highest rate of people without health insurance. Texas has the highest national rate of uninsured children. Texas has the highest home insurance rates in the U.S. Texas has the highest foreclosure rate in the nation. Texas has the highest number of alcohol-related traffic deaths and injuries. Texas has the highest rate of criminals executed. Texas has the highest percentage of church goers in US. Texas has the highest number of recent violations under the Voting Rights Act. Texas has the highest carbon output in America. Then I searched "*Texas has the lowest.*" Texas has the lowest percentage of high school graduation in the U.S. Texas has the lowest personal credit scores in the country. Texas has the lowest wages of all 50 states. Texas has the lowest levels of immunization in the country. And Texas has the lowest unemployment rate in the nation - bingo!

Mr. van Swol - we ain't no Texas yet. This is the big and beautiful **Upper Delaware River** - and we 5000 good people of the **Damascus Citizens** like it just the way it is - peaceful and pristine! Fish abound in our waters, and bald eagles soar above. Not the "Halliburton Loopholes," nor blind greed will prevail. We will not allow the destruction of our beloved river and the priceless watershed region. **Pat Carullo Lackawaxen, PA**

EDITORIAL FROM WASHINGTON COUNTY PA

It's becoming completely obvious that **Range Resources** operations are run by a bunch of bumbling idiots and/or subcontractors who don't give a crap about our water or environment. They continue to come up with more excuses than a juvenile delinquent with this latest one: "...a 90-degree elbow coupling failed at the bottom of a hillside because of a manufacturing defect." You know, when you run pipelines for several miles that carry toxic fluids, they need to be monitored more closely. They should spend a few bucks on some extra workers to do just this. Of course it's probably cheaper for them to pay the small DEP fine that will result (\$10 per fish) which is a slap on the wrist. This fish kill is identical to the situation that caused their second **Cross Creek fish kill**, except in that case (May 2009) they blamed "vandals" for loosening bolts on a pipe connection. For those who don't know this **Brush Run** area, it is a left turn off Rt 844 (when headed northwest) which used to be landmarked by "the red sheep barn." The road winds through a shady, scenic valley to **Bethany, WV** and has always been one of my favorite motorcycle roads on a hot afternoon. Give them enough time and they will ruin every scenic spot in **Washington County, Pennsylvania**. **Robert Doonan**

EDITORIAL PA

River Reporter October 1-7, 2009 Proud to be a NIMBY To the editor: My backyard is very special—it's a refuge from the world, a safe haven, a place of beauty. It is on the banks of one of the cleanest rivers in the Northeast. It's a quiet place, where most times the only sounds are singing birds, where the night sky is so dark I can almost touch the stars, where a pair of nesting eagles take my breath away as they take off in flight, where a natural spring provides me with water so clean-tasting I could bottle it, where the air is sweet with the scent of wildflowers, where the view is of rolling hills and an uninterrupted ridge line of trees. There are many things I definitely do not want in my back yard: toxic sludge in my pond, a contaminated water well, a poisoned river, ear-splitting noise, glaring lights blocking the stars, the smell of rotten eggs, a view of an industrial superfund site. However, this will be the fate of my backyard if those around me allow gas drilling in their backyard. I don't think we have the right to destroy our backyards because no one actually "owns" them. And we all really share the same backyard, one that provides sustenance for all. This could be our only chance to save it. I know there are others who feel the same way as I do, but are reluctant to speak out of political correctness. They fear being derided as a "NIMBY" (not in my back yard), someone who objects to the establishment in one's neighborhood of projects believed to be dangerous, unsightly or undesirable. I say to them, don't be a "Namby-Pamby;" stand up, and be a "Nimby!" **Joanne Wasserman**
Milanville, PA

EDITORIAL PA

Andy Loza, executive director of the **Pennsylvania Land Trust**, worries about how quickly the natural gas industry is taking off. The environmental impact could be huge. Last week 8,000 gallons of a "potential carcinogen" used in the drilling process spilled in **Susquehanna Township** and reached a nearby creek. The agencies charged with protecting the land and waters? They're being cut, too.

"Companies are going to come, they're going to take the gas, make a fortune, and send that fortune largely elsewhere," Loza warns. " Pennsylvania will be left to clean up the mess for many decades and perhaps centuries to come." These woods belong to all Pennsylvanians. Seems to me that if we're not going to preserve them, we ought to make sure we get better paid.

Paying the piper To the editor: A proposal regarding the DEC gas drilling regulations: Every landowner who allows gas drilling on their property should be required to accept personal financial responsibility (equal to at least the amount of money they receive for drilling rights and royalties) for all costs resulting from any environmental damage and clean-up, including damage to town and state roads from hundreds of trucks per well site, damage to neighboring property and property values, pollution and contamination of drinking wells and waterways and all other related costs. Doesn't this approach sound fair? It's a purely conservative approach that is all about people taking full personal responsibility for what they permit on their private property. Of course, this might make drilling seem less like a bonanza. And, faced with this reality, landowner groups might act accordingly. The true long-term costs and risks of drilling in the Upper Delaware outweigh the benefits to anyone but the gas companies (who must also be held accountable for all potential costs, something proposed regulations and enforcement seem unlikely to accomplish.) With all due respect, if drilling is such a profitable deal for lease-signers then let's clearly insist they accept financial responsibility for its increasingly well-documented negative effects on everyone else. **S. Feinberg Damascus, PA**

EDITORIAL NY and A LETTER FROM ALFRED RUNTE

Perhaps some of you saw the series on PBS about National Parks. One of the people interviewed was Alfred Runte who grew up in Binghamton, NY. I wrote him about the gas drilling situation and his response is quite interesting. He has given me permission to forward it. His advice to those of us working on this issue is quite strong and provides food for thought.October 4, 2009 Yes, I am very aware of the issue of gas drilling in the Southern Tier. I have been following the issue online. Certain friends of mine in the Binghamton area are also hoping to "cash in.".... Everyone in power hopes that you will not use your power, i.e., that you will remain polite and diplomatic. Nonsense. When the future is being screwed, it is legitimate to scream rape. It is reasonable self-defense to scratch their eyes out. From everything that I have seen and read so far, you people are much too polite. You are hoping this is an issue about the facts, when the only fact that matters here is greed. This is a Gold Rush. Winner takes all. Like wind, and solar, and all of the rest of the so-called "sustainable" solutions, there is nothing "green" about this form of natural gas drilling. It all depends on taxpayer subsidies. Huge ones. People don't want the truth. That is how we got into this Depression. Many are now hoping that natural gas drilling is their way out. You will be standing between them and MONEY. In those instances, the facts by themselves are beside the point. As they see it (as in West Virginia mountaintop mining), because they are suddenly millionaires they can always move. **Alfred Runte, Ph.D. Latest Book Allies of the Earth: Railroads and the Soul of Preservation (Truman State University Press)**

EDITORIAL NY Schlumberger WHY NO EIS???

Lisa Wright 9_9-09 For the village of Horseheads, as lead agency, to have the ability to allow a huge corporation like Schlumberger to build a giant facility serving a 300-mile gas drilling radius with EXPLOSIVES, RADIOACTIVE MATERIAL AND CONCENTRATED TOXIC CHEMICALS across the street from a school, without requiring a full EIS is appalling. The truck traffic has been estimated in THE HUNDREDS of trucks from the site to and from the facility PER DAY. This three hundred mile radius includes most, if not all of us, but we have absolutely no voice. THE VILLAGE OF HORSEHEADS IS NOT REQUIRING AN ENVIRONMENTAL IMPACT STATEMENT. All for a few hundred "jobs", most of them dangerous and unpleasant. Is NYS's economy so bad we are reduced to allowing rapacious businesses to flagrantly abuse the most vulnerable of us all? If natural gas extraction by unconventional means must occur as part of a well-thought out and soberly constructed NYS energy plan, then LET US DO IT METHODICALLY AND CAREFULLY. Instead, these companies have used highly financed, stealthy, and forceful techniques to get their way, from their cronies at the top to the landmen sharks who coerced landowner-victims into signing leases they had no context of understanding. The world is upside down. We don't cherish our agricultural areas, our forests, our fresh water supplies in this country or this state anymore. And now, we see that many people are OKAY WITH NOT CHERISHING THE HEALTH AND SAFETY OF OUR CHILDREN, EITHER.

EDITORIAL BROOME COUNTY NY

PRESS CONNECTS in response to county executive Barbara Fiala's Sunday guest viewpoint, she does not speak on my behalf in regard to natural gas drilling in Broome County. I hope the Department of Environmental Conservation can stand up to the exploration companies and refuse to allow them to ruin the life some of us have chosen in New York. My small property is quiet, with sparkling clean water and no pollution. It is unacceptable that my neighbors, with one signature, can allow a threat to my water and air quality, increase noise and light pollution levels and bring more traffic. Ethically and morally, we owe it to the ecosystem and future generations to say "no" to gas drilling here. We should be more concerned with preserving what little natural beauty and purity that remains on the surface of this planet so future generations might enjoy some of the same pleasures in the relatively clean environment that we take for granted. *Patrice Vanslyke Windsor*

EDITORIAL WEST VIRGINIA DODDRIDGE COUNTY-BUCKEYE RUN CREEK

Dear Governor Manchin, I have been very impressed with the new theme of "Coming Home to West Virginia" and the articles in the "Wonderful West Virginia" magazine. I grew up on the banks of Buckeye Run, a tributary of Middle Island Creek in Doddridge County. I am a 5th generation West Virginian, my great grandfather built the house I grew up in and that has always been a point of family pride. Our creek was quite a popular spot and many of the local churches used our swimming hole for their baptisms..... Long, lazy summers at our "Swimming Hole" and riding my pony around the fields, provided a foundation for the love of my home and I have been determined to pass this on to my three sons. I married and moved away to Colorado..... Though we live near Vail Colorado during the school year, we love our cabin on the banks of the Greenbrier River in Pocahontas County and our farm near Lewisburg and are making preparations to return "home" in the future. My sons have been brought here to West Virginia every summer since they were small. All my sons are thriving musicians, largely due to the nurturing environment provided by many of the locals here in Pocahontas County. All this brings me to here, where I begin the rest of my story of returning home to West Virginia. Last Monday night, August 24th, I went "home" to Doddridge County to spend the night with my oldest son as we were going to Oberlin Ohio the next day to get him settled in at college. My son chose to take that route as it would give him just one more opportunity to cast his line in the waters of Buckeye Run Creek. He headed down to the creek at 9:00 pm and came back saying there appeared to be a "problem". We took flashlights down to our fishing hole, the acrid, oily smell of this red/orange gel met us almost up to the house. I got it on my hands, the smell of which didn't go away for some time despite repeated washing. Is this the "Come home to West Virginia" we deserve? It is now Sunday, August 30th. After having called the DEP, oil and gas division, we STILL do not know what this is. Though they were quick to respond, and have been very polite, information has been sketchy. Clean up has been ongoing, the employees of which, were in the water with this contaminant all over their bare skin. I have been told that they don't know yet what it is. If you don't know 'what it is' how do you know you are cleaning it up properly and it is safe for people to touch. When I notified my neighbors downstream, they stated they had seen before that time, that the water appeared 'funny' and red. There is no educational outreach to people who live downstream... My neighbors down stream had not been notified, many children play in the creek as mine do..... Who wants to live in a state known for razing and polluting their own home?..... Their heritage is being plundered and altered by others who do not respect other people's homes and safety. We can become a state others look to instead of down upon. Laws need to be changed quickly and closer scrutiny of industries with the potential to pollute our homes and make us sick. The pictures I have sent are not pretty, cancer is not pretty either. I just lost my third sibling to cancer, my sister, who "came home to West Virginia" and used to swim side by side with me in Buckeye Run Creek. Louanne McConnell Fatoran <http://wvhighlands.org>

EDITORIAL WEST VIRGINIA

More Problems With Gas Wells Dear Mr. McFerrin Thank you for the articles on drilling in the Marcellus Shale. Roger and I invite you to come to our home and see firsthand the drilling operation 300ft from our front door. Patterson UTI Rig 738. This company drilled here last July. We got little sleep for about 6 months. I heard some tools got lost in the well. Then last week the head of our water district said the bottom fell in. Anyhow, they are here drilling yet again. We tried to deal with the company but they lied to us, and only consider their own agenda. We have also read the Dominion Post, and have so many concerns about the air we are breathing and the water supply. We invite someone from the Conservancy to come here-we will provide you food and lodging if needed. They tore up the tar and chip road that we waited 40 years for. They used 90 million gallons of water for the well drilling operation over the hill. Don't know how much they will use on this one-the second time around. Thank you for your advocacy for the people of WV and for our beautiful state. Sincerely Kay and Roger Findley

TESTIMONY FROM COLORADO

TESTIMONY FROM COLORADO Hello Shaleshock, ignorantly enough I just learned of the whole concept of exploiting the natural areas of the Finger Lakes and the Catskills for Natural Gas. When I found out about this my heart sank. All of my family and ancestral roots are in the Southern Tier of New York State from Ithaca to Binghamton to Sullivan County to Middletown north of NYC. Though I live in Colorado the Appalachian region of New York is my home place. I'm deeply disturbed to have this issue facing the people and landscape of NY.As I've seen in Colorado the natural gas drilling is devastating to the communities. All one need to do is look at the health of the people surrounding these drilling areas and sharp increases in cancer, lung ailments, and other chronic health problems. These are well documented! Has anybody calculated the cost of treating lung cancer without insurance? That cost could well exceed the monetary gains proposed for these areas if multiplied by the hundreds and thousands. From what I hear the stench of the gas drilling in the Northwestern part of Colorado and Southwest Wyoming is worse than the noise. It's hard to express how it feels to me to know that my homeland is under such an assault. I feel somewhat like a tree whose roots are being sawed through. I would be fully prepared to come to New York for a long while and campaign, speak, etc. if that is what it takes to get such dangerous drilling banned in the state. Good luck with all of your efforts, I'll be watching and assisting where I can. Jason

JOSH FOX First Amendment Violation

River Reporter October 1-7, 2009 A First Amendment violation Recently, the Town of Delaware refused to give Josh Fox permission to show his film "Water Under Attack" in Callicoon Creek Park in Callicoon, NY. It used as the basis for its decision the contention that the film, a documentary on the impact of natural gas drilling activities on water, was "too one-sided." Fox said he believed that the town's refusal to let him show the film might be a First Amendment issue. When we first heard about the case, we weren't so sure. After all, municipalities can and do require permits for public events all the time, and sometimes applicants are turned down, without the Supreme Court getting dragged into it. Then we started to do a little research. And as it turns out, it's not even a close call. We're going to stick our necks out as laymen and call it a First Amendment violation, pure and simple. The case hinges on two key concepts: "public forum" and "content neutrality." Any type of expression that takes place in a public forum is entitled to the strictest degree of Constitutional protection. Therefore, though there are some circumstances in which public agencies may prohibit such expression in the public interest, the criteria used must be content-neutral; that is, they must not apply to the topics discussed or viewpoints articulated. Some First Amendment cases are complicated by disagreements over what does and does not count as a public forum. But public parks, of which Callicoon Creek Park is one, are indisputably public forums. As Justice Owen Roberts wrote in his opinion on the landmark 1939 case *Hague v. CIO*, "Wherever the title of streets and parks may rest, they have immemorially been held in trust for the use of the public and, time out of mind, have been used for purposes of assembly, communicating thoughts between citizens, and discussing public questions. Such use of the streets and public places has, from ancient times, been a part of the privileges, immunities, rights, and liberties of citizens." Despite this, municipalities do have an established right to set up a permitting process if it is expeditious and has a clear set of rules that is applied consistently to all applicants, and to grant or refuse permits according to those rules. But there are strict Constitutional limits to the criteria that may be used in denying a permit: they must be limited to time, place or manner. "Place" obviously can't mean the whole park or other forum, but could be restricted in terms of, say, a location within a park that causes a traffic disturbance or puts an endangered species at risk; time could be restricted to prevent disturbances of a residential area late at night; manner could be related to the volume of sound and local noise ordinances. But restrictions related to content—like a judgment that the expression in question is "too one-sided"—are forbidden unless they "serve a compelling state interest," like preventing imminent violence, and there is no way of serving the interest that is less speech restrictive. Those conditions were not met in this case. We don't question the good intentions of the Town of Delaware officials who refused permission to Fox. Probably they felt that it wasn't fair for public property to be used to represent a point of view that not all taxpayers share. But that's just not the way that the right of free speech in public places works. You get free speech when everybody is allowed to express any point of view—not when everybody is forbidden from speaking for fear that someone else might disagree. Fox's film must be allowed, and so must any peaceable event held by those wanting to discuss other perspectives on gas drilling. Perhaps the Town of Delaware simply doesn't have a formal set of rules for permitting the use of public places. If not, it might want to consider formulating a set, with its lawyer's advice. It needs to come up with something that serves public needs in terms of issues like preserving the peace, keeping people and the environment safe and making sure that public facilities aren't damaged or abused. But if it keeps

on deciding cases like this on an ad-hoc basis, or adopts a system with criteria that prohibit certain viewpoints from being expressed, it is at risk of finding itself at the wrong end of a First Amendment lawsuit. And while it's at it, it might invite Fox back for a showing of his film.

GAS DRILLING IN CANADA

Technology spurs gas exploration in new places. Globe and Mail. "Spurred by high commodity prices and new technologies, junior energy companies are on a natural gas exploration hunt across Canada in search of overlooked reserves. Technological breakthroughs have made unconventional plays — the easy-to-find, but hard-to-develop resources that can hold vast reserves — far more economically viable. There have been big natural gas discoveries in British Columbia, Saskatchewan and even Quebec. And while companies have flocked to the hottest new development regions such as B.C.'s Montney shale gas field, there are many others now seeking to replicate that success in regions whose potential is little known. ... "We feel we might as well be on the [shale] gas bandwagon," said PetroVorth president Neal Mednick. "There are gas-charged structures throughout the East Coast ... it's the new frontier for oil and gas exploration in Canada." www.energyindepth.org

A letter to SHALESHOCK.... By the way, Québec main gas distributor, Gaz Métro, said last week at Québec Energy Board that they cannot know where their gas comes from so they would not be able to restrict from buying shale gas production because they can't retrace the source... Anyone knows if that is true or not? Not knowing the source of gas will cause problems soon since Québec (and maybe US too) intends to have a GHG credit emission tax soon and everybody should push for Life Cycle Analysis of gas (so that shale gas is not in the same "basket" as biogas for example) and not only consumption of gas when assessing the amounts of GHG produced (or avoided). Thanks again! Kim Cornelissen for AQLPA AQLPA (Québec Association Fighting Air Pollution)

Religion Emerges as an Influential Force for Climate Action

It's a Moral Issue by Johanna Peace - Oct 9th, 2009 In Sign a Global Treaty American Clean Energy and Security Act People of Faith Religion When we envision the solution to climate change, we expect it to come from negotiating table — not a place of worship. But religion is emerging as an influential force in the climate movement. It makes sense. The reverence for nature and for creation are basic tenets of almost every major religion, and estimates say over 85% of the world's population subscribes to some faith. Activists at the secular Alliance of Religions and Conservation and the United Nations Development Program believe this massive demographic — people of faith with an environmental conscience — has the potential to make a considerable impact in the global effort to curb climate change.

COLORADO AND SOLAR

DURANGO, Colo., Oct. 10, 2009 Solar Power Outshining Colorado's Gas Industry (AP) The sun had just crested the distant ridge of the Rocky Mountains, but already it was producing enough power for the electric meter on the side of the Smiley Building to spin backward. For the Shaw brothers, who converted the downtown arts building and community center into a miniature solar power plant two years ago, each reverse rotation subtracts from their monthly electric bill. It also means the building at that moment is producing more electricity from the sun than it needs. "Backward is good," said John Shaw, who now runs Shaw Solar and Energy Conservation, a local solar installation company. Good for whom? As La Plata County in southwestern Colorado looks to shift to cleaner sources of energy, solar is becoming the power source of choice even though it still produces only a small fraction of the region's electricity. It's being nudged along by tax credits and rebates, a growing concern about the gases heating up the planet, and the region's plentiful sunshine. The natural gas industry, which produces more gas here than nearly every other county in Colorado, has been relegated to the shadows. Tougher state environmental regulations and lower natural gas prices have slowed many new drilling permits. As a result, production — and the jobs that come with it — have leveled off.

HINCHEY SAYS REGULATE ENERGY DERIVATIVES

Letter Sent to House Financial Services Committee Chairman Barney Frank "Any financial regulatory reform would be incomplete without provisions that safeguard against the blatant

JOINT PRESS RELEASE Damascus Citizens for Sustainability and NYH2O

RE: Atlantic Chapter of Sierra Club makes sweeping Resolution on Gas Drilling

"The Atlantic Chapter is to be congratulated for demonstrating critical thinking, evaluating known events and putting the Precautionary Principle into action as regards the intrinsically contaminating process of unconventional gas drilling. True conservation must be pro-active to preserve our very existence and our future. We are so creative, we can find new ways, we do not need to trade clean air and clean water for energy," says Damascus Citizens for Sustainability Director Barbara Arndell.

Sierra Club calls for a ban on gas drilling in NYS

On Saturday, October 17, 2009, the Executive Committee of the Atlantic Chapter of the Sierra Club met in Syracuse and passed a resolution proposed by the SC Gas Drilling Task Force. The resolutions calls on the NYS legislature to enact a ban on unconventional gas drilling in NYS.

"WHEREAS extensive environmental and health damages would be caused by horizontal drilling and high pressure hydraulic fracturing gas extraction techniques due to the contamination of water, soil and air by the toxic chemicals used in drilling and fracturing, and the naturally occurring toxic chemicals brought to the surface from deep in the ground,

"WHEREAS these environmental and human and animal health damages will have damaging economic consequences on residential property values, and on the state's tourism, agriculture, forestry, winery, real estate development and educational businesses,

"WHEREAS the infrastructure costs of building and repairing roads, water treatment facilities, and other public services would far exceed any economic benefit to local communities, and

"WHEREAS it is yet to be proven that the green house effects of the production and use of natural gas produced by horizontal drilling and hydrofracturing are any less than those of the production and use of coal when the life cycle emissions of natural gas production and the higher impact of methane as a green house gas are taken into account.

"Be it Resolved that the Atlantic Chapter of the Sierra Club calls on the New York State Legislature to enact a ban on permitting gas wells that use horizontal drilling and hydro-fracturing to release gas from tight sand and shale formations such as the Marcellus."

"Those of us paying attention to this issue are informed almost daily of yet another incident related to this activity that has a profound effect on so many aspects of our lives and health. The preliminary findings of a study commissioned by the NYC DEP has resulted in the demand for a ban on this activity in the watershed because of the uncalculated risks to their water supply. A recent ruling by the EPA in Colorado rescinded an exemption from "aggregate policy" (cumulative impacts) and scores of pieces of legislation - including the FRA Act and the Brennan Bill are wending their way through state and federal legislatures. Now is not the time to consider proceeding with this activity while so much is unresolved and so much is at risk." (Joe Levine Chair NYH2O)

In addition, we also want to express our extreme dissatisfaction with the 60 day public comment period provided as this is not an adequate amount of time to review and comment on an 800 page SCGIS document with such substantial implications. It is equally inadequate that public hearings have been scheduled in so few locations around the state as to prohibit the kind of intercourse required.

Damascus Citizens for Sustainability

Damascus Citizens for Sustainability P. O. Box 147 Millerville, PA 18443

www.DamascusCitizens.org

Protection of drinking water is a national concern. Someone has to take the reins here. The perpetual effects of tens of thousands of hydraulically fractured, horizontal wells, deep injection wells, vast networks of pipelines and compressor stations, millions of gallons of poisoned water, millions of pounds of radioactive, toxic drilling muds, fleets of trucks transporting toxic materials on our roads and highways, the production and delivery of tons of toxic volatile compounds, including **benzene, toluene, ethylbenzene, xylene**, gas field production of ozone that creates serious air pollution and irreversible damage to the lungs as well as to our precious and dwindling forests, cannot be ignored. The impacts go on and on.

Now that the EPA has been reactivated after a decade, the proper research must be done by independent entities that have no ties to the oil and gas companies, so that every New Yorker and every American can be aware of the risks here. There are farmers and landowners who are not aware of the true impacts. Many of them are not seeing the vast amount of articles, video and testimony from landowners whose land, water and air has been contaminated. Our grassroots organization, Damascus Citizens for Sustainability has tried everything possible to spread the word about the dangers of this type of gas drilling. The landowners who snuck around 22 months ago all over the gas rich areas of the Delaware River Basin didn't mention the long-term impacts. These individuals working a little too hard to make a living welcomed them. The money offered has blinded them. "You gotta die sometime, I've been told. I might as well die rich".

How many politicians are getting large donations from players in the oil and gas industry. I challenge NYC to take on the task of exposing these conflicts of interest. DCS has researched this and the results are what one would expect, but I don't hear those who could make a difference about this issue discussing it. This is a national public health issue. Who has the real power to do something about this. NYC does. The DRBC does. The EPA does. The NY Times does. Again, please take the reins.

Thank-You



646-594-7311

HANCOCK & THE MARCELLUS SHALE

Visioning the Impacts of Natural Gas Extraction Along the Upper Delaware
Prepared by the Columbia University Urban Design Research Seminar >> Spring 2009



ACKNOWLEDGEMENTS

The organization of the Urban Design Research Seminar and preparation of this publication has been a collaborative effort involving many organizations and individuals. The Project Team was essential to the success of this effort. Also of note, the Earth Institute at Columbia University contributed an Internship appointment toward the completion of this work. In the Town of Hancock, we are grateful to residents Brian Begeal and Mark Dunau for their assistance. For production we appreciate the careful work of Tom Leung of i2Print, Inc. We also thank others who have contributed to the completion of this publication through sharing of information and resources:

Kelly Tucker, LIGHTHAWK Flight & Aerial Services
Albert Appleton, Barbara Arrindel, Pat Carullo, Joe Levine, Damascus Citizens for Sustainability
William J. Pammer, Ethan Cohen, Sullivan County Planning Department
Raye Levine, The Cooper Union for the Advancement of Art and Science
Deborah Goldberg, Earthjustice
Edward Lloyd, Susan Kraham, Columbia University Environmental Law Clinic
Michael J. DeWan, DeWan & Schott Appraisal Services
Sarah Sutto-Plunz, The School at Columbia University
Joanne Wasserman, Upper Delaware Network

Critical to this effort has been the participation in two public sessions¹ of the seminar by the following individuals:

Stephen Corson, Alnisha Maniaci, Office of Manhattan Borough President Scott M. Stringer
Denise Frangipane, Gerry Foundation
Kenneth Frampton, Columbia University Graduate School of Architecture, Planning and Preservation
Caroline Martin, Catskill Citizens for Safe Energy
Mike Uretsky, Marian Schweighofer, Northern Wayne Property Owners Alliance
Rick Marquardt, Conservation Services LLC
Jim Matthews, Lisa Ann Wright, Shaleshock Citizens Action Alliance
Judy Kurtley Maxx, Jeffrey Seeds, Pike County Citizens for Clean Water
Tom McKean, McKean Realty
Lou & Sue Mickley, Wayne County Residents
Stephen Sacco, Times Herald Record
Laurie Stuart, Upper Delaware Roundtable
Jurgen Wekerele, Sierra Club New York State Chapter
Joe Zenes, Delaware Riverkeeper Network
Buck Moorhead, Building Consensus for Sustainability
Durrell Dawson, NBC News

The Editors are extremely grateful to the NORCROSS WILDLIFE FOUNDATION for its support, which has been essential to completion of this publication.

1) The first public meeting was convened by the Upper Delaware Preservation Coalition in Lackawaxen, Pennsylvania, on January 31, 2009 and the second at the Columbia University Graduate School of Architecture, Planning and Preservation on March 26, 2009.

PUBLICATION EDITORS

Emily Weidenhof, Editor
with Vivian Ngo and Richard Gonzalez

To obtain a copy of this publication, please contact The Open Space Institute, Inc. by phone at 212.290.8200 or email your name and mailing address to webmaster@osiny.org

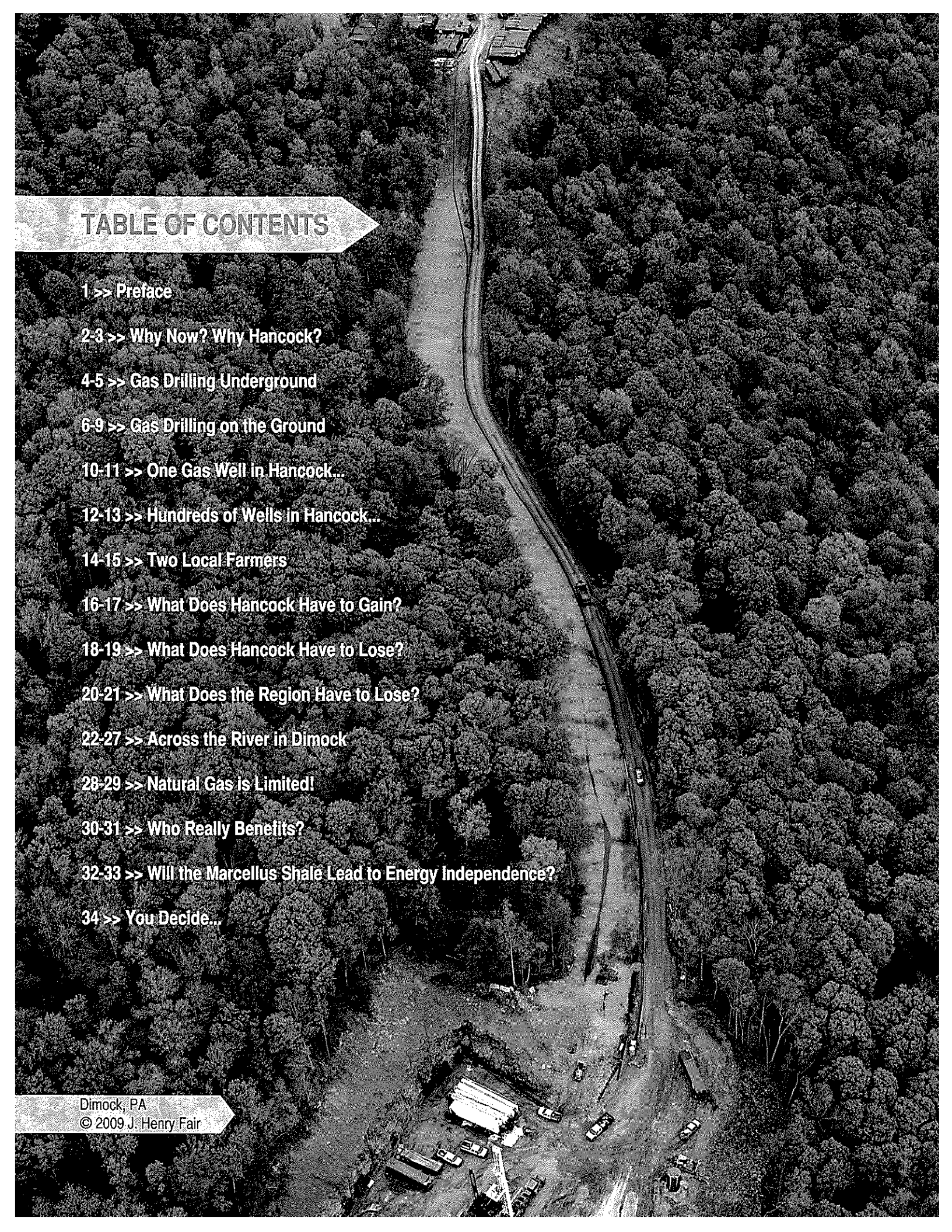


TABLE OF CONTENTS

1 >> Preface

2-3 >> Why Now? Why Hancock?

4-5 >> Gas Drilling Underground

6-9 >> Gas Drilling on the Ground

10-11 >> One Gas Well in Hancock...

12-13 >> Hundreds of Wells in Hancock...

14-15 >> Two Local Farmers

16-17 >> What Does Hancock Have to Gain?

18-19 >> What Does Hancock Have to Lose?

20-21 >> What Does the Region Have to Lose?

22-27 >> Across the River in Dimock

28-29 >> Natural Gas is Limited!

30-31 >> Who Really Benefits?

32-33 >> Will the Marcellus Shale Lead to Energy Independence?

34 >> You Decide...

PROJECT TEAM

**Urban Design Program, Graduate School of Architecture, Planning and Preservation,
Columbia University** >> www.arch.columbia.edu

Ben Abelman, Ariel Hsieh, Dongsei Kim, Hector Lim, Vivian Ngo, Julia Siedle, William Tate, Emily Weidenhof, Richard Plunz (Director)

Urban Design Lab, Earth Institute, Columbia University >> www.urbandesignlab.columbia.edu

Richard Gonzalez (Project Manager), Hector Lim (Intern), Richard Plunz (Director)

Open Space Institute >> www.osiny.org

Pati Canseco, Stuart Root, Gillian Weber-Mollod, Jennifer Grossman (Vice President)

J. Henry Fair, Photographer >> www.jhenryfair.com >> www.industrialcars.com

Photographs appear on Cover, Table of Contents, pp 8-11, 22-27, 30. All © 2009 J. Henry Fair

Upper Delaware Preservation Coalition (UDPC) >> www.udpc.net

Dejay Branch, Troy Bystrom, Daria Dorosh, Adrienne Eisenberg, Maria-Paola Sutto, John Tomlinson

Catskill Mountainkeeper >> www.catskillmountainkeeper.org

Wes Gillingham

Natural Resources Defense Council (NRDC) >> www.nrdc.org

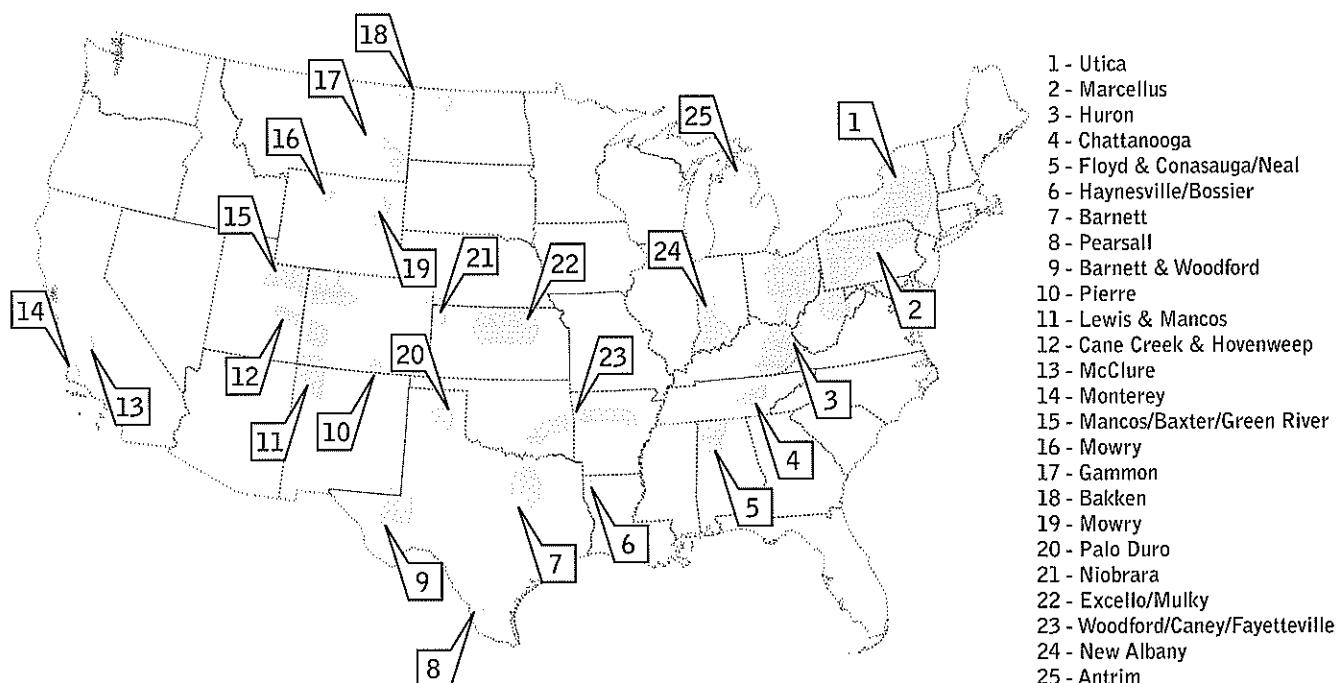
Kate Sinding

Riverkeeper >> www.riverkeeper.org

James L. Simpson

Delaware Riverkeeper Network >> www.delawareriverkeeper.org

Tracy Carluccio



GAS SHALE DEPOSITS IN THE U.S.

Schlumberger, http://www.slb.com/content/services/solutions/reservoir/unconventional_gas_4.asp (accessed May 2009)

PREFACE

This publication is the fourth such document to be produced by a graduate level seminar within the Urban Design Program at Columbia University. All have been focused on environmental issues facing the Upper Delaware River: the development potential of the Route 97 highway corridor (spring 2002)¹; the impacts of the proposed NYRI power transmission line (spring 2007)²; the impacts of residential subdivision within the watershed (spring 2008)³; and now the impact of Marcellus Shale gas extraction (spring 2009). The importance of this year's topic is obvious. It is likely that throughout the history of the region, no other single developmental impetus has been so environmentally threatening and contentious and yet so devoid of local oversight. The letter below indicates the huge stakes in terms of impacts on Upper Delaware communities. Our choice of Hancock as the primary focus for this study is also obvious. For the gas industry, Hancock is an easy starting point, with its confluence of valuable infrastructure: river, roads, railroad, and gas pipeline. To date more than twenty-five percent of Hancock has been leased, creating the potential for hundreds of well sites with enormous cumulative environmental impacts concentrated in a relatively small area.

Among the communities of the Upper Delaware, perhaps nothing is more sacred than the practice of "Home Rule," with its legal guarantee of local control over land use. Historically, home rule has been a carefully guarded privilege throughout New York State and particularly in this region. Local town planning boards are routinely required by local, state and federal law to adhere to the State Environmental Quality Review Act (SEQRA) and consider micro-

scale environmental impacts for even the smallest development projects. Unfortunately, in one devastating sweep, both the U.S. Energy Policy Act of 2005 and New York State's Environmental Conservation Law Article 23, altered municipal control by exempting natural gas activities from local oversight. Today, extracting natural gas from the Marcellus Shale, ultimately involving hundreds of cleared sites, miles of rural road impacts and millions of gallons of water, does not even receive the same level of review required by Hancock for a single residential dwelling plan where local, State and Federal criteria must be met regarding well, septic and adjacent wetland. This leaves the entire Upper Delaware region unprotected and slated for industrialization without compliance to historic local planning criteria and oversight. In Hancock the mayor's concern is understandable.⁴

Examining the planning consequences of natural gas extraction from Marcellus Shale is a useful contribution to the growing debate within the region. Our team focused on the gaps in local awareness of the comprehensive long-term impacts to the landscape and existing municipal infrastructure. Visualizing this impact was an important exercise for the seminar team, and an important component of this exercise. We hope that this document will be read by politicians and decision-makers who will determine the fate of natural gas extraction in the Upper Delaware Region; and by local citizens whose lives and livelihoods will be most effected by their decisions

Richard Plunz, Columbia University

Open Letter to the DRBC¹

July 2009

I'm taking this opportunity, together with the members of the village's board of trustees, to officially express our concern and ask that the Delaware River Basin Commission (DRBC) give due consideration to this request regarding the application by Chesapeake Appalachia, LLC to withdraw water from the West Branch of the Delaware River. It is to be hoped at this point in time that reasonable people and groups can work in cooperation for the betterment of mankind. With that thought in mind, I would like to go on the record with the DRBC with our request.

The site for water withdrawal is located in Pennsylvania less than a mile from the Village of Hancock, NY. One of the consequences of DRBC granting this permit would be that the water obtained by the applicant from this site and transported into New York State by way of the shortest route must travel on the Village of Hancock streets before reaching any town, county or state road.

In these tough economic times, it would be logical for the DRBC, if it were to give approval to the above docket, to make the actual issuing of the permit contingent on the applicant's (gas drilling company) previously entering into a legal agreement with the municipality for bonding its roads. This will address the potential of the applicant adversely affecting the public road right-of-ways. Bonding ensures that the road repair costs resulting from gas drilling company trucks, is placed on the company (applicant) where it belongs, and not the local taxpayers.

Celia Vazquez, Mayor of the Village of Hancock

Bill Schoonmaker, Dottie Picozzi, Karol Mech and Alice Hartz, Members, Village of Hancock Board of Trustees

1) K.J. Hutzler, K. Saul, eds., "Case Studies in Regional Environmental Design: Upper Delaware River Corridor," Columbia University Urban Design Research Seminar, 2002.

2) "A River Endangered. Proposed Power Transmission and Its Impact on Cultural History Along the Upper Delaware River," Columbia University Urban Design Research Seminar, Spring 2007.

3) "A Citizen's Guide to Residential Development. Western Sullivan and the Upper Delaware River Basin," Columbia University Urban Design Research Seminar, Spring 2008.

4) C. Vazquez, "Open Letter to the DRBC," *The River Reporter*, July 23-29, 2009.

WHY NOW? WHY HANCOCK?

"It's almost divine intervention. Right at the time oil prices are skyrocketing, we're struggling with the economy, we're concerned about global warming, and national security threats remain intense, we wake up and we've got this abundance of natural gas around us."

- Aubrey K. McClendon, Chairman and Chief Executive of the Chesapeake Energy Corporation

C. Krauss, "Drilling Boom Revives Hopes for Natural Gas," *New York Times*, August 24, 2008.



**ENERGY
CRISIS**



**ECONOMIC
CRISIS**



**NEW FEDERAL
LEADERSHIP**



**POLICY
REVIEW**

Americans have all too slowly come to understand the massive impacts that our energy consumption habits have had on this planet over the past century and a half. The seemingly limitless expenditure of non-renewable resources has created the current crisis in which we now find ourselves: political turmoil over America's dependence on foreign energy sources, volatile fuel prices exemplified by record-high gas prices in 2008, decimation of fragile ecosystems containing limited fossil fuel reserves, and increasing changes to our global climate. Combined with the global economic recession, we have no choice but to seek more affordable, efficient and environmentally-safe energy solutions to sustain life as we know it. On the national stage, we have gradually moved towards a new agenda of 'energy independence' by investing in research and development to both upgrade current energy infrastructure and explore new renewable energy technology. This has fostered a growing interest in natural gas which is a non-renewable yet relatively clean-burning fossil fuel. Such focus is due predominantly to the existing extensive infrastructure necessary to extract and distribute natural gas (i.e. pipelines, processing plants, transfer stations) and the numerous commercial applications (i.e. heating, appliance, and vehicle fuel sources).

In early 2008, geosciences professors Terry Engelder of Penn State University and Gary G. Lash of SUNY Fredonia, estimated that the Marcellus Shale Play running through West Virginia, Pennsylvania, Ohio, and New York, contains up to 500 trillion cubic feet of natural gas, far more than the USGS estimate of 1.3 trillion cubic feet in 2002.¹ Due to recently improved extraction processes and redesigned equipment, this cache of natural gas, previously inaccessible at 5,000 to 8,000 feet underground, was suddenly now within reach.

In July of 2008, New York Governor David Paterson signed a bill into law which facilitated denser drilling in the Marcellus Shale. At the same time, landowners throughout the Catskill region, including portions of the New York City watershed, were inundated with land men (representatives of gas companies) encouraging them to sign

long term leases to allow for natural gas exploration, drilling and extraction. Like the millions of other homeowners throughout the country affected by the downturn of the financial market, local residents saw signing a lease as a viable source of much needed revenue: a means to support their families, pay bills and put food on the table.

However, New York State's regulatory matrix that governs natural gas drilling has not kept pace with these recent developments. The State's Department of Environmental Conservation (DEC) last established standards for natural gas extraction in 1992 when it issued a Generic Environmental Impact Statement (GEIS) which did not account for horizontal drilling technology or high water volume hydraulic fracturing.² As a result, in July 2008 the Governor ordered an update of the GEIS in a Supplemental Generic Environmental Impact Statement (SGEIS), described by DEC Commissioner, Pete Grannis, as follows:

"The update will examine potential impacts from new horizontal drilling techniques, including potential impacts to groundwater, surface water, wetlands, air quality, aesthetics, noise, traffic and community character, as well as cumulative impacts. The update will occur as part of a public process that ensures that concerns raised by residents who could be affected by drilling activities are heard and considered...In addition, DEC is reviewing a variety of other areas, including staff resources, existing regulations, jurisdiction over water withdrawals, permit application fees and procedures, and legal and regulatory compliance, that could be implicated by increased drilling activity."³

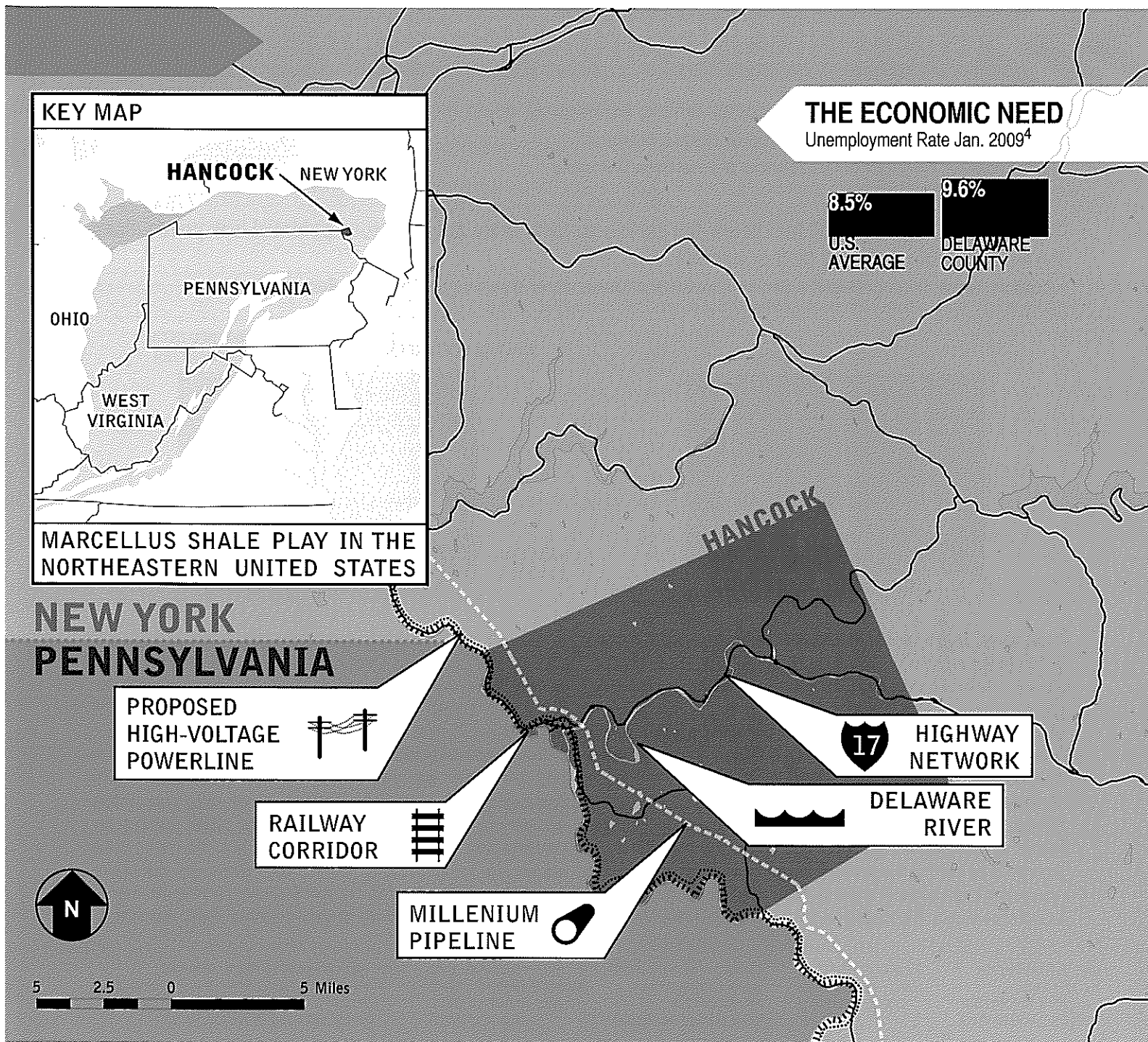
On the advent of this DEC review, it is incumbent upon all of us - voters, landowners and municipal leaders - to take a closer look and better understand the costs and benefits of natural gas extraction through horizontal drilling and hydraulic fracturing. This report explores this 'transitional energy' source, the means by which we reach it and the impacts such processes have on our communities, our health, our land and our water.

1) T. Engelder and G. Lash, "Marcellus Shale Play's Vast Resource Potential Creating Stir In Appalachia," *The American Oil & Gas Reporter*, May 2008, http://www.aogr.com/index.php/magazine/cover_story_archives/may_2008_cover_story/ (accessed May 2009)

2, 3) A. Lustgarten, "Governor Signs Drilling Bill But Orders Environmental Update," *ProPublica*, July 23, 2008.

<http://www.propublica.org/article/governor-signs-drilling-bill-but-orders-environmental-update-723> (accessed May 2009)

4) "Geography of a Recession," *New York Times*, March 3, 2009, http://www.nytimes.com/interactive/2009/03/03/us/20090303_LEONHARDT.html (accessed May 2009)



Gas drilling companies have been extensively acquiring leases on privately owned lands throughout the Upper Delaware region in preparation for exploration and extraction of natural gas in the Marcellus Shale as soon as state regulations allow. The Town of Hancock in Delaware County, New York, with its own share of economic struggles, is at the epicenter with approximately 24,741 acres leased to gas drilling companies as of April 2009. The town sits above a dense portion of the Marcellus Play amongst a convergence of infrastructure necessary to facilitate major natural gas extraction and distribution. This infrastructure and its potential value to drilling companies includes several components, the first

and primary being the Delaware River, which could source some of the millions of gallons of water needed for hydraulic fracturing. Route 17, "The Quick Way", soon to be upgraded to Interstate 86, may be a potential transportation corridor for truckloads of water, construction materials, and waste. The existing major rail corridor could provide an alternate shipping option for water and site materials. The Millennium Pipeline, recently enlarged to a diameter of 30 inches, has the potential to serve as the primary gas distribution line. While its future remains unclear, the NYRI high-voltage power line proposal may also be an asset to gas companies as an electricity source for hydraulic fracturing and drilling operations.

GAS DRILLING UNDERGROUND

"The value of this science [horizontal drilling techniques] could increment the net worth of U.S. energy resources by a trillion dollars, plus or minus billions."

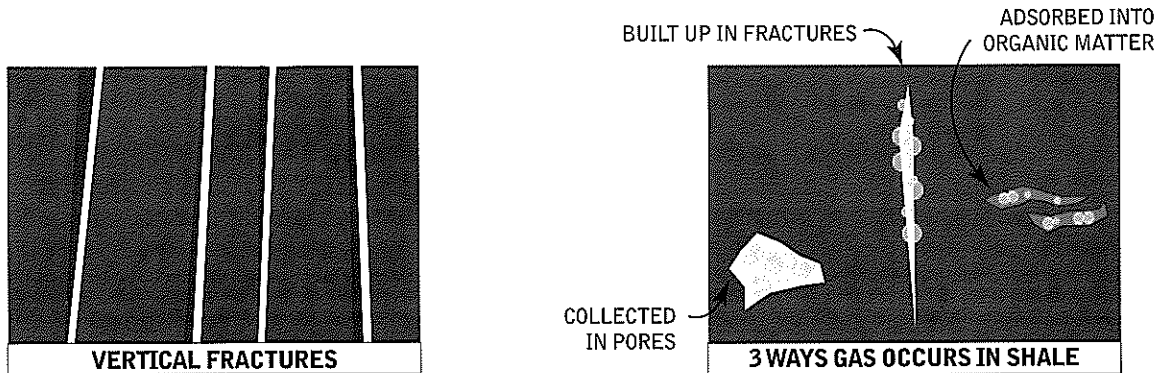
-Terry Engelder, Professor of Geosciences at Penn State University

Penn State Live, "Unconventional natural gas reservoir could boost U.S. supply," January 17, 2009, <http://live.psu.edu/story/28116> (accessed May 2009)

"When a pipe extends 8,000 feet below the earth's surface, there are numerous potential leak points along the way...well bore, natural fault or fracture..."

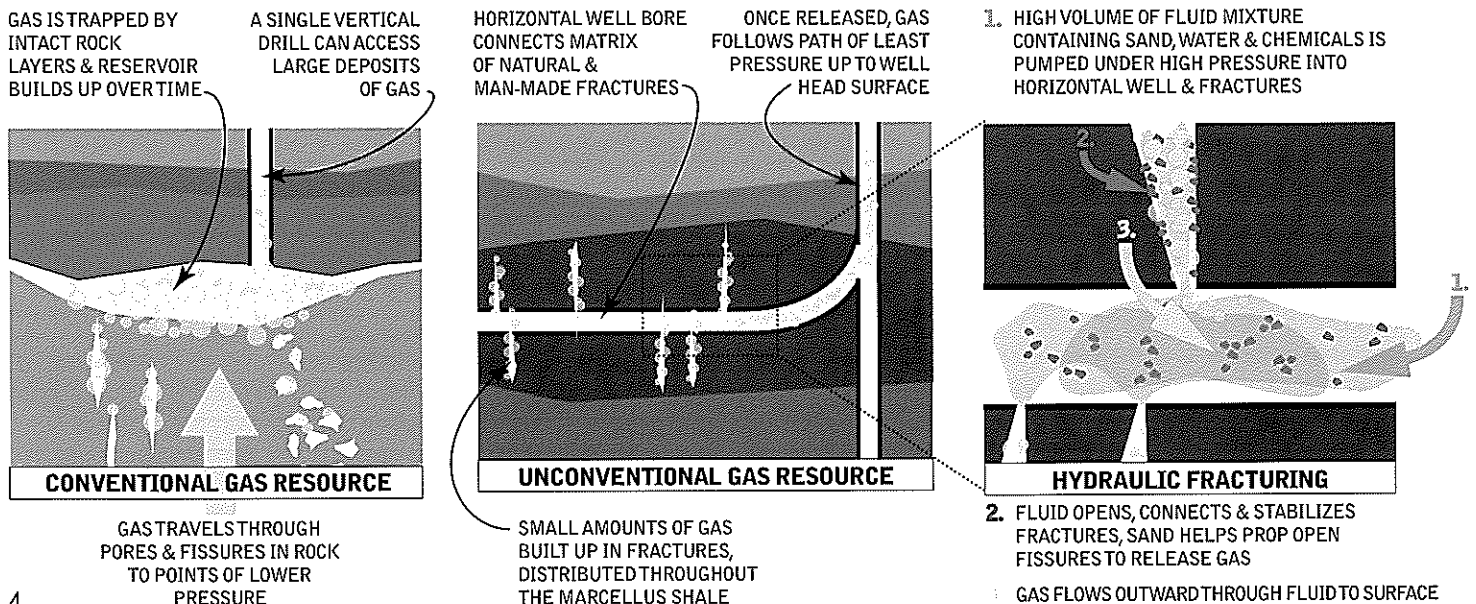
- Geoffrey Thyne, Hydrogeologist & Senior Researcher at University of Wyoming, Enhanced Oil Recovery Institute

A. Lustgarten, "Officials in Three States Pin Water Woes on Gas Drilling," *ProPublica*, April 26, 2009.



Each shale deposit across the United States is unique: formed with different varieties of organic matter, under different pressures, and over various time periods. As the organic matter decomposes, natural gas builds up in the shale. Over 350 million years ago layers of organic sediment collected, underwent tremendous pressure, and eventually formed the Marcellus during the Devonian period in the Northeastern US. The structure of the shale causes it to fracture vertically when stressed. As the earth shifts over time, gas travels through the fractures and collects in trapped underground pockets known as conventional gas reservoirs. When the permeability of the rock is so low that the gas cannot flow, or when the gas is tightly attached to organic matter in the formation, the deposit is referred to as unconventional. The majority of the gas potential in the Marcellus

is unconventional, making it more challenging to extract relative to conventional reservoirs. Over its nearly 600 mile span across the Appalachian Basin, the characteristics of the Marcellus fluctuate. The eastern portion below Delaware County is particularly attractive to gas drilling companies because it is both deep and thick (there is high potential for technically recoverable gas) and probably dry (the gas is pure with very little precipitates requiring less costly processing after extraction). Because of the often microscopic pockets distributed unevenly throughout the shale, the industry conservatively estimates that only about 10% of the gas in place will be able to be extracted.¹ At this early stage, gas companies must experiment to develop site specific drilling techniques, leaving the location and productivity of each gas well highly speculative.



METHANE GAS MIGRATION

Methane can occur naturally or near an extraction site and can be difficult to detect because it is odorless. Signs of contamination include effervescent water, spurting faucet, or a bubbling noise in a well. A recent study of 200 private water wells in McKean County, PA, shows higher contamination rates for volatile organic compounds and other fracturing chemicals near deep gas wells.²

TUBING & PROTECTION STRINGS

FRESHWATER PROTECTION STRING

In order to protect groundwater aquifers from the drilling fluids, a thick steel casing is cemented into place from the ground surface to below the deepest freshwater aquifer. Properly designed surface casings are critical due to the stresses of high gas and water pressure and the freeze/thaw cycles of the ground surface. Operators must monitor casing pressures throughout the well life to locate and correct leaks that may occur.³

HORIZONTAL DRILL

RADIOACTIVE MATERIAL

Shales often contain low levels of naturally occurring radioactive material, as is the case for the Marcellus.⁴ Radioactive material can reach the surface if radon gas is mixed with the natural gas and/or radioactive material is present in the fluids that are pumped out of the well. To ensure this is not a concern, monitoring of material brought to the surface and the regulation of waste storage and treatment are very important.

POTENTIAL CONCERNS

WELL HEAD CONNECTIONS

WELL PLUGGING

After the productive life of a well, typically a period of several years and in some cases up to a few decades,⁵ much of the well casing is removed. The freshwater protection string remains in place, and the well is plugged with a low porous material.

AQUIFER

HYDROGEN SULFIDE

Hydrogen sulfide (H_2S), recognized by its "rotten egg" odor, is a flammable and poisonous gas. It is naturally occurring, formed from decomposing organic matter, and is often present in wells drilled in shale or sandstone. H_2S was found in other Devonian shales in Ohio, Kentucky, and more specifically, in Derry Township, Pennsylvania which lies on the Marcellus Formation.⁶

MARCELLUS SHALE + 8,500FT

ACID-PRODUCING MINERALS

Shales are also known to contain acid-producing minerals such as pyrite and sulfides. In 2003, pyrite was exposed in the Marcellus Formation in Mifflin County, PA.⁷ Pyrite, when exposed to air and water, breaks down to form sulfuric acid and iron hydroxide. This acid can erode metals often found in black shales and contaminate soil and water resources. The US Geological Survey has confirmed high concentrations of arsenic, cobalt, chromium, molybdenum, nickel, vanadium, and zinc in stream sediments in close proximity to pyrite-rich Devonian black shale.⁸

- 1) Penn State Live, "Unconventional Natural Gas Reservoir Could Boost U.S. Supply," January 17, 2009, <http://live.psu.edu/story/28116> (accessed May 2009)
- 2) Penn State University Natural Gas Webinar, "Water," Feb. 19, 2009.
- 3) K. Moss, "Potential Development of the Natural Gas Resources in the Marcellus Shale," National Park Service, US Dept. of Interior, December 2008.
- 4, 6, 7, 8) L. Sumi, "Shale Gas: Focus on the Marcellus Shale," The Oil & Gas Accountability Project / Earthworks, May 2008.
- 5) B. Swistock, "Water Facts #28, Gas Well Drilling and Your Private Water Supply," Penn State College of Agricultural Sciences, Rev: Sept. 15, 2008.

GAS DRILLING ON THE GROUND

**WELL PAD SITE
APPROXIMATELY FIVE ACRES
ARE NEEDED FOR DRILLING
OPERATIONS.***

GAS DELIVERY
95% OF U.S. NATURAL
GAS IS DELIVERED VIA
INTERSTATE PIPELINE TO
LOCAL DISTRIBUTORS. THE
MILLENNIUM PIPELINE WILL
BE THE MAIN DELIVERY
LINE FOR HANCOCK.

WASTE WATER MANAGEMENT
FLUIDS USED DURING HYDRAULIC
FRACTURING ARE DISPOSED OF IN
ON-SITE WATER PITS OR SHIPPED
OFF-SITE TO TREATMENT PLANTS.

HYDRAULIC FRACTURING
HORIZONTAL DRILLING CAN REACH
10,000 FEET BELOW GROUND TO
EXTRACT NATURAL GAS.**

* FOR CONCEPTUAL CLARITY,
FRACTURING OPERATIONS NOT TO SCALE.

** MARCELLUS SHALE SITS 8,500 FT BELOW GROUND.
<http://geology.com/articles/marcellus-shale.shtml> (accessed May 2009)

WATER DEMAND

FRACTURING REQUIRES A HIGH QUANTITY OF WATER TO PROCESS ITS AGENTS, COMPETING WITH NEARBY WATER SOURCE NEEDS.

SETBACK

DRILL SITE MUST BE AT LEAST 100 FEET FROM DWELLING, 75 FEET FROM PUBLIC LAND AND 150 FEET FROM PUBLIC BUILDINGS.

SITE ANALYSIS

SEISMIC 2D SCANNING ESTABLISHES SHALE CHARACTERISTICS.

SITE CLEARING

SITE PREPARATION REQUIRES FOREST CLEARING TO ACCOMMODATE WELL PADS AND ACCESS ROADS.

TRAFFIC INCREASE

LARGE TRUCKS TRANSPORT WATER, HYDRAULIC FRACTURING SUPPLIES AND WASTE.

GAS DRILLING ON THE GROUND



1. LEASING

Gas companies gain legal access to private property for the exploration and extraction of natural gas by signing lease agreements with willing landowners. Because of radically shifting market pricing, these offers are often made under pressure for a short-term turnaround.

>> HOW CAN LAND OWNERS PROTECT THEMSELVES FROM POTENTIAL HAZARDS AND LIABILITIES FROM HYDRAULIC FRACTURING?



2. SITE ANALYSIS

The exploration for natural gas begins with a series of geological surveys of the surface and sub-surface characteristics of the site. Geologists can then extrapolate a two- or three-dimensional seismic interpretation to identify which areas are best suited for gas extraction from the shale. Typically, this process may take up to four months.

>> WHO CONSIDERS PROXIMITY TO A HOME, A BARN, A WELL, AND RESULTING VISUAL AND AUDIAL IMPACTS?



3. SITE CLEARING

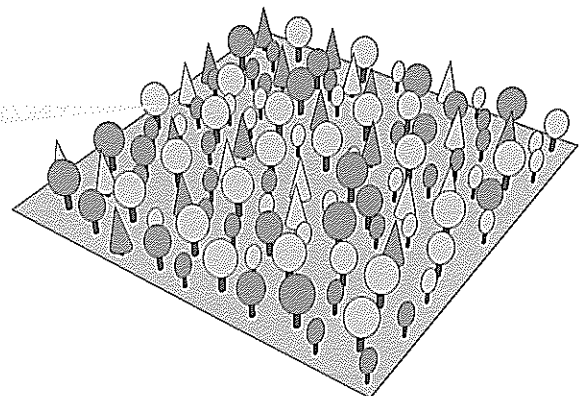
Once chosen, a site is prepared by tree removal, earth-moving and road-grading. This allows for the delivery of heavy machinery and for transportation of water and gas during and after extraction. Consequently local traffic will increase on predominantly rural roads and deforestation may result in more frequent and severe incidents of erosion.

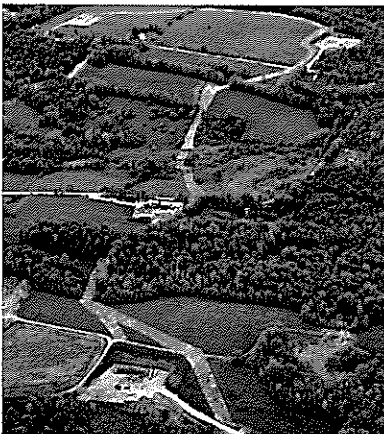
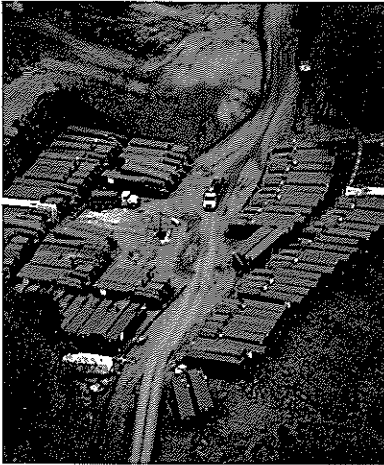
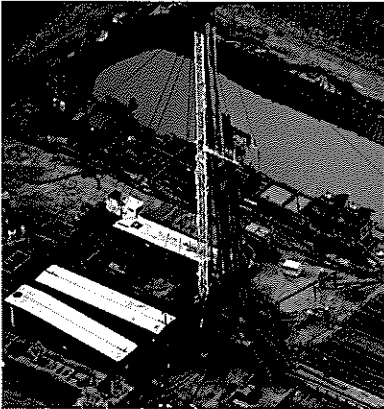
>> WHAT IMPACTS WILL SITE CLEARING HAVE TO HANCOCK'S RURAL LANDSCAPE AND HISTORIC WATER CONDITIONS?

TREE REDUCTION

1 acre of land sustains approximately **700 trees**, according to the Energy Act of 1992.

If one well pad site averages **5 acres**, about **3,500 trees** would be cut to clear maturely wooded terrain.





4. GAS PRODUCTION & DELIVERY

Once site preparation is complete, pad construction begins and drilling equipment is located. To initiate horizontal hydraulic fracturing, the drill first runs vertically for a few thousand feet before turning horizontally to reach the Marcellus Shale which sits approximately 8,500 feet below the surface. This process will last several weeks to months. Wells drilled in the Marcellus may require repeated fracturings, which often require more water than the initial fracturing, to maintain productivity.¹ After the drilling, natural gas production and distribution occurs simultaneously. Pipelines are placed underground on-site and connected to the well through a feeder pipe, allowing gas to be transported to assigned distributors off-site. Ninetyfive percent of natural gas within the United States is distributed below ground via a network of interstate and intrastate pipe-works, such as the Millennium Pipeline.² Depending on the leasing company, extracted gas may be distributed above-ground, whereby the gas is liquified at a local plant and then trucked out to gas distribution source points.³ This however is not a common practice unless the extracted gas is meant to be exported to a distant location.

>> HOW MUCH WATER WILL BE NEEDED, WHERE WILL IT COME FROM, AND WHERE WILL IT GO?

5. CLOSING

The lifespan of a well is anywhere from five to thirty years.⁴ During this period, road maintenance, refracturing and additional site preparation will likely be necessary. Upon expiration of the lease, the inactive well should be closed and the site should be restored as per the terms and conditions of the lease. Many leases may allow for extensions but may not fully cover necessary remediation. A typical well closing may last for two weeks.

>> WHAT ARE THE LONG-TERM CONSEQUENCES OF HYDRAULIC FRACTURING TO LANDOWNERS, THE ENVIRONMENT, AND THE COMMUNITY?

All Photos Dimock, PA
© 2009 J. Henry Fair

1) L. Sumi, "Shale Gas: Focus on the Marcellus Shale," The Oil & Gas Accountability Project / Earthworks, May 2008.

2) United States Department of Energy, "Energy Efficiency and Renewable Energy, Current Technology, Natural Gas Reforming." http://www1.eere.energy.gov/hydrogenandfuelcells/production/natural_gas.html (accessed May 2009)

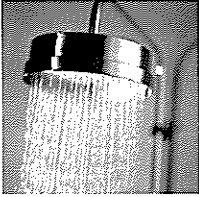
3) American Petroleum Institute, "Natural Gas Facts." http://naturalgasfacts.org/processing_and_delivery.html (accessed May 2009)

4) W. Lynn, "Drilling Companies Looking for Natural Gas," *The Progress Paper*, April 16, 2008. http://naturalgasfacts.org/processing_and_delivery.html (accessed May 2009)

ONE GAS WELL IN HANCOCK...

Natural gas exploration and extraction will impact the water, traffic and air in Hancock.

At minimum, horizontal wells use 62.5 times more water than traditional vertical wells



That's a minimum of 1.5 million gallons of water used during drilling¹

That's enough water for everyone in the town of Hancock to take 17 ten-minute showers!

Average shower = 2.5 gallons per minute
25 gallons = 10 minute shower
Population of Town of Hancock = 3,449
according to the 2000 US Census

WATER WITHDRAWAL

"Water use is important, but an overblown issue."

-Mike Uretsky, Northern Wayne Property Owners Alliance

M. Uretsky, "Understanding and Fixing the Gas Exploration Paralysis: Building a Win-Win Situation, An Agenda for Change," Presentation dated January 12, 2009.

Horizontal fracturing requires a substantial consumption of water. A traditional vertical well uses an average of 80,000 gallons during its operating life, while horizontal wells that will be used throughout the Marcellus Shale will require anywhere from 1,500,000 gallons to 9,000,000 gallons of water during its 4 to 6 weeks of fracturing process.¹ This amount of water exceeds the volume required for vertical wells by more than 62.5 to 112.5 times.² That amount of water is approximately equivalent to every resident in Hancock taking between 60,000 to 360,000 ten-minute showers.³

Hancock's proximity to the Delaware River has encouraged extensive natural gas leasing in this area. The Delaware River is the main source of drinking water for many communities in the Catskills, as well as primary metropolitan areas such as Philadelphia and Trenton. According to the Delaware River Basin Commission

(DRBC), approximately 36% of the Delaware Basin lies above the Marcellus Shale.⁴

For Delaware County and other municipalities that lack a centralized water system, the viability of gas development here will depend on the capacity of on-site wells to support drilling needs rather than the more costly shipment of water from off-site to the drilling location.⁵ In addition to the challenge of finding enough water required for hydraulic fracturing, there is great concern regarding the disposal of significant amounts of waste water created by natural gas extraction. Questions remain as to how the water will be contained on-site following the fracturing process (i.e., in open pits or containers), whether municipal waste water treatment facilities can handle large quantities of large contaminated water, and how and where the water will be transported off-site if treatment cannot be provided locally.

All Photos Dimock, PA
© 2009 J. Henry Fair

WASTE WATER & DISPOSAL

"...It's only sand and water, you have nothing to be afraid of..."

-Ron Gillius, Director of the Oil & Gas Management Division, Pennsylvania DEP

Deaware River Basin Comission, Meeting Minutes, West Trenton, New Jersey, March 11, 2009 http://www.state.nj.us/drbc/3-11-09_minutes.pdf (accessed August 2009)

Typically, 30 to 40% of the water used for drilling and fracturing returns to the surface highly contaminated. Pollutants include surfactants/detergents, salt, metals, suspended solids, fracturing chemicals, oil, and grease.⁶ However, municipalities in Delaware County do not have specialized treatment facilities with a capacity to handle industrial volumes of drilling waste water that contain salts and non-traditional chemicals. Instead, gas companies will likely pump waste water into on-site pits to evaporate in the open air. These pits are constructed with plastic liners, susceptible to punctures and often overflow during

heavy rainfall. They must be frequently monitored during their construction and use to avoid any risk of contamination to soils and ground water. Using deep injection disposal wells, where millions of gallons of waste water are injected deep into the earth, is another on-site option but this process runs a very high risk of contaminating drinking water and requires permits from both the DEP and the EPA, regulated by the Underground Injection Control (UIC).⁷ Containerized wastewater units on-site can also hold waste water on-site prior to shipment for off-site treatment but such must be included in a lease negotiated by the landowner.



AIR, NOISE & LIGHT

Portions of the chemicals used in fracturing fluid for natural gas extraction are converted into airborne toxins. Because many of the chemicals used by hydraulic fracturing companies are not of public record due to trade secret protection, it is difficult, if not impossible, to fully evaluate exposure risks. Of the documented health impacts associated with exposure to these chemicals, 94% result in eye and/or skin harm, 83% respiratory harm, 87% brain/neurological harm, and 93%

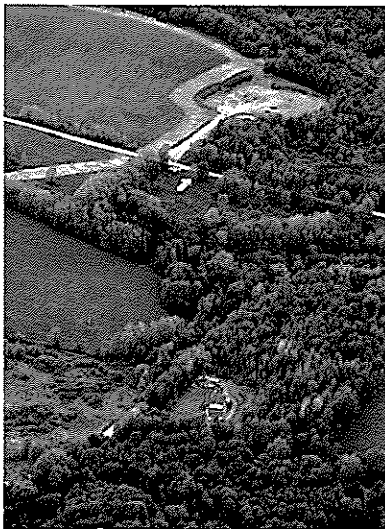
gastrointestinal harm.⁸ While gas workers are primarily affected by direct exposure to these chemicals, both air- and water-based dispersal of chemicals at pad sites impact those living in close proximity to fracturing operations. Thumper trucks, drilling, generators, and large trucks are all sources of noise and light pollution at varying frequencies and durations throughout surveying, 24-hour drilling, and fracturing operations.



TRAFFIC INCREASE

The increase of truck traffic for water transport associated with natural gas extraction has been studied at length. With three primary extraction phases - drilling which typically runs for 30 days, fracturing which typically takes anywhere from 14 days to a few months, and the ongoing operation and maintenance of the well site which can last for years - a tremendous amount of water is required. Sullivan County's study of the City of Denton,

Texas, found that on average, for all three phases, approximately 592 one-way truck trips were made per well. Some individual vehicles weighed as much as 80,000 lbs when loaded with water and 100,000 lbs when loaded with rigging equipment.⁹ The report clearly indicated that truck traffic associated with natural gas extraction increased vehicles on the road and also had a detrimental impact on the pavement life of municipal roads.¹⁰



COMPULSORY INTEGRATION

As large swaths of land are leased by gas companies, the future of any unleased land in close proximity remains in question. All drilling permits are subject to mandatory spacing units and as a result, some may encroach on unleased land as required by DEC. If the State grants such a permit, the property owner of that unleased land will receive a notice to elect, within 21 days, one of three choices of integration: as a participating owner, as a non-participating owner or as a royalty owner.¹¹ While participating owners must front non-refundable costs to the well operator which can be a risk if the well ends up producing little or no

natural gas, a participating owner receives lease payments as well as their full share of royalties. Non-participating owners do not front the cost of the well but are compensated by the well operator only after the revenue from production covers the costs for the well and for a 200% risk penalty. Royalty owners, the default option, are not required to make any payments to the well operator. After the well goes into production, the owner will receive a royalty no less than one-eighth of the revenue received by the well operator for the share of production attributable to the owned acreage.¹²

1, 4, 5) "Preparing For Natural Gas Development: Understanding Impacts And Protecting Public Assets," A Gas Drilling Research Task Force Report For Sullivan County, February 13, 2009.

2) Natural Resources Defense Council (NRDC), "Comments on Draft Scope of Work for Well Permit Issuance of Horizontal Drilling and High-Volume Hydraulic Fracturing to Develop the Marcellus Shale and Other Low-Permeability Gas Reservoirs," December 15, 2008.

3) Based on average 10 minutes on 2.5 gallons per minutes shower head

6, 7) Penn State University Natural Gas Webinar, "Water," February 19, 2009.

8) "Products and Chemicals Used in Fracturing," Endocrine Disruption Exchange of Paonia, CO, February 2009.

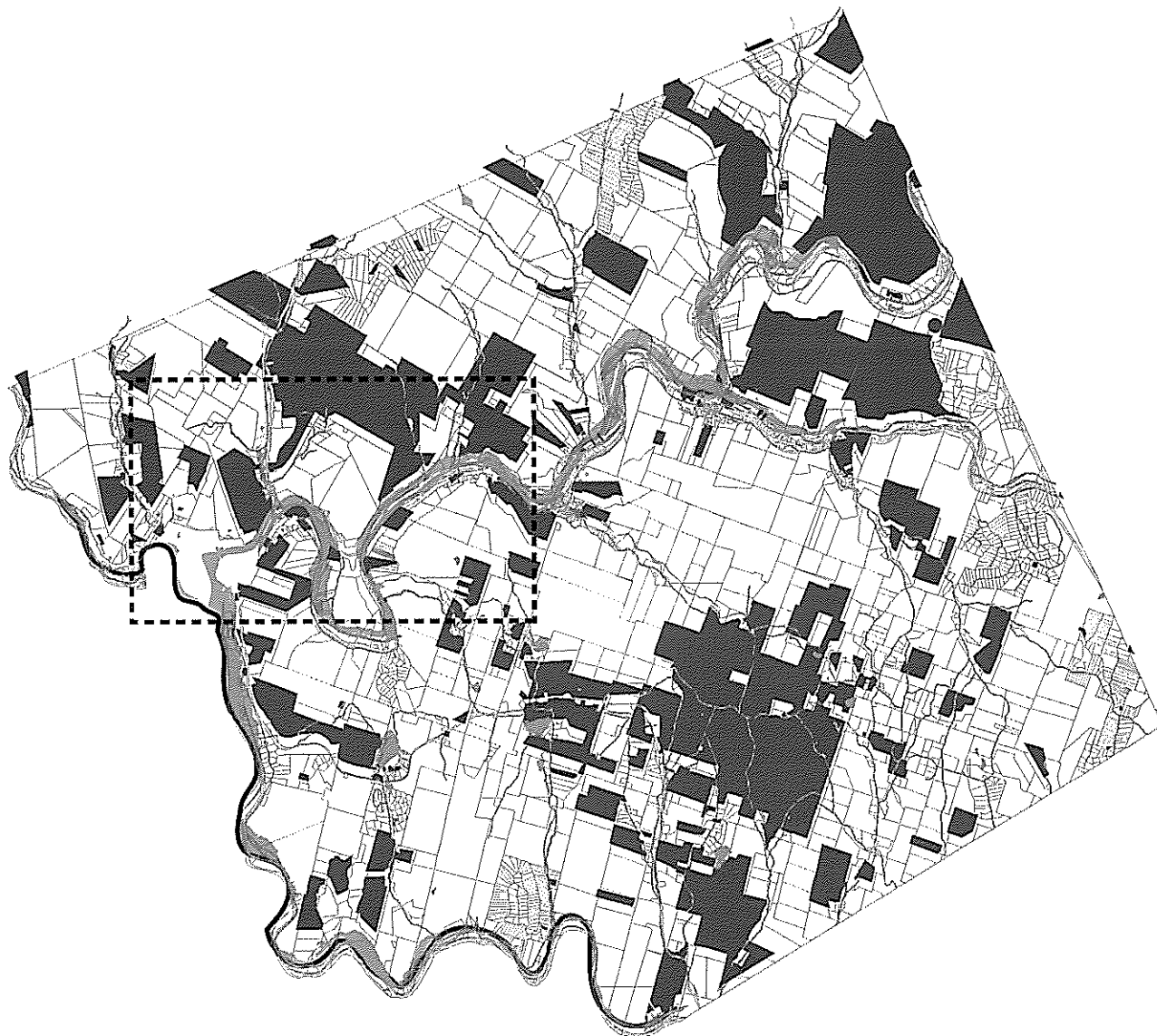
<http://www.endocrinedisruption.com/chemicals/fracturing.php> (accessed August 2009)

9, 10) "Preparing For Natural Gas Development: Understanding Impacts And Protecting Public Assets," A Gas Drilling Research Task Force Report For Sullivan County, February 13, 2009.

11) B. Field, "NYS DEC Program Policy DMN-1," Division of Mineral Resources, February 22, 2006. <http://www.dec.ny.gov/energy/28013.html> (accessed August 2009)

12) NYS DEC, "Landowner Option Guide," <http://www.dec.ny.gov/energy/1590.html> (accessed August 2009)

HUNDREDS OF WELLS IN HANCOCK...



As of April 2009 **25%** of Hancock has been leased to gas companies.¹

¹. Based on research conducted by S.D. Root, Esq. of the Open Space Institute.



HANCOCK, NY

40-ACRE WELL SPACING
16 WELLS PER SQ. MILE
 Hypothetical Scenario based
 on April 2009 Lease Map
5 ACRE WELL PADS

EXISTING ROADS
 POTENTIAL BUILD OUT
 MILLENNIUM PIPELINE

100 YEAR FLOOD ZONE
 LOCAL HYDROLOGY DISCHARGE

0 1.25 2.5 MI



HANCOCK, NY

5-6 WELL HEADS PER PAD
16 WELLS PER SQ. MILE
 Hypothetical Scenario based
 on April 2009 Lease Map
15 ACRE WELL PADS

TWO LOCAL FARMERS

"...for me this lease means retirement."

"...they are drilling all over the world, there's got to be a way to protect it [water]...they [gas companies] don't tell you much of anything..."

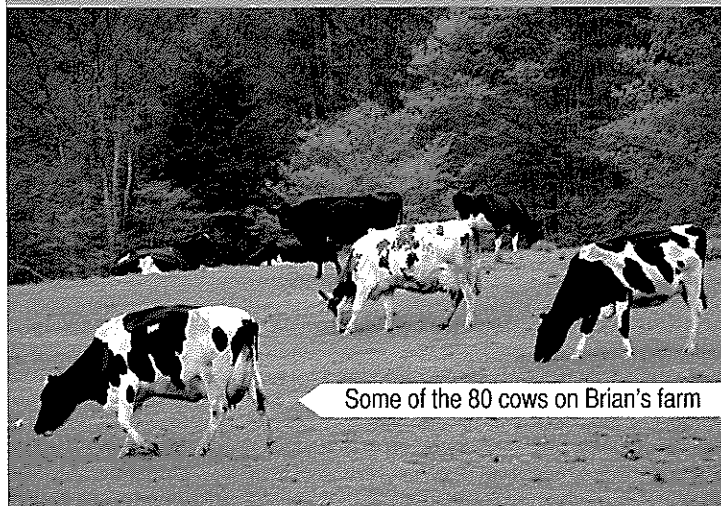
"...I think this will be a great thing for the economy...it's going to stimulate the area. The economy in the area will boom..."

>> Brian Begeal

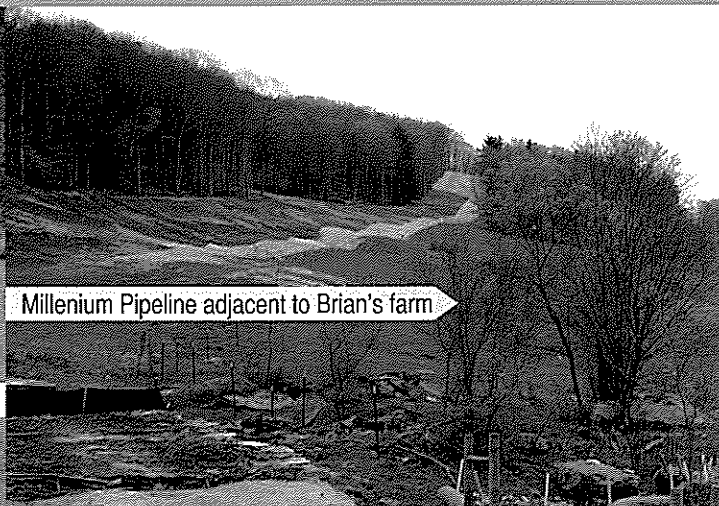
312 acre Dairy Farm

Owned for 5 generations, operated since 1982

After negotiations with the gas drilling company, Brian, along with a group of land owners, signed a 5 year lease with an additional 3 year option.



Some of the 80 cows on Brian's farm



Millenium Pipeline adjacent to Brian's farm

All quotes Brian Begeal, interview by Emily Weidenhof, Vivian Ngo, Dongsei Kim and Wes Gillingham, Brian's Farm in Deposit, NY, May 5, 2009.

All photographs taken by Dongsei Kim on May 5, 2009.

Photographs and quotations published with individual's permission.

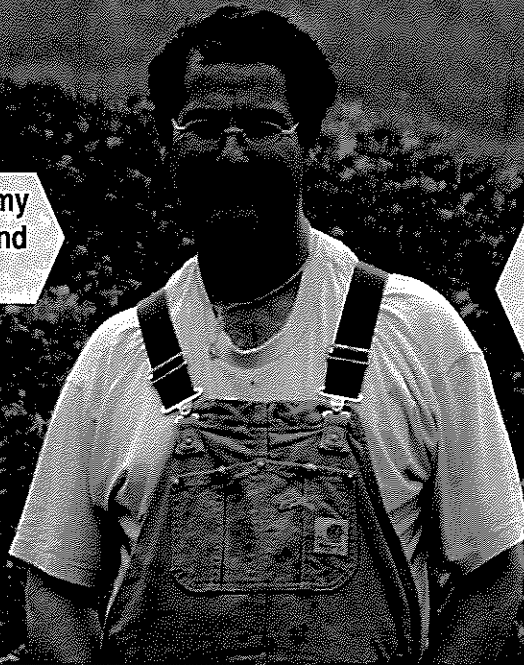
“...there is no stopping the gas...”

“...this is all about the water...don't take it from the aquifers...it's also how you build the roads...this [gas drilling] is a disaster for water but doesn't have to be if DEC places protections...”

“...my farm is utterly dependent on my well water and spring pond...”

“...some lives better, some worse...my life will be worse with truck traffic and noise.”

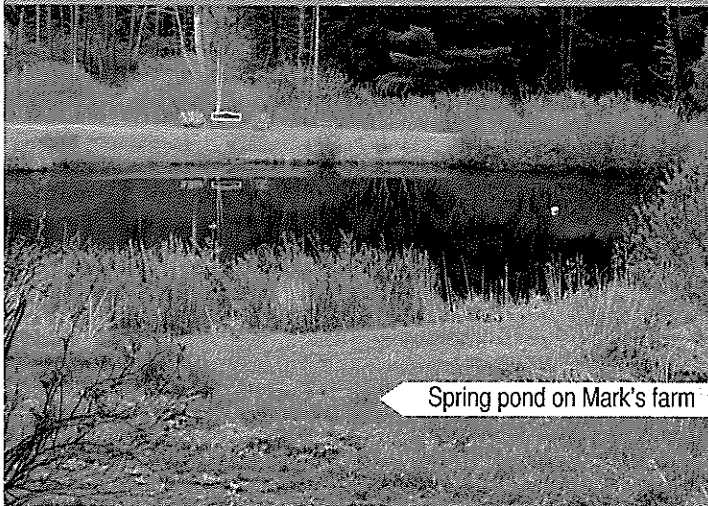
“...there are so many tired farmers out there, this is their chance now not to go to work...”



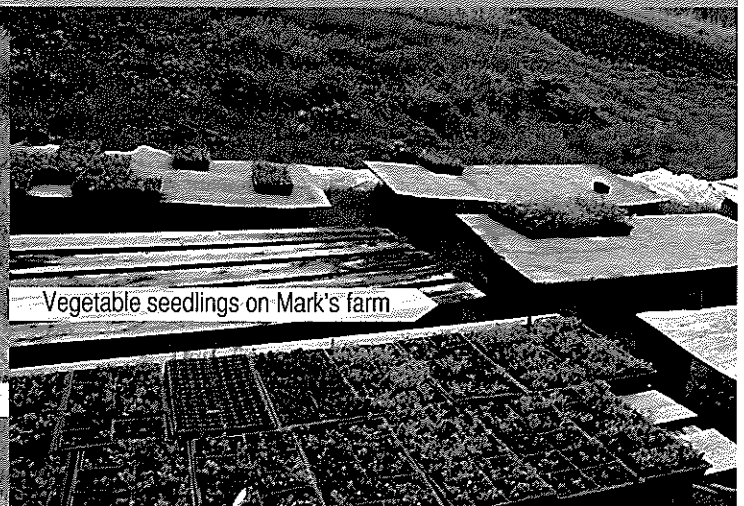
>> Mark Dunau

50 Acre Organic Vegetable Farm
Owned & operated since 1986

After attending lease contract meetings, Mark declined to lease his land to the gas company.



Spring pond on Mark's farm



Vegetable seedlings on Mark's farm

All quotes Mark Dunau, interview by Emily Weidenhof, Vivian Ngo, Dongsei Kim and Wes Gillingham, Mark's Farm in Hancock, NY, May 05 2009.

All photographs taken by Dongsei Kim on May 5, 2009.

Photographs and quotations published with individual's permission.

WHAT DOES HANCOCK HAVE TO GAIN?

“Natural-gas extraction would create jobs, create wealth for upstate land owners and increase state revenue from taxes and landowner leases and royalties.”

-Governor Paterson’s draft 2009 New York State Energy Plan

S. Israel, “Gas Industry Prepares to Drill in Sullivan,” *Times Herald-Record*, September 1, 2009.

“Unless you want all the land to end up in the hands of the wealthy, or go for back taxes to the county or see it developed, this [leasing land to gas company] is the way to go.”

-Tom Shepstone, former planning adviser for the Town of Bethel

S. Israel and A. Bosch, “Sullivan Bracing for Enormous Rush by Natural Gas Companies: Big Money’s at Stake,” *Times Herald-Record*, July 06, 2008.

“Once we drill, we expect to be in a location for many decades. We come with the intention of being a long-term, positive influence.”

-Jim Gipson, spokesman for Chesapeake Energy, a company leasing land in Sullivan County

S. Israel and A. Bosch, “Sullivan Bracing for Enormous Rush by Natural Gas Companies: Big Money’s at Stake,” *Times Herald-Record*, July 06, 2008.

“People don’t realize what a huge economic boost this has been.”

-Tina Schaeffer, bookkeeper at the Grandview Palace condominium resort in Loch Sheldrake, which rented 25 units to pipeline workers at up to \$900 each per month

S. Israel, “Millennium Employees Gave Big Lift to Economy,” *Times Herald-Record*, November 14, 2008.

Many industry experts predict that Marcellus shale is the next big opportunity for Appalachia, and oil companies have already invested hundreds of millions of dollars in the region. It is still too early to evaluate the full economic impact gas drilling will have on Hancock. However, we can draw some conclusions from the Barnett Shale region of north Texas where unprecedented wealth, employment jumps, and significant population increases have occurred. In an economic impact study by Perryman Group,¹ a Texas-based economic consulting group, three types of economic activities related to natural gas were identified in the Fort Worth Region: 1. Exploration, drilling and operations; 2. Leasing and royalties that go to landowners; and 3. Pipeline infrastructure.

Leasing and royalties income, which creates the most direct economic effect, actually accounts for a relatively small share of 11% in gross product, compared to 67% in exploration, drilling and operation, and 22% in pipeline infrastructure.² The report notes that the largest gain from the Barnett Shale went to the crude petroleum and natural gas industry, while retail, hospitality and other service sectors experienced some growth in income and employment. In the current

economic crisis, these activities could potentially sustain Hancock’s financial future while providing stable income for land owners who have signed leases.³ It remains to be seen whether the additional income and jobs would create enough personal financial benefit to offset potential costs associated with effects of gas drilling on health care, home insurance and home value. Gas drilling activities in Hancock could also bring in tax revenue to the county and municipal governments. However, under the current Real Property Tax Law for New York, only gas-producing wells are being taxed. This means no tax goes to the local governments during exploring, drilling and fracturing or from abandoned and wells under the minimum production level. A productive well will only provide approximately 21% or \$12,368 of tax revenue back to Hancock, while the remainder would be allocated to Delaware County and local schools.⁴ Based on this scenario and figures, ten drilling sites with six producing wells each could bring to the town \$742,208 in taxes. Because it has yet to be determined what the total costs would be associated with road repair and maintenance, emergency services and contamination clean up, it is not clear whether such income would be enough to cover these expenditures by Hancock as a result of natural gas exploration.

1. 5) The Perryman Group, “Drilling for Dollars: An Assessment of the Ongoing and Expanding Economic Impact of Activity in the Barnett Shale on Fort Worth and the Surrounding Area,” 2008.

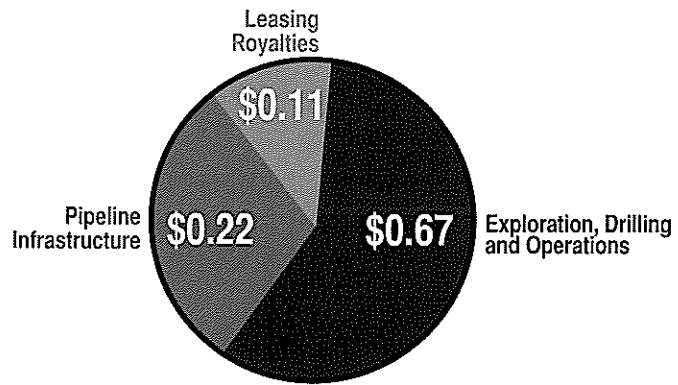
2) T. Kelsey, “Potential Economic Impacts of Marcellus Shale in Pennsylvania: Reflections on the Perryman Group Analysis from Texas,” Penn State Cooperative Extension, <http://naturalgaslease.pbwiki.com/Potential+Economic+Impacts+of+Marcellus+Shale.pdf> (accessed July 2009)

3) “Economic Impact of the Oil and Gas Industry in Pennsylvania,” Pennsylvania Economy League of Southwestern Pennsylvania, LLC, November 2008.

4) The Gas Drilling Task Force, “Preparing for Natural Gas Development: Understanding Impacts and Protecting Public Assets,” February 11, 2009.

6) B. Begeal, interview by Emily Weidenhof, Vivian Ngo, Dongsei Kim and Wes Gillingham, Brian’s Farm in Deposit, NY, May 05 2009.

FOR EVERY \$1 GENERATED RELATED TO GAS DRILLING⁵:



LEASING BONUS + ROYALTIES = EARLY RETIREMENT

"There are so many tired farmers out there. For the folks around this area, this gas lease is like a lottery ticket. This is their chance to not have to work."

- Mark Danau, organic farmer from Hancock

M. Dunau, interview by Emily Weidenhof, Vivian Ngo, Dongsei Kim and Wes Gillingham, Mark's Farm in Hancock, NY, May 05 2009.

NEW BUSINESS FOR HOTELS AND RESTAURANTS

"For now, the men on the drilling crews seem to be mostly from Texas, and they are providing steady business to hotels and restaurants."

- Rick Adams, Houston, PA mayor and cafe owner

M. Levy, "Marcellus Shale Drilling Offers Hope," *Times Leader*, November 28, 2008.

http://www.timesleader.com/news/hottopics/shale/Marcellus_Shale_drilling_offers_hope_11-27-2008.html (accessed May 2009)

NEW JOB OPPORTUNITIES

"Employment of 26,500 individuals in full and part-time jobs. For every oil and gas industry job, an additional 1.52 full and part-time jobs are generated in Pennsylvania. Indirect or induced employment, related to oil and gas, includes industries such as health care, legal services and the management of companies and enterprises."

- Report by the Pennsylvania Economy League of Southwestern Pennsylvania

Allegheny Conference on Community Development, "Pennsylvania's Oil and Gas Industry Generates \$7.1 Billion in Statewide Economic Impact Annually, New Report Finds," November 17, 2008. <http://www.alleghenyconference.org/PDFs/ACCDPress/PR08OilGasIndustryReport111708.pdf> (accessed June 2009)

IT'S ALL ABOUT ECONOMIC BOOM

"With the signing bonus I can retire now....
I am tired of working 100 hours a week."

-Brian Begeal, as he points towards a future gas drilling site⁶

WHAT DOES HANCOCK HAVE TO LOSE?

"It's a heated subject, and it makes us get angry with one another. And we shouldn't. We should find common ground and move it forward. To stop the drilling is an exercise in futility. ...[W]e're property owners and voters who reside here and we favor responsible development, including gas drilling, which is going to take place."

-Marian Schweighofer, Northern Wayne Property Owners Alliance

S. Long, "Natural Gas Hot Topic at UDC Meeting," *River Reporter*, June 11-17, 2009. <http://www.riverreporter.com/issues/09-06-11/head2-udc.html> (accessed July 2009)

"Gas companies will try and cheat a landowner in 1,000 different ways. It all comes down to the lease."

-James Leonard, an Endicott Accountant specializing in the gas industry

S. Israel, "Gas-drilling forum draws 300 people in Sullivan," *Times Herald-Record*, August 19, 2008. <http://www.recordonline.com/apps/pbcs.dll/article?AID=/20080819/NEWS/80819035/-1/rss01> (accessed July 2009)

"We're all poor people around here. We thought this was going to be great for us. But we didn't expect explosions."

-Norma Fiorentino, referring to the local gas development and after her water well exploded in Dimock Township, PA

L. Legere, "DEP Probes Blast in Gas-Drilling Region," *Scranton Times-Tribune*, January 03, 2009.

As our midwestern and Pennsylvania neighbors can attest, increased costs associated with hydraulic fracturing borne by a town and its school districts can be significant. From road damage and repair to added burdens from contamination cleanup costs, the impact on local coffers can be devastating. In Hancock, all drilling, fracturing and extraction processes will require extremely heavy truck traffic on rural roads not designed for such capacity and the seven bridges in Hancock will undoubtedly experience unprecedented levels of use.¹ If the Town of Lebanon, New York is any indication, Hancock's costs to repair and maintain its road infrastructure would negate any benefit from tax revenues generated by gas production. With 1,340 residents, this small Madison County town had an annual local road repair budget of approximately \$60,000 but following the introduction of natural gas drilling, and associated transport needs, the cost for road repair has risen to more than \$550,000 in the past two years.²

extraction and capping of wells could further drain local tax revenues because current bonding levels collected from the gas companies by the town for potential contamination cleanup are still set at the 1960 rate.⁴ Since this will not be sufficient to cover current capping costs, it will likely be the tax payers who will subsidize the town's effort to clean and cap abandoned gas wells.

Individual landowners may also face increased costs for home and health insurance costs. In most cases, a property leased for gas exploration would constitute a "business" exposure with a greater risk of injury, requiring additional liability clauses and a higher insurance rate.⁵ Impacts on the health of landowners, their children and their livestock from the noise and air pollution generated by a 24-hour drilling operation may likely increase health insurance premiums or may not even be covered by certain policies.

All industrial sites carry a high risk of chemical spills and fire. Such risks place burdens on rural emergency services and in Hancock, additional training for emergency personnel on toxic chemicals and flammable gas significantly will be critically necessary.³ Moreover, cleaning up contamination during fracturing,

Because of the unknown nature of gas drilling's physical impact on Hancock, any prediction of economic results, whether a gain or loss, is entirely speculative. Policy makers, as well as residents, should be aware of all potential impacts from natural gas extraction that could affect the health and economy of Hancock and its residents.

1) G. Scott, "Truck Traffic Blamed for Damaged Roads," *Weatherford Democrat*, June 20, 2007.

2) J. Goldstein, "Lebanon Supervisor Comments on Recent Natural Gas Article," *The Madison County Courier*, July 22, 2009.

3) Headwaters Economics, "Fossil Fuel Extraction as a County Economic Development Strategy Are Energy-focusing Counties Benefiting?", Bozeman, Montana, September 2008. http://www.headwaterseconomics.org/energy/HeadwatersEconomics_EnergyFocusing.pdf (accessed May 2009)

4, 10) D. Pace, "Taxpayers May Be Liable for Oil Cleanup," *Associated Press*, December 27, 2004.

5) DGK Insurance and Financial Services, "If I Sign a Gas Lease, How Will Coverage for Liability Issues be Addressed Under Either Homeowner's or Farm Owner's Insurance Policy?", <http://www.dgkinsurance.com/faq.htm#gaslease> (accessed August 2009)

6) U.S. Department of Education, "New York," http://www.ed.gov/rschstat/eval/disadv/2002indicators/new_york/edlite-new_york.html (accessed August 2009)

7) U.S. Environmental Protection Agency, "Evaluation of Impact to Underground Sources of Drinking Water by Hydraulic Fracturing of Coalbed Methane Reservoirs," June 2004.

8) A. Mail, "Oil and gas impacts on livestock health?", NRDC, Boulder, Colorado, May 5, 2009.

http://switchboard.nrdc.org/blogs/amaill/oil_and_gas_impacts_on_livesto.html (accessed July 2009)

9) "Preparing For Natural Gas Development: Understanding Impacts And Protecting Public Assets," A Gas Drilling Research Task Force Report For Sullivan County, February 13, 2009.

11) L. Legere, "DEP Probes Blast in Gas-Drilling Region," *Scranton Times-Tribune*, January 03, 2009.

12) A. Bosch, "Farmers Hope Gas Drillers Hit Paydirt," *Times Herald-Record*, July 13, 2008.

<http://www.recordonline.com/apps/pbcs.dll/article?AID=/20080713/NEWS/807130330> (accessed May 2009)

SCHOOL COSTS

CURRENT PER PUPIL EXPENDITURES \$9,344⁶

MEDICAL & EMERGENCY SERVICE COSTS

SOME INGREDIENTS IN THE FRACTURING FLUID IN UNDILUTED FORM CAN CAUSE KIDNEY, LIVER, HEART, BLOOD, & BRAIN DAMAGE THROUGH PROLONGED OR REPEATED EXPOSURE.⁷

LIVESTOCK HEALTH

REPRODUCTIVE CHANGES, INCLUDING UNEXPLAINED, DRAMATIC INCREASES IN BIRTH DEFECTS, STILLBIRTHS, AND REDUCED FERTILITY, ACCORDING TO MEDICAL TESTING. ONE HOG FARMER ESTIMATES HIS LOSSES AT MORE THAN \$50,000.⁸

ROAD REPAIR & MAINTENANCE

ON AVERAGE, ALL THREE PHASES YIELD ABOUT 592 ONE-WAY TRUCK TRIPS PER WELL WITH SOME INDIVIDUAL VEHICLES WEIGHING UP TO 80,000 LBS. WHEN LOADED WITH WATER.⁹

CONTAMINATION CLEAN UP

\$1 BILLION TAX EXPENSE; SINCE REQUIRED BONDS ARE COLLECTED FROM OIL AND GAS COMPANY AT A RATE SET IN 1960, TAX PAYERS MUST SUBSIDIZE GOVERNMENT EFFORTS TO CLEAN AND CAP ABANDONED GAS WELLS¹⁰

INSURANCE PREMIUMS

JUST BEING NEAR A DRILLING SITE MAY CAUSE YOUR INSURANCE TO INCREASE.

IF THERE IS AN EXPLOSION IN YOUR NEIGHBORHOOD AS HAS HAPPENED IN DIMOCK, PA,¹¹ YOU MAY NOT BE ABLE TO GET HOMEOWNERS' INSURANCE AT ALL.

IT'S ALL ABOUT LONG TERM

Photograph by Dongsei Kim

**"Their trucks are up and down here all day.
You ought to hear it at..."**

-Ray, an auto mechanic in Dimock, whose voice is drowned out by a passing truck.¹²

WHAT DOES THE REGION HAVE TO LOSE?

"You can't do a large amount of drilling and have zero impact.....We are absolutely focused on protecting our water"

-John Hanger, Secretary of Pennsylvania's Department of Environmental Protection

J. Hurdle, "Pennsylvania Says Natgas Drilling Risks Inevitable," *Reuters*, March 20, 2009.

<http://www.reuters.com/article/environmentNews/idUSTRE52J6AP20090320> (accessed August 2009)

"The gas companies tell us it's impossible for the water to become contaminated... But it's increasingly common... We have no idea what to protect ourselves from."

-Lisa Bracken, resident of Silt, Colorado, who draws her drinking water from Divide Creek.

A. Lustgarten, "Does Natural-Gas Drilling Endanger Water Supplies?", *Business Week*, November 11, 2008.

http://www.businessweek.com/magazine/content/08_47/b4109000334640.htm (accessed August 2009)

"As in 1981, the physical behavior of the Delaware River system can still be compared to that of a single pool. Changes in one region can affect circumstances in another. The replenishment of both surface and ground waters is linked to weather and precipitation, soil and geology, human use and transport."

-The Delaware River Basin Commission

State of the Delaware River Basin Report 2008, "Category 1, Basin Hydrology," December 2008. <http://www.state.nj.us/drbc/SOTB/index.htm> (accessed August 2009)

As millions of people, plants, and wildlife species depend on the high quality and quantity of water in the Delaware River, one of the most important considerations for policy makers and landowners is the impact natural gas extraction will have on the regional water network of the Delaware River Basin. To best understand the scale of this impact, we look to the number of people depending on this hydrological system and its vulnerability to a drastic change in use patterns.

Every day, over 8.7 billion gallons of water are consumed in the Delaware River Basin¹ by nearly 16 million people.- that's one out of twenty Americans. Of the four states sharing the Delaware River Basin, Delaware has the highest percentage of water consumption from this source (81.5%), followed by Pennsylvania (42%), New York (35%), and New Jersey (34%).² The potable water supply of the Delaware River Basin is composed of surface water diversions (rivers, streams, and reservoirs) and groundwater withdrawals (aquifers). Surface water sources constitute one third of the resources provided by the Delaware River and are directly related to the condition and use of the area's landscape. The remaining two thirds of the water is fed by groundwater sources.

The upper region of the basin where Hancock is located depends mostly on groundwater sources (80%), specifically domestic wells.³

New York City's water supply depends almost entirely on the well-being of the Catskill/Delaware System. The Catskill/Delaware watershed, located on the eastern edge of the Marcellus Shale, is the main source of water for over 9 million New York City residents. It constitutes 90% of the total water consumption in the city and is one of the rare water supply systems in the world that does not require an expensive filtering process or a mechanical pumping system to reach its consumers. The other 10% of the water is provided by the Croton Watershed, for which the city is currently building a water filtration plant that will cost more than \$3 billion.⁴

Recent records of gas drilling activity in the U.S. collected from at least nine states have shown that water contamination, fracturing fluid spills, and water theft⁵ have been consistent issues in communities where local residents are competing for water with gas drilling operations from a common river or reservoir system.

J. HENRY FAIR

Observing the landscape from a larger scale, photographer J. Henry Fair visions the regional environmental impacts of industry in his recent work "Industrial Scars". "My work is a response to my vision of society", Henry says, "I see our culture as being addicted to petroleum and the unsustainable consumption of other natural resources,

which seems to portend a future of scarcity." Henry's latest project catalogs the burgeoning gas drilling operations in Dimock, PA. Shown in the adjacent map, Dimock shares similarities in its geology, landscape, and communities with Hancock. Henry's photographs on the following pages share valuable lessons from just across the river.

1, 2, 3) The Delaware River Basin Commission, "State of the Delaware River Basin Report 2008," December 2008. <http://www.state.nj.us/drbc/SOTB/index.htm> (accessed August 2009)

4, 5) Manhattan Borough President Scott M. Stringer Report, "Uncalculated Risk: How Plans to Drill for Gas in Upstate New York Could Threaten New York City's Water System," February 2009. <http://www.mbpo.org/uploads/UncalculatedRisk.pdf> (accessed August 2009)

Delaware System

Catskill System

HANCOCK

35% of New York
State's population served by the Delaware River
6,821,604 people

DIMOCK, PA

~35 miles

NYC water supply system

Croton System

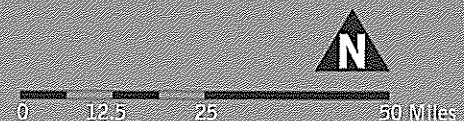
Delaware River Basin

IT'S ALL ABOUT WATER

42% of Pennsylvania
State's population served by the Delaware River
5,228,277 people

34% of New Jersey
State's population served by the Delaware River
2,952,105 people

81.5% of Delaware
State's population served by the Delaware River
711,570 people



Sources: The Delaware River Basin Commission, State of the Delaware River Basin Report 2008, U.S. Census Bureau, 2008 Population Estimates.

ACROSS THE RIVER IN DIMOCK



Only 35 miles west of Hancock, across the Delaware River, sits what has been considered to be the “ground zero for America’s energy future”¹ and an example of what gas drilling in the Marcellus shale would bring to New York State. The township of Dimock, Pennsylvania, currently has 20 drilling rigs operated by Cabot

Oil & Gas Co. As of April 2009, the 1,382 residents² are dealing with 9 cases of private water wells contaminated with high levels of methane and 2 diesel fuel spills (100 and 800 gallons) due to drilling operations. Next year, the Houston TX based company will be drilling 63 new wells in Dimock in light of facing a DEP Notice of





Violation (NOV) on charges of contaminating fresh groundwater.³ The most infamous drilling related incident took place on New Year's Eve of 2009. A several thousand pound concrete slab covering a drinking water well exploded due to the accumulation of methane in the water. Without acknowledging responsibility, Cabot Oil &

Gas Co. began a voluntary supply of water to at least five homes in Dimock.⁴ The following aerial photographs were taken by J. Henry Fair in collaboration with LIGHTHAWK: Flight & Areal Services. These drill sites, photographed in late winter and early spring of 2009, are located in Dimock Township in Susquehanna County, PA.



All Photos Dimock, PA
© 2009 J. Henry Fair

ACROSS THE RIVER



"The water has to go somewhere...The thing is it's not water. It's like you're taking 5 million gallons of fresh water, and you're contaminating it intentionally. You're leaving half of it in the ground, and then you're looking for a place to dispose of the other half."

-Steve Penningroth, co-founder of the Community Science Institute

B. Duncan, "An Unearthed Resource," *The Ithacan*, April 23, 2009. http://theithacan.org/am/publish/news/200904_An_unearthed_resource.shtml (accessed August 2009)



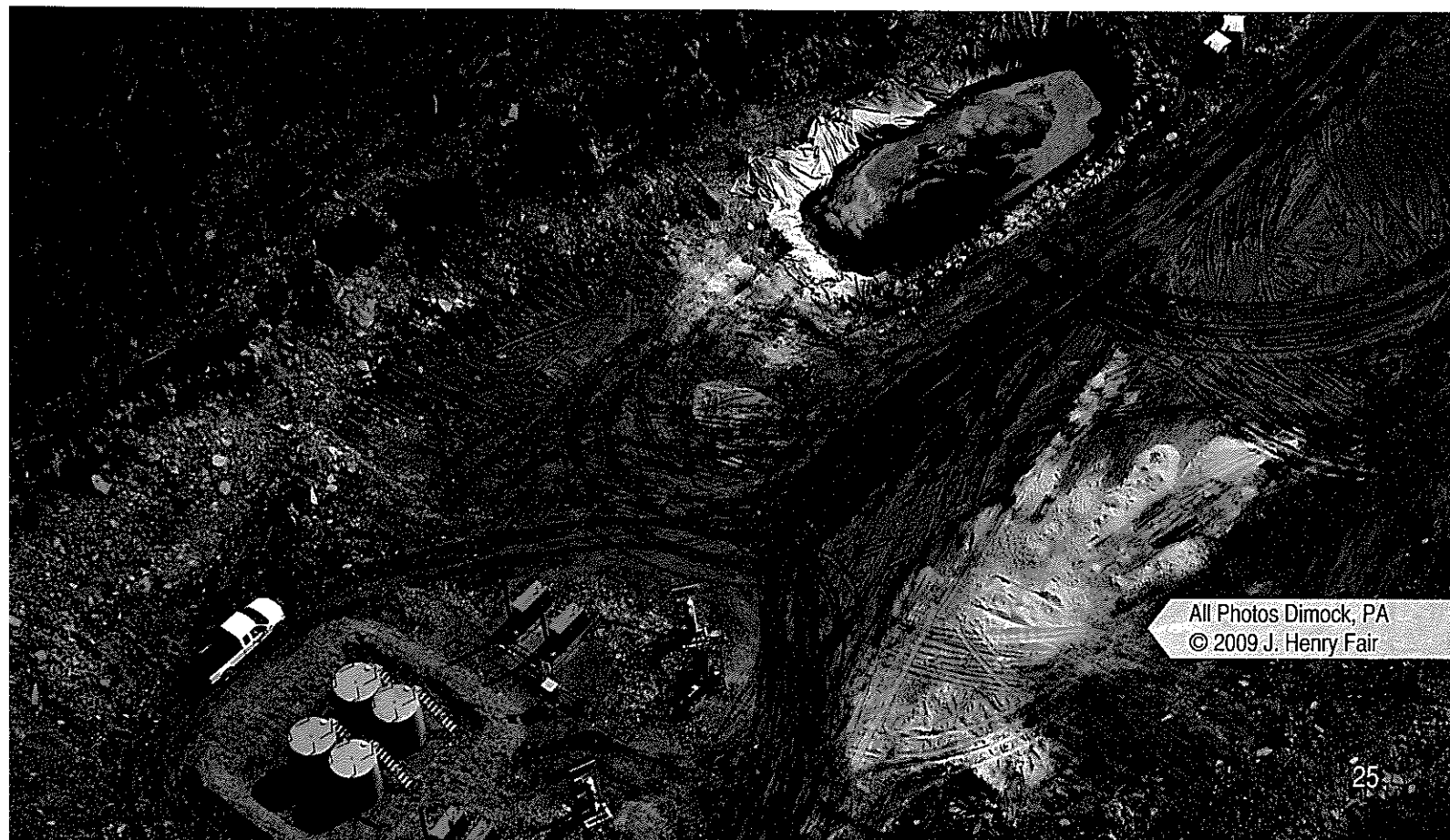


"If these formulas were to become available to other companies, it is possible that we could lose our competitive advantage to those companies"

-Diana Gabriel, Halliburton spokesperson

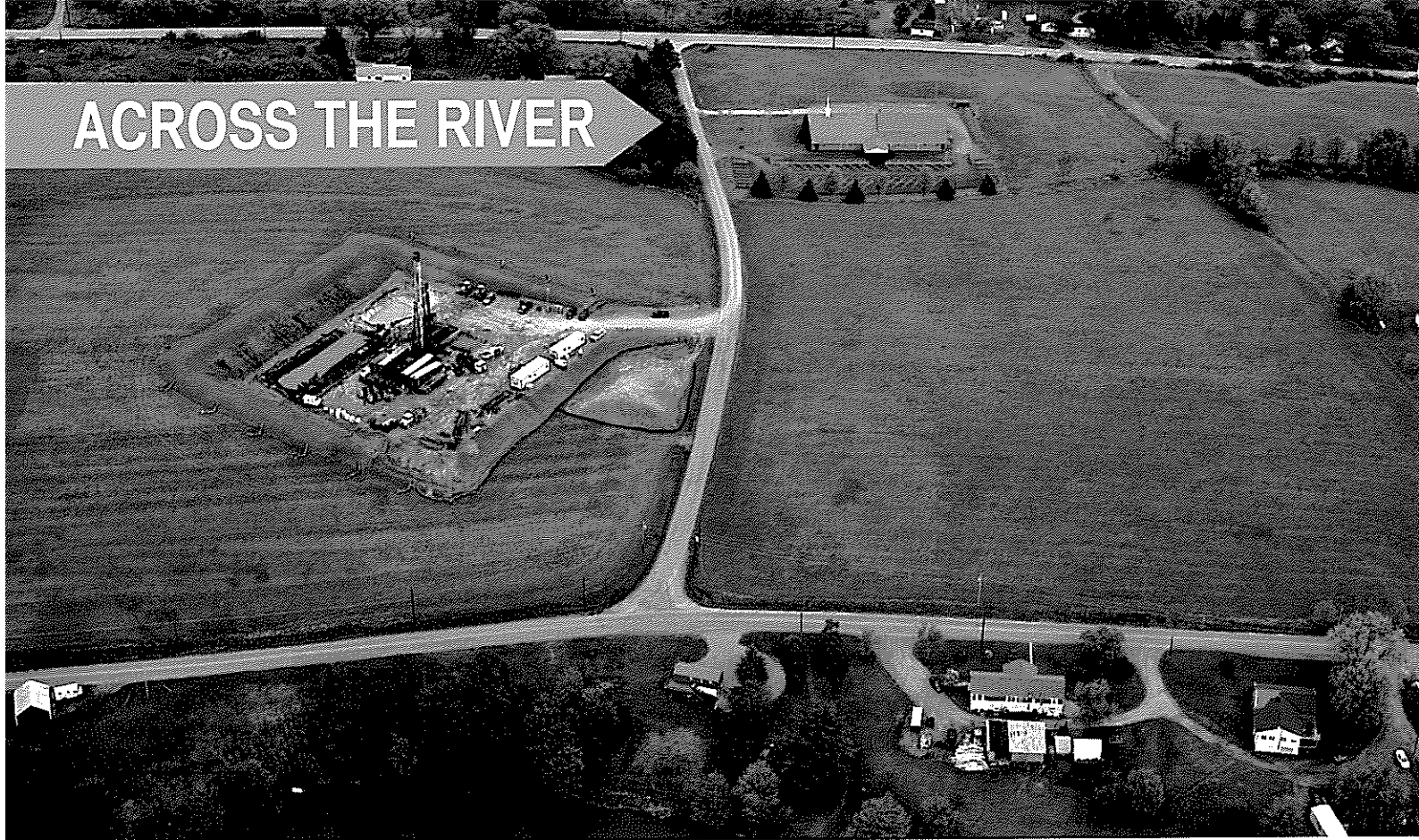
A. Lustgarten, "Does Natural-Gas Drilling Endanger Water Supplies?", *Business Week*, November 11, 2008.

http://www.businessweek.com/magazine/content/08_47/b4109000334640.htm (accessed August 2009)



All Photos Dimock, PA
© 2009 J. Henry Fair

ACROSS THE RIVER



"You have to evaluate which is more important, the money or the water...The economy is so tough. Suppose you could stop drilling – no one wants Cabot to go away."

-Dimock resident, owner of a leased property who declined to be named

A. Lustgarten, "Officials in Three States Pin Water Woes on Gas Drilling," *ProPublica*, April 26, 2009.

<http://www.propublica.org/feature/officials-in-three-states-pin-water-woes-on-gas-drilling-426> (accessed August 2009)





- 1) B. Duncan, "An Unearthed Resource," *The Ithacan*, April 23, 2009. http://theithacan.org/am/publish/news/200904_An_unearthed_resource.shtml (accessed August 2009)
- 2) U.S. Census Bureau, 2007 Population Estimates
- 3) S. Long, "Contaminated Wells Spark Controversy," *The River Reporter*, March 19-25, 2009.
- 4) A. Lustgarten, "Officials in Three States Pin Water Woes on Gas Drilling," *ProPublica*, April 26, 2009. <http://www.propublica.org/feature/officials-in-three-states-pin-water-woes-on-gas-drilling-426> (accessed August 2009)



All Photos Dimock, PA
© 2009 J. Henry Fair

NATURAL GAS IS LIMITED!

"It's well accepted that the 2005 Energy Bill was the Dick Cheney lobbyist energy bill. It was written by lobbyists. It was championed by Dick Cheney. It wasn't just the green light that it gave to more nuclear power. It had enormous giveaways to the oil and gas industries."

-Hillary Clinton, during the primaries in 2008, at the democratic debate in Las Vegas

On The Issues, "Hillary Clinton on Energy & Oil," http://www.issues2000.org/Cabinet/Hillary_Clinton_Energy_+_Oil.htm (accessed August 2009)

"This bill will strengthen our economy, and it will improve our environment, and it's going to make this country more secure."

-George W. Bush, after signing the Energy Policy Act in 2005 in Albuquerque, NM

R. Stevenson, "Bush Signs an Energy Bill That Had Been a Longtime Priority," *New York Times*, August 9, 2005.

Though natural gas is considered an alternative source of energy, it is not renewable. According to the most optimistic scientific estimations¹ and even if it was possible to extract all the gas from the ground, the natural gas reserves from the Marcellus Shale could supply the U.S. for a little less than three years based upon current consumption rates.² While the most easily accessible gas has already been extracted in the United States, the natural gas reserves in the Marcellus Shale have remained untouched. Known of for decades, the Eastern Gas Shales Project (EGSP), a multi state initiative funded by the U.S. Department of Energy that was formed subsequently to the oil crisis in 1973, concluded that the Marcellus reserves were not likely to be exploited until its pricing would support the development of advanced technology to access it.³ Located approximately 8,500 feet below the earth's surface, the Marcellus Shale was not a feasible reserve for cultivation. But more than thirty years later, as gas prices steadily increased,⁴ Halliburton developed a combined horizontal drilling and fracturing technology⁵ to extract natural gas trapped in subsurface geological formations. This technology, common to the Midwestern states such as Colorado, New Mexico, Arizona, Wyoming and southern states such as Texas has just made its way to the Northeast making access to the Marcellus Shale in Virginia, Pennsylvania and New York possible.

With supportive policy regimes at the federal, state, and local levels, gas drilling remains an economically viable pursuit. Following the energy crisis of the 1970s, President Carter implemented energy conservation and renewable energy policies⁶ which resulted in a drop in consumption of both natural gas and oil. But as some of these regulations were repealed by subsequent administrations in the 1980s, both consumption and therefore also production rates stepped up again.⁷ Not only is gas consumer activity influenced by policy but government subsidies and incentives influence the behavior of gas companies (see following page).

The 2005 Energy Policy Act offered significant subsidies that guaranteed gas companies profit, even if they didn't discover gas or did not pursue extraction after the initial drilling and fracturing had been completed. The 2005 Energy Policy Act⁸ also exempts gas drilling techniques from the Safe Drinking Water Act of 1974.⁹ As a result, profit margins for gas drilling and technology companies have further increased while additional tax burdens are indirectly being imposed on local municipalities. Current conditions have also supported the natural gas industry. Since the early 1970s, the average yield of a gas well has consistently diminished.¹⁰ At the same time, however, fossil fuel supplies are becoming ever more scarce keeping natural gas drilling a worthwhile investment for gas companies today.

1) Based on estimates by the Department of Environmental Conservation, <http://www.dec.ny.gov/energy/46288.html>, assuming that total reserves in the Marcellus Shale amount to a maximum of 516 trillion cubic feet (accessed April 2009)

2) Energy Information Administration (EIA), <http://www.eia.doe.gov/emeu/aer/natgas.html> (accessed February 2009)

3) J. Harper, "The Marcellus Shale - An Old New Gas Reservoir in Pennsylvania," Bureau of Topographic and Geologic Survey, in Pennsylvania Geology, Vol 38, No. 1 <http://www.dcnr.state.pa.us/topogeo/pub/pageolmag/pdfs/v38n1.pdf> (accessed April 2009)

4) Energy Information Administration (EIA), <http://tonto.eia.doe.gov/dnav/ng/hist/n9190us3m.htm> (accessed April 2009)

5) Information brochure by Halliburton, <http://www.halliburton.com/public/shale/pubsdata/H06377.pdf> (accessed April 2009)

6) Energy Information Administration (EIA), <http://www.eia.doe.gov/emeu/aer/natgas.html> (accessed February 2009)

7) U.S. Department of Energy (DOE), Energy Timeline from 1971 to 1980, <http://www.energy.gov/about/timeline1971-1980.htm> (accessed April 2009)

8) Energy Information Administration (EIA), <http://www.eia.doe.gov/emeu/aer/natgas.html> (accessed February 2009)

9) Energy Policy Act (EPA), http://www.epa.gov/oust/fedlaws/publ_109-058.pdf (accessed April 2009)

10) Energy Policy Act (EPA), http://www.epa.gov/oust/fedlaws/publ_109-058.pdf, Subtitle C - Production, Sec. 322, Hydraulic Fracturing, accessed 04/23/2009

11) NATURAL GAS <http://www.naturalgas.org/regulation/history.asp#dereg> (accessed May 2009)

12) NATURAL GAS <http://www.naturalgas.org/environment/technology.asp#advances> (accessed May 2009)

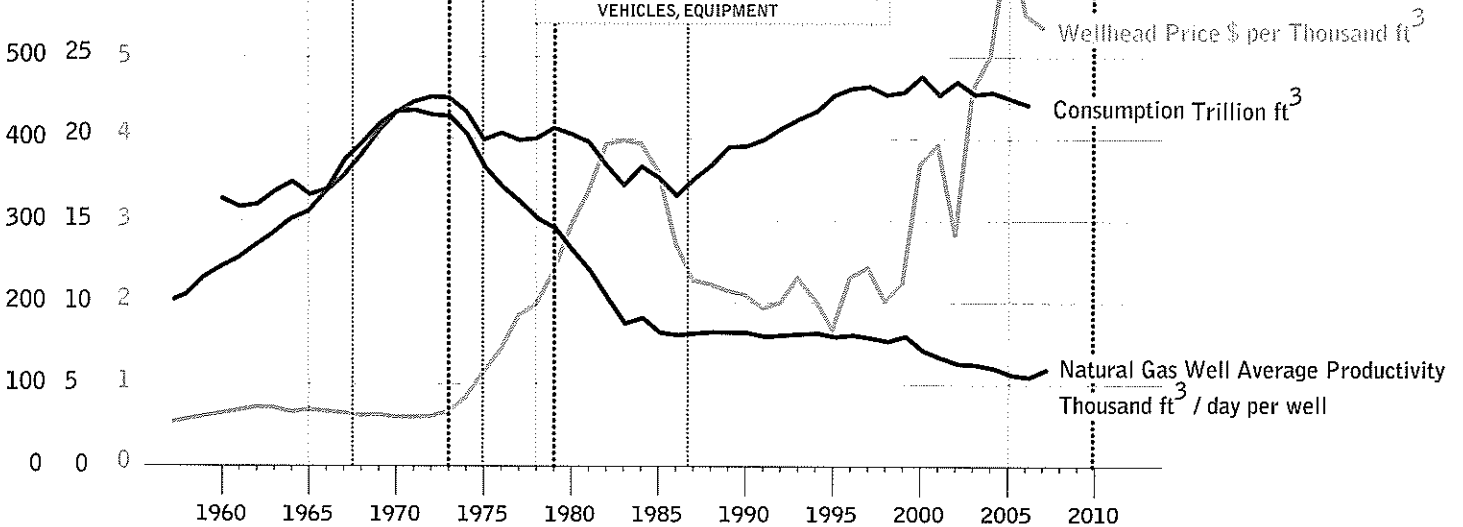
13) J. Harper, "The Marcellus Shale - An Old New Gas Reservoir in Pennsylvania," Bureau of Topographic and Geologic Survey, in Pennsylvania Geology, Vol 38, No. 1 <http://www.google.de/url?sa=t&source=web&ct=res&cd=1&url=http%3A%2F%2Fwww.dcnr.state.pa.us%2Ftopogeo%2Fpub%2Fpageolmag%2Fpdfs%2Fv38n1.pdf&ei=Kj-QS22CFo-ctwe00OmmCw&usq=AFQjCNETkIUtg3J4SV-RUKSisZOGJoU4EA&sig2=NxSJl26du3jirKXEkud4MQ> (accessed May 2009)

14) ENERGY POLICY ACT http://www.epa.gov/oust/fedlaws/publ_109-058.pdf (accessed May 2009)

EFFECTS

TECHNOLOGY

POLICY



HISTORY OF NATURAL GAS IN THE U.S.

500 TCF

THE MARCELLUS SHALE CONTAINS APPROX. 500 TRILLION CUBIC FEET OF NATURAL GAS, THOUGH IT IS ESTIMATED THAT ONLY 10% IS RECOVERABLE.

230 TCF

THE UNITED STATES WILL CONSUME AN ESTIMATED 230 TRILLION CUBIC FEET OF NATURAL GAS IN THE NEXT 10 YEARS.

50 TCF

10% OF THE MARCELLUS SHALE WILL SUPPLY THE USA WITH 2 YEARS OF NATURAL GAS AT CURRENT CONSUMPTION RATES.

NATURAL GAS IS A NON-RENEWABLE RESOURCE

WHO REALLY BENEFITS?

"The oil and gas industry has been given exemptions to the regulations that apply to everyone else...this is not an accident."

-James Barth, a resident of Beach Lake, Pennsylvania

S. Long, "Natural Gas Hot Topic at UDC Meeting," *River Reporter*, June 11-17, 2009. <http://www.riverreporter.com/issues/09-06-11/head2-udc.html> (accessed August 2009)

In order to boost domestic production of fossil fuel, the energy industry and United States Congress have promoted large subsidies for fuel exploration in the U.S. The Energy Policy Act of 2005, authorized subsidies to incentivize domestic harvesting in order to obtain energy independence.¹ These numerous tax breaks favoring domestic energy producers were staggering; a typical gas company paid only 0.3% on their profit, compared to the standard 35% stated corporate tax rate.² This lower tax rate could be justified if it was proven to assist with the domestic production of energy but there is a strong possibility that extracted U.S. natural gas will be exported to overseas.

Most of the subsidies provided to corporate gas companies apply to the exploration phase of natural gas extraction, rather than production.³ Since taxes and royalties are not paid to townships and residents until gas production reaches a minimal level, gas companies have

nothing to lose in leasing, exploration and drilling. It also means that abandoning drilled wells without remediation can be a possibility. Due to the recent economic global crisis and severe cutbacks on all levels of public and private spending, prices of natural gas have fallen dramatically. Many energy companies no longer see profit in natural gas drilling and have been shutting down wells all across the US. Companies are not only drilling less but also deciding not to pump from wells already drilled. Even in the highly active Barnett Shale field, drilling operations have reduced significantly. "The big bonanza is over," said Jay Ewing, the completion and construction manager for Devon Energy in the Barnett Shale, where so far in 2009 his company has brought its rig count from 35 to 8. With the energy prices so volatile, any landowner or community considering natural gas exploration and extraction should investigate other options for a more financially secured future.

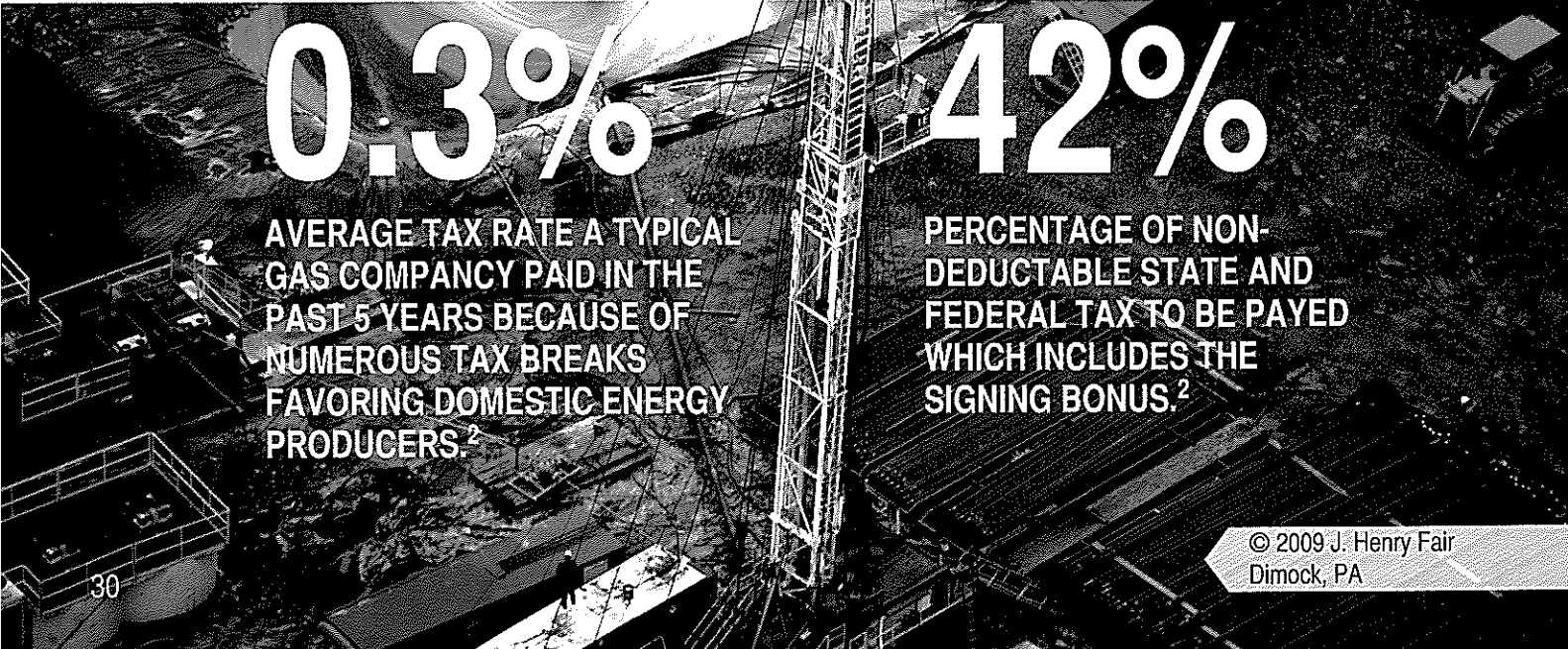
1) S. Lazzari, "Oil and Gas Tax Subsidies: Current Status and Analysis," CRS Report for Congress, February 27, 2007. <http://price.house.gov/issues/uploadedfiles/energy2.pdf> (accessed May 2009) Joint Committee on Taxation, "Renewable Energy and Energy Conservation Tax Act of 2007," Annual Tax Expenditure Reports, June 19, 2007. <http://www.house.gov/jct/x-36-07.pdf> and <http://www.house.gov/jct/x-59-05.pdf> (accessed May 2009)

2) Money Central, "Companies With the Fattest Tax Breaks," *Business Week*, December 4, 2007.

<http://articles.moneycentral.msn.com/Investing/Extra/CompaniesWithTheFattestTaxBreaks.aspx> (accessed August 2009)

3) "Analytical Prospects, Budget of the United States Government Fiscal Year 2009" <http://www.whitehouse.gov/omb/budget/fy2009/pdf/spec.pdf> (accessed July 2009)

4) Friends of the Earth, "Big Oil, Bigger Giveaways," July 2008. http://www.foe.org/pdf/FoE_Oil_Giveaway_Analysis_2008.pdf (accessed August 2009)

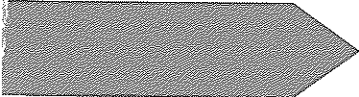


0.3%

AVERAGE TAX RATE A TYPICAL GAS COMPANY PAID IN THE PAST 5 YEARS BECAUSE OF NUMEROUS TAX BREAKS FAVORING DOMESTIC ENERGY PRODUCERS.²

42%

PERCENTAGE OF NON-DEDUCTIBLE STATE AND FEDERAL TAX TO BE PAID WHICH INCLUDES THE SIGNING BONUS.²



\$5.9 Billion

OIL AND GAS PERCENTAGE DEPLETION ALLOWANCE¹

EPA ALLOWS INDEPENDENT COMPANIES TO DEDUCT 15 PERCENT OF THEIR SALES REVENUE IF THEIR AVERAGE DAILY PRODUCTION FALLS BELOW A CERTAIN MINIMUM.

this means: **gas companies get subsidies even if the wells don't yield any products and no royalties need to be paid⁴**

\$3.5 Billion

MANUFACTURING TAX DEDUCTION¹

A 2004 LEGISLATION RECLASSIFIED OIL AND GAS AS A MANUFACTURED GOOD, ALLOWING COMPANIES TO CLAIM BILLIONS OF DOLLARS OF ADDITIONAL TAX DEDUCTIONS.

this means: **tax payers subsidizing costs of oil production⁴**

\$3.5 Billion

INTANGIBLE DRILLING COSTS¹

INTEGRATED COMPANIES ARE ALLOWED TO IMMEDIATELY DEDUCT 70 PERCENT OF INTANGIBLE DRILLING COSTS (WAGES, SUPPLIES, SITE PREPARATION, ETC) AND SMALL INDEPENDENT COMPANIES 100 PERCENT.

this means: **tax payers pays for 70%-100% of equipment, supplies, etc costs for drilling⁴**

\$522 Million

NATURAL GAS DISTRIBUTION LINES¹

EPA 2005 ALLOWS COMPANIES CAN DEDUCT THE COSTS OF NATURAL GAS DISTRIBUTION OVER 15 YEARS OF DEPRECIATION TIME.

this means: **almost free gas distribution⁴**

\$133 Million

PASSIVE LOSS¹

OWNERS AND INVESTORS CAN USE LOSSES FROM THE OIL AND GAS BUSINESS TO SHELTER OTHER INCOME.

this means: **subsidizing gas companies if they lose money on drilling⁴**

\$10 Million

NATURAL GAS GATHER LINES¹

EPA 2005 ALLOWS COMPANIES TO DEDUCT THE COST OF NATURAL GAS GATHERING LINES OVER A 7-YEAR DEPRECIATION RECOVERY PERIOD.

this means: **almost free gas pipelines³**

WILL THE MARCELLUS LEAD TO ENERGY INDEPENDENCE?

"We applaud...elected leaders from both political parties who understand the once-in-a-lifetime opportunity we have to strengthen our Commonwealth's economy and energy independence by supporting the development of the Marcellus Shale."

-The Marcellus Shale Committee, The Independent Oil & Gas Assoc. of Pennsylvania, and The Pennsylvania Oil & Gas Assoc.

"Marcellus Shale Committee Applauds State Elected Leaders for Pro-Jobs Position," *Reuters*, April 16, 2009.
<http://www.reuters.com/article/pressRelease/idUS207651+16-Apr-2009+PRN20090416> (accessed August 2009)

"We believe Marcellus easily holds a 10- to 20-year supply of natural gas - that's for the nation, based on current consumption."

-Dave Spigelmyer, Spokesman for Equitable Resources Inc.

K. Leonard, "Marcellus Gas Estimate Swells," *Pittsburgh Tribune-Review*, November 1, 2008.
http://www.pittsburghlive.com/x/pittsburghtrib/business/s_596250.html (accessed August 2009)

"All this for 10 years worth of natural gas? Pollution on this scale is not easily remedied, future generations will surely scoff at the idea of severely impacting a heavily populated 575 square mile area to obtain a 10-year supply of gas. The 'more petroleum at any cost' philosophy may keep our economy going for now, but it will be the key to our eventual undoing. Until we can shift into an economy based on the sustainable exploitation of our planet's resources, we will increasingly poison ourselves and our environment."

-David Austin, Benzene Leukemia Law Blog

D. Austin, "Natural Gas Drilling Pollution Debate Heats Up Around Marcellus Shale," Benzene Leukemia Law Blog, Burke & Eisner, P.A., May 13, 2009.
<http://www.benzeneleukemiaweblog.com/2009/05/articles/benzene/informationnews/natural-gas-drilling-pollution-debate-heats-up-around-marcellus-shale/> (accessed August 2009)

The term "energy independence" was conceived in the United States during the energy crisis of the 1970's, where national security was clearly at risk due to a dependence on foreign oil. While very little has changed since then, the term "energy independence" has become a politically popular saying, especially in light of the climate change impacts we are now experiencing from increased reliance on petroleum products. During the 2008 presidential campaign, the expression was seen as a rally cry for candidates of both parties resulting in two very different visions on accomplishing this goal. The Democratic candidates saw investment in renewable energy, such as wind and solar power, as the answer whereas the Republican Party tended to focus on increasing domestic production of existing energy resources.

Despite consuming more natural gas than it produces domestically,¹ the United States still exports a portion of its supply of natural gas to international markets. At the same time, we still import from other countries to fulfill our internal demand. When considering the Marcellus Shale in the context of this global trade network, it appears as a feasible source for gas export as the infrastructure necessary to bring natural gas to a marine transfer station for

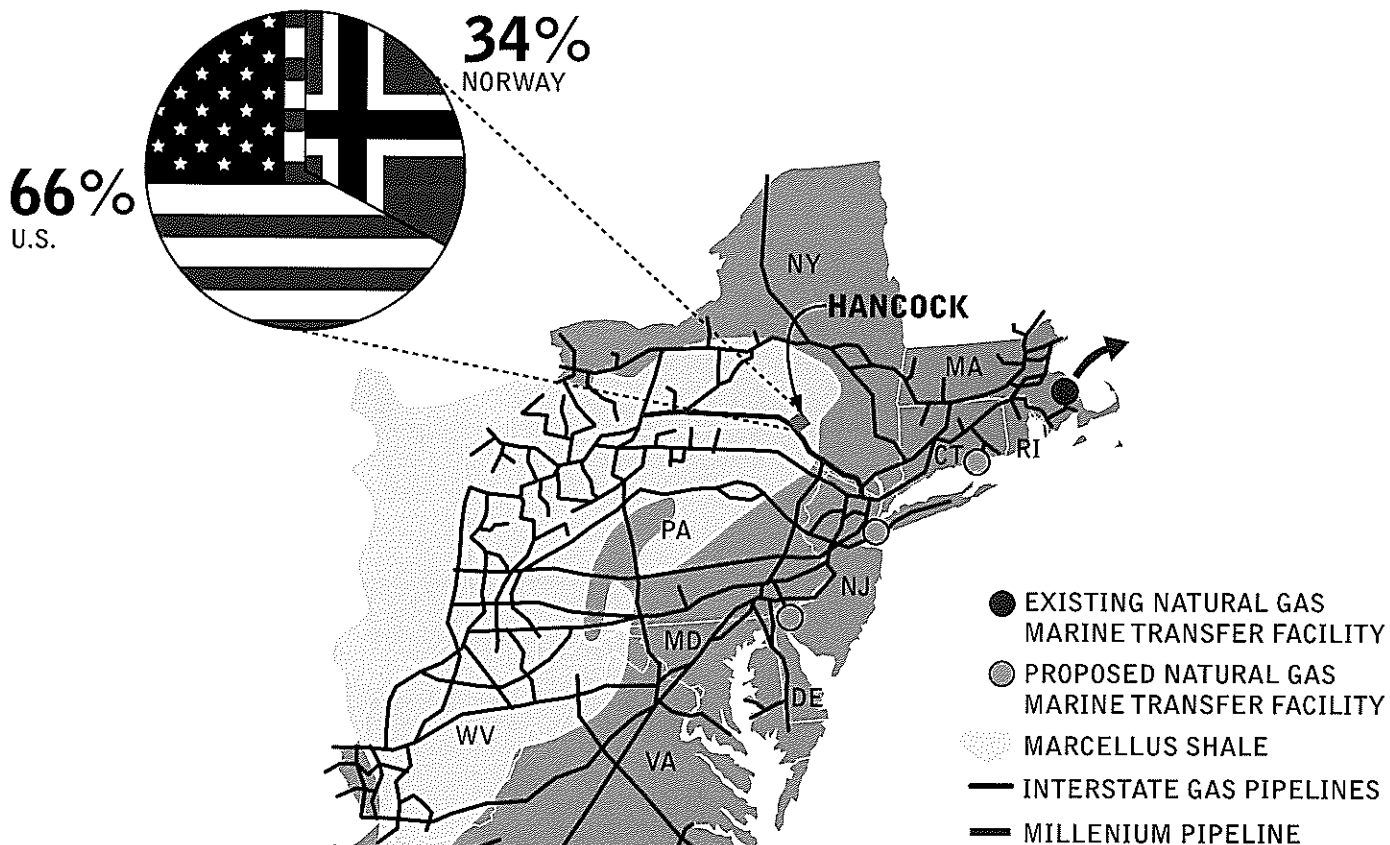
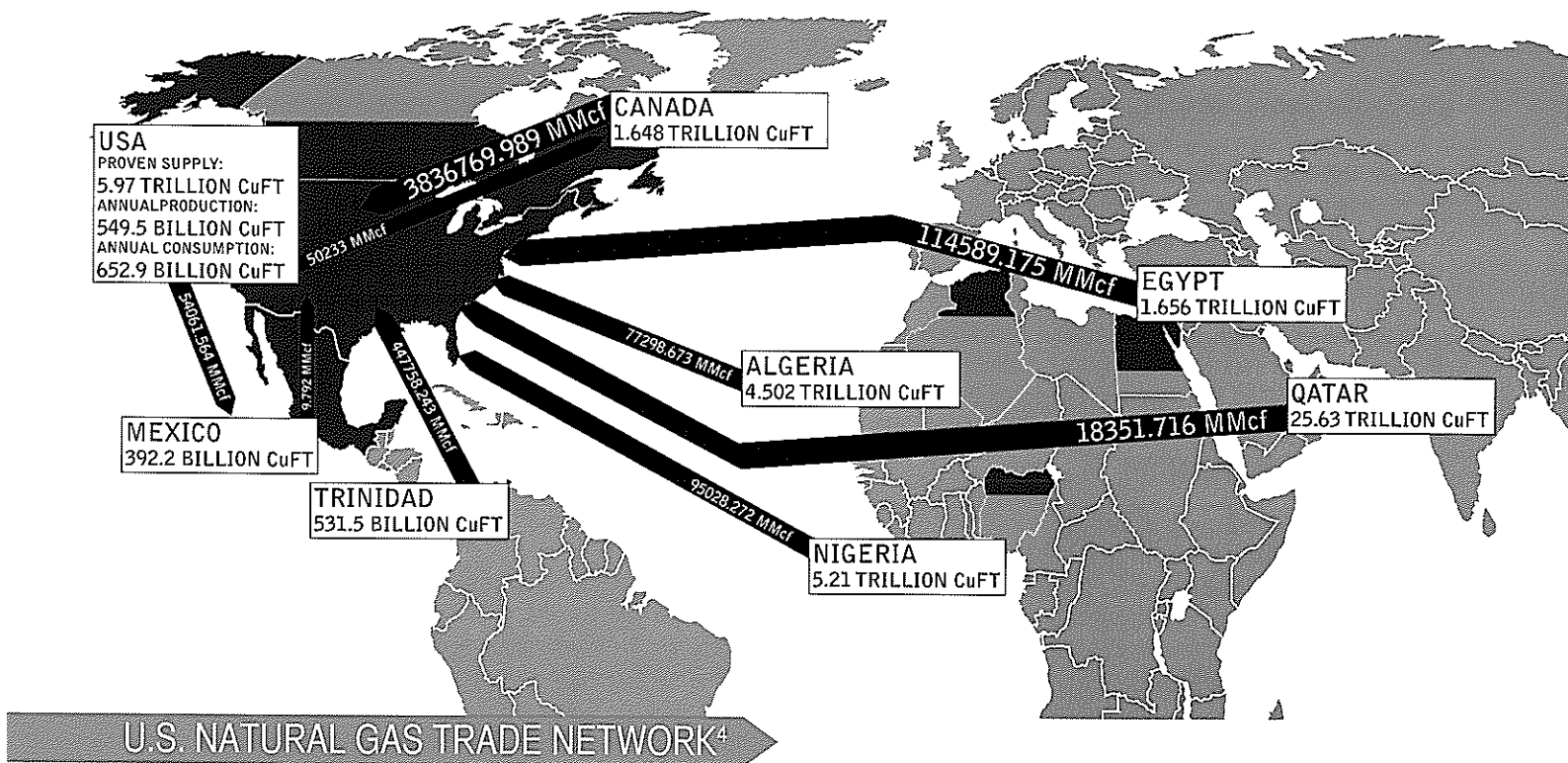
distribution abroad is available through the Millennium Pipeline. Exportation of natural gas produced in the Marcellus Shale may also be influenced by the fact that Chesapeake Energy, one of the major investors thus far in the Marcellus Shale, has sold a 32% share of its leases in the region to the second largest European natural gas distribution company, StatoilHydro² from Norway. This transaction may imply that the development of the Marcellus Shale is again not solely for America's "energy independence" but is another source for the global gas trade network.

Accordingly, while geologic research has shown that the Marcellus Shale would create a new domestic source for natural gas, there is no guarantee that this will further American independence from foreign oil or even be sold within the U.S. market. There are still many who argue that there is great danger in the American import of international energy resources to fulfill its demand as it sends billions of dollars out of the country to governments that are not "U.S. friendly". However, the USEIA reports that in 2007 the U.S. imported 16% of its natural gas to fulfill domestic consumption with 90% of this import coming from Canada, making this ally the main supplier of both oil and natural gas to the United States.³

1) The Central Intelligence Agency World Factbook. <https://www.cia.gov/library/publications/the-world-factbook/geos/us.html> (accessed April 2009)

2) "Chesapeake Teams Up with Norway Supplier," *Toronto Star*, November 12, 2008. <http://www.thestar.com/Business/article/535150> (accessed August 2009)

3, 4, 5) The United States Energy Information Administration, "U.S. Natural Gas Imports by Country," http://tonto.eia.doe.gov/dnav/ng/ng_move_imp_s1_m.html (accessed April 2009)



YOU DECIDE...

Natural gas hydraulic fracturing has the capacity to alter lifestyle and landscape at a scale not seen in the Catskills since the creation of the New York City Watershed system. Requiring almost a million gallons of water (with chemical additives) per day for each operating well, the impacts to the quantity and quality of water in the Upper Delaware region are clearly at risk, whether simply by diversion or as a result of contamination. Increased truck traffic, wastewater treatment needs and gas distribution pipelines will burden already-stressed municipal infrastructure, from rural road networks to local fire departments. And the alteration of a once bucolic landscape will affect the community character of an historic region that draws millions of recreational visitors a year.

However, natural gas leasing appears to be a viable solution to the many that are suffering in this difficult economic climate. While not clearly a 'stable' commodity, revenue from gas leasing and potential income from royalties can offer relief to landowners on the brink of losing their property and their way of life. Such funds would allow for mortgages to be paid off, children to go to college and lifelong dreams to be realized. As such, we are poised at a difficult juncture – to drill or not to drill.

At a time when there is incontrovertible evidence that our climate will deteriorate dramatically unless we move immediately towards sustainability in global energy production and use, the natural gas debate in Hancock, New York becomes an evermore important

venue for cooperative resolution. Localities, like never before, have an ability to influence the direction of regional, national and even global policy on energy. Given the jurisdiction they exercise over land use and planning, as well as the design and construction of buildings and other municipal services, local governments are a critical partner of state and federal governments to resolve energy issues to prove that ground-breaking strategies really can work. Natural gas hydraulic fracturing presents an historic opportunity for localities to seek scalable solutions that are transferrable to larger geographies.

This report aims to accomplish two goals: to inform broadly and to induce involvement. Seeking and implementing strategies in the Catskills that support both sustainable economic development and preservation of invaluable natural resources can only be accomplished with the support of the individual citizen, elected local officials and regional policy makers. These will be legal, political and scientific solutions that require the work of several generations to undo our past "era of procrastination". Instead, in this "period of consequences", where there is both severe urgency and great optimism, we are charged with - and capable of - solving our energy problems in our own backyard. Be a critical contributor – get the facts and then decide on whether or not to drill.

Jennifer Grossman, Open Space Institute

RESEARCH SEMINAR

Ben Abelman is a native of Brooklyn, New York. He received his BFA and B. Arch from the Rhode Island School of Design in 2004. He worked as an architect in New York City before receiving his Master of Science in Architecture and Urban Design from Columbia University in 2009.

Ariel Hsieh is a native of Taipei City, Taiwan. She lived for a number of years in New Zealand followed by California where she received her B. Arch from the University of Southern California in 2006. She received her Master of Science in Architecture and Urban Design from Columbia University in 2009.

Dongsei Kim is a native of Seoul, Korea. He later moved to New Zealand where he received his B. Arch with honours from Victoria University of Wellington in 2003. He is a registered architect and practiced in New Zealand before receiving his Master of Science in Architecture and Urban Design from Columbia University in 2009.

Hector Lim is a native of Tijuana, Mexico. He received his B. Arch from Universidad de las Americas, Puebla in 2004. He worked in both Mexico and Chile before receiving his Master of Science in Architecture and Urban Design from Columbia University in 2009.

Vivian Ngo is a native of Hong Kong. She grew up in Los Angeles and received her B. Arch with a minor in Sustainable Environments from California Polytechnic University, San Luis Obispo in 2005. She is a LEED accredited professional and worked as an architect in Los Angeles before receiving her Master of Science in Architecture and Urban Design from Columbia University in 2009.

Julia Siedle is a native of Rottweil, Germany. She received her engineering degree in architecture from the Peter Behrens School of

Architecture in Dusseldorf in 2007. She worked in Germany and the Netherlands before receiving her Master of Science in Architecture and Urban Design from Columbia University in 2009.

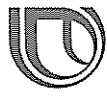
William Tate is a native of Patterson, New Jersey. He received his B. Arch from the New Jersey Institute of Technology in 2007. He received his Master of Science in Architecture and Urban Design from Columbia University in 2009.

Emily Weidenhof is a native of State College, Pennsylvania. She received her B. Arch from the Pennsylvania State University in 2004. She worked as an architect in Pennsylvania and New York City before receiving her Master of Science in Architecture and Urban Design from Columbia University in 2009.

Richard Gonzalez is a native of New York City. He received his B. Arch from the City College of New York in 1999 and his Master of Science in Architecture and Urban Design from Columbia University in 2008. He is a Project Manager at the Urban Design Lab at Columbia's Earth Institute.

Patricia Culligan is Professor of Civil Engineering and Engineering Mechanics at the Fu School of Engineering and Applied Science at Columbia University, where she directs the Center for Sustainable Engineering.

Richard Plunz is Professor of Architecture at the Graduate School of Architecture Planning and Preservation at Columbia University, where he directs the Urban Design Program. He also directs the Urban Design Lab at Columbia's Earth Institute; and he is a member of the Town of Lumberland Planning Board in Sullivan County, New York.



URBAN DESIGN LAB
THE EARTH INSTITUTE AT COLUMBIA UNIVERSITY

Open Space Institute



UPPER
DELAWARE

udpc
Preservation
Coalition, Inc.



**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. 1850-2009
☒ in favor ☐ in opposition

Date: _____

Name: Catherine McWay Hughes (PLEASE PRINT)

Address: _____

I represent: CBI

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____
☒ in favor ☐ in opposition

Date: _____

Name: MAYA HOMICS (PLEASE PRINT)

Address: 2787 Webb Ave. Bx. NY 10468

I represent: CWCWC

Address: Bedford, N.Y.

◆ Please complete this card and return to the Sergeant-at-Arms ◆

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 1850 Res. No. _____

☐ in favor ☒ in opposition

Date: 10/23/09

(PLEASE PRINT)

Name: KAREN BAER

Address: 91 6th AVENUE, BLSN 11217

I represent: SIBRA CLUB

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 1850 Res. No. _____

☐ in favor ☒ in opposition

Date: 10/23/2009

(PLEASE PRINT)

Name: Molly Bidol

Address: _____

I represent: Assembly member Deborah Glick

Address: 853 Broadway NY, NY 10003

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 1850-A Res. No. _____

☐ in favor ☐ in opposition

Date: 10/23/2009

(PLEASE PRINT)

Name: Dusty Horvitt, Environmental Working Group

Address: 1436 U St, NW, ~~APR 1850~~ suite 100, Wash DC 20009

I represent: EWG

Address: Same as above

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Herdi Boginis

Address: 1576 Crescent Valley Rd. Bovina

I represent: my neighbors

Address: in Delaware County, NY

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: SCOTT M. STRINGER - MANHATTAN BP

Address: 1 CENTRE STREET, 19TH FLOOR

I represent: _____

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 1850-A Res. No. _____

☐ in favor ☒ in opposition

Date: 10/23/09

(PLEASE PRINT)

Name: CARL ARNOLD

Address: 156 PROSPECT PARK WEST, BLYN

I represent: CDOG; GREEN PARTY

Address: _____

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. 1850-A

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Josh Fox

Address: ~~37~~ 37 GRAND AVE NYC 11205

I represent: WATERUNDERATTACK.COM

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. 1850-A

☒ in favor ☐ in opposition

Date: OCT 23, 2009

(PLEASE PRINT)

Name: Peter Grantell

Address: 392 Broadway

I represent: Concerned Citizens

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 1850-A Res. No. _____

☐ in favor ☒ in opposition

Date: 10/23/09

(PLEASE PRINT)

Name: Elizabeth Tobier

Address: 8602 Ft Hamilton Pkwy Apt 3D Bklyn

I represent: _____

Address: _____

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. 1850

☒ in favor ☐ in opposition

Date: 10/23/09

(PLEASE PRINT)

Name: MATT WALLACH

Address: 19 COURT ST 2L White Plains NY

I represent: Citizens Campaign for the Environment

Address: SAME AS ABOVE

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☒ in favor ☐ in opposition

Date: 10-23-09

(PLEASE PRINT)

Name: BO SAMATPOULOS

Address: 148 16th ST 11215

I represent: _____

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☒ in opposition

Date: OCT. 23, 2009

(PLEASE PRINT)

Name: Elizabeth Manus

Address: 524 E 72nd St. NYC 10021

I represent: Private NYC citizen

Address: (NYC watershed)

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 1850* Res. No. _____

☒ in favor ☐ in opposition

Date: 10-23-09

(PLEASE PRINT)

Name: ANN WARNER ARLEN

Address: 147 Sullivan St. #14 NYC 10012

I represent: Manhattan Community Pol #2

Address: #3 Washington Sq Village NYC 10012

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☒ in opposition

Date: _____

(PLEASE PRINT)

Name: Alice Alcalá

Address: 333 4th Street

I represent: myself

Address: 333 4th Street 4D

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. 1850 A

☒ in favor ☐ in opposition

Date: 23 Oct 09

(PLEASE PRINT)

Name: Linda Koltz

Address: 20 Pierrepont Bklyn 11201

I represent: myself and others

Address: Living in NY + Catskills

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☒ in favor ☐ in opposition

Date: 10/23/09

(PLEASE PRINT)

Name:

Dr. Mirele Goldsmith

Address:

174 East 74 th St 14C NYC

I represent:

Croton Watershed Clean Water Coalition

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor

☐ in opposition of drilling NO DRILLING

Date: Oct 23, 2009

(PLEASE PRINT)

Name:

Mary-Elizabeth Rupich

Address:

35-03 29th St #3F

I represent:

Concerned Citizens Your Friends From West Virginia

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. 1250-A

☒ in favor

☒ in opposition

Date: Oct 23 09

(PLEASE PRINT)

Name:

ANNIE WILSON

Address:

PO BOX #2430, NYC, NY 10009

I represent:

SIERRA CLUB

Address: _____

Please complete this card and return to the Sergeant-at-Arms

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. 1850 Res. No. _____
☐ in favor ☒ in opposition to drilling in Manhattan
Date: Oct.

Name: Jane Cypher (PLEASE PRINT)
Address: 128. 16th St Brooklyn NY
I represent: _____
Address: 11/25

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. 1850
☒ in favor ☐ in opposition
Resolution to Ban Natural Gas Fracking
Date: 10/23/09

Name: Susan Rosenthal (PLEASE PRINT)
Address: 345 W. 88th St NY NY 10024
I represent: myself
Address: _____

THE COUNCIL
THE CITY OF NEW YORK

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____
☐ in favor ☒ in opposition
Date: _____

Name: TRISH GOUGH (PLEASE PRINT)
Address: 432 E. 120th St NYC 10035
I represent: myself
Address: _____

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☒ in favor ☐ in opposition

Date: 10-23-09

(PLEASE PRINT)
Name: Cathleen Breen

Address: 9 Murray St

I represent: NYPIRG

Address: 9 Murray St.

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 1850 Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)
Name: Betty Trentlyon

Address: 409 W. 21st St., NYC, NY 10011

I represent: Myself

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 1850 Res. No. 1850-A

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)
Name: Monica Hunka

Address: 308 Jefferson St. #2R Brooklyn, NY

I represent: myself

Address: _____

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. 1850-A

☒ in favor ☐ in opposition

Date: 10/23/09

(PLEASE PRINT)
Name: JAMES SIMPSON - RIVERKEEPER

Address: 78 North Broadway, White Plains, NY

I represent: Riverkeeper

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 1850-A Res. No. 1850-A

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)
Name: Anne Lazarus

Address: 524 East 20th St, 26 10009

I represent: myself

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. DSEIS Res. No. 1850

☒ in favor ☐ in opposition

Date: 10.23.09

(PLEASE PRINT)
Name: ROUTHINE

Address: 1281 GALILEE RD DAMASCUS PA

I represent: MYSELF

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____
☒ in favor ☐ in opposition

Res. No. 1850A
*But it really must be
banned in NYS.*

Date: _____

(PLEASE PRINT)

Name: Anne Lazarus

Address: 524 E. 10th St, 26 10009

I represent: myself

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____
☒ in favor ☐ in opposition

Res. No. 1850A

Date: _____

(PLEASE PRINT)

Name: Arnold Froese

Address: 340 West 28th St, #21J
NYC 10001

I represent: _____

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____
☒ in favor ☐ in opposition

Res. No. 1850

Date: 10/23/09

Name: DAN JACOBY (PLEASE PRINT)

Address: 47-48 113 ST WOODSIDE

I represent: DFNYC

Address: _____

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☒ in opposition

Date: 10/23/09

Name: JUDITH CANEPA (PLEASE PRINT)

Address: 716 EAST 11TH ST, NYC

I represent: _____

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☒ in favor ☐ in opposition

Date: _____

Name: Eric Goldstein (PLEASE PRINT)

Address: 40 W 20TH ST.

I represent: Natural Resources Defense Council

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☒ in favor ☐ in opposition

Date: _____

Name: Nes Gillingham (PLEASE PRINT)

Address: Yonkersville, NY

I represent: Catskill Mountaineer

Address: _____

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 1850-A Res. No. _____

☒ in favor ☐ in opposition

Date: 10/23/09

(PLEASE PRINT)
Name: JOE LEVINE

Address: 561 BROADWAY NY NY

I represent: NY H20

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. 1850-A

☒ in favor ☐ in opposition

Date: 10/23/09

(PLEASE PRINT)
Name: SUSAN DEY

Address: Andes, NY 13731

I represent: Member of Catskill

Address: Mountain Keeper

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 1850-A Res. No. _____

☒ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)
Name: AL APPLETON

Address: FORMER NYC DEP COMMISSIONER

I represent: (DAMASCUS CITIZENS)

Address: _____

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 1850-A Res. No. _____

☒ in favor

☒ in opposition

Date: 10.23.09

(PLEASE PRINT)

Name: Denise Katzman

Address: 35 Hudson St, JC, NY 10730

I represent: myself

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. 1850-2009 Res. No. 1850-2009

☒ in favor

☐ in opposition

Date: _____

(PLEASE PRINT)

Name: MICHAEL L LIBROW

Address: 36 COOPER SQ NY 10003

I represent: NEW YORKERS FOR SUSTAINABLE ENERGY

Address: SOLUTIONS STATEWIDE

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. 1850-A

☒ in favor

☐ in opposition

Date: 10/23/09

(PLEASE PRINT)

Name: BERNARD SOTROWSKI

Address: 1395 UPPER DINGLE HILL RD,

I represent: ANDER, N.Y.

Address: CATSKILL MOUNTAIN KEEPER

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 10/23/09

(PLEASE PRINT)
Name: Paul Rush, P.E.

Address: _____

I represent: Deputy Commissioner, Bureau of

Address: Water Supply, NYC DEP

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 10/23/09

(PLEASE PRINT)
Name: Steven W Larruts

Address: _____

I represent: Acting Commissioner NYC DEP

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)
Name: MAV MOOREHEAD

Address: 2 JANE ST NYC

I represent: NYH 20

Address: -

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: 10/23/09

(PLEASE PRINT)

Name: BUCKLE MOOKHEAD

Address: 236 WEST 27TH ST NYC

I represent: NYH 20

Address: 236 W. 27TH

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: MIRIAM G. MCGURK

Address: PO BOX 252 CULLWOOD CT

I represent: _____

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: PAT CARULLO

Address: 113 CEDAR ST, 18428

I represent: DAMASUS CITIZEN

Address: _____

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. DSG-15 Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Joel Kupferman

Address: 351 Broadway

I represent: New York Environmental Law & Justice Proj.

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. DSGE 15 Res. No. _____

☐ in favor ☐ in opposition

Date: 10/23/09

(PLEASE PRINT)

Name: Deborah Goldberg

Address: 156 William St., Suite 800 NYC

I represent: Earthjustice 10038

Address: see above

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

Date: _____

(PLEASE PRINT)

Name: Deputy Comptroller Marcia Van Wagner

Address: _____

I represent: _____

Address: _____

Please complete this card and return to the Sergeant-at-Arms

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. 1850

☒ in favor ☐ in opposition

Date: 10/23/09

Name: JARED CHAUSOW (PLEASE PRINT)

Address: 112 Clay St., 7F, Bardonia, NY 11222

I represent: NYS Senator Tom Duane

Address: 322 8th Ave, #1700, New York, NY 10001

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. 1850

☒ in favor ☐ in opposition

Date: _____

Name: Maria M. Eldon (PLEASE PRINT)

Address: 2166 Broadway

I represent: D F Nye

Address: _____

**THE COUNCIL
THE CITY OF NEW YORK**

Appearance Card

I intend to appear and speak on Int. No. _____ Res. No. _____

☐ in favor ☐ in opposition

SGEIS
Gas Drilling Date: 10/23/09

Name: John H. Williams (PLEASE PRINT)

Address: _____

I represent: U.S. Geological Survey

Address: Troy, NY

Please complete this card and return to the Sergeant-at-Arms