

[Jorge Aguilar submitted an attachment containing 1,691 copies of this letter signed by individual Marylanders]

Aug 29, 2014

Governor Martin O'Malley
State House
100 State Circle
Annapolis, MD 21401-1925

Subject: Study Proves Public Health Risks Too High to Frack in MD

Dear Governor O'Malley,

I urge you to protect Marylanders from the health threats associated with fracking by altogether prohibiting it in the state. The governor's fracking advisory commission just issued an eye-opening report about the public health dangers that would be associated with fracking in Maryland.

The report found that the risk of negative impacts to public health in Maryland will be significant if the state allows fracking. In trying to quantify the dangers to public health that fracking would have, researchers found that water contamination, air pollution and other problems related with fracking (like increased truck traffic and crime rates) present high or moderately high risks of causing health problems that could be irreversible or even fatal.

Multiple times, the report also stresses that these negative health impacts will be disproportionately felt by vulnerable groups such as children, the elderly, people with current health problems and the poor.

Perhaps the most problematic of all the findings, however, is that researchers don't believe that the fracking rules that Maryland is considering will diminish many of these public health impacts and that significant limitations still exist in the health field about how to properly address the impacts of fracking.

Over the last year, Governor O'Malley and state officials have said that they will not move forward with fracking until it is proven safe, even though the precursor to fracking regulations were finalized a month ago. This new public health report is a clear indication that Maryland cannot move forward with fracking in the state.

I urge you to protect your Maryland constituents by fully discrediting the current process to allow fracking in Maryland and to move to prohibit drilling in the state altogether. As this report shows, fracking is inherently unsafe and no regulations can fully protect Marylanders.

Sincerely,

[116 commenters submitted this comment electronically]

To Whom It May Concern

I commend you and your administration for establishing the Marcellus Shale Safe Drilling Initiative to study whether and how gas production can be accomplished without unacceptable risks and adverse impacts to public health, safety, the environment and natural resources. Unfortunately as the deadline for the Initiative's Advisory Commission work approaches, it becomes apparent that the process and any resulting decision cannot be complete without further investigation and study of the impacts likely caused by unconventional natural gas drilling operations or 'fracking' in western Maryland. Therefore, we ask that you delay any decision until more research in this rapidly evolving field is complete.

I base this request as a result of the recent health study released by the Commission on August 18th. The University of Maryland's Institute for Applied Environmental Health's (MIAEH) report: Potential Public Health Impacts of Natural Gas Development and Production In The Marcellus Shale In Western Maryland paints a less than manageable picture of fracking in Maryland offering no less than 52 recommendations for assessing and offsetting probable impacts.

Specifically, the study foresees a "high likelihood" of gas development causing pollution that could harm residents and workers, such as a "moderately high" chance of problems with water, soil and noise pollution from unconventional gas development. The report's lead author Dr. Donald Milton admits "there is a significant concern for air quality." The report also warns of strains on the health care system of the local counties and increases in crime, drug abuse, traffic accidents and other social problems arising from the influx of gas industry workers.

Although Maryland's health study is the first to assess health risks associated with unconventional gas development, the MIAEH scope of work did not include an assessment of the costs to counties, taxpayers, and businesses of health care and emergency responder service demands, related to accidents, new health problems, or uninsured workers.

The report falls short as well in its research into long-term impacts that are known or suspected to arise from unconventional gas development in Maryland. For example, the study does not adequately address risks from spills or the disposal of toxic fracking fluids, or the potential effect on our food supply as such contaminants bio-magnify in soil and water. The study does not consider the future costs to families and the health care system from lost work or school days due to illness. The study also ignores the potential for fracking to worsen the impacts of climate change. Finally, the study looks only at Western Maryland, even though gas basins stretch across 19 Maryland counties, and fracking and its related infrastructure could impact communities statewide.

This fact is becoming more recognized not just by health professionals and environmental advocates, but the industry itself. A March report from Resources for the Future, a June workshop conducted by the Health Effects Institute, and a July call from the American Petroleum Institute (API) are three examples of industry-related calls for more research. Last month, API issued a request for proposals "to evaluate whether a causal relationship exists between community exposure to [Unconventional Resource Development] operations (including well construction, hydraulic fracturing and well production) and selected health outcomes."

A number of peer-reviewed articles by scientists and public health researchers have been published this year making a similar call. Long term studies are underway in Pennsylvania but more are called for and being planned. In July, a working group of the National Institutes of Health concluded that "[e]xposure and health outcomes research related to [Unconventional Natural Gas Drilling Operations] is urgently needed and community engagement is essential in the design of such studies." In short, the process and especially its impacts on health remain incomplete and demand further study.

The Governor has said his decision will be decided by science. It is clear that the current Maryland health study is in some part lacking in this respect and where scientific (health) evaluations have been made they come with warnings of likely and probable impacts. This fact demands that the state continue research before deciding whether to make a decision on drilling in Maryland.

We urge Governor O'Malley to extend the commission's review of potential impacts, especially those mentioned above associated with health, until and unless there is clear, scientific evidence that unconventional

natural gas drilling operations or 'fracking' will NOT cause significant harm to our health in Maryland.

[928 commenters submitted this comment electronically]

To Governor O'Malley and the Maryland Department of Health and Mental Hygiene:

I'm deeply concerned by the report released on August 18 outlining potential public health risks of fracking in Maryland. The study shows that fracking could cause significant short-term and long-term harm to the health of Maryland communities, and especially to children, the elderly, and people already suffering from illness. Even so, because of limited time and scope, and major gaps in available data, the report only scratches the surface of the health impacts that communities across Maryland could face if fracking happens here.

In response, I urge Governor O'Malley to extend the state's fracking moratorium until and unless there is clear, scientific evidence that fracking would NOT cause significant harm to our health in Maryland.

The health study does not give Marylanders the full answers we deserve. For instance:

- The study looks only at Western Maryland, even though gas basins stretch across 19 Maryland counties, and fracking and its related infrastructure could impact communities statewide.
- The study does not consider the costs families would bear from lost work or school days due to illness.
- The study does not adequately address risks from the disposal of toxic fracking fluids, or how our food supply would be protected from potential soil and water contamination.
- The study ignores the potential for fracking to worsen the impacts of climate change – the #1 long-term public health threat we all face.

Even more concerning, as the researchers themselves note, comprehensive scientific data on the health impacts that fracking is already having in places like Pennsylvania is not yet available. The report's 52 recommended steps for minimizing potential health risks fail to address all of the safety concerns raised by the study. There is also little to no scientific evidence proving that many of the recommended steps -- such as setting drilling wells back from homes by only 2,000 feet -- would be sufficient to protect our health.

If fracking were to start in Maryland now, we'd be the next guinea pigs for testing the industry's impacts on people, and that's unacceptable. Governor O'Malley must protect our health by keeping Maryland's moratorium on fracking in place and ensuring we have the time and resources needed to get complete, science-based answers on all of the risks that fracking poses to our health.



New Form Entry: Comment Form

24 messages

42engle@comcast.net <no-reply@weebly.com>
Reply-To: 42engle@comcast.net
To: dhmh.envhealth@maryland.gov

Wed, Oct 1, 2014 at 5:06 PM

You've just received a new submission to your [Comment Form](#).

Submitted Information:

Name

Jane Engle

Email

42engle@comcast.net

Comment

I'm very concerned that the report highlights seven areas that are likely to be harmful to me, my husband, and my children. My husband has asthma and has difficulty breathing the Maryland air as it is. I can't imagine what it would be like if the air were even more polluted from drilling for natural gas.

jmiller200@verizon.net <no-reply@weebly.com>
Reply-To: jmiller200@verizon.net
To: dhmh.envhealth@maryland.gov

Thu, Oct 2, 2014 at 2:48 AM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Joanna Miller

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jmiller200@verizon.net

Comment

As a resident of Garrett County who is deeply concerned about possible negative effects on quality of life, health and the environment, I am truly grateful that the state of Maryland is taking time to study the effects of UNGD before proceeding with drilling. When the Maryland Marcellus Shale Public Health Study was begun, there was a dearth of documentation and published studies available to aid in conducting a search of the literature. With many new studies emerging, it is imperative that Maryland continue to learn from what is happening where UNGD has already taken place.

The question of SETBACKS is of major importance for air, soil, and water safety. Section 12.3 addresses this issue regarding recommendations for Air Quality. The Colorado study, cited here, reports concentration of air pollution within half a mile of a site. A standard setback of 2000 feet is not sufficient to mitigate adverse effects. Two thousand feet would also provide inadequate protection from noise pollution and water contamination, especially depending on the terrain and wind currents.

A MAJOR PROBLEM not addressed in the study is the contamination of farmland and the water supply for farm animals, wildlife, and vegetation that are more than 2000 feet from a human dwelling or a drinking water well. Vegetation and the animals themselves are at risk from toxic chemicals and chemical combinations used in fracking and from emissions or activity related to gas extraction. If farm animals, deer, and crops of native vegetation do survive, there may still be a very serious threat to those who

consume food produced near a drilling site. This is a major health threat that I have not heard discussed in any of the Governor's Marcellus Shale Advisory Commission meetings that I attended as an observer. Where is the setback for protection of our food chain, and thus the health and wellbeing of residents of Garrett County -- and of anyone who ingests food raised in western Maryland?

bluebirds09@yahoo.com <no-reply@weebly.com>
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To: dhmh.envhealth@maryland.gov

Thu, Oct 2, 2014 at 1:22 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Jo McLaughlin

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bluebirds09@yahoo.com

Comment

The list of 52 recommendation in the Health Study speaks volumes.

Maryland is already being severely impacted by air and water pollution from fracking operations in PA, WVA and Ohio. Water pollution from PA fracking impacts the D- rating of the Chesapeake Bay.

We cannot continue to adversely impact the Health of Marylanders by allowing fracking in Maryland. Fracking is a complex issue. It must be examined systemically. Special attention must be focused on overlapping consequences -- health risks AND risk management AND best practices AND economic risks.

The Health Study shows a lack of understanding of cross-functional risk issues. There are a myriad of unknown unknowns noted in the Health Study. Why does Maryland want to proceed when so much is unknown?

For example -- Let's look at the topic of Noise -- Here's what the Health Study says:

"6.3.5 Noise

Based on our monitoring results from Doddridge County, WV as well as other noise monitoring reports, we conclude that there is a Moderately High Likelihood that UNGDP related changes in noise exposure will have negative impacts on public health in Garrett and Allegany Counties.

Should Maryland move forward with UNGDP, the following recommendation should be implemented to prevent or minimize potential negative impacts on public health.

R27. Implement noise reduction strategies recommended by UMCES-AL in the MD

Best Management Practices, including requiring electric motors wherever power supplies are available and construction of artificial sound barriers.

R28. Require a setback of 2,000 feet for natural gas compressor stations using diesel

engines, 1000 feet for stations using electric motors and sound barriers.

R29. Establish a system to actively address noise complaints."

There is no consideration of the noise from 24/7 Truck Traffic throughout all

areas impacted by Truck Traffic. A friend's grandson drives a dump truck for fracking operations in PA, Ohio, and WVA. The trucking firm operates dump truck and other trucking delivery operations 24 hours a day, 7 days a week. He spoke of the anger he gets from other drivers and people in communities as he drives through them...the horror, the gestures, the yelling, the disgust.

Where is the consideration for noise factors from a 24/7 delivery scheule, 24/7 road safety factors and 24/.7 road condition factors are not included in the Health Study or the Risk Analysis or the Economic Study? My Aunt Doro and her cardiologist husband live in northern PA. They were recently successful in opposing fracking in their area, where two hotels -- built for the fracking industry -- stand empty. On their drives south through fracking areas, they constantly complain about the fracking trucking issues... personal health issues related to dust and odors and road safety due to noise and scary truck drivers I've also driven this road...not a pleasure drive. I would not want to experience the extreme hazards driving west in Maryland.

What are the health risks AND safety risks AND economic consequences for people who live, work and vacation in Western Maryland? How is Maryland planning to compensate people who live in Alleghany and Garrett Counties for the health, safety and economic risks of living in Allegahany and Garrett Counties? Will people and business concerns want to spend their valuable time, money and other resources on vacations, second homes and new business operations when they must contend with fracking's health risks and the constant and continuing traffic and noise?

The Health Study appears to be a work in progress. More time and attention needs to be directed to unknown Health Impacts, as well as these unknown health impacts in the context of unknown risk impacts AND unknown economic impacts before moving forward with fracking in Maryland.

Thank you.

Jo H. McLaughlin, Ph.D.
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Thu, Oct 2, 2014 at 6:53 PM

You've just received a new submission to your [Comment Form](#).

Submitted Information:

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William Neil

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Comment

October 2, 2014

COMMENTS OF WILLIAM R. NEIL UPON THE FINAL REPORT
“POTENTIAL PUBLIC HEALTH IMPACTS OF NATURAL GAS
DEVELOPMENT AND PRODUCTION IN THE MARCELLUS SHALE IN
WESTERN MD”

My name is William R. Neil, and I am a resident of Frostburg, Maryland, and have been living in Maryland since 2005.

I am also the former Director of Conservation for New Jersey Audubon Society, having enjoyed an environmental career from 1988-2001. That means I am very familiar with Commissions, studies and reports, especially about the protection of water resources, having been for many years the Audubon point person on its efforts to save the New Jersey Highlands (NJ's key northern water supply region, upon which millions of users depend),

which extended from 1989-2005, as well as a close observer and participant of efforts at the NJ DEP, under Governor Christine Todd Whitman, to shift to a “watershed” based approach for planning, and – draw a deep breath – sigh – “regulating.”

That doesn't make me an “expert” in the matters at hand, the potential human health impacts from unconventional gas drilling and extraction - “fracking” in the broadest sense of the term. But how many are, given its very specialized nature? Very, very few of us can bring to the table the “first hand” expertise of say, a Dr. Anthony Ingraffea, who was, as the language goes, “present at the creation” of the process, a process which involved government, academe, non-profit private research centers and of course, the private sector.

Being a former resident of New Jersey also gave me some additional first-hand insights into water pollution issues, especially how water travels over and under the ground. I'll mention just two, in an anecdotal manner, but I hope you'll see what I'm driving at.

In New Jersey, we had two famous, or infamous highway projects that ran into difficulties, delays in construction and cost overruns due to issues about the unpredictability of ground water, both volume and pathways. One was the site where Route 78 was cut through Musconetcong Mountain (aka “Jugtown Mtn.”), and the other was the construction of Route 287 through the New Jersey Highlands in the northeastern part of the state, a project that unfolded in the 1990's, a route which had to traverse rivers, gorges, wetlands and of course, other roadways. It too had massive cuts through Highland “mountains,” running into some of the same problems as the much older Route 78.

At the Musconetcong Mountain site the volume of subsurface water was so great that during the winter the cut was marked by massive ice formations which hung along the exposed mountain side, which would turn various shades of blue as the winter wore on, and everyone remarked how it transformed a little stretch of Jersey highway into an almost Alpine feature, glacial in feel. You can imagine what a shock such a feature is to NJ suburbanites – flatlanders. Where did all this ice come from? (The springs and wet patches were not as noticeable, unfrozen, in the warmer months.) I happened to live for ten years just a mile or so from the cut, so I'm familiar with the feature. And that reminds me again of something else, right there at Jugtown Mountain and Tunnel Road: the eastern seaboard's longest railway tunnels, one cut in 1871, and now abandoned, and the other built in the late

1920's, 1929 I believe, still very active. These are cut through the heart of Musconetcong/Jugtown Mountain, and the point I'm making is that the abandoned 1871 tunnel is now filled with groundwater. Even at the peak summer heat.

And in both highway projects engineers marveled at how new sources of subsurface water kept showing up in unpredicted places and volumes, creating drainage-engineering problems. In both cases, we are talking about road cuts of about 100-300 feet in depth, yet the water flows were very hard to predict – and manage. Put that observation on hold for a few minutes, I'll come back to it.

That's not the end of my NJ anecdotes, however. Although it was not my area of specialty, it was impossible to be a serious environmental "professional," or a citizen who took their responsibilities seriously, and not be aware, in the Garden State, that we were ground zero and aquifer zero for our nation's Superfund law. And once again, over time, the history of that law and its attempted clean-ups brings us back to the pathways of migration of serious chemical pollutants, although at admittedly shallower depths in comparison to those invoked in "fracking." Nonetheless, coming up with GEIS models became a science and an art form in itself, as predicting where the toxic pollution plume was headed next was the burning question of the day, and as matter of fact, at times, of life or death for the citizens in its pathways. And all this, mind you, in situations, not all, but in many, perhaps a majority of cases, where the pollutants were known because of past owners and past industrial and chemical practices, so that the chain of liability and assignment for clean-up costs was relatively straightforward. (In Superfund the legal Gordian Knots got worse, not better over time.)

So there are lessons here even in the relatively shallow world of Superfund pollution: a cautionary tale, and if one would like, one also of the resounding efficacy of the "precautionary principle": that in matters of pollution travels and plumes, there is a great deal of uncertainty and risk, and that it is far better to prevent the contamination in the first place than to cope with cleaning it up afterwards. I provide two links to make these points: a generic site at the US EPA outlining the problems and history of Superfund, and a detailed historical account of the unfolding of Superfund problems at Pompton Lakes, NJ, with DuPont being the star and openly acknowledged polluter. If the story drags out for unhappy decades and is still not resolved today even with an upfront responsible party, what do we face in fracking with all the art forms of disguise and denial of chemical signatures on full

“display,” with an out-of-the-gate claim that their chemical tools are not “hazardous wastes” and contain mysterious “proprietary” chemicals and formulas, so valuable and mysterious that property owners must be sworn to secrecy and medical personnel “gagged?”

<http://www.epa.gov/superfund/health/conmedia/gwdocs/brochure.htm>

<http://www.wolfenotes.com/2012/05/dupont-pompton-lakes-still-dirty-after-all-these-years/>

(Acknowledgement: the author of Wolfenotes is a friend and former environmental colleague of mine, Bill Wolfe, who heads the NJ Office of Public Employees for Environmental Responsibility, (PEER). Bill is one of the nation’s most knowledgeable environmental law and policy “experts,” across the widest range of laws and regulations that I have ever seen encompassed in one individual. He has a long and distinguished environmental biography. Most pertinent here is that he served as the chief policy advisor to Brad Campbell, head of NJDEP under Governor Jon Corzine.)

Today, before us in this Report on potential health impacts from fracking, we are talking about the possibility of water pollution, surface and groundwater, from both a myriad of surface operations as well as those conducted many of thousands of feet below the surface, through known and unknown fracture pathways that have existed historically, as well as all the unpredictable ones created by the vast pressures of the process itself, literally and figuratively “breaking new ground” and channels for subsurface water. And indeed, because the process pushes millions of gallons of water underground for each well, loaded with dangerous chemical pollutants, it is creating new underground water sources of the most threatening kind, because their future pathways are unknown. And most of it is going remain underground because based on four different estimates of how much does or doesn’t “flowback” to the surface, between 50-90% will not return through the main drilling borehole, instead looking for new pathways, sideways and towards the surface. (The figures are in dispute; the four I used prior to this report say that 66%-90% of the water that is injected will stay underground; that’s only half the story; the unwritten, uncertain other half is where it will go and how quickly. A recent piece of modelling research says it will travel faster than we had ever thought, and that the fracturing process may not be contained within the intended target geological formations, or even the shallower (relatively speaking, of course) formations that are still supposed

to keep thousands of feet between the roving fracking fluids and the water/aquifer courses.)

The other revelation contained in the study is that not only is the injected fracking fluid not going to behave in the staid claimed industrial pathways, but the process of fracking itself is not going to be contained to the target formation, it will set off pressures, including many small earthquakes, that may continue for up to six years, with force fields directed upwards. Add these factors to the known “unknown” – that we do not have command of, either the drillers or the more dispassionate governmental and academic geologists, full knowledge of where all the underground faults are, and we are unlikely ever to have that knowledge, and the risk factors are piling up. <http://www.propublica.org/article/new-study-predicts-frack-fluids-can-migrate-to-aquifers-within-years>

And did I really ask the Commission, in the public meeting held in Frostburg on September 15, 2014, what the extent of overlap was between the Marcellus Shale Formation in Garrett and Allegany County and the reality of former coal mines/shafts – and not get an answer? Yes, that was the case, and that complicates the assessment of potential risk, especially in the realm of projecting water/pollutant pathways underground.

Although I do not recall the term being used in the report itself, it was hard not for it to “surface” inside my own mental processes – I’m talking about the “precautionary principle,” of course. When I first tossed it out in informal commentary behind the scenes, all I meant by it was that contained in the old medical sense, to do no further or future harm, as much as that is within the control of human agency. But as I searched for more detailed refinements and the history of the principle, I saw that it fit the world of fracking, known risks and unknown ones, very, very well. This is “the principle” we should be applying to the process and the governmental response, and this, I believe, this Report on health risks does, implicitly at least.

As the field reports come in and are assessed, despite the gas industry attempts to suppress as much data as possible, we now have a better idea of the impacts upon drinking water sources at the individual well level, and the immediate human health impacts, and we can measure the air pollution around the individual well operations. Despite the very difficult overall assignment, the study teams did a good job making sense of the knowns and unknowns, and came up with a common sense diagnosis and

assessment of the health hazards of unconventional shale gas development, given the severe limitations imposed on all of us by the industry's working habits. So in Table 6.1 four of the Categories have high hazard characterizations, and three have Moderately High ones, and the risk of earthquakes is low. That should be enough in itself for the State of Maryland to say, "This economic gambit is not worth it." But in two areas where the hazards are "just" moderately high, Cumulative Exposure Risks and Flowback and Production Water Related, we enter an area of even greater uncertainty, as we have previously observed in our suggestion that since so much of the fracking fluid stays underground, and the fracking process itself breaks up the alleged certainty of drilling pollutant travel, we have now entered a twilight zone of growing but not fully understand greater risk to human health via the possible pollution of underground aquifers by some very toxic pollutants. And given what we know about the difficulty of aquifer pollution cleanup from the history of Superfund, this is a huge risk, and one likely not to be fully understood until we have 5-10 years of further data, if not more.

Ironically, the way the political economy implications of fracking tend to play out, it is fiscal conservatives in both parties who are enthralled with entrepreneurial risk taking of nearly any type, and yet, here they are running deep and unknown risks which may cost future generations billions if not trillions to clean up if it starts "breaking bad." Forgive me for asking this, but does it remind anyone else of the disregard of the precautionary principle exhibited by the invasion of Iraq and is it any coincidence that one of the principal drivers of that disaster also worked hard to exempt the gas companies from the nation's existing laws?

Furthermore, this study is full of declarations of what we don't know, of missing basic baseline studies and information of what well water quality and aquifer water quality is like through the seasons, before drilling. How many studies are called for? I did a count in the recommendations beginning on Page XXV. I noted the following assessments needed, R1, R2, R6 and the calls for Monitoring at R4, R5, R9(a), R19(c), R23, R24, R30 (baseline), R32, R40, R45, R46, R47....my, my.

My own sense of how the precautionary principle ought to work would be this: Where the risk is very high, or unknown but carries high likely negative consequences (for human health and/or the costs of cleaning up pollution), then don't proceed with the activity posing the risk(s).

Now I have been informed that this precautionary principle is not one accepted by many of the elected officials in the proposed fracking region in Maryland. So be it, they are entitled to their choice of principles, as we all are. But I'm wondering if this is really true, and if so, how might it be, because I think we all use a form of the precautionary principle in our everyday lives, meaning we all, formally but most likely informally, are risk assessors of one form or another, at one time or another.

Yet I think I understand the ideological underpinnings of this claim for our local elected officials, county and statewide offices: we have lived now for 30 years or more, since 1980, in a culture of political economy where risk takers, especially economic risk takers are the highest national ideal. And indeed, let us more cautious types acknowledge the necessity for risk takers in science, looking for new insights, for risk takers in business, inventing new products or services and willing to break the status quo. As a writer I like to think I take quite a few myself. It's built into the American social DNA, and always has been so. Yet even conceding this aspect of national culture and risk taking, the precautionary principle works every day even inside this risk taking. The venture capitalist who puts all her money, every last cent on the line, rather than in a walled off amount she can afford to lose, will not last long, and the one who operates in this fashion is a gambler rather than a risk taker. The military planner looking at whether to put our American boots on the ground in the Syrian civil war is immersed in a process of risk assessment including assigning a degree of risk to all the unknowns of the situation, in addition to assigning risk to the knowns. The parent listening to a teenager seeking approval for a hitchhiking trip across Mexico, to better learn the language and the culture, will be doing a shorthand form of risk assessment and applying the precautionary principle to be sure. So I rather think that in everyday life our elected officials do this as well, and one can hope that they will not plunge us in, head first, after every proposal by an economic risk taker that promises new riches, even new energy and jobs for a region badly in need of jobs.

Those in the economics profession, will, I hope, when considering a matter like fracking, have thoroughly in mind the general characteristics of previous historical booms, manias and the resulting panics. And surely unconventional gas development has all the warning signs of previous "infatuations": a technological, if not "high tech" breakthrough, a pledge to solve pressing energy and diplomatic problems (global warming and energy "dependence")...a cheap clean abundant fuel...an energy bridge to alternative fuels later, always sometime later. I can only hope that

economists and citizens alike are aware of dissenting views of the way this Marcellus Shale “play” (a term I hate for reasons that should be obvious for someone asserting the relevance of the precautionary principle) might work out: unhappily for the average citizen and for our alternative energy future. Here are three, for example:

<http://www.wolfenotes.com/2013/10/fracking-is-a-ponzi-scheme/>

http://www.nytimes.com/2011/06/26/us/26gas.html?pagewanted=all&_r=0

<http://iopscience.iop.org/1748-9326/9/9/094008/article>

I will close as I began, not as an expert, but also not quite as the “average citizen,” although I am very sympathetic to the problems the average citizen has in finding the time and energy to read all the reports that make up the background findings and charges to the fracking Commission. And this is how I would put it to that average citizen who might be listening in, and thinking about what we have all learned from the Pennsylvania experience when the economically thirsty threw caution to the wind and in one of the worst democratically sanctioned economic policies I can think of in the long history of democracy, bought the gas industry’s pitches lock, stock and barrel (it is an NRA state, after all). Did they fully understand the health risks?

I try to put myself in the place of someone sitting in on a venture capitalist’s pitch, but I am not an innocent listening in, I have the full record of the gas and oil industry’s lobbying in DC and other state capitals at my fingertips, and I can see in historical perspective how unusual and defensive their secrecy and gag rule efforts actually are, how, frankly, shocking they are, being a sure dead giveaway that they are focused on the short run and are terribly worried about what might turn up in liability matters in the medium and long term. I am not buying this bluff of “no threat, no harm.” I think their entire history and current practices scream loudly the exact opposite.

Yet I also know because I have been a student of capitalism and economic history and have written about it for the past seven years, that we are now deep in the throes of a brand of capitalism that is intensely focused on the short run, of getting in, milking the cash flow, and getting out ASAP, “ideally” done with other people’s money. I hope readers of this report and my comments realize that fracking, if it is to be done at all, and I don’t think it can be done “safely,” based on what we now know, is a long term process

that demands intensive quality control monitoring at all stages of the processes, and those processes have to go on for decades even in the abandoned wells. So this particular process and its needs run in fact counter to the whole trend of modern American capitalism and its headlong reckless “short termism.” Fracking is a disaster waiting to happen if it already hasn’t happened and we just don’t know it yet.

Maryland should never allow this to go forward, it is a bad long term deal for the economy and the environment, and likely to cost far more than any short run benefits it delivers. If we do decide go forward, don’t do so without all the mapping of wells and aquifers and their pre-drilling chemical profiles and former coal mine shafts completed, and with full disclosure of chemicals used and shields and gags denied and no proprietary claims honored either. And the funding and staffing in place to monitoring this dangerous process at every step of the way. And realize that these needs may be impossible to meet under the current political conditions of the American political economy.

And remember this as well, especially if you do decide to go forward: as America has embraced fracking as the “bridge” to an alternative energy future to “solve” global warming effects, other nations like Germany have raced ahead with the actual new alternative technologies and are busily learning how to scale it up in a way America won’t get to for many decades. In that clear sense, fracking has already cost us dearly.

Please don’t ever say no one warned you.

Thanks for the time.

Sincerely,

William R. Neil
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Submitted Files

Upload File

[fracking_md_health_study_comments__oct_1_2014.docx](#)

Imcdnativeplants@hughes.net <no-reply@weebly.com>
Reply-To: Imcdnativeplants@hughes.net
To: dhmh.envhealth@maryland.gov

Thu, Oct 2, 2014 at 7:51 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Liz McDowell

Email

Imcdnativeplants@hughes.net

Comment

What more can I say? The report speaks for itself. The overall likelihood of a negative impact to public health is simply too high. As such, fracking should not be permitted in Maryland.

The big question is what does our State government value more? Is it the health and well-being of our citizens, or the profits of multi-national corporations?

To me (a long-time resident and landowner of Garrett County, who has repeatedly refused to sign a gas lease) the choice is clear. The risks posed by fracking are simply not acceptable. Maryland should choose instead to

keep its water and air clean for the benefit of current and future generations. If Maryland says no to fracking now, and chooses instead to protect its communities and natural resources, in the very near future our clean water will be more valuable than natural gas.

rbiodiversity@hughes.net <no-reply@weebly.com>
Reply-To: rbiodiversity@hughes.net
To: dhmh.envhealth@maryland.gov

Thu, Oct 2, 2014 at 8:04 PM

You've just received a new submission to your [Comment Form](#).

Submitted Information:

Name

Ron Boyer

Email

rbiodiversity@hughes.net

Comment

As this report indicates, the risks associated with fracking are high. In my humble opinion much too high to allow this industrial process to occur in Maryland's rural communities. I live on a large parcel of land in Garrett County. I personally do everything possible to conserve energy and to live simply. I refused to sign a gas lease because I was concerned about the risk that fracking posed not only to my air and water, but to my neighbors as well. If we lose our clean water and air, we have nothing. Where can we live? Who would buy my property (my life investment) if our beautiful rural community becomes an industrial wasteland? If Maryland values the health and well-being of its citizens, they will not allow fracking here.

dgartner1@verizon.net <no-reply@weebly.com>
Reply-To: dgartner1@verizon.net
To: dhmh.envhealth@maryland.gov

Thu, Oct 2, 2014 at 11:09 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Mary Gartner

Email

dgartner1@verizon.net

Comment

1. There is little research on health impacts. Data is difficult to obtain due to the industry's requiring individuals whose health has been impacted to sign non-disclosure agreements in order to be compensated. Still, research is beginning to be published. Maryland should maintain a moratorium on gas fracking until more is known about health impacts.
2. Unless the industry provides public information about the chemicals used in fracking, it will be difficult for physicians to determine whether poor health is related to fracking.
3. There has been no attempt to determine the impact of fracking on the health care infrastructure. Western MD already has health care shortages. The economic study did not provide a cost analysis of increased health care needs. Such costs cannot be borne by the counties but should be built into industry permit costs.

4. Once again, the poor of Western MD will suffer the effects of environmental degradation and health catastrophes.

lucinda314@gmail.com <no-reply@weebly.com>
Reply-To: lucinda314@gmail.com
To: dhmh.envhealth@maryland.gov

Thu, Oct 2, 2014 at 11:25 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

CINDY ELLIOTT

Email

lucinda314@gmail.com

Comment

INTRODUCTION

I attended the Western MD Marcellus Commission Review. I heard the good doctor say all of the comments against moving forward happened to say the same thing; that 800 of the letters he received objected to the project. Well, I could re-frame that. None of them wanted the project to move forward... PERIOD. I may admittedly be new to any type of Commission hearing, but I know it was flawed in that it needed more information to make a thorough report and, based on what I heard, Maryland is at risk when it comes to threats to the environment. Please note that I am also listening to the first of the Orioles Postseason Games as I write this letter. I am sacrificing my time to really enjoy myself, when I could be watching an historical win for the

home team. On the other hand, I don't mind it a bit, this is worth it.

MARYLAND'S HEALTH

I care about the outcome of any decision as I am beginning to get a sense, after reading the report, specifically on health, that the Marcellus Commission needs more time. More time to explore why 7/8 findings are focused on health risks, High to Moderate. Only earthquakes were considered a low threat, the only one, to my knowledge. To debate the meaning of the word Moderate in this case, is fruitless, unless you want to call it something else. I don't want a moderate chance a tree will fall on my house, for example. Or that a hurricane will endanger a flight ready for take off but we're not sure of its path.

WOMEN'S HEALTH/ CHILDREN'S HEALTH

If there is ANY data to support the cause, it is the fact that this project may endanger women's health, including that of their young children who will have to grow up in an unhealthy environment. Women concerns, especially health concerns, are part of the political discourse right now. We demand that someone cares about our right to good health and our children's futures. May I speak for all women, who worry about health hazards and the impacts imposed upon them and their families because they do not have agency to push back on the decision to go ahead in their back yards. Let me speak for them. Many of them are too busy raising children to understand what is happening in Western Maryland.

TELL THE COMMISSION

Therefore, tell the Commission they have more time, more time to complete their investigation, more time to gather information from states like Pennsylvania. I think this is the heart of the matter. However, if you want my opinion, moderate to high risk, high to moderate risk, is too much for me to hear, with the exception of earthquakes which are low. I am not thinking about earthquakes. I am thinking about the air I breathe, the air the people breath in Western Maryland, the precedent that moving forward for this project that will open the door for new ones in Central Maryland.

THANK YOU

As a Marylander, we have the distinction of a Governor who took the time to even form a Commission before he made up his mind. Thank you Governor for making that difference. You are the only Governor to do this. Just make sure your Commission is not flawed, limited, in coming to its conclusions. Give them more time, if that is what they need. That's what I'm hearing them saying. Not all decisions are fair and balanced. It's like the old adage, "first, we will form a committee..."

In conclusion, happily, I just heard a very loud cheer coming from the TV in the other room. The Orioles won their first Postseason Game, 12-3. With a score like that, there is no doubt who outperformed whom in that one. I hope the Marcellus Commission can say the same thing about its findings, and that whatever decision is made, it is sound, complete, and representative of the voices coming from Maryland.

Respectfully,

Cindy Elliott

christalm@me.com <no-reply@weebly.com>
Reply-To: christalm@me.com
To: dhmh.envhealth@maryland.gov

Fri, Oct 3, 2014 at 6:42 AM

You've just received a new submission to your [Comment Form](#).

Submitted Information:

Name

Mark Christal

Email

christalm@me.com

Comment

This final report seems to be calling for significantly more study before embarking on an extractive short-term economic activity that has a high likelihood of negative health impacts on Maryland citizens. Much more study is required, in my view. For what it accomplishes, this study is eye-opening, demanding even more caution before allowing these activities to take place, and much more regulation will need to be put into place if it is to be allowed. One aspect of the study is very disturbing. The fact that the complete account chemicals used in fracking fluid is deemed a proprietary trade secret. How can a comprehensive study on health impacts be done while this is the case? Another aspect that I don't think has been examined well enough is the long-term impact of a generation of children who may be damaged by UNGDP activity. We have learned that small increases of lead in gasoline led to a generation of young people susceptible to increases in impulsivity, aggression, and ADHD, which led to large increase in violent crime. The potential for such long-term social and health impacts are very real. Much more study is required.

kennybraitman@yahoo.com <no-reply@weebly.com>
Reply-To: kennybraitman@yahoo.com
To: dhmh.envhealth@maryland.gov

Fri, Oct 3, 2014 at 9:24 AM

You've just received a new submission to your [Comment Form](#).

Submitted Information:

Name

Kenny Braitman

Email

kennybraitman@yahoo.com

Comment

See attached

Submitted Files

Upload File

[kb_miaeh_health_study_response.pdf](#)

gregraspanti@yahoo.com <no-reply@weebly.com>
Reply-To: gregraspanti@yahoo.com
To: dhmh.envhealth@maryland.gov

Fri, Oct 3, 2014 at 10:09 AM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Greg Raspanti

Email

gregraspanti@yahoo.com

Comment

As a PhD candidate in environmental health, I am very excited about this recent report. I deeply believe that policies and decisions that directly influence the health and well being of a community need to be taken extremely seriously. We need to allow the science to determine our best course of action related to natural gas drilling in MD. We need to take a proactive approach and allow the research to determine it is safe BEFORE drilling rather than conducting the research AFTER drilling and determining it is unsafe. There are too many unknowns related to hazardous chemicals, human exposure, and environmental impacts too allow drilling to take place in MD. Most importantly, the focus needs to shift to long term, chronic exposures to these currently unknown chemicals used in drilling processes. We may not be able to observe short term health impacts, but my concern is the long term cancers and potential negative birth outcomes and childhood diseases. Again, I believe there are too many unknowns related to fracking to allow it to continue in MD. Who knows how it will turn out, but let's take the right path to protect the health of Maryland residents.

srwdirector@gmail.com <no-reply@weebly.com>
Reply-To: srwdirector@gmail.com
To: dhmh.envhealth@maryland.gov

Fri, Oct 3, 2014 at 10:47 AM

You've just received a new submission to your [Comment Form](#).

Submitted Information:

Name

SRWA Board of Directors

Email

srwdirector@gmail.com

Comment

Attached response

Submitted Files

Upload File

[srwa_miaeh_response_10.3.14.pdf](#)

piperannie@gmail.com <no-reply@weebly.com>
Reply-To: piperannie@gmail.com
To: dhmh.envhealth@maryland.gov

Fri, Oct 3, 2014 at 10:52 AM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Ann Bristow

Email

piperannie@gmail.com

Comment

This was a presentation given at the Garrett County Health Department on 9/25/14 in response to the health study. It was a collaborative effort of Chesapeake Chapter of Physicians for Social Responsibility, the Maryland

Environmental Health Network and me.
Sincerely, Ann Bristow, Ph.D.

Submitted Files

Upload File

[gchd_presentation_9.25.14.pdf](#)

ruth.folkfan@gmail.com <no-reply@weebly.com>
Reply-To: ruth.folkfan@gmail.com
To: dhmh.envhealth@maryland.gov

Fri, Oct 3, 2014 at 11:34 AM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Ruth White

Email

ruth.folkfan@gmail.com

Comment

Thank you for the opportunity to comment on the health study for the possibility in Maryland of unconventional natural gas development (UNGD) - or in a common shorthand phrase I use, but use in perhaps a technically incorrect shorthand to refer to the whole process of gas production and delivery including pipelines and compressor stations - fracking.

I am struck by the repeated reference in the report to lack of data. As a result the risk or harm in many instance cannot be scientifically "proven" and risk is not assessed at the highest level.

When speaking of health for industrial processes that may affect human health in critical ideas like birth defects, air quality and respiratory diseases etc. needs to be the same standard that FDA uses in the development and approval of drugs. <http://www.fda.gov/drugs/developmentApprovalProcess/default.htm>

My daughter works for a pharmaceutical firm and talks about the FDA approval process often. Before a drug is approved for sale in the U.S. an "independent and unbiased review establishes that a drug's health benefits outweigh its known risks"

There are no health benefits from the fracking process. There are potentials risks and these should not be assessed as less than the highest risk without DATA. This is the precautionary principle that FDA uses. No

approval until health benefits are PROVEN to outweigh health risks.

I remember when I was pregnant with my daughter and wondering praying that I would have a healthy baby. And when my daughter was pregnant with my grandson - also praying and hoping for a healthy child. I was blessed twice. But my heart goes out to pregnant women in the fracking zones in Pennsylvania and elsewhere that are seeking higher rates of birth defects and wondering about the effective of exposure due to poor air quality and toxins that result from the fracking process.

My father, and I and my daughter have all have had severe asthma. We lived in the Baltimore/DC area, an area with historically high air pollution largely due to coal. My heart goes out to those with cronic diseases or those who develop chronic diseases as a result of exposures to bad air, water etc from yet another potentially toxic fossil fuel - fracked gas.

The report clearly state that the the risks and hazards of chemical exposure is not yet known. The chemicals used in fracking fluids are allowed to be kept "secret" by claiming "trade secrets".

Prescription drug companies have trademarks on their formulas but must

prove them non-toxic before getting approval to use them on a human population.

Medical professionals treating pregnant women, babies, the ill, any vulnerable people in the fracking areas need FULL disclosure of all chemicals that their patients may have been exposed to.

The Center for Disease Control should be involved in monitoring the health risks in fracking zones - collecting statistics and warning residents and travelers to the affected areas. The CDC's mission is "to protect America from health, safety and security threats" - <http://www.cdc.gov/about/organization/mission.htm>. Instead of the resources of the Federal Government which is funded to protect American citizens, a relatively poor western county in Maryland is being asked to continually survey health factors. How will this monitoring be funded?

The unknowns cited in this report (lack of scientific studies to prove the safety of processes on human health) are too numerous for the medical community to say that fracking can be done safely from the point of view of human health. We don't have enough data on birth outcome, water quality and especially the safety of drinking water, endocrine disruption and more.

It is well known that the wastewater comes from depths in the earth where it is contaminated by radioactive elements. We know that the wastewater has in the past leaked. We don't have studies to show definitely that this wastewater does not expose people to harmful doses of radioactive toxicity.

The study focuses on the effects on the Marcellus shale area and western counties in Maryland. But we know there are natural gas basins throughout Maryland. Gas companies are planning to frack in the Taylorsville basin in Virginia east of Fredericksburg and south of Annapolis. Should fracking be allowed in Maryland, that basin will be a potential fracking site; and there are natural gas basins that could be fracked throughout Maryland counties.

I share the concerns of several official commenters on the report as follows:

John L. Adgate, PhD, MSPH

Note that both ground and surface water can be affected by spills and leaks from not just the wells themselves but also from pipelines, water handling

systems, and related infrastructure

As I noted in my initial review of the Scoping document, the lack of substantive research to address the main public health concerns about UNGDP is still one of the major limitations facing both public health experts and decision-makers.

Lynn E. Goldman

"Maryland may wish to consider the health risks of methane releases and what actions, if any, can be taken in advance of federal regulatory oversight to assure that natural gas development, transport and use - now and in the future - minimize emissions of methane to air and water."

In addition, I share her concerns that issues related to water use and the adequacy of water supply is relevant to this report. As she points out, "water scarcity can lead to circumstances in which communities have fewer choices for drinking water supplies."

I also share the concerns in her comments about the adequacy of the emergency response system and this is key to the health and safety of residents. I understand there is a volunteer fire department and no hazmat team.

General comments:

The MD Shale Commission Best Practices report was written before the health study was completed and needs to be revised to consider the health study.

Monitoring and surveying is not prevention. The local population are not guinea pigs and should not be considered as residents in a "sacrifice zone".

And when the report says the data is not in, and we need more studies to adequately assess risk, this means we should not proceed until studies are in. Again we need to use the precautionary principle and do the additional studies needed before proceeding.

Submitted Files

Upload File

[comments_on_health_report_for_the_md_marselles_shale_commission.docx](#)

jmclaugh2000@gmail.com <no-reply@weebly.com>
Reply-To: jmclaugh2000@gmail.com
To: dhmh.envhealth@maryland.gov

Fri, Oct 3, 2014 at 11:43 AM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Leadership and Learning Associates

Email

jmclaugh2000@gmail.com

Comment

Thank you for BEGINNING the Marcellus Health Study. Maryland has a long way to go to study potential health risks and impacts before allowing hydraulic fracturing to begin in Maryland. There are just too many known unknowns and unknown unknowns -- beyond the Commission's 52 recommendations -- which need to be investigated and resolved.

I've had too many Maryland friends die from cancer in the past five years. Two friends believed methane gas was the culprit for their cancer.,,they were "overexposed to methane". A Hopkins oncologist said it was a

possibility.

Methane from any source is a health hazard. The amount of methane released from hydraulic fracturing creates health consequences. Isn't Maryland's air pollution bad enough already? Aren't the Maryland cancer rates high enough? How many Marylanders have asthma and other respiratory disease exasperated by air pollution? Unfortunately, pollution can't be controlled by state borders. Air pollution, as well as water pollution, from fracking in PA, WVA and Ohio flows to Maryland already...why add to this pollution of our air and water by fracking in Maryland?

Maryland can and must do better in studying the health impacts of fracking. Let's spend the time, effort and resources to assure that Maryland is committed to exemplary health outcomes for those living in or working in Maryland.

Thank you for continuing to study the health risks and impacts of hydraulic fracturing by adding additional rigor to the work already in progress. It is critical that healthcare professionals, scientists and scholars alleviate the many unknowns before recommending any hydraulic fracturing in Maryland.

amintzes@earthworksaction.org <no-reply@weebly.com>
Reply-To: amintzes@earthworksaction.org
To: dhmh.envhealth@maryland.gov

Fri, Oct 3, 2014 at 12:10 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Aaron Mintzes

Email

amintzes@earthworksaction.org

Comment

Thank you for the opportunity to submit the attached comments on behalf of Earthworks. Please note, we will include an additional submission of our recent report for reference.

Aaron

Submitted Files

Upload File

[miaeh_study_comments-_earthworks.pdf](#)

amintzes@earthworksaction.org <no-reply@weebly.com>
Reply-To: amintzes@earthworksaction.org
To: dhmh.envhealth@maryland.gov

Fri, Oct 3, 2014 at 12:16 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Aaron Mintzes

Email

amintzes@earthworksaction.org

Comment

Please accept a copy of the recent Earthworks report Blackout in the Gas Patch: How Pennsylvania Resident are Left in the Dark on Health and Enforcement.

Thank you,

Aaron

Submitted Files

Upload File

[earthworks-_blackout_in_the_gas_patch.pdf](#)

bditioner@gmail.com <no-reply@weebly.com>
Reply-To: bditioner@gmail.com
To: dhmh.envhealth@maryland.gov

Fri, Oct 3, 2014 at 1:32 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Brian Ditzler

Email

bditzler@gmail.com

Comment

See attached file

Submitted Files

Upload File

[bd_comments_on_miaehs_health_study_10-2014.doc](#)

piperannie@gmail.com <no-reply@weebly.com>
Reply-To: piperannie@gmail.com
To: dhmh.envhealth@maryland.gov

Fri, Oct 3, 2014 at 1:53 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Ann Bristow

Email

piperannie@gmail.com

Comment

piperannie@gmail.com <no-reply@weebly.com>
Reply-To: piperannie@gmail.com
To: dhmh.envhealth@maryland.gov

Fri, Oct 3, 2014 at 1:54 PM

[Quoted text hidden]

see attached pdf document

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[10.3.14_response_to_dhmh.pdf](#)

newsshilpa@hotmail.com <no-reply@weebly.com>
Reply-To: newsshilpa@hotmail.com
To: dhmh.envhealth@maryland.gov

Fri, Oct 3, 2014 at 3:01 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Shilpa Shenvi

Email

newsshilpa@hotmail.com

Comment

There is still no proof that fracking can be done safely. Too many inhabitants of fracked land have developed painful, terminal diseases. Some types of these illnesses, such as cancer, are identifiable. Other types cannot yet be identified but are unique to the inhabitants of these areas. The public health study confirms that for air quality, water quality, and worker health, the risk to public health is either high or moderately high. While some preventative measures have been suggested, these measures have not yet been proven to be safe. For example, the recommended setback distance for wells is 2000 feet. While this is based on patterns of car emissions, the dynamics of the emissions from a well might be different; 2000 feet might not be sufficient to protect the health of the citizens near that well. The public health study also cites many peer-reviewed articles that link birth defects with the poor air quality around well pads; for this particular issue, no precautions have yet been offered.

The dangers that fracking poses to Maryland citizens are clear. While it is commendable Maryland opted to undertake a study, the authors of that study themselves state that further research is needed. Several studies are currently underway both by government agencies and independent groups. Until more studies have been completed, I urge Maryland to wait to decide on fracking. If it is proven that fracking can be done safely, then I very strongly urge Maryland to rewrite the Best Practices manual in accordance with the evidence. The current version of the manual was written before the health study was published, and those practices are not based on sufficient scientific data.

Please do not allow fracking in Maryland until enough research is done to ensure the safety of our citizens. No amount of money is worth the health of human beings, and the inhabitants of Maryland have a right to live in their homes without being poisoned.

Reply-To: lar917dy@gmail.com
To: dhmh.envhealth@maryland.gov

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Larysa Dyrszka

Email

lar917dy@gmail.com

Comment

please see attachment

Submitted Files

Upload File

[maryland_hia_comments_dyrszka_10032014.pdf](#)

wspiggle@mac.com <no-reply@weebly.com>
Reply-To: wspiggle@mac.com
To: dhmh.envhealth@maryland.gov

Fri, Oct 3, 2014 at 6:32 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Wayne Spiggle, M.D.

Email

wspiggle@mac.com

Comment

This excellent report should be useful to other states that are open minded enough to consider health impacts in public policy matters.

Thank you, especially, for section 10.3.6.1, pg. 70 documenting the historical degrading of "community livability and social cohesion" resulting from large numbers of migrant workers who follow the developer, take the good jobs and overwhelm already taxed health care, housing and justice infrastructure.

To be worth the effort, we must train local labor to take these jobs.

I think you are being far too conservative with the set back distance and would suggest three thousand feet from human habitation to be more protective of the public health. Wayne C. Spiggle, M.D.

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Liz Feighner

Email

liz.feighner@gmail.com

Comment

Submitted Files

Upload File

[marcellus_shale_comments_on_public_health_report.pdf](#)



New Form Entry: Comment Form

14 messages

meleahboyle@gmail.com <no-reply@weebly.com>
Reply-To: meleahboyle@gmail.com
To: dhmh.envhealth@maryland.gov

Mon, Aug 18, 2014 at 1:03 PM

You've just received a new submission to your [Comment Form](#).

Submitted Information:

Name

Meleah Boyle

Email

meleahboyle@gmail.com

Comment

Test.

meleahboyle@gmail.com <no-reply@weebly.com>
Reply-To: meleahboyle@gmail.com
To: dhmh.envhealth@maryland.gov

Mon, Aug 18, 2014 at 3:12 PM

[Quoted text hidden]

joseph.cariola@gmail.com <no-reply@weebly.com>
Reply-To: joseph.cariola@gmail.com
To: dhmh.envhealth@maryland.gov

Mon, Aug 18, 2014 at 4:16 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Joseph Cariola

Email

joseph.cariola@gmail.com

Comment

Please keep fracking from the state of Maryland. We have seen the damage it's done and I really don't want flammable drinking water like the people of WV have. It does terrible things to our environment in pursuit of a form of energy we should be working to get away from.

If you love Maryland, don't let them come in and destroy it. Please. Keep fracking out of Maryland. It's destroying the land everywhere it's done.

johnhug91486@gmail.com <no-reply@weebly.com>
Reply-To: johnhug91486@gmail.com
To: dhmh.envhealth@maryland.gov

Mon, Aug 18, 2014 at 4:26 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

John Hughes

Email

johnhug91486@gmail.com

Comment

Please don't pimp out our home for a few quick oil dollars. Please.

jfd_mld@yahoo.com <no-reply@weebly.com>
Reply-To: jfd_mld@yahoo.com
To: dhmh.envhealth@maryland.gov

Mon, Aug 18, 2014 at 4:46 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Michele Deibler

Email

jfd_mld@yahoo.com

Comment

NO fracking in Maryland!! This is a danger to our water and, therefore, a

danger to our health. There are no economic benefits other than to the company doing the fracking. We need good, clean jobs in Maryland. We can move our economy forward without destroying life on the planet. If life is gone - guess what? - we don't need an economy! I don't want to have to buy my water from the grocery store. I like being able to turn on my faucet and get it right from my own well.

waydegordon@gmail.com <no-reply@weebly.com>
Reply-To: waydegordon@gmail.com
To: dhmh.envhealth@maryland.gov

Mon, Aug 18, 2014 at 5:00 PM

You've just received a new submission to your [Comment Form](#).

Submitted Information:

Name

Timothy Gordon

Email

waydegordon@gmail.com

Comment

While I am concerned over the public health risks involved in hydraulically fracturing, the economic impact of not opening up more areas to drill, in all likelihood provides a greater public health risk to Western Maryland.

We already have the paper mill dumping 300lbs of mercury into the Potomac river per year, and that only sustains a few hundred jobs at best, despite being a multibillion dollar industry.

Natnsvspot@hotmail.com <no-reply@weebly.com>
Reply-To: Natnsvspot@hotmail.com
To: dhmh.envhealth@maryland.gov

Mon, Aug 18, 2014 at 5:42 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Natalie Vetter

Email

Natnsvspot@hotmail.com

Comment

I grew up in the county and I am totally against fracking for various reasons!

carrieloughry@yahoo.com <no-reply@weebly.com>
Reply-To: carrieloughry@yahoo.com
To: dhmh.envhealth@maryland.gov

Mon, Aug 18, 2014 at 6:16 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Carrie Loughry

Email

carrieloughry@yahoo.com

Comment

I oppose the use of fracking in the state of MD (and throughout the world.) There are too many unanswered questions, and dangers which have already arisen from the use of fracking.

1. What exactly are the chemicals used and what happens if they get into the drinking water? The chemical formula is a closely guarded secret which doesn't allow for an informed decision.
2. In the Earthquake evaluation, it is stated that "Provided that Maryland does not allow deep well injection of wastewater" there is a low risk of earthquake. Can it be guaranteed that deep well injection will not be used? And how does the information coming out of Oklahoma influence this decision? Oklahoma is experiencing earthquakes every day due to fracking. Is this really what we want in MD?
3. Tourism is the main economy in Western MD. I think the risk of impact on residents and visitors alike is too high to allow fracking in MD.

Sincerely,
Carrie Loughry

To: dhmh.envhealth@maryland.gov

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Catherine Gibson

Email

kvgibson03@gmail.com

Comment

Please keep fracking out of Western Mmd and Garrett County, MD. Our entire economy out here in Deep Creek Lake and Friendsville depends on our beautiful scenery and clean water resources for recreational activities. After seeing the havoc wrought by the surveyors and exploration crews, with their workers, trucks, helicopters and heavy machinery, I can only imagine how awful the actual drilling and transport of natural gas would wreck. I hope you listen to us. Thank you.

the.kitzmilan@gmail.com <no-reply@weebly.com>

Reply-To: the.kitzmilan@gmail.com

To: dhmh.envhealth@maryland.gov

Mon, Aug 18, 2014 at 10:22 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Ryan Kitzmiller

Email

the.kitzmilan@gmail.com

Comment

Ive worked for a fuel company working on many frack sites. I thought people were wrong about all of it. But after I left a chevron site (which was as enviromentally friendly as it gets) n went to a frack tech site where I saw many liquids spilled on gound and much water being contaminated I quit that week. I cant be apart of any thing to my beat intrest (\$) that effects the environment n that way. I really hope this dosnt come to my home garrett co. Im scared its so close, but we have water ive been swimming n for 30 years and really would hate for money to cloud judgements. Please take in to consideration.

Thanks

Ryan

sienna2@juno.com <no-reply@weebly.com>
Reply-To: sienna2@juno.com
To: dhmh.envhealth@maryland.gov

Mon, Aug 18, 2014 at 10:25 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

TK Oram

Email

sienna2@juno.com

Comment

This report provides no analysis on the economic impact of any adverse, negative events and no meaningful review of the impact of this work on the region's top economic driver: tourism.

We cannot risk the health of many for the profits of a very few who don't even live here. Will the corporations making money off of this gas be left to live in the mess they create? When this gas gets shipped overseas, do you think the end-users will care if we have no clean water to drink? So short-sighted; so foolish.

Do you really think accidents don't happen? They do. They will.

mtrail5505@howardcc.edu <no-reply@weebly.com>
Reply-To: mtrail5505@howardcc.edu
To: dhmh.envhealth@maryland.gov

Tue, Aug 19, 2014 at 1:35 AM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Mollie Rose Trail

Email

mtrail5505@howardcc.edu

Comment

When the environment is in danger, honestly, nothing else should matter. Fracking is known to have methane leaks that cause tap water to become flammable and toxic. That's not good for us humans, our livestock, or our crops. Maryland has a lot of people and farms too. We have so many farms making strides to become or stay eco-friendly and fracking could very easily destroy that, even destroy those farms that aren't eco-friendly. Not only that but it threatens our citizens and our land. Maryland has such biodiversity and to threaten or risk any part of that is a shame. We have already permanently damaged areas of our environment, but this could destroy so much more. Everything in Maryland leads to the Chesapeake Bay, a wondrous source of beauty and livelihood that has suffered enough but fracking anywhere, Cove Point or elsewhere will only damage it further. Every inch of forest covered land lost hurts it, so even if things went right, the loss of land would hurt, but something will go wrong and if fracking comes here it will get much worse. Do you want to lose those blue crabs forever? Trust me when I say Old Bay on Louisiana Blue Crabs and bordwalk french fries will get old quick. Keep Maryland from fracking and you will preserve not only our agriculture but our crabs too. Don't let that happen!

Submitted Files

Upload File

[md-steamed-crabs.jpg](#)

You've just received a new submission to your Comment Form.

Submitted Information:

Name

louis antonelli

Email

louisvantonelli@gmail.com

Comment

please no fracking been making progress with the bay just not worth it

mariosalazar@comcast.net <no-reply@weebly.com>
Reply-To: mariosalazar@comcast.net
To: dhmh.envhealth@maryland.gov

Tue, Aug 19, 2014 at 6:24 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Mario Salazar

Email

mariosalazar@comcast.net

Comment

First, I would like to inform the Commission of my credentials in these particular technical and regulatory areas. I worked professionally at the EPA Underground Injection Control Program for over 20 years, mostly as a National Technical Expert in injection well engineering. I am knowledgeable in all aspects of "fracking" and have reviewed the reports that EPA has issued on the subject.

My comments are in two general areas of the report:

1. The general scope, and;
2. The impact on ground water, my area of expertise.

Scope

It seems short-sighted to exclude global warming effects from the study. These effects are by any logical definition long term chronic effects. It is apparent to me that this exclusion emanates from political, legal and economic reasons, not from technical, public health, technical or environmental ones. Surveys documented in "Years of Living Dangerously" and "Gasland II" indicate that a significant portion of the gas extracted escapes to the atmosphere during extraction, processing and transportation. Some have said that this quantities eliminate any advantages of natural gas with regards to other fossil fuels with regards to climate change causal phenomena.

Water

About 60% of the potable water in the planet is in the ground. Reports that I have read indicate that about 5% of the wells drilled for fossil fuel and other natural resource extraction fail cementing tests. If only a portion of these wells allow for migration of gas and other pollutants into drinking water aquifers, we will have a crisis in our hand. Who will pay for the remediation and/or the treatment of the water?

All tests in geo-technical projects use remote sensing technology. Interpretation of these results is extremely difficult and costly. This becomes an issue when a state, even the Great State of Maryland, would have to have a highly trained extensive staff to do oversight and enforce a program like this. My experience is that the funding will never be a par with the need to provide proper oversight and enforcement.

My experience with the Federal Underground Injection Program (UIC) and its funding makes me believe that the state will never have the staff and resources to do an adequate job. The funding for the UIC program is about \$11 million a year for grants to most states and direct implementation for others.

The Commission will have to decide if in its recommendations the political and economic benefits of "fracking" will be more important than the protection of our ground water and public health.

I have uploaded an article that I wrote in this respect. It is short.

The state legislature will have to decide whether

Submitted Files

Upload File

[hydraulicfracturing.docx](#)

Comments on Maryland Marcellus Shale Public Health Study 10-3-2014

The Maryland Institute for Applied Environmental Health's (MIAEH) report "Potential Public Health Impacts of Natural Gas Development and Production in the Marcellus Shale in Western Maryland" is a noteworthy, valuable and substantive examination of the impact of "fracking" on public health.

The comments of independent peer reviewers on the report are significant. Dr. Lynn Goldman wrote, "This approach is a major step forward in identifying potential health threats" from unconventional natural gas development and production (UNGDP). Dr. Jonathan Levy noted, "This was a solid report that provided insight about key pathways linking UNGDP with public health." However, Dr. John Adgate's words expressed the concern shared by all 3 independent reviewers as well as participants in the study, "The lack of substantive research to address the main public health concerns about UNGDP is still one of the major limitations facing both public health experts and decision-makers."

In fact, many of MIAEH's recommendations call for additional research, special monitoring and specialized studies. I mention this at the beginning of my comments to stress that the MIAEH report is a very good first step, but there is not yet sufficient scientific evidence to allow decision-makers in Maryland to determine whether and how UNGDP can be done in a safe way.

What is needed is for the State to continue studying how potential UNGDP activity would affect public health, and to wait for the results of studies underway in other states as well as research that government, industry and academic groups are calling for. A related concern is that the latest Marcellus Shale Safe Drilling Initiative Best Practices study by Maryland's Department of the Environment and Department of Natural Resources does not address all the hazards identified in the MIAEH report, and needs to be updated to remedy that deficiency before any decision can be contemplated about whether to proceed with UNGDP in our state .

The overall message of the MIAEH report is that UNGDP in Western Maryland is likely to be harmful to the health of residents. The study found a high or moderately high likelihood of adverse health impacts in 7 of 8 areas researched: air and water quality, worker health, the healthcare infrastructure, social determinants of health (eg., traffic, crime, drug abuse, STDs), and from noise pollution and the cumulative effects from exposure to all these problems.

The study cited peer-reviewed studies that have found adverse birth outcomes (including congenital heart and neural tube defects) from exposure to worsening air quality around well pads. It's worth noting that the recommended setback of 2000 feet from all habitation and human activity has not been demonstrated to be a safe distance. A much greater precautionary setback distance would make more sense until a safe setback distance has been established by research.

One particularly commendable set of recommendations in the MIAEH study calls for disclosing information about chemicals and mixtures used in the fracking process. Unlike in the MDE and MDNR Best Practices study, the MIAEH study appropriately questions the legitimacy of industry claims that chemical formulas are trade secrets and concludes, "Public risk should outweigh commercial concerns especially where the potential risks are created by the trade secret claimant."

What would be most helpful would be for the State to institute a policy requiring disclosure of both individual chemical names and chemical formulas including concentrations of each chemical in each formula, volumes used and locations where each chemical is discharged. In addition, there should be a requirement that a toxicological profile be submitted for each chemical used that addresses its potential health and ecological effects, as well as interactions with other chemicals used in the fracking process and commonly found in shale formations. Such requirements would have the additional benefits of encouraging industry to substitute chemicals with known minimal effects for those that are more harmful, and stimulating more research into the effects of all chemicals in use or that could be used.

Since other states have not required industry to disclose chemicals they use in fracking, the risks and hazards of chemical exposure on human health and the environment is not yet known. That is totally unacceptable, and further justification for Maryland instituting a chemical full disclosure policy as I described above.

At a minimum, MIAEH's recommendations requiring disclosure about chemicals and mixtures used in fracking should supercede those in the Safe Drilling Best Practices document.

The MIAEH scope of work unfortunately did not include an assessment of the many adverse impacts on the health of residents across the state from transport of gas and toxic wastewater from neighboring states as well as Western Maryland. Pipelines and compressor stations will need to be built and operated across our state, truck traffic will increase, and there will be increased demands on health care and emergency responder services from spills, traffic accidents, and increases in crime, drugs, STDs and mental illness. There needs to be a broader study of the impacts of UNGDP on the entire state. The MIAEH study could serve as the first phase of such a study.

The MIAEH study also ignores the potential for fracking to worsen the impacts of climate change on our health as well as the environment.

It is clear that the current Maryland health study has both strengths and deficiencies, with the latter primarily caused by lack of sufficient research on which to draw. What evaluations have been made come with warnings of likely and probable adverse impacts. The MIAEH study's many recommendations calling for monitoring and surveillance are helpful, but they are not prevention, which should

be the ultimate goal. What's needed is for the state to continue research on its own and to monitor other research underway until there is clear, scientific evidence that unconventional natural gas development and production will NOT cause significant harm to public health in Maryland.

Respectfully,

Brian E. Ditzler
1225 Noyes Drive, Silver Spring, MD 20910
bditzler@gmail.com 301 565-0870

Comments on Health Report for the MD Marselles Shale Commission
Ruth White ruth.folkfan@gmail.com 10-3-14

Thank you for the opportunity to comment on the health study for the possibility in Maryland of unconventional natural gas development (UNGD) - or in a common shorthand phase I use, but use in perhaps a technically incorrect shorthand to refer to the whole process of gas production and delivery including pipelines and compressor stations - fracking.

I am struck by the repeated reference in the report to lack of data. As a result the risk or harm in many instance cannot be scientifically "proven" and risk is not assessed at the highest level.

When speaking of health for industrial processes that may affect human health in critical areas like birth defects, air quality and respiratory diseases etc. needs to be the same standard that FDA uses in the development and approval of drugs.

<http://www.fda.gov/drugs/developmentApprovalProcess/default.htm>

My daughter works for a pharmaceutical firm and talks about the FDA approval process often. Before a drug is approved for sale in the U.S. an "independent and unbiased review establishes that a drug's health benefits outweigh its known risks"

There are no health benefits from the fracking process. There are potential risks and these should not be assessed as less than the highest risk without DATA. This is the precautionary principle that FDA uses. No

approval until health benefits are PROVEN to outweigh health risks.

I remember when I was pregnant with my daughter and wondering praying that I would have a healthy baby. And when my daughter was pregnant with my grandson - also praying and hoping for a healthy child. I was blessed twice. But my heart goes out to pregnant women in the fracking zones in Pennsylvania and elsewhere that are seeking higher rates of birth defects and wondering about the effectiveness of exposure due to poor air quality and toxins that result from the fracking process.

My father, and I and my daughter have all have had severe asthma. We lived in the Baltimore/DC area, an area with historically high air pollution largely due to coal. My heart goes out to those with chronic diseases or those who develop chronic diseases as a result of exposures to bad air, water etc from yet another potentially toxic fossil fuel - fracked gas.

The report clearly states that the risks and hazards of chemical exposure is not yet known. The chemicals used in fracking fluids are allowed to be kept "secret" by claiming "trade secrets".

Prescription drug companies have trademarks on their formulas but must prove them non-toxic before getting approval to use them on a human population.

Medical professionals treating pregnant women, babies, the ill, any vulnerable people in the fracking areas need FULL disclosure of all chemicals that their patients may have been exposed to.

The Center for Disease Control should be involved in monitoring the health risks in fracking zones - collecting statistics and warning residents and travelers to the affected areas. The CDC's mission is "to

protect America from health, safety and security threats" - <http://www.cdc.gov/about/organization/mission.htm>. Instead of the resources of the Federal Government which is funded to protect American citizens, a relatively poor western county in Maryland is being asked to continually survey health factors. How will this monitoring be funded?

The unknowns cited in this report (lack of scientific studies to prove the safety of processes on human health) are too numerous for the medical community to say that fracking can be done safely from the point of view of human health. We don't have enough data on birth outcome, water quality and especially the safety of drinking water, endocrine disruption and more.

It is well known that the wastewater comes from depths in the earth where it is contaminated by radioactive elements. We know that the wastewater has in the past leaked. We don't have studies to show definitely that this waste water does not expose people to harmful doses of radioactive toxicity.

The study focuses on the effects on the Marcellus shale area and western counties in Maryland. But we know there are natural gas basins throughout Maryland. Gas companies are planning to frack in the Taylorsville basin in Virginia east of Fredericksburg and south of Annapolis. Should fracking be allowed in Maryland, that basin will be a potential fracking site; and there are natural gas basins that could be fracked throughout Maryland counties.

I share the concerns of several official commenters on the report as follows:

John L. Adgate, PhD, MSPH

Note that both ground and surface water can be affected by spills and leaks from not just the wells themselves but also from pipelines, water handling systems, and related infrastructure

As I noted in my initial review of the Scoping document, the lack of substantive research to address the main public health concerns about UNGDP is still one of the major limitations facing both public health experts and decision-makers.

Lynn E. Goldman

"Maryland may wish to consider the health risks of methane releases and what actions, if any, can be taken in advance of federal regulatory oversight to assure that natural gas development, transport and use - now and in the future - minimize emissions of methane to air and water."

In addition, I share her concerns that issues related to water use and the adequacy of water supply is relevant to this report. As she points out, "water scarcity can lead to circumstances in which communities have fewer choices for drinking water supplies."

I also share the concerns in her comments about the adequacy of the emergency response system and this is key to the health and safety of residents. I understand there is a volunteer fire department and no hazmat team.

General comments:

The MD Shale Commission Best Practices report was written before the health study was completed

and needs to be revised to consider the health study.

Monitoring and surveying is not prevention. The local population are not guinea pigs and should not be considered as residents in a "sacrifice zone".

And when the report says the data is not in, and we need more studies to adequately assess risk, this means we should not proceed until studies are in. Again we need to use the precautionary principle and do the additional studies needed before proceeding.



Public Health Study of Fracking

1 message

Michael Ichniowski <michich23@hotmail.com>

Fri, Oct 3, 2014 at 12:55 AM

To: dhmh.envhealth@maryland.gov

TO: Division of Environmental Health
RE: Public Health Study of Fracking

It is clear from this report that the health risks of proceeding with hydraulic fracturing (fracking) are too high, putting the health of those living in proximity to fracking pads at great risk. The potential for pollution of air and drinking water is substantial. Many of the chemicals used to extract natural gas by this method are known carcinogens and neurotoxins. The reticence of the gas industry to reveal the exact components of their fracking solutions increases the difficulty of physicians attempting to care for patients exposed to these chemicals. The health effects of these chemicals may not be reversible; prevention of exposure to them is the only justifiable course to take.

The report has identified high likelihood of negative health impacts to air quality, healthcare infrastructure, occupational health, and social determinants of health, and moderately high likelihood of negative impacts from cumulative exposure, flowback and contamination of water and noise pollution. There is no justification for exposing citizens to these substantial health risks. As a practicing pediatrician, I am particularly concerned about the risks to children, because of their smaller size and sensitivity to smaller doses of toxic substances; their greater potential for cumulative effects over time, and the potential for adverse developmental effects on their still-forming nervous systems.

I hope you will agree with me that the potential for significant negative health impacts from fracking, as it is currently carried out, is simply too great to consider allowing this process to go forward in Maryland.

Thank you for your time and attention.

Sincerely,
Michael Ichniowski, MD, FAAP



New Form Entry: Contact Form

1 message

dpramsey@verizon.net <no-reply@weebly.com>
Reply-To: dpramsey@verizon.net
To: dhmh.envhealth@maryland.gov

Tue, Oct 7, 2014 at 9:46 PM

You've just received a new submission to your [Contact Form](#).

Submitted Information:

Name

David Ramsey

Email

dpramsey@verizon.net

Comment

I realize the public comment period on your report has ended, but at the meeting of the Garrett County Marcellus Shale Committee today I was encouraged to forward these comments.

I am not certain why EMS and fire were left out of your study. In the case of EMS, first responders provide emergency medical care and paramedics practice medicine in the field. Fire companies, in addition to extinguishing fires, provide rescue services, emergency housing during disasters and assist in community evacuation should it be necessary.

The impact on these vital community resources if Marcellus Shale gas development occurs will be considerable. Increased traffic accidents, increased violence, as well as increased time out of service to their

communities should explosions, fires or other well pad incidents happen.

EMS and fire services in this area where gas development would take place is 99% volunteer. Having sufficient manpower and equipment in this volunteer system is a major concern. The volunteer structure of these services have been sorely tested in the recent past and the added responsibilities caused by Marcellus Gas field development will only increase the pressure.

Perhaps the omission of EMS from your report was the rationale that it is not a part of the health care community. If so I would point out that during the current discussion surrounding the Ebola crisis CDC and other government agencies repeatedly refer to "EMS and OTHER health care workers" when providing their reports.

October 3, 2014

Clifford S. Mitchell, MD, MS, MPH
Director, Environmental Health Bureau
Prevention and Health Promotion Administration
Maryland Department of Health and Mental Hygiene
201 West Preston Street, Room 327
Baltimore, MD 21201

Dear Dr. Mitchell,

I send my thanks for the opportunity to comment on the MIAEH study, *Potential Public Health Impacts of Natural Gas Development and Production in the Marcellus Shale in Western Maryland*, and to the MIAEH study team—especially Dr. Milton, Dr. Sapkota and Dr. Wilson—extra thanks for their good work. Organizing and carrying out this study required multiple trips to remote western Maryland to develop scoping, gather data and present findings. Those of us who live out here appreciate such efforts on our behalf.

I submit these comments as a landowner living directly in the path of proposed Unconventional Natural Gas Development and Production (UNGDP). As a parent, a business owner, a caregiver, and a taxpayer, I am deeply concerned that our communities' health and quality of life will decline should UNGDP be permitted in western Maryland. I serve on the Garrett County Shale Gas Advisory Committee and am a founding member of CitizenShale, a local organization formed to educate and advocate for protections from UNGDP impacts, but the opinions expressed here do not represent either entity.

I applaud the MIAEH Health Impacts Assessment for its rigor in identifying and documenting significant and potentially serious, irreversible health hazards that will happen in western Maryland should UNGDP be permitted.

Identifying surface owners as a vulnerable population and acknowledging that groundwater users are vulnerable to different risks shows that the study team took time to understand local perspectives. I agree with the methodology for assigning risk levels, since for those of us who will endure them, a moderate risk of exposures that can lead to cancer, breathing problems or birth defects is not something that should be trivialized.

COMMENTS ON STUDY RECOMMENDATIONS

The HIA presents a wealth of data and analysis that must inform a life-changing decision: whether UNGDP can be accomplished in Maryland without unacceptable risk. Unfortunately, the Best Management Practices for UNGDP were approved by Maryland's Shale Advisory Commission before this study, or RESI's economic study, were completed. How can Governor O'Malley and his agencies be sure that we have developed a "gold standard" of best practices without a full understanding of the health,

economic and social impacts that our regulations are supposed to mitigate?

Many of the study recommendations go further than the requirements proposed in the BMPs to protect Maryland communities and resources. In certain cases, funding and administrative/legislative action will be required to implement MIAEH's recommendation, so I hope the agencies will take the time needed to readdress these areas in the BMPs.

I take to heart your request, Dr. Mitchell, for substantive comment informed by local concerns; these comments in support of the recommendations—and the instances of criticism when one falls short—offer some local perspective in hope that policy makers will see western Maryland not as “elsewhere” but as a home to families much like their own when making decisions on our behalf.

6.3.1 CGDP

R1. As an asthma sufferer, I value the proposal ***to require assessment of air quality and other potential health impacts*** as part of the CGDP. We need clear strategies to protect the community and workers from exposure to hazardous air pollutants. What is a safe distance between industrial activity and people with pre-existing existing conditions?

R2. There has been vigorous ongoing debate on the Governor's Advisory Commission regarding the legitimacy of peer-reviewed studies that indicate a greater setback distance is needed between UNGDP and occupied properties or residential water wells. Given the list of potential health impacts identified in the HIA, it is critical that we ***require assessment of whether application of existing setback distances will be adequate to protect public health.***

I appreciate the recommendation that prevailing winds and topography be considered in the CGDP siting process. Living on the windward side of a hill might concentrate exposures; morning fog lays in our valleys. It's alarming to think that something beautiful that we take for granted, like a blanket of fog, could one day immerse residents, livestock and stream bed below it in harmful VOCs.

6.3.2 Disclosure of Well Stimulation Materials

R8 through R13 are all strong recommendations and should supersede Maryland's Final Best Practices (published July 2014).

R-X1. Under this topic, an additional recommendation is needed to ***prohibit nondisclosure agreements.*** In other states, such settlements have suppressed needed information and limited full understanding of UNGDP's public health impacts.

6.3.3 Air Quality

R-X2. There is ***no recommendation for measures to mitigate air exposures and potential injury under upset conditions.*** Secrecy of chemical components in use could impair decision making in these situations. Neighbors within a 1/2 mile perimeter of a Chevron well that exploded in southwest PA in

February, 2014 were evacuated from their homes for several days while the pad site burned without control and a *special fire team was flown in from Texas*. Access to the pad site was limited to 1,500 feet away until the fire was extinguished and the ground cooled enough for tires and shoe soles not to melt.

There ***may be other relevant categories*** where upset conditions merit consideration. Setbacks, at the very least, should be informed by the need to protect public safety during UNGDP emergencies.

<http://patch.com/pennsylvania/canon-mcmillan/what-can-we-learn-from-the-greene-county-gas-well-explosion#.VDBgLOtavwI>

R14. Though all other recommendations are strong, I am concerned that a ***2,000 foot setback distance from well pads and compressor stations not using electric motors*** is inadequate. Making an exception to a larger setback for compressor stations based on use of a less harmful power source and noise reductions (**R28**) fails to take into account the need to establish a safe distance from the facility's other harmful emissions.

R-X3. Furthermore, a commenter to the study authors (MSAC meeting presentation, 9/15/14) noted the need to consider a setback distance from roads and UNGDP traffic, due to the exhaust and particulate emissions from intensive truck transport through residential areas.

The MIAEH report notes "concentrations of traffic-related pollutants drop to the background level beyond 500-700m (1640-2296 feet)." (p. 40)

My home and business lies 150 feet from the narrow dead-end road on which Chief Oil & Gas, prior to the Executive Order, was seeking a permit to develop an HVHF well 1.5 miles further east. Approximately 20 other homes hug this road from its beginning to its end, all of them well within the 2,296 feet in which traffic pollutants have impact. At least one third of these homes shelter a person who is part of a vulnerable population, including elderly retirees, children and people with pre-existing health conditions including asthma, sleep apnea, cancer, heart disease, and diabetes. This road is a typical county road with a typical population and assortment of households.

The two-trucks-per-minute traffic in and out to serve a gas well (or 8) at the end of this road would subject every resident to the noise, road dust and particulate/VOC emissions from several thousand diesel trucks. Traffic impacts will happen with each new well drilled and each time a well is re-fractured. Residents will endure industrial traffic exposures before emissions and airborne silica sand from drilling and production of the well(s) even begin. ***There is no effective way to protect local residents on rural county roads from traffic-related pollution if HVHF wells are developed here. The only mitigation would be to deny a permit on such rural residential roads.***

No setback distance adequately protective of air pollution from UNGDP has been empirically determined in any state and it is unknown if these impacts can be mitigated by regulations.

R18. While serving on the Garrett County Shale Gas Advisory Committee, I was tasked with analyzing and sharing information from the *Multi-State Shale Research Collaborative's* Four-County Studies (<http://www.multistateshale.org>). A wide range of economic, public health, public safety and social impacts of UNGDP was documented in four active Marcellus drilling counties (April, 2014). MIAEH's recommendations under Air and Health Care Infrastructure parallel repeated recommendations in the MS-SRC studies: ***establish a panel consisting of community residents, officials and industry personnel to actively address local concerns.*** The 4-county studies recommended—in addition to emissions and odors—that local panels address issues regarding land use, minerals leasing, traffic/road safety, health care/public health problems, crime, housing, public safety/responders and other social impacts.

6.3.4 Flowback and Production Water-Related

R20 The recommendation to ***prohibit well pads within watersheds of drinking water reservoirs and protect public and private drinking water wells with appropriate setbacks*** is a strong one, but the second part is very vague. Given the content of MIAEH's excellent discussion (10.3.2.5 *Evidence of well water contamination*) of studies focusing on water contamination, it seems that the preponderance of evidence supports a setback of no less than 3,280 ft (1 km) to mitigate risk of contamination.

New information has emerged since the MIAEH study's publication that further attests to UNGDP activities increasing risk for contamination of residential water wells. This information is included in **NEW INFORMATION SINCE RELEASE OF HIA.**

R23. To ***require identification and monitoring of "signature" chemicals in fracturing fluids to allow for future identification of ground water infiltration/contamination*** is a much-needed recommendation that the agencies have indicated they are evaluating for inclusion in BMPs. An ongoing study by the Department of Energy begun in 2012, injected a Marcellus well in southwestern PA with four different man-made tracers at different stages of the fracking process. After a year of monitoring, the researchers found that the chemical-laced fluids stayed below the shallower areas that supply drinking water (though they did document that one fracture that traveled 1,800 feet from the well bore).
(<http://timesleader.com/apps/pbcs.dll/article?avis=TL&date=20130723&category=news&lopenr=307239917&Ref=AR>)

If the industry insists on keeping secret certain details about the substances it uses in the drilling process, and yet continues to claim that no instance of any of the >300,000 gallons of chemicals used in the fracturing stage has ever risen to shallow groundwater aquifers, then the inclusion of tracers should not be disagreeable to them. The simple ability to prove contamination would provide residents near UNGDP a greater level of comfort about the state's commitment to keeping them safe.

R25. Prohibiting the use of *flowback and production wastewater or brine use to suppress road dust, de-ice roads, etc* is a welcome recommendation. These materials could become airborne when dried, or could quickly end up in a sensitive stream due to the area's hilly topography.

R26. *Conducting research on NORM* before UNGDP is permitted makes sense, since mitigation for these emissions is not thoroughly addressed in the BMPs.

R-X4. *A recommendation is needed here for a system to track waste disposal and to address illegal dumping.*

6.3.5 Noise

R 28. This item is discussed under Air (R14). *A 2,000 ft. setback only for diesel-run compressor stations with a variance to 1,000 ft. for those using electric motors and sound barriers*—though it may mitigate noise—fails to take into account that processing will produce emissions, regardless of the power source. Reducing the distance from the facility also reduces the effectiveness of the setback to mitigate VOC emissions from the facility.

6.3.6 Earthquakes

New information regarding UNGDP-induced earthquakes has emerged since the study resources were gathered. It is discussed in the **NEW INFORMATION** section.

6.3.7.1 Social Determinants of Health—Traffic Safety

R33 through R35 are very strong recommendations. *Increasing state and local highway patrols to closely monitor truck traffic, empowering local communities to control truck speed and traffic patterns, and routing truck traffic to maintain separation between UNGDP activities and the public* are all recommended in each of the four-county M-SSRC studies. Garrett County's Shale Gas Advisory Committee will likely recommend taking local action, when possible, to implement these points, as they are not addressed in the State BMPs.

It is impossible to over-estimate the danger drivers—both local and visitors—will encounter should the intensive truck traffic required by UNGDP come to local roads. With the exception of I-68 and parts of Routes 219 and 40, roads with a long, clear sight distance, unobstructed by curves or hillsides are rare in Garrett County. I fear that many will be harmed and lives will be lost on our roads if we don't have really strong planning and enforcement in this area.

Currently there is no system in place to monitor and enforce UNGDP truck traffic issues in Garrett County, so we have no mitigation for the issues that result.

6.3.7.2 Social Determinants of Health—Empower Communities

R37. Enact a Surface Owners Protection Act as recommended by MDE Part 1 report. This is needed, but this act should apply to all surface owners, not just to those who have split mineral estates. Health risks for surface dwellers are the same, regardless of mineral ownership. I own my mineral rights, and I know the stress of facing shale development near my home has already affected my health and my ability to care for my family.

Maryland's current Presumption of Liability law is not a complete mitigation, as the protection it extends to landowners—that drillers are liable for damage that occurs within 2,500 feet of their operations—is valid only for the first year of drilling.

6.3.8 Healthcare Infrastructure

R41 through R44 are also strong recommendations echoed in the M-SSRC Four-County studies (see **R18**). **Organizing stakeholder forums regarding local healthcare issues, informing emergency and medical personnel, reviewing tax revenues and assessing needed improvements** are all among the tasks that a “shale office” could undertake for the benefit of the county.

R X5. Since Garrett County is a medically-underserved area (MSA) and has shortages in healthcare personnel (HPSA), it is not clear if there are recommendations that will mitigate problems that will result from rising demand on our healthcare system. **Our county's Healthcare Infrastructure needs to grow, with or without an influx of itinerant shale workers. If the study recommends expanding this system, how will it be financed?**

6.3.9 Cumulative Exposure/Risk

R46 through R48 The discussion of Cumulative Exposure/Risk on page xxiv rings frighteningly true. It so accurately describes the range of social impacts and changes that people in my community fear they will experience should our state permit fracking in our far western counties. The recommendations **for active medical surveillance** called for in **R46 and R47** seem necessary in light of the magnitude and range of impacts that we should expect. The state-collected health data should be made available to the public as soon as possible, and the Department of Health must develop a health registry that is accessible to the public. **This system should also include a system of incident reporting for accidents and upset conditions at well sites.**

A push for similar measures in a state where UNGDP is underway affirms the strength of MIAEH's recommendations. Due to emerging health issues, lack of baseline data, and failure of its state Health Department to respond to and document complaints, a bill has been introduced in the PA State Legislature (SB 790) calling for a program of medical surveillance and research on health effects of air pollutants generated by oil and gas operations. The bill's purpose is to push Pennsylvania towards a statewide database of public health information regarding natural gas drilling. <http://citizensvoice.com/news/study-more-gas-wells-in-area-leads-to-more-hospitalizations-1.1763826>

NEW INFORMATION SINCE RELEASE OF HIA

Since the release of MIAEH's Assessment, ***a lot of new information has emerged that could inform the overall findings and potentially raise the degree of risk assigned to several categories.***

•6.2.5 Earthquakes

Though the MIAEH assessment notes that hydraulic fracturing can trigger micro-earthquakes, it assigns a **Low Likelihood** of risk to public health from UNGDP related earthquakes, provided that Maryland does not allow deep well injection of wastewater.

However, the Ohio Department of Natural resources concluded in September that five March 2014 quakes (magnitude 2.0 or greater) in Mahoning County, Ohio, resulted ***not*** from deep well waste (Class II UTI) disposal wells, but from UNGDP wells owned by Hilcorp Energy. No injection wells were nearby; the state ordered an indefinite moratorium on fracturing HVHF wells within three miles of the quakes' epicenter. ***This is the first likely connection between earthquakes and HVHF production in the Appalachian Basin.***

<http://www.ohio.com/blogs/drilling/ohio-utica-shale-1.291290/no-seismic-monitoring-plan-from-hilcorp-energy-to-odnr-1.492051>

In light of this new information, the section on Earthquakes should be modified to reflect an increased level of risk now that quakes have been tied directly to HVHF extraction. A raised risk level, if acknowledged, also merits a discussion by the MSAC (on public record, please), of the differences and functional similarities between Class II UTI's and HVHF production wells.

•6.3.3 Air Quality

Air Quality risks already receive a High degree of likelihood in the HIA. But new research is pending from the Colorado State University Department of Atmospheric Science (a research entity requested by industry and contracted by the Colorado Department of Public Health and Environment), that is expected to show a firm link — if there is one — between UNGDP emissions and health problems.

Full results, which will include measurements of methane gas and VOCs (benzene and toluene) in the emissions, are expected to be available by 2016.

http://www.denverpost.com/business/ci_26660219/colorados-biggest-drillers-try-new-techniques-cut-oil?source=most_viewed

"I think the 2016 data really holds the most promise," said Mike Van Dyke, head of the environmental epidemiology, occupational health and toxicology section of the Colorado Dept. of Public Health and Environment. ***With the promise of***

definitive new information, it is possible that new recommendations would be needed for a higher score in an already High level of risk.

•6.2.3 Flowback and Production Water Related

1. New research by scientists at Ohio State University (published in August in the Proceedings of the National Academy of Sciences) using trace isotope analysis shows increasing contamination over time of well water near 8 fracking sites in Texas and Pennsylvania is “linked to fracking. The researchers identified 3 mechanisms by which fracking was causing the contamination: 1) leaks through the ‘annulus’... 2) leaks through cracks in the production casing of pipes, and 3) leaks in a “failed well”, specifically through the failure of a well “packer” that usually acts as a sealing device...”

The new research, which also ruled out biogenic methane contamination, shows that UNGDP is responsible for contamination, but not necessarily in the most often-suspected way: migration of gas through natural fracture networks from gray and black shale layers. <http://www.neomatica.com/2014/09/24/trace-isotope-analysis-reveals-fracking-contaminating-well-water-3-ways/>

Reviewers regard research conclusions as testable: when affirmed, the research suggests “that improvements in integrity of drill hole casings and pipelines will ameliorate contamination.” ***These findings necessitate a review of casing standards in the BMPs; clearly, minor improvements to API standards may not be enough to protect water resources and public health.***

2. On August 20, 2014, the Pennsylvania DEP released records and supporting documents on water supplies that were damaged by oil and gas activities since the end of 2007. Most of the roughly 240 documented contaminations were from the usual culprits: methane, metal and salt that had apparently seeped from well sites or been disturbed by drilling activity. But in May, 2014, ***DEP inspectors in Susquehanna County found volatile organic compounds, ethylene glycol and 2-butoxyethanol, chemicals regulators said were consistent with a surfactant used to drill a UNGDP well 1,500 ft away.*** <http://powersource.post-gazette.com/powersource/policy-powersource/2014/09/09/DEP-releases-details-on-water-contamination/stories/201409090010>

This revelation has special meaning for my family and neighbors northwest of Friendsville. Our rural neighborhood is where the first permits for UNGDP were being sought when Governor O’Malley issued his Executive Order for the Safe Drilling Initiative. The driller responsible for the notable Susquehanna county contamination—Chief Oil and Gas—was the same company seeking permits for UNGDP 1.5 miles from my home.

The Governor’s prudent decision to wait in 2011 may have prevented the same kind of water contamination, health impacts, and inevitable property devaluation from happening to families in western Maryland.

Other recent data from PA DEP shows a first-year well failure rate of 9%. At this rate, we can expect one of the first 11 wells drilled in western Maryland to fail (and allow methane migration) the first year drilled. Since our current BMPs fail to heed the science indicating better outcomes with a 1 km setback, it's not clear to me how the current setbacks and best practices will mitigate this failure rate. Regardless of the risk level assigned in this category, the magnitude (& health implications) for the unlucky winner will be life-changing when failures eventually occur.

MIAEH notes our region's high dependence on residential water wells. I hope the Governor and agencies will take seriously this statement from MIAEH: "Studies of health effects of drinking water exposures to fracturing contaminants do not yet exist, though many anecdotal reports would suggest that high-quality, rigorous studies should be conducted to better understand the health consequences of exposure." (p. xxi)

Given the most recent information about propensity for groundwater contamination, the risk level in this area should be raised to High, and BMPs addressing this area should be re-evaluated before proceeding with UNDGP.

•6.2.3 Cumulative Exposure/Risk

Although in most cases, MIAEH's scoring and logic for assigning levels of risk likelihood is clear, I do not understand why—with 4 of the 8 categories earning a High level of risk—that the risk of Cumulative Impacts is not assigned a High level as well.

Just last week notice of a study by University of Pennsylvania's Center of Excellence in Environmental Toxicology (publication pending peer review) was released, with preliminary findings indicating "over time an increasing number of wells [in a community] is significantly correlated with inpatient rates of hospitalization." Researchers collected data from seven different insurance providers for three counties (one of which was a control area with no drilling). They compared the density of gas wells with inpatient health records, adjusting for population density. (<http://citizensvoice.com/news/study-more-gas-wells-in-area-leads-to-more-hospitalizations-1.1763826>).

GARRETT COUNTY'S MEDICALLY-UNDERSERVED STATUS SHOULD ALSO INFORM LEVEL OF CUMULATIVE RISK

Garrett County is a "medically underserved" area. Many factors limit access to health care and contribute to poor health outcomes. Many residents are uninsured or underinsured, and it is a challenge to get medical practices to locate here. The level of cancer in our county is fairly average compared to rest of state, but our mortality rate is not. We have a mortality rate for breast cancer 25% higher than Maryland, with similar results for prostate and colorectal cancers. Though my background is not in public health, it seems

reasonable to assume this high mortality rate is, in part, due to lack of access to early diagnosis and continuing care.

Those assessing our healthcare infrastructure might miss the extent to which physical distance to providers limits healthcare options and discourages adequate preventative care. There is no regular form of public transit in Garrett County. Driving to a doctor or hospital testing facility takes many residents 45 minutes or more. Diagnosing a new or unusual symptom might require more than one day missed from work, if the initial doctor visit requires followup testing elsewhere.

And sadly, this irony: it is highly plausible that town centers and the Deep Creek Lake watershed tourism locus—all already better served by health care facilities—will receive better protections from UNGDP than the more rural “corners” of Garrett County. ***UNGDP traffic, proximity and resultant exposures in these more remote areas—coupled with limited access to care—will place an additional, cumulative burden on these already underserved residents.***

CONCLUSIONS

I value the excellent work of MIAEH’s study team, and appreciate this opportunity to comment.

- The Health Impacts Assessment has increased our understanding of the risks and exposures Maryland residents will undergo should UNGDP proceed in the near term. ***With new information being released almost daily about fracking’s negative impacts on health, environment ,economics and property, I respectfully ask that the HIA be considered only a first step in a much-needed, ongoing study process.*** Until we know more, western Maryland and its people will be safer, and can be of greater service, as a control group in our nation’s fracking experiment on the Marcellus.

I agree with Dr. Milton’s admonition (in MIAEH’S September 15 presentation to the Marcellus Shale Advisory Commission) about regulations, best practices and our ability to enforce them: *No number of mitigation measures can provide 100% assurance of efficacy of regulations.* The state has not made clear how it will implement or fund enforcement of MIAEH’s recommendations or the proposed best practices.

- The study has identified 7 of 8 areas where there is a High or Moderately high likelihood of negative health impacts. However, new information released since MIAEH gathered its data should be evaluated to determine if the Risk levels assigned to Earthquakes, Water Contamination and Cumulative Risk should be raised.***

- I have watched closely for four years as this process unfolds, while trying to help my county prepare for potential impacts. The RESI economic study provided no guarantees that the appeal of our local tourism market won’t be destroyed. Nor did it demonstrate that economic benefits from UNGDP would outweigh the

economic risks it will impose on our region. (In fact, Garrett County's Economic Development Office has conducted a preliminary financial analysis that suggests property devaluation from shale development will result in deficits in our property tax base that are not offset by our 5.5% severance tax.) ***Is our state prepared to go forward with this economic gamble, while asking western Maryland families to accept risks to their health that can be characterized as "High" or "Moderately High?"***

To those of us on the ground in the communities where the state wishes to impose this industrial activity, all of the risks are unacceptable.

All that we've learned from this study notwithstanding, we cannot conclude—with a reasonable degree of certainty—that the best practices proposed by the state will allow UNGDP to proceed without unacceptable risk to western Maryland's families—our health, our economy or our resources. I implore our decision makers to ask: would you accept these risks if someone wished to undertake them near your family? It's likely you would find them unacceptable, too.

Sincerely yours,

Nadine Grabania
177 Frazee Ridge Road
Friendsville, MD 21531
301.746.4287

cc: Governor Martin O'Malley
Delegate Wendell Beitzel
Senator George Edwards



Delay Any Decision on Fracking

1 message

Nikki Wojtalik <nwojtalik@hotmail.com>

Mon, Oct 6, 2014 at 8:36 AM

Reply-To: nwojtalik@hotmail.com

To: dhhm.h.envhealth@maryland.gov

To Whom It May Concern

It's good that the Marcellus Shale Safe Drilling Initiative will study whether and how gas production can be accomplished without unacceptable risks and adverse impacts to public health, safety, the environment and natural resources. Unfortunately as the deadline for the Initiative's Advisory Commission work approaches, it becomes apparent that the process and any resulting decision cannot be complete without further investigation and study of the impacts likely caused by unconventional natural gas drilling operations or 'fracking' in western Maryland. Therefore, we ask that you delay any decision until more research in this rapidly evolving field is complete.

I base this request as a result of the recent health study released by the Commission on August 18th. The University of Maryland's Institute for Applied Environmental Health's (MIAEH) report: Potential Public Health Impacts of Natural Gas Development and Production In The Marcellus Shale In Western Maryland paints a less than manageable picture of fracking in Maryland offering no less than 52 recommendations for assessing and offsetting probable impacts.

Specifically, the study foresees a "high likelihood" of gas development causing pollution that could harm residents and workers, such as a "moderately high" chance of problems with water, soil and noise pollution from unconventional gas development. The report's lead author Dr. Donald Milton admits "there is a significant concern for air quality." The report also warns of strains on the health care system of the local counties and increases in crime, drug abuse, traffic accidents and other social problems arising from the influx of gas industry workers.

Although Maryland's health study is the first to assess health risks associated with unconventional gas development, the MIAEH scope of work did not include an assessment of the costs to counties, taxpayers, and businesses of health care and emergency responder service demands, related to accidents, new health problems, or uninsured workers.

The report falls short as well in its research into long-term impacts that are known or suspected to arise from unconventional gas development in Maryland. For example, the study does not adequately address risks from spills or the disposal of toxic fracking fluids, or the potential effect on our food supply as such contaminants bio-magnify in soil and water. The study does not consider the future costs to families and the health care system from lost work or school days due to illness. The study also ignores the potential for fracking to worsen the impacts of climate change. Finally, the study looks only at Western Maryland, even though gas basins stretch across 19 Maryland counties, and fracking and its related infrastructure could impact communities statewide.

This fact is becoming more recognized not just by health professionals and environmental advocates, but the industry itself. A March report from Resources for the Future, a June workshop conducted by the Health Effects Institute, and a July call from the American Petroleum Institute (API) are three examples of industry-related calls for more research. Last month, API issued a request for proposals "to evaluate whether a causal relationship exists between community exposure to [Unconventional Resource Development] operations (including well construction, hydraulic fracturing and well production) and selected health outcomes."

A number of peer-reviewed articles by scientists and public health researchers have been published this year making a similar call. Long term studies are underway in Pennsylvania but more are called for and being planned. In July, a working group of the National Institutes of Health concluded that "[e]xposure and health outcomes research related to [Unconventional Natural Gas Drilling Operations] is urgently needed and

community engagement is essential in the design of such studies.” In short, the process and especially its impacts on health remain incomplete and demand further study.

The Governor has said his decision will be decided by science. It is clear that the current Maryland health study is in some part lacking in this respect and where scientific (health) evaluations have been made they come with warnings of likely and probable impacts. This fact demands that the state continue research before deciding whether to make a decision on drilling in Maryland.

We urge Governor O'Malley to extend the commission's review of potential impacts, especially those mentioned above associated with health, until and unless there is clear, scientific evidence that unconventional natural gas drilling operations or 'fracking' will NOT cause significant harm to our health in Maryland.

Respectfully submitted,

Nikki Wojtalik
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October 2, 2014

COMMENTS OF WILLIAM R. NEIL UPON THE FINAL REPORT “POTENTIAL PUBLIC HEALTH IMPACTS OF NATURAL GAS DEVELOPMENT AND PRODUCTION IN THE MARCELLUS SHALE IN WESTERN MD”

My name is William R. Neil, and I am a resident of Frostburg, Maryland, and have been living in Maryland since 2005.

I am also the *former* Director of Conservation for New Jersey Audubon Society, having enjoyed an environmental career from 1988-2001. That means I am very familiar with Commissions, studies and reports, especially about the protection of water resources, having been for many years the Audubon point person on its efforts to save the New Jersey Highlands (NJ’s key northern water supply region, upon which millions of users depend), *which extended from 1989-2005*, as well as a close observer and participant of efforts at the NJ DEP, under Governor Christine Todd Whitman, to shift to a “watershed” based approach for planning, and – draw a deep breath – sigh – “regulating.”

That doesn’t make me an “expert” in the matters at hand, the potential human health impacts from unconventional gas drilling and extraction - “fracking” in the broadest sense of the term. But how many are, given its very specialized nature? Very, very few of us can bring to the table the “first hand” expertise of say, a Dr. Anthony Ingraffea, who was, as the language goes, “present at the creation” of the process, a process which involved government, academe, non-profit private research centers and of course, the private sector.

Being a former resident of New Jersey also gave me some additional first-hand insights into water pollution issues, especially how water travels over and under the ground. I’ll mention just two, in an anecdotal manner, but I hope you’ll see what I’m driving at. In New Jersey, we had two famous, or infamous highway projects that ran into difficulties, delays in construction and cost overruns due to issues about the unpredictability of ground water,

both volume and pathways. One was the site where Route 78 was cut through Musconetcong Mountain (aka “Jugtown Mtn.), and the other was the construction of Route 287 through the New Jersey Highlands in the northeastern part of the state, a project that unfolded in the 1990’s, a route which had to traverse rivers, gorges, wetlands and of course, other roadways. It too had massive cuts through Highland “mountains,” running into some of the same problems as the much older Route 78.

At the Musconetcong Mountain site the volume of subsurface water was so great that during the winter the cut was marked by massive ice formations which hung along the exposed mountain side, which would turn various shades of blue as the winter wore on, and everyone remarked how it transformed a little stretch of Jersey highway into an almost Alpine feature, glacial in feel. You can imagine what a shock such a feature is to NJ suburbanites – flatlanders. Where did all this ice come from? (The springs and wet patches were not as noticeable, unfrozen, in the warmer months.) I happened to live for ten years just a mile or so from the cut, so I’m familiar with the feature. And that reminds me again of something else, right there at Jugtown Mountain and Tunnel Road: the eastern seaboard’s longest railway tunnels, one cut in 1871, and now abandoned, and the other built in the late 1920’s, 1929 I believe, still very active. These are cut through the heart of Musconetcong/Jugtown Mountain, and the point I’m making is that the abandoned 1871 tunnel is now filled with groundwater. Even at the peak summer heat.

And in both highway projects engineers marveled at how new sources of subsurface water kept showing up in unpredicted places and volumes, creating drainage-engineering problems. In both cases, we are talking about road cuts of about 100-300 feet in depth, yet the water flows were very hard to predict – and manage. Put that observation on hold for a few minutes, I’ll come back to it.

That’s not the end of my NJ anecdotes, however. Although it was not my area of specialty, it was impossible to be a serious environmental “professional,” or a citizen who took their responsibilities seriously, and not be aware, in the Garden State, that we were ground zero and aquifer zero

for our nation's Superfund law. And once again, over time, the history of that law and its attempted clean-ups brings us back to the pathways of migration of serious chemical pollutants, although at admittedly shallower depths in comparison to those invoked in "fracking." Nonetheless, coming up with GEIS models became a science and an art form in itself, as predicting where the toxic pollution plume was headed next was the burning question of the day, and as matter of fact, at times, of life or death for the citizens in its pathways. And all this, mind you, in situations, not all, but in many, perhaps a majority of cases, where the pollutants were known because of past owners and past industrial and chemical practices, so that the chain of liability and assignment for clean-up costs was relatively straightforward. (In Superfund the legal Gordian Knots got worse, not better over time.)

So there are lessons here even in the relatively shallow world of Superfund pollution: a cautionary tale, and if one would like, one also of the resounding efficacy of the "precautionary principle": that in matters of pollution travels and plumes, there is a great deal of uncertainty and risk, and that it is far better to prevent the contamination in the first place than to cope with cleaning it up afterwards. I provide two links to make these points: a generic site at the US EPA outlining the problems and history of Superfund, and a detailed historical account of the unfolding of Superfund problems at Pompton Lakes, NJ, with DuPont being the star and openly acknowledged polluter. If the story drags out for unhappy decades and is still not resolved today even with an upfront responsible party, what do we face in fracking with all the art forms of disguise and denial of chemical signatures on full "display," with an out-of-the- gate claim that their chemical tools are not "hazardous wastes" and contain mysterious "proprietary" chemicals and formulas, so valuable and mysterious that property owners must be sworn to secrecy and medical personnel "gagged?"

<http://www.epa.gov/superfund/health/conmedia/gwdocs/brochure.htm>

<http://www.wolfenotes.com/2012/05/dupont-pompton-lakes-still-dirty-after-all-these-years/>

(Acknowledgement: the author of Wolfenotes is a friend and former environmental colleague of mine, Bill Wolfe, who heads the NJ Office of Public Employees for Environmental Responsibility, (PEER). Bill is one of the nation’s most knowledgeable environmental law and policy “experts,” across the widest range of laws and regulations that I have ever seen encompassed in one individual. He has a long and distinguished environmental biography. Most pertinent here is that he served as the chief policy advisor to Brad Campbell, head of NJDEP under Governor Jon Corzine.)

Today, before us in this Report on potential health impacts from fracking, we are talking about the possibility of water pollution, surface and groundwater, from both a myriad of surface operations as well as those conducted many of thousands of feet below the surface, through known and unknown fracture pathways that have existed historically, as well as all the unpredictable ones created by the vast pressures of the process itself, literally and figuratively “breaking new ground” and channels for subsurface water. And indeed, because the process pushes millions of gallons of water underground for each well, loaded with dangerous chemical pollutants, it is creating new underground water sources of the most threatening kind, because their future pathways are unknown. And most of it is going remain underground because based on four different estimates of how much does or doesn’t “flowback” to the surface, between 50-90% will not return through the main drilling borehole, instead looking for new pathways, sideways and towards the surface. (The figures are in dispute; the four I used prior to this report say that 66%-90% of the water that is injected will stay underground; that’s only half the story; the unwritten, uncertain other half is where it will go and how quickly. A recent piece of modelling research says it will travel faster than we had ever thought, and that the fracturing process may not be contained within the intended target geological formations, or even the shallower (relatively speaking, of course) formations that are still supposed to keep thousands of feet between the roving fracking fluids and the water/aquifer courses.)

The other revelation contained in the study is that not only is the injected fracking fluid not going to behave in the staid claimed industrial pathways,

but the process of fracking itself is not going to be contained to the target formation, it will set off pressures, including many small earthquakes, that may continue for up to six years, with force fields directed upwards. Add these factors to the known “unknown” – that we do not have command of, either the drillers or the more dispassionate governmental and academic geologists, full knowledge of where all the underground faults are, and we are unlikely ever to have that knowledge, and the risk factors are piling up. <http://www.propublica.org/article/new-study-predicts-frack-fluids-can-migrate-to-aquifers-within-years>

And did I really ask the Commission, in the public meeting held in Frostburg on September 15, 2014, what the extent of overlap was between the Marcellus Shale Formation in Garrett and Allegany County and the reality of former coal mines/shafts – and not get an answer? Yes, that was the case, and that complicates the assessment of potential risk, especially in the realm of projecting water/pollutant pathways underground.

Although I do not recall the term being used in the report itself, it was hard not for it to “surface” inside my own mental processes – I’m talking about the “precautionary principle,” of course. When I first tossed it out in informal commentary behind the scenes, all I meant by it was that contained in the old medical sense, to do no further or future harm, as much as that is within the control of human agency. But as I searched for more detailed refinements and the history of the principle, I saw that it fit the world of fracking, known risks and unknown ones, very, very well. This is “the principle” we should be applying to the process and the governmental response, and this, I believe, this Report on health risks does, implicitly at least. As the field reports come in and are assessed, despite the gas industry attempts to suppress as much data as possible, we now have a better idea of the impacts upon drinking water sources at the individual well level, and the immediate human health impacts, and we can measure the air pollution around the individual well operations. Despite the very difficult overall assignment, the study teams did a good job making sense of the knowns and unknowns, and came up with a common sense diagnosis and assessment of the health hazards of unconventional shale gas development, given the severe limitations imposed on all of us by the industry’s working

habits. So in Table 6.1 four of the Categories have high hazard characterizations, and three have Moderately High ones, and the risk of earthquakes is low. That should be enough in itself for the State of Maryland to say, “This economic gambit is not worth it.” But in two areas where the hazards are “just” moderately high, Cumulative Exposure Risks and Flowback and Production Water Related, we enter an area of even greater uncertainty, as we have previously observed in our suggestion that since so much of the fracking fluid stays underground, and the fracking process itself breaks up the alleged certainty of drilling pollutant travel, we have now entered a twilight zone of growing but not fully understand greater risk to human health via the possible pollution of underground aquifers by some very toxic pollutants. And given what we know about the difficulty of aquifer pollution cleanup from the history of Superfund, this is a huge risk, and one likely not to be fully understood until we have 5-10 years of further data, if not more.

Ironically, the way the political economy implications of fracking tend to play out, it is fiscal conservatives in both parties who are enthralled with entrepreneurial risk taking of nearly any type, and yet, here they are running deep and unknown risks which may cost future generations billions if not trillions to clean up if it starts “breaking bad.” Forgive me for asking this, but does it remind anyone else of the disregard of the precautionary principle exhibited by the invasion of Iraq and is it any coincidence that one of the principal drivers of that disaster also worked hard to exempt the gas companies from the nation’s existing laws?

Furthermore, this study is full of declarations of what we don’t know, of missing basic baseline studies and information of what well water quality and aquifer water quality is like through the seasons, before drilling. How many studies are called for? I did a count in the recommendations beginning on Page XXV. I noted the following assessments needed, R1, R2, R6 and the calls for Monitoring at R4, R5, R9(a), R19(c), R23, R24, R30 (baseline), R32, R40, R45, R46, R47....my, my.

My own sense of how *the precautionary principle* ought to work would be this: Where the risk is very high, or unknown but carries high likely negative

consequences (for human health and/or the costs of cleaning up pollution), then don't proceed with the activity posing the risk(s).

Now I have been informed that this precautionary principle is not one accepted by many of the elected officials in the proposed fracking region in Maryland. So be it, they are entitled to their choice of principles, as we all are. But I'm wondering if this is really true, and if so, how might it be, because I think we all use a form of the precautionary principle in our everyday lives, meaning we all, formally but most likely informally, are risk assessors of one form or another, at one time or another.

Yet I think I understand the ideological underpinnings of this claim for our local elected officials, county and statewide offices: we have lived now for 30 years or more, since 1980, in a culture of political economy where risk takers, especially economic risk takers are the highest national ideal. And indeed, let us more cautious types acknowledge the necessity for risk takers in science, looking for new insights, for risk takers in business, inventing new products or services and willing to break the status quo. As a writer I like to think I take quite a few myself. It's built into the American social DNA, and always has been so. Yet even conceding this aspect of national culture and risk taking, the precautionary principle works every day even inside this risk taking. The venture capitalist who puts all her money, every last cent on the line, rather than in a walled off amount she can afford to lose, will not last long, and the one who operates in this fashion is a gambler rather than a risk taker. The military planner looking at whether to put our American boots on the ground in the Syrian civil war is immersed in a process of risk assessment including assigning a degree of risk to all the unknowns of the situation, in addition to assigning risk to the knowns. The parent listening to a teenager seeking approval for a hitchhiking trip across Mexico, to better learn the language and the culture, will be doing a shorthand form of risk assessment and applying the precautionary principle to be sure. So I rather think that in everyday life our elected officials do this as well, and one can hope that they will not plunge us in, head first, after every proposal by an economic risk taker that promises new riches, even new energy and jobs for a region badly in need of jobs.

Those in the economics profession, will, I hope, when considering a matter like fracking, have thoroughly in mind the general characteristics of previous historical booms, manias and the resulting panics. And surely unconventional gas development has all the warning signs of previous “infatuations”: a technological, if not “high tech” breakthrough, a pledge to solve pressing energy and diplomatic problems (global warming and energy “dependence”)...a cheap clean abundant fuel...an energy bridge to alternative fuels later, always sometime later. I can only hope that economists and citizens alike are aware of dissenting views of the way this Marcellus Shale “play” (a term I hate for reasons that should be obvious for someone asserting the relevance of the precautionary principle) might work out: unhappily for the average citizen and for our alternative energy future. Here are three, for example:

<http://www.wolfenotes.com/2013/10/fracking-is-a-ponzi-scheme/>

<http://www.nytimes.com/2011/06/26/us/26gas.html?pagewanted=all&r=0>

<http://iopscience.iop.org/1748-9326/9/9/094008/article>

I will close as I began, not as an expert, but also not quite as the “average citizen,” although I am very sympathetic to the problems the average citizen has in finding the time and energy to read all the reports that make up the background findings and charges to the fracking Commission. And this is how I would put it to that average citizen who might be listening in, and thinking about what we have all learned from the Pennsylvania experience when the economically thirsty threw caution to the wind and in one of the worst democratically sanctioned economic policies I can think of in the long history of democracy, bought the gas industry’s pitches lock, stock and barrel (it is an NRA state, after all). Did they fully understand the health risks?

I try to put myself in the place of someone sitting in on a venture capitalist’s pitch, but I am not an innocent listening in, I have the full record of the gas and oil industry’s lobbying in DC and other state capitals at my fingertips, and I can see in historical perspective how unusual and defensive their

secrecy and gag rule efforts actually are, how, frankly, shocking they are, being a sure dead giveaway that they are focused on the short run and are terribly worried about what might turn up in liability matters in the medium and long term. I am not buying this bluff of “no threat, no harm.” I think their entire history and current practices scream loudly the exact opposite.

Yet I also know because I have been a student of capitalism and economic history and have written about it for the past seven years, that we are now deep in the throes of a brand of capitalism that is intensely focused on the short run, of getting in, milking the cash flow, and getting out ASAP, “ideally” done with other people’s money. I hope readers of this report and my comments realize that fracking, if it is to be done at all, and I don’t think it can be done “safely,” based on what we now know, is a long term process that demands intensive quality control monitoring at all stages of the processes, and those processes have to go on for decades even in the abandoned wells. So this particular process and its needs run in fact counter to the whole trend of modern American capitalism and its headlong reckless “short termism.” Fracking is a disaster waiting to happen if it already hasn’t happened and we just don’t know it yet.

Maryland should never allow this to go forward, it is a bad long term deal for the economy and the environment, and likely to cost far more than any short run benefits it delivers. If we do decide go forward, don’t do so without all the mapping of wells and aquifers and their pre-drilling chemical profiles and former coal mine shafts completed, and with full disclosure of chemicals used and shields and gags denied and no proprietary claims honored either. And the funding and staffing in place to monitoring this dangerous process at every step of the way. And realize that these needs may be impossible to meet under the current political conditions of the American political economy.

And remember this as well, especially if you do decide to go forward: as America has embraced fracking as the “bridge” to an alternative energy future to “solve” global warming effects, other nations like Germany have raced ahead with the actual new alternative technologies and are busily

**learning how to scale it up in a way America won't get to for many decades.
In that clear sense, fracking has already cost us dearly.**

Please don't ever say no one warned you.

Thanks for the time.

Sincerely,

William R. Neil

149 Maple Street

Frostburg, MD 21532

MIAEH Health Study Response

It has become abundantly clear through the MIAEH Health Study that Unnatural Gas Production and Development puts Maryland citizens at great health risk in most categories studied. Where the risk is not great, there is insufficient data to know the impact or risk. The question then becomes, how many citizens does the State of Maryland wish to put at a great health risk in order to provide money to the gas industry in order to export natural gas to other countries or use domestically? How many water wells does the State of Maryland think it can allow to be contaminated hurting people, animals, and crops in order to produce natural gas for exportation and domestic use? How many people should the State of Maryland condemn to poor respiratory health or permit negative health of unborn and newborn babies by permitting Si and other contributors to air pollution to develop and produce natural gas? It is clear that UGDP will negatively effect the health of a great number of people in Allegany and Garrett counties, how many are worth it?

To make matters worse, the State of Maryland is considering hindering medical treatment by physicians and other healthcare providers by denying them access to the knowledge of chemicals (full disclosure) involved in this process and their concentrations. This is unconscionable.

I find it hard to believe that the State of Maryland, charged with the task of protecting its citizens, its land, and its animals, will consider regulations facilitating the very harm that it's tasked to prevent.

The health study falls short of answering many critical questions and there are a few instances of misleading conclusions such as minimal risk to water contamination due to insufficient data, as well as there is a clear indication that there is insufficient information to make reasonable BMP recommendations. In spite of this, the State wishes to consider proceeding because of pressures to move forward, to have an action plan where all calls to reason says it's premature.

The true measure of greatness is showing restraint where there is cause, particularly where there is ample reason to question the safety and health implications of such a move. Economic and energy concerns do not trump health issues. Particularly, as the MAIEH health study suggests, when there is a high to moderate risk to harm to the citizens of this state in almost all categories studied.

Sincerely,
Kenny Braitman, Garrett County

Thank you for the opportunity to submit comments on the Potential Public Health Impacts of Natural Gas Development and Production in the Marcellus Shale in Western Maryland.¹ My comments are in bold.

Concerned Health Professionals of New York has developed a COMPENDIUM OF SCIENTIFIC, MEDICAL, AND MEDIA FINDINGS DEMONSTRATING RISKS AND HARMS OF FRACKING (UNCONVENTIONAL GAS AND OIL EXTRACTION)². Please include this Compendium in your list of references.

Regarding: EXECUTIVE SUMMARY

On pg 3 of his comments Dr Levy writes about this statement in the study: “HIA is not a quantitative risk assessment, rather it provides information that is qualitative in nature that can be used to assess whether and how community wellbeing may be impacted, both directly and indirectly”; this is technically not correct, as HIA can provide quantitative as well as qualitative information.”

Comment: agree.

And further, Dr Levy writes: re p. 18: “The linkage between hazards, exposures, and adverse health outcomes is established using epidemiological studies’; this is often true, but toxicological evidence can also establish these linkages, and is the foundation for much of the estimated health risk from HAPs. Especially given the long lead time for some epidemiology, the authors probably don’t want to indicate that a causal linkage could not be made from only animal data. Also, as mentioned above, it is not necessary for UNGDP epidemiology to be completed to draw insights about health effects; it would be sufficient to understand exposures to constituents whose health effects were characterized elsewhere.”

Comment: agree. This is also relevant to 10.2.3 Ranking of Hazards and Table 10.2 Likelihood of health effects. As Dr Levy writes: “it is not necessary for UNGDP epidemiology to be completed to draw insights about health effects; it would be sufficient to understand exposures to constituents whose health effects were characterized elsewhere.”

6.2.3 Flowback and Production Water-Related

¹ <http://www.marcellushealth.org/final-report.html>

² <http://concernedhealthny.org/wp-content/uploads/2014/07/CHPNY-Fracking-Compendium.pdf>

Comment: Broad baseline water testing is recommended by the authors, and that has not been done yet.

Also, water contamination from NORM or TENORM received superficial and inadequate attention. And importantly, the EPA method measuring Radium 226 and 228 and their progeny has recently been found to be inadequate for FPWHFO (flowback and produced water in hydraulic fracturing operations), and a new set of methods has been developed by the EPA³. The FPWHFO matrix is considered to be a particularly challenging one due to its extremely high dissolved solids content and its complexity. In short, calculations done using the older EPA methods have likely significantly underestimated the radium content of flowback and produced water. Please note that the methods used to detect radium in the USGS report⁴ (EPA methods 903 and 904) have likely underestimated the radium content because of the high salinity in the samples.

Despite these shortcomings in data, the study's authors "conclude that there is a Moderately High Likelihood that UNGDP's impact on water quality, soil quality and naturally occurring radioactive materials will have a negative impact on public health in Garrett and Allegany Counties." This category should have received a determination of HIGH risk considering the consequences of radioactivity exposure.

Regarding the Study Recommendations:

Comments:

The required items are not definitive or specific enough. For example...

R19—Air modelling should also be done prior to permitting.

R20—What is an appropriate setback?

R26—The research type should be clarified. Also, the NORM monitoring plan is inadequate (e.g, exactly which tests are to be done and on which sources).

³ [http://www2.epa.gov/sites/production/files/2014-08/documents/epa-600-r-14-107 - gross_alpha - gross_beta_508_km_08-08-2014.pdf](http://www2.epa.gov/sites/production/files/2014-08/documents/epa-600-r-14-107_-_gross_alpha_-_gross_beta_508_km_08-08-2014.pdf)

⁴ <http://pubs.usgs.gov/sir/2011/5135/pdf/sir2011-5135.pdf>

R28—Not mentioned are the setbacks for a gas-powered compressor.

The recommendations on healthcare infrastructure will not significantly improve the health of the general populations. If the state is serious about improving health, they will try to address the root causes of people’s diseases, improve education and poverty levels. All that will take years. Gas drilling and production will only serve to worsen this population’s health under current conditions. Preliminary information from researchers in the field suggests that is the case in Pennsylvania.⁵

Re: p1: “HIA is not a quantitative risk assessment; rather it provides information that is qualitative in nature that can be used to assess whether and how community wellbeing may be impacted, both directly and indirectly.”

Comment: While HIA is not just a risk assessment, it can (and this one should) include risk assessments.

Re: p1: “Recommendations: Based on the assessment, develop recommendations for minimizing health effects, and approaches for monitoring.”

Comment: Recommendations can and should include NO ACTION if risks are too high. Monitoring and surveillance after residents have been injured is not an adequate or ethical approach.

10.2.3 Ranking of Hazards

Comment: In the chart on rankings (pp20-21), unknown consequences (due to insufficient information) are given a low numerical value. This is of concern because the authors are presuming, by assigning a low numerical value to unknown, that the consequences will be low. That does not make sense, since it is unknown. Caution would suggest that it be assigned a higher value. Emerging literature has, thus far, shown more serious, rather than less serious impacts. This would change the final evaluation of each risk. This may be one of the reasons that the industry withholds information and enters into non-disclosure agreements—so that risk assessments are underestimated.

10.2.4 Identifying Chemicals of Concern

⁵ <http://citizensvoice.com/news/study-more-gas-wells-in-area-leads-to-more-hospitalizations-1.1763826>

Comment: On the chart on page 23, would suggest also listing the consequences of using the particular class of chemicals; examples of public health problems exist on the Endocrine Disruption Exchange website.⁶ There is some explanation in the text (referencing the U.S. House of Representatives Committee on Energy and Commerce report and ATSDR) regarding carcinogenicity; however, these chemicals also exert influence on other organ systems.

Re: pp23-24 on process level emissions

Comment: does not take into account compressors along interstate pipelines or any processing facilities. This graph is based on a lot of assumptions...such as that emissions will go down and that reporting from gas companies is correct.

10.3.1 Air Quality

Re: pp38-39 Report concludes that air pollution will increase incidence of heart disease, mortality from CV disease, low-birth weight babies, infant mortality, and finally concluding “that there is a High Likelihood that UNGDP related changes in air quality will have a negative impact on public health in Garrett and Allegany Counties.”

Comment: agree.

10.3.2 Flowback and Production Water-Related

In his comments, Dr Adgate writes: “I do not think the term ‘Flowback and Production Water-Related’ should be used as a heading... and suggest you use ‘Water Quality,’ which is similar to the rest of the hazard categories and not focused on process.”

Comment: agree

10.3.2.4 Radiological materials

Comment: should be in separate hazard category.

⁶ <http://endocrinedisruption.org/chemicals-in-natural-gas-operations/chemicals>

Re: p44 “Prominent NORM found in production water from the Marcellus Shale includes radioactive radium (often Ra226 and Ra228) with activities ranging from 185 to 592 Bq/L (Rozell).” ...

Comment: In this USGS study (<http://pubs.usgs.gov/sir/2011/5135/pdf/sir2011-5135.pdf>), the calculations were done using the older EPA methods (903 and 904) which have likely significantly underestimated the radium content of flowback and produced water. Therefore, the problem with radioactivity may likely be greater than estimated thus far.

Also, radon was not adequately covered. The International Atomic Energy Agency and the International Commission of Radiation Protection have recommendations regarding radioactivity at oil and gas mining sites⁷, and most countries which are members adhere to the recommendations. The US is a member but has instead exempted from federal oversight through RCRA (Resource Conservation and Recovery Act) the materials that come from down-hole which are, in many cases, radioactive.⁸

Radon, a gas, has a short half-life (3.8 days) but among its progeny are lead and polonium, and these are toxic and have relatively long half-lives of 22.6 years and 138 days respectively. Lead causes neurologic and hematologic toxicity, and death; polonium causes cancer and death.⁹ Radon and its radioactive decay products enter the body primarily through inhalation. Most of the radon is exhaled prior to radioactive decay but some of the solid radioactive polonium and lead remain in the lungs and may cause cancer.

The gas which flows through the pipeline carries gaseous radon with it, and as radon decays within the pipeline, the solid daughter elements, polonium and lead, accumulate along the interior of the pipes. There is a concern that the gas transiting, and being compressed and regulated, will have radioactivity levels which will be a risk not only to the workers at these stations and along the pipeline, but potentially also to the residents. (ATSDR lists stoves and furnaces as a source of radon.¹⁰)

⁷ http://www-pub.iaea.org/MTCD/publications/PDF/TCS-40_web.pdf

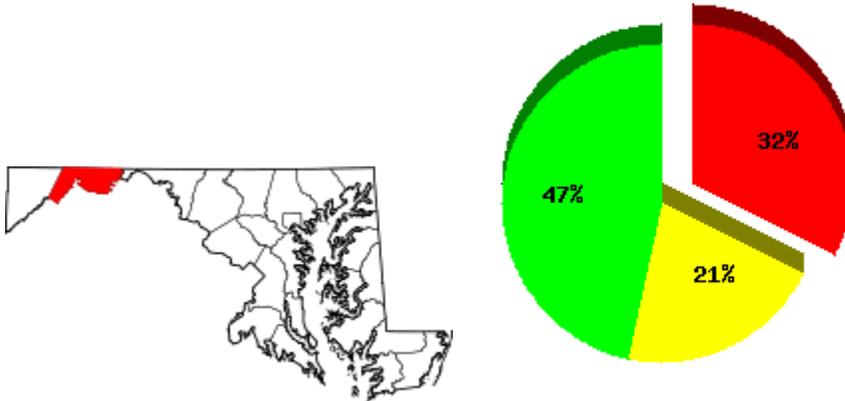
⁸ <http://www.epa.gov/osw/nonhaz/industrial/special/oil/oil-gas.pdf>

⁹ [National Academy of Sciences 1988 report: Health Risks of Radon and Other Internally Deposited Alpha-Emitters: BEIR IV, page 5](#)

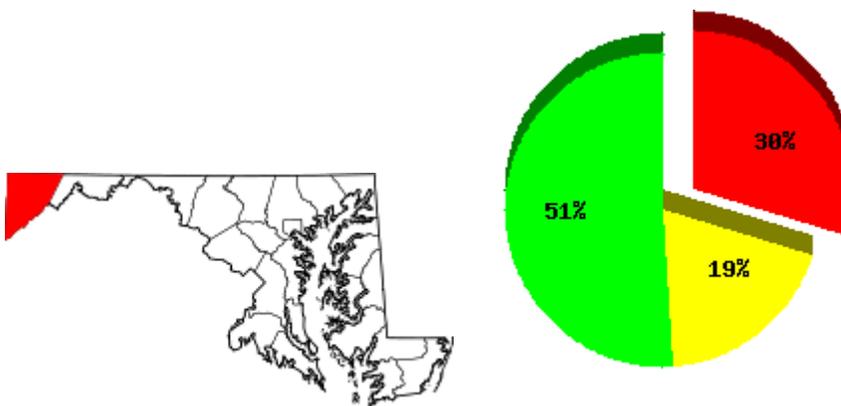
¹⁰ <http://www.atsdr.cdc.gov/csem/csem.asp?csem=8&po=5>

The average national indoor radon level is 1.3 pCi/L.

The average indoor radon levels of Allegany County, as determined by radon test results is 4.8 pCi/L



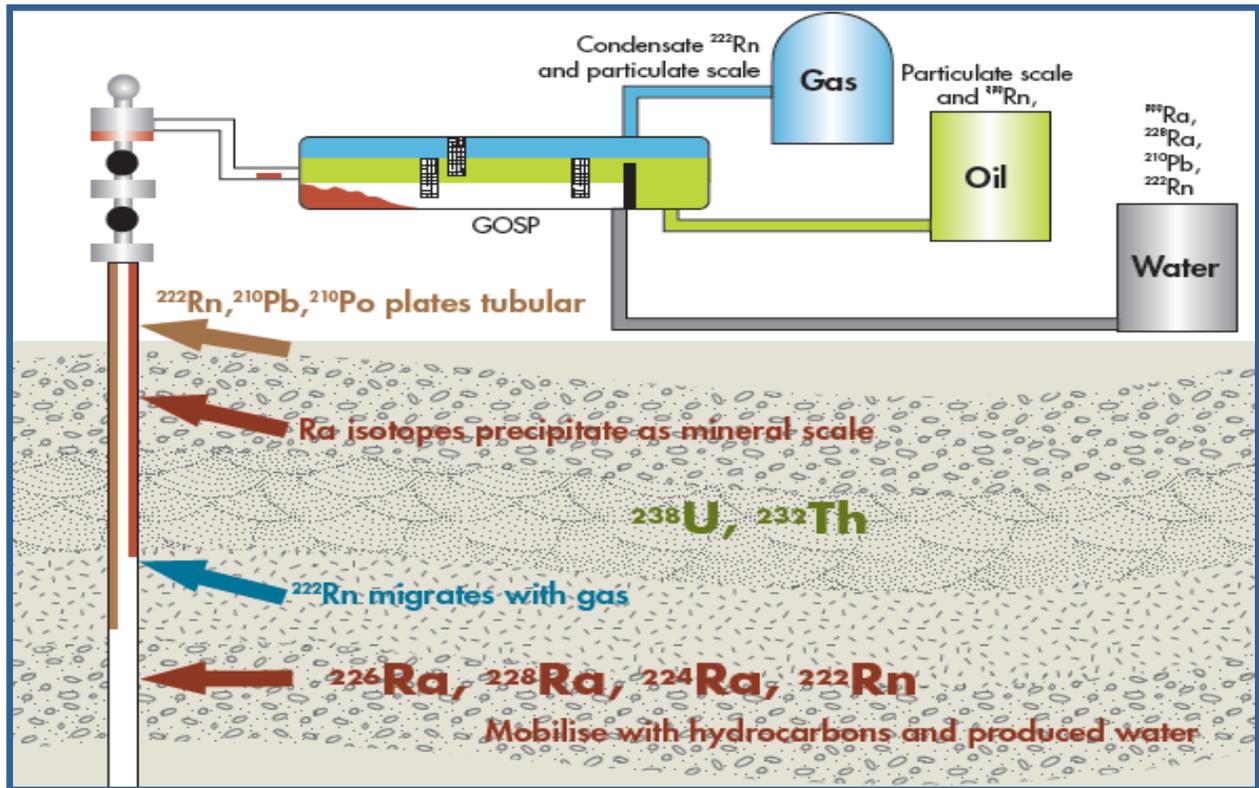
The average indoor radon levels of Garrett County, as determined by radon test results is 5.6 pCi/L ¹¹



This is a description from the 2008 publication of the International Association of Oil & Gas Producers: “During the production process, NORM flows with the oil, gas and water mixture and accumulates in scale, sludge and scrapings. It can also form a thin film on the interior surfaces of gas processing equipment and vessels. The level of NORM accumulation can vary substantially from one facility to another depending on geological formation, operational and other factors. To determine whether or not a facility has NORM contamination, NORM survey, sampling and analysis needs to be conducted. NORM may accumulate, *e.g* at wellheads in the form of scale; at Gas/Oil Separation Plants (GOSP) in the form of sludge; and at gas plants the form of thin films as the result of radon gas decay.

¹¹ http://md-radon.info/MD_counties.html

...radionuclides such as Lead-210 and Polonium-210 can ... be found in pipelines scrapings as well as sludge accumulating in tank bottoms, gas/oil separators, dehydration vessels, liquid natural gas (LNG) storage tanks and in waste pits as well as in crude oil pipeline scrapings.”¹²



“...regulatory oversight aimed at exposure mitigation appears to be minimal, and the likelihood of human exposures and disease resulting from potential exposures are largely uncharacterized.”

Comment: This is an acknowledged limitation of the current Maryland study, but not a reason to rank the risk lower.

“Based on our evaluations of the limited data available from UNGDP impacted areas, we conclude that there is a Moderately High Likelihood that UNGDP’s impact on water quality, soil quality and naturally occurring radioactive materials will have a negative impact on public health in Garrett and Allegany Counties.”

¹² <http://www.ogp.org.uk/pubs/412.pdf> International Association of Oil & Gas Producers, Guidelines for the management of Naturally Occurring Radioactive Material (NORM) in the oil & gas industry, September 2008

Comment: disagree in view of the lack of adequate information in the Maryland report. Based on the additional information provided about NORM and TENORM, we believe that there will be significant and long-term health impacts from the radioactivity, both in water and also from radon, both to residents as well as to workers. The likelihood of adverse health impacts should be raised to HIGH.

10.3.3 Noise

“The residential noise standards for both day and night are relatively high considering the literature on health effects associated with noise exposure and may not adequately protect public health.”

Comment: agree. Noise can cause Vibro-Acoustic Disease which can lead to heart disease, neurological and gastrointestinal problems, as well as psychological issues.¹³ Noise pollution raises the risk of heart attack and high blood pressure and cognitive deficits in children, and it can interfere with the ability to learn in children, as reported by the World Health Organization.¹⁴

There are adverse physical and mental effects from noise.¹⁵ For example, prolonged periods of exposure to 65 dBA can cause mental and bodily fatigue. Noise can affect the quantity and quality of sleep; it can cause permanent hearing damage; and it can contribute to the development or aggravation of heart and circulatory diseases; and it can transform a person's initial annoyance into more extreme emotional responses and behavior.¹⁶ One example of extreme and sometimes unexpected noise comes from blowdowns.¹⁷

This referenced statement in the Maryland report is also of concern: “In addition to noise-related health outcomes, there may be synergistic effects between noise and air pollution associated with UNGDP. Several studies have evaluated the relationship between air quality and noise on health.”

Yet the overall risk was concluded to be MODERATE.

¹³ <http://www.citidep.pt/papers/articles/alvesper.htm> and

<http://www.fastcompany.com/1744151/air-pollution-causes-europeans-to-lose-16-million-years-of-healthy-living-annually-study>

¹⁴ http://www.euro.who.int/_data/assets/pdf_file/0008/136466/e94888.pdf

¹⁵ <http://www.earthworksaction.org/noiseresources.cfm#GENERALNOISE>

¹⁶ Marsh, A. 1999. University of Western Australia, School of Architecture and Fine Arts. Cited in East of Huajatolla Citizens Alliance. [Noise](#)

¹⁷ http://www.transcanada.com/docs/Our_Responsibility/Blowdown_Notification_Factsheet.pdf

Comment: disagree with the study conclusion. Impacts on children (vulnerable population) should have been higher. In addition, whether or not someone has signed a lease should not determine whether they should be placed at risk.

10.3.4 Earthquakes

“Provided that Maryland does not allow deep well injection of wastewater, there is a Low Likelihood that UNGDP related earthquakes will have a negative impact on public health in Garrett and Allegany Counties.”

Comment: There should be a guarantee that there will be no injection wells in Maryland.

Further, a map of faults in Maryland was not presented, but should be in order to determine risk.

“ In Maryland ... there are numerous faults, but none is known or suspected to be active. Because of the relatively low seismic energy release, this region has received relatively little attention from earthquake seismologists (Bollinger, 1969).”¹⁸ Information exists for counties further to the east¹⁹ where earthquakes have been recorded, but such information is lacking for Allegany and Garrett Counties.

10.3.5 Social Determinants of Health

“Based on our review of social determinants of health (section 10.3.5), we conclude that there is a High Likelihood that UNGDP related activities will have a negative impact on the social determinants of health.”

Comment: we agree.

10.3.6 Healthcare Infrastructure

Comment: It is a 2 hr drive from Allegany County to the closest Level III facility which is in Morgantown WV.

¹⁸ http://www.mgs.md.gov/geology/geohazards/earthquakes_and_maryland.html

¹⁹ <http://www.mgs.md.gov/publications/reports.html>

According to the 2014 RWJ County Health Rankings, Allegany County ranks 22nd of 24 counties in Maryland, and Garrett ranks 15th.²⁰ For health factors, Allegany ranks 19th and Garrett 17th.

According to the Maryland health study, “All of Garrett County is considered a medically underserved area (MUA), while substantial portions of Allegany County (Orleans, Lonaconing, Oldtown, and Cumberland) also qualify as a MUA.”

A migrant, underinsured and high-risk workforce will significantly tax an already poor health infrastructure.

“... there is a High Likelihood that UNGDP related activities will have a negative impact on public healthcare infrastructure in Garrett and Allegany Counties.”

Comment: agree.

10.3.7 Cumulative Exposures/Risk

Assessment “...Moderately High Likelihood that the UNGDP related activities will have a net negative impact in the cumulative exposure/risk.”

Comment: The authors presented important and valid reasons to include a cumulative risk assessment. However, it is not clear why the risk was assessed as moderate as opposed to high. This statement (as in previous risks), “Magnitude/severity of health effects was assigned score of 1 because evidence regarding the magnitude/severity of health effect could not be determined because of insufficient data.” If the risks are unknown, the risk should be weighted higher and not the same as a low risk.

10.4.2 Job Hazards Overall

“... there is a High Likelihood that UNGDP related activities will have a negative impact on occupational health.”

Comment: agree.

²⁰ http://www.countyhealthrankings.org/sites/default/files/state/downloads/CHR2014_MD_v2.pdf

Concluding comments:

There are many unanswered questions and the need for a much larger body of research before a decision can be made about the most significant land use decision, i.e., gas exploration and development in Maryland, can be reached. This study is a good start; however, it is not complete.

From the Study, we know that significant air pollution and several brownfield and superfund sites in the areas of planned gas development in Maryland already exist. In addition, the Study confirms higher infant mortality on average, lower average education, higher percentage of aged, higher rates of non-Hodgkin's Lymphoma and Leukemia (data from study²¹) which are also known to be exacerbated with VOC exposure²². The study acknowledges that there will be negative impacts on health infrastructure, and that there is the need for (and current absence of) a science policy tool that helps to organize/analyze information to examine, characterize, and quantify combined threats from multiple stressors. The Study concludes a high air hazard rank, high occupational hazard rank, moderate hazard ranks for noise, water and cumulative exposure (these should have been ranked higher risk). And we know that the net health effects associated with these exposures are likely greater than the simple sum of effects associated with individual exposures.

The Study results should lead to the obvious conclusion that more research is needed. However, based on the Study results available thus far, one can only conclude that, at this time and in the proposed location, the process of gas exploration and development as currently done and proposed for Maryland is too risky.

Thank you.

Larysa Dyrszka MD

Co-founder of Concerned Health Professionals of NY

www.concernedhealthny.org

²¹ <http://www.marcellushealth.org/final-report.html>

²² <http://concernedhealthny.org/wp-content/uploads/2013/07/Simpson2013-AE-in-press.pdf>

Oct. 3, 2014

Environmental Health Bureau
Marcellus Shale Comments
Maryland Department of Health and Mental Hygiene
201 W. Preston Street, Room 327
Baltimore, MD 21201

Comments on the MIAEH public health study

I am writing about the MIAEH public health study because I have family in Pennsylvania and Colorado and friends that live in Ohio, West Virginia and Texas. All of these states have had severe negative health implications on its citizens due to the harm that hydraulic fracturing has caused. Many of the issues are just now coming to light as data from studies is just being published. The long list of 52 recommendations that The Maryland Institute for Applied Environmental Health offers show the serious threat that fracking can and most likely will cause our communities. Most of the 52 recommendations are underfunded and require citizen vigilance in policing the industry which is an unacceptable burden on the public. Not only will the local residents suffer from the health implications, they must also be responsible for ensuring the industry is following the lax regulations that have been established.

I am particularly concerned about **Methane migration**: A study on the failure rate of the cement casing around gas wells suggests that 1 in 11 wells fails within the first year. Defects in fracked oil and gas wells in Pennsylvania are leading to methane leaks in shale wells throughout the state — greenhouse gas emissions that could exacerbate climate change, according to a Cornell University study conducted by a team professor Anthony Ingraffea. His analysis found that newer oil and gas wells that use modern hydraulic fracturing drilling techniques are more likely to leak methane than older wells drilled using less advanced technology.

Over a 100-year timeframe, methane is about 34 times as potent as climate change-driving carbon dioxide, and over 20 years, it's 86 times as potent. Both groundwater contamination and methane leakage into the atmosphere are the result, according to the study. These present serious risks to the local and global communities.

Public health experts organized a symposium in Baltimore to review health report. They concluded: "As public health professionals whose responsibility is protecting the health of all Marylanders, we should not pretend that we'll know what to do in the next couple of years — we acknowledge that it may take 10 years or more to fully understand the health ramifications of hydro fracturing, and importantly, how to mitigate the health risks associated" with unconventional shale gas production.... Acute, long term and cumulative risks in this field are a real and grave concern, and the necessary underlying scientific research has not been conducted. Our current regulatory system does not have the infrastructure, programs or

methods to adequately protect human health. We need to acknowledge that we do not yet know whether this can be done safely.”

https://mdehndotorg.files.wordpress.com/2014/08/sept_12_symposium_report.pdf

When public health experts are extremely concerned, allowing fracking in Maryland would be irresponsible given the fact that more and more studies are showing that there are truly serious health impacts. There are too many unknown risks to determine whether it can be safely done.

Sincerely,

Liz Feighner
10306 Champions Way
Laurel, MD 20723



public comment on the Marcellus Shale Health Study

1 message

Kunze, Jennifer <jckunze@smcm.edu>

Fri, Oct 3, 2014 at 2:49 PM

To: dhhm.h.envhealth@maryland.gov

To whom it may concern,

I am writing to submit public comment on the recent Marcellus Shale Health Study. The results of this study indicate that it would be extremely unwise to proceed with permitting shale gas development in Maryland at this time. Since these public health impacts are not fully understood, it would be best to wait on future health studies (including both those pending in other states, and those recommended by multiple government, industry, and academic groups) before establishing any policies.

In particular, future consideration should include the particular impacts of shale gas development on those least able to compensate for them or reap the possible economic benefits of development, such as families in rural areas who rely on private wells for water, those living near potential drilling sites with both preexisting and the potential for developing respiratory conditions from air pollution, and all residents of Garrett and Allegany Counties who rely on an already-overburdened healthcare system that will only become more burdened by the impacts of shale gas development. For example, the study cites peer-reviewed studies that show adverse birth outcomes associated with declining air quality around well pads; would it be just to create conditions that will lead to lifelong negative impacts on Maryland residents who happen to be born near drilling sites?

Also, as an individual with a chronic thyroid disorder, I think that impacts of drilling technology and practice on the endocrine system must be studied further. As indicated on page 27, 37% of chemicals associated with the UNGDP process could potentially affect the endocrine system; page 48 says that water samples from a region with high drilling activity contained an increased potential for endocrine disruptors. Due to my thyroid condition, I began to take medication in high school and will most likely have to continue for the rest of my life; if drilling could cause that to happen to more people, it should not be permitted in Maryland - and that risk must be well understood before drilling begins.

For these and many more reasons, I believe that this public health report shows that it would be dangerously irresponsible to permit natural gas development in Maryland. Thank you for your consideration.

Thank you for the opportunity to comment on this well-constructed scoping document. Unfortunately, I only learned of its existence several days ago, so I have not had the time to provide a more comprehensive review. In addition, I'll primarily limit my comments to the topics of human health and ecological risk. Recognizing that this document refers to an HIA, I'll try to avoid the discussion of quantitative risk assessment. Finally, time constraints did not allow me to include literature references, which I can provide at a later date, if necessary.

First, I'll comment on a few matters of general interest:

- 1) The authors focus almost exclusively on the fracking fluid additives, which constitute between 0.5 and 2% of the total mixture. There was little discussion of hazards associated with effluent leaks and other possible contamination of the post-drilling process.
- 2) There are several statements and bar graphs shown in which the authors report higher levels or incidence rates, without a complete analysis of the data. For example, on page 29, they discuss another UNGDP study, where they indicate that [the median air concentrations] of benzene were $2.6 \mu\text{g}/\text{m}^3$ (range $0.9\text{-}69 \mu\text{g}/\text{m}^3$) and $0.9 \mu\text{g}/\text{m}^3$ (range $0.1\text{-}14 \mu\text{g}/\text{m}^3$) at points ≤ 0.5 miles from the well pad and points ≥ 0.5 miles from the pad, respectively. Given the large variability in these findings, I believe that the statement that the benzene concentrations were "significantly higher" nearer the well is premature. A t-test or non-parametric test, as appropriate, should be conducted to validate the conclusion.
- 3) When illustrating cross-regional differences in the bar graphs, the authors would be well served to maintain the same color scheme throughout. The fact that they sometimes change the region represented by each color is confusing.
- 4) Comparisons of studies across geographic regions must be tempered by a knowledge of the baseline conditions in each region. For example, divalent cation and radioactive metal concentrations are typically (but not always) higher in the Rocky Mountain states.
- 5) Finally, you may want to emphasize that it's to the industry's advantage to comply with the document's recommendations now rather than later. As more complete fracking impact assessment data are made available, the industry may be faced with even greater costs related to increased toxicity testing or reverse engineering requirements.

Now I'll comment on specific findings and conclusions within the document:

- 1) The use of 25% and 75% extraction scenarios (p. 31) is an excellent method for assessing the range of probable impacts.
- 2) Given the elevated air emission HQ findings of residents near well sites (p. 36) and the increased incidence of smoking in the two counties of concern (p. 144), further discussion of the relationship between these two findings, especially with regard to co-carcinogenicity and effects of PM_{2.5} exposure in smokers, is warranted.
- 3) Similarly, the relationship between findings of neonatal and childhood impacts in near-well residents (pp. 36-39), and infant mortality (pp. 153-154) should also be considered. Although inadequate health care is a contributory factor to infant mortality, contaminant exposure to teratogens or contaminants that delay fetal development may exacerbate the issue. If known teratogens are found the fracking mix, previous research and/or risk assessments should be consulted, and exposure scenarios should be considered.

- 4) Although not directly a toxic effect, I think that the authors should emphasize that, in addition to the massive amounts of water used in these operations, that freshwater is a dwindling resource that few species can live without.
- 5) Fig. 10-11 is a good concise diagram of water contamination pathways. Does the reuse box refer to spills during the recycling process?
- 6) The authors' point (p 45) on monitoring radionuclides other than radon is well-taken. They may want to further indicate that carcinogenicity and chromosomal aberrations are the chief hazards of concern for radioactivity exposure. Cells that frequently undergo mitosis, which is much more common in children, are the most susceptible. Overall, systematic statements about acute and chronic effects are difficult because of differences in the radioisotope (or combination of radioisotopes) involved, the exposure level in rems, distance from the source, and the types of radiation produced. Nevertheless, the EPA has provided a useful guideline (http://www.epa.gov/radiation/understand/health_effects.html) of threshold exposures at exposure levels ranging from 5 to 2000 rems.
- 7) The Fernow Experimental Forest application is interesting because it found severe community-level effects after being exposed to fracking fluid levels that were within regulatory guidelines. With respect to further ecological analysis, I would suggest that two or three exposed target species be tagged to get a better understanding of movement, eating, drinking, and spawning behaviors. In particular, these species, such as deer and grouse, should be part of the human food chain. The results of this study can then be compared to measured concentrations of fluid components in land, water, and air, to provide a measure of potential impact to these species.
- 8) If a stream system may be compromised by the results of fracking operations, damage to the stream system itself, water column species, and organisms bound to sediment may be at risk. I would suggest a search of the literature to find relevant studies that address this issue.
- 9) The EPA has a long history of guidelines and references regarding the risk of cumulative exposures (Sect. 10.3.7). In addition, the IPCS (<http://www.inchem.org/documents/harmproj/harmproj/harmproj7.pdf>) have introduced a series of models that could be useful for assessing combined exposures to multiple chemicals. The authors may want to review these sources and make reference to them in Sect. 10.3.7.
- 10) Several fracking studies have found families of contaminants in which toxicity data is unavailable for all but a few. A classic example are the PAHs. The authors may want to recommend the use of Decision Trees or Quantitative Structure-Activity Relationship to estimate the hazard potential of these substances, and to suggest where additive or multiplicative effects are in place. Of course, this proposal assumes that the industry is willing to name the constituents of the fracking fluid, and allow technicians to monitor soil, air, and water samples post-drilling.
- 11) With reference to H₂S exposure (p 80), the authors may want to note that the gas is odorless but lethal at higher concentrations. This property has led to the deaths of several occupational workers.
- 12) The CGDP provides an excellent overview of industry and health group requirements to ensure a safer fracking experience.
- 13) The authors may want to include studies of air flow modeling for the most offensive airborne contaminants. (R19, p. 92).
- 14) The authors may want to change the text in R24 (p. 93) to 'Periodic soil **and sediment** monitoring should be conducted...'

- 15) In Sect. 12.7.2 (p. 96), it may be wise to employ community-based educators who can hold modular sessions on the fracking process and associated health impacts. This issue is partially addressed in R41.
- 16) In section 15.4.1 (p.136), I think that a stronger statement needs to be made regarding the monitoring of groundwater for fecal indicator species, and how elevated levels should be treated.
- 17) For Fig. 15-11, p. 138, the TRI results should be normalized by population in each region.
- 18) The authors appear to be misstating the facts in Sect. 15.4.3. According to the bar charts of Figs. 15-12 and 15-13, the state of Maryland is leading in both cancer risk and the RHI. Either the bar charts or the authors' conclusions need to be modified.
- 19) In Sect. 15-5 (p. 141), the term 'region' should have been defined earlier in the document.
- 20) Both Allegany and Garrett counties have high life expectancies, compared to Maryland. This finding may at least partially explain the elevated cardiovascular and cerebrovascular deaths (Figs. 15-22 and 15-23, p.151) in these two counties, compared to the state.
- 21) In Appendix A, the authors have a tendency to state that one locale has a higher incidence than another, when, in fact, the heights of the two bars are virtually identical. This tendency is particularly noticeable in Figs. 15-15 (p. 143), 15-19 (p 148), 15-25 (p 153), 15-26 (p 154), and 15-27 (p 154). I would suggest that the authors run chi-square tests on the results, to verify which comparisons are statistically significantly different.
- 22) With regard to deaths from individual causes I found it curious that Allegany had larger (sometimes much larger) mortality rates than Garrett (Figs. 15-18a, 15-18c, 15-18e, 15-18f, 15-19, 15-20, 15-21, 15-22, and 15-24). Yet the All-Cause mortality rate (Fig. 15-25, p 143) between the two counties is virtually the same. I would recommend further investigation as to why mortality rates for individual disorders differ between the two counties.

Charles Shore
M.S., Toxicology
Gaithersburg



Public Comment on Drilling in the Marcellus Shale of Western Maryland

1 message

Carol Montgomery <freshwindblow@gmail.com>

Thu, Oct 2, 2014 at 4:42 PM

To: dhmh.envhealth@maryland.gov

Dear Dr. Mitchell and others,

We recently found out that Maryland is considering allowing gas well oil drilling in Western Maryland. As a teacher I am deeply concerned about the potential negative health effects of such drilling. I have seen negative health effects from environmental toxins and hazards both inside and outside the classroom. Many times health challenges are related to cumulative exposures that may not show acute symptoms.

Our nation's water supply must be protected from further contamination to protect the next generations. Similarly, our air must be protected to protect the next generations. There are too many questions and serious health concerns about allowing gas well oil drilling to rush this decision.

Please, wait to make any decision re: "fracking" until after we have more information on the potential health effects. Other states and agencies are doing research that will benefit us. We MUST consider the next generations—not just energy, profits, and taxes. The risks are too great to make a mistake.

Thank you for your time and expertise.

Sincerely,
Carol Montgomery



Marcellus Shale

1 message

Sarah Gubits <sarah.gubits@gmail.com>

Thu, Oct 2, 2014 at 1:53 PM

To: "dhhm.h.envhealth@maryland.gov" <dhhm.h.envhealth@maryland.gov>

Dear Sir or Madam,

I am writing to register my deep concern about opening any Maryland areas to fracking, including the Marcellus Shale. We need to find solutions to our energy needs that do not put our citizens at risk. Fracking contributes even more to climate change than oil (when you consider the energy required for the extraction of natural gas). Fracking is a waste of our time, money, and energy and is reckless with our public health. Thank you for considering my comments.

Sarah Hillegass Gubits, LCSW-C, LICSW
Guttman and Pearl Associates

6000 Executive Blvd. Suite 530
Rockville, MD 20852

4545 42nd St., NW, Suite 200
Washington, DC 20016

[703-459-7786](tel:7034597786)

www.gpathrapy.com

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Comments on Study: "Potential Public Health Impacts of Natural Gas Development and Production in the Marcellus Shale in Western Maryland"

1 message

Alan Montgomery <headchair@gmail.com>
To: dhmh.envhealth@maryland.gov

Thu, Oct 2, 2014 at 1:24 PM

Dr. Clifford Mitchell,

I was alarmed at the study's analysis of the potential effects of fracking on drinking water since our fresh water supplies in this nation are largely taken for granted. Once polluted however, ground water supplies may be the hardest and most expensive resource to "clean up", if possible. I am also alarmed at the general "warning" tone of the entire report.

I have read the executive summary of the subject study. I agree with the consensus of the Sept. 12th expert panel who reviewed this study.

Please consider my input as a concerned citizen, voter, and resident of central Maryland. There are members of my family who are chemically sensitive and that is why I took the time to reply. We do need to be very careful not to pollute our precious water and air resources.

Sincerely,
Alan Montgomery
4975 Morning Star Drive
Dayton, Md. 21036



Public Health Study of the Marcellus Shale Fracking Proposal

1 message

Leeann Irwin <paxirwin@yahoo.com>

Thu, Oct 2, 2014 at 10:36 AM

Reply-To: Leeann Irwin <paxirwin@yahoo.com>

To: "dhmh.envhealth@maryland.gov" <dhmh.envhealth@maryland.gov>

Dear People,

As a health care worker in the state of Maryland I am proud the state is leading the country in its concrete efforts to reduce health care disparities among minority populations. I will be attending Maryland's 11th Annual Health Disparities Conference this month-The Future of Community Health Workers in Maryland: Their Role in Achieving Health Equity.

In reviewing some of the Public Health Study of the Marcellus Shale proposed development of fracking, the devastating impacts on public health are obvious. Seven out of the eight areas investigated show severe or moderately severe negative impact on public health. These include: air quality, worker health, increase of crime, traffic, substance abuse, STD's, water quality, overburdening current health care facilities, and excessive noise to name a few. Because other states have allowed fracking MD can wait for results of studies already underway by state governments on the effects on public health and review those results. Negative health effects on water has direct impact on public health as well as negative impact on state agriculture- Maryland's number one industry. Livestock would also be effected by negatively effected water. People living in the rural areas of the Marcellus Shale site may be a minority in urban Maryland but the state has a legal commitment to reducing health disparities of minority populations. Fracking has increased health issues in states that allow this dirty industry.

Maryland Institute for Applied Environmental health also mentions peer review studies which found adverse birth outcomes including congenital heart and neural tube defects.

These are only a few of the health concerns raised by this state funded study. The results are clear that fracking is not good for Maryland's public health.

Leeann Irwin

Leeann Irwin

Shiatsu for Health, LLC

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Public comment on the Marcellus Shale Public Health Report

1 message

Marjorie Gray <marjgray3@gmail.com>

Thu, Oct 2, 2014 at 8:23 AM

Reply-To: marjgray3@gmail.com

To: dhmh.envhealth@maryland.gov

To Governor O'Malley and the Maryland Department of Health and Mental Hygiene:

As a 68 year old grandmother, gladly thriving in Maryland since '72, I was appalled by the report released on August 18 outlining potential public health risks of fracking in Maryland.

How can you leave office ignoring these short and long term dangers, especially to children, the elderly, and people already suffering from illness? Governor, you have no right to brag about your environmental record after this cursory and limited assessment.

I urge you to extend the state's fracking moratorium until and unless there is clear, scientific evidence that fracking would NOT cause significant harm to our health in Maryland.

The health study does not give Marylanders the full answers we deserve. For instance:

–The study looks only at Western Maryland, even though gas basins stretch across 19 Maryland counties, and fracking and its related infrastructure could impact communities statewide.

–The study does not consider the costs families would bear from lost work or school days due to illness.

–The study does not adequately address risks from the disposal of toxic fracking fluids, or how our food supply would be protected from potential soil and water contamination.

–The study ignores the potential for fracking to worsen the impacts of climate change – the #1 long-term public health threat we all face.

Even more concerning, as the researchers themselves note, comprehensive scientific data on the health impacts that fracking is already having in places like Pennsylvania is not yet available. The report's 52 recommended steps for minimizing potential health risks fail to address all of the safety concerns raised by the study. There is also little to no scientific evidence proving that many of the recommended steps – such as setting drilling wells back from homes by only 2,000 feet – would be sufficient to protect our health.

If fracking were to start in Maryland now, we'd be the next guinea pigs for testing the industry's impacts on people, and that's unacceptable. Governor O'Malley must protect our health by keeping Maryland's moratorium on fracking in place and ensuring we have the time and resources needed to get complete, science-based answers on all of the risks that fracking poses to our health.

Sincerely,

Marjorie Gray
4-E Crescent Rd
Greenbelt, MD 20770



Comments on UMD Public Health Report

1 message

Perry Wheeler <pwheeler40@gmail.com>

Wed, Oct 1, 2014 at 11:44 PM

To: dhmh.envhealth@maryland.gov

Hello,

I read through the UMD public health report on the risks associated with allowing fracking in western Maryland. While I personally live in Howard County Maryland, I have friends and family in western Maryland. This report makes me extremely concerned for their well being -- especially for their children. It appears as though children are vulnerable to health issues. Why would we even consider allowing industry to frack for profit in our state when it could damage our children and environment? I have been opposed to fracking, but am now 100% more opposed given the potential health impacts.

It's interesting that it was broken into "likelihoods of impacts to public health." Here's an idea: if there is ANY likelihood of impact to public health, it should be kept far, far away from our state and rejected! It's astonishing that our state is considering gambling with people's lives in order to turn a profit for industry.

If you have any follow up questions, please don't hesitate to ask.

Perry Wheeler
10641 Delfield Ct, Laurel, MD 20723



Comments on Marcellus Shale Health Study

1 message

Lisa Bardack <lisabardack@gmail.com>

Wed, Oct 1, 2014 at 6:59 PM

To: dhhm.h.envhealth@maryland.gov

To Whom It May Concern:

I am writing to submit a public comment with regard to the Marcellus Shale Health Study. I am an environmental writer and educator who has been closely following high-volume, slick water hydraulic fracturing for the past four years. The more I learn about fracking the more apparent it is that this new unconventional form of natural gas extraction cannot be done safely. Yet it has been in operation for well over a decade, side stepping the "precautionary principle" in favor of a fix-it-as-you-go-and-cover-your-mistakes operation. People living near fracking wells are falling ill in myriad ways, from rashes, dizziness, headaches, loss of smell, loss of taste, respiratory and gastrointestinal illnesses, neuropathy and more. The question comes up again and again, are these anecdotal? Where is the evidence that fracking causes harm to the health of citizens? Where are the science-based studies to confirm this conclusion?

It has been extremely challenging to come up with science-based data on these dangers when the natural gas industry has made non-disclosure agreements the main tool in their efforts to suppress the truth. The industry usually goes into poor, rural areas, where people's farms and/or homes are often the sole assets in their lives. When their water becomes permanently contaminated or they become ill from air and water contamination caused by fracking, the industry offers them water buffalos and/or a monetary settlement IF they sign a non-disclosure agreement that says they will not speak to state agencies, federal agencies, the press, or anyone else about the damage done. Unable to afford to buy water for the rest of their lives or pay the medical expenses, the families opt for what the industry offers and signs on the dotted line. How can the facts be gathered if this is how the industry has been operating for over a decade?

Thankfully, scientific studies are emerging that are proving that fracking does cause harm to the health of people by way of water and air contamination.

If you are not already familiar with it, I would like to bring to your attention the publication put forth by Concerned Health Professionals of New York (CHPNY). CHPNY is an initiative by health professionals, scientists and medical organizations for raising **science-based concerns** about the impacts of fracking on public health and safety. In July 2014 CHPNY published the "Compendium of Scientific, Medical and Media Findings Demonstrating Risks and Harms of Fracking (Unconventional Gas and Oil Extraction)." The Compendium is a fully referenced compilation of the significant body of scientific, medical and journalistic findings demonstrating risks and harms of fracking.

The introduction reads as follows:

Horizontal drilling combined with high-volume hydraulic fracturing and clustered multi-well pads are recently combined technologies for extracting oil and natural gas from shale bedrock. As this unconventional extraction method (collectively known as "fracking") has pushed into more densely populated areas of the United States, and as fracking operations have increased in frequency and intensity, **a significant body of evidence has emerged to demonstrate that these activities are inherently dangerous to people and their communities.** Risks include adverse impacts on water, air, agriculture, public health and safety, property values, climate stability and economic vitality.

Researching these complex, large-scale industrialized activities—and the ancillary infrastructure that supports them—takes time and has been hindered by institutional secrecy. Nonetheless, research is gradually catching up to the last decade's surge in unconventional oil and gas extraction from shale. **A growing body of peer-reviewed studies, accident reports, and investigative articles is now confirming specific, quantifiable evidence of harm and has revealed fundamental problems with the drilling and fracking.** Industry studies as well as independent analyses indicate **inherent**

engineering problems including well casing and cement impairments that cannot be prevented. Earlier scientific predictions and anecdotal evidence are now bolstered by **empirical data, confirming that the public health risks from unconventional gas and oil extraction are real, the range of adverse impacts significant, and the negative economic consequences considerable.** Our examination of the peer-reviewed medical and public health literature uncovered no evidence that fracking can be practiced in a manner that does not threaten human health.

Despite this emerging body of knowledge, industry secrecy and government inaction continue to thwart scientific inquiry, leaving many potential problems—especially cumulative, long-term risks—unidentified, unmonitored and largely unexplored. This problem is compounded by non-disclosure agreements, sealed court records, and legal settlements that prevent families (and their doctors) from discussing injuries. As a result, no comprehensive inventory of human hazards yet exists.

At the same time, inflated estimates of shale reserves and potential profitability continue to fuel the rush to drill new wells, cut regulatory corners, and press into densely populated communities, as corporations attempt to compensate for the unexpectedly rapid depletion of their existing wells and coincident drop off in revenue. Thus do **the fundamental economic uncertainties of shale gas and oil production further exacerbate the risks of fracking to public health and society.** With the industry intention of drilling tens of thousands of new wells into shale every year in the United States and with more than 15 million Americans already living within a mile of a fracking well that has been drilled since 2000, the stakes could not be higher.

I commend Maryland for being the first state to look into fracking before it comes to this state. Maryland must continue the moratorium on fracking until there is absolute certainty that fracking does not cause harm. Right now, there is enough evidence to show that the technology is not safe. Until it is, we cannot, in good conscience, allow fracking in Maryland.

Thank you for your time.

Sincerely,

Lisa Bardack
Baltimore Maryland

Lisa Bardack
410-945-9139
wordsforabetterworld.com



Comments on MARYLAND PUBLIC HEALTH STUDY OF MARCELLUS SHALE

1 message

Poune Saberi <poune@psrphila.org>

Tue, Sep 30, 2014 at 10:09 PM

To: dhhmh.envhealth@maryland.gov

Dear DHMH,

I was invited to attend a symposium on September 12, 2014 and provide feedback on the Maryland Potential Public Health Impacts of Natural Gas Development and Production in the Marcellus Shale in Western Maryland. I am an occupational and Environmental physician and have been studying the health impacts of natural gas development in Pennsylvania for last three years.

Here were my comments on September 12, 2014:

1- In Pennsylvania the emergency management infrastructure in Marcellus Shale regions has been seriously over-extended. The 911 calls, fire and police incidents, road side accidents, spills have overburdened regions that did not have the resources to handle the number and severity of emergencies. Furthermore, hospitals and emergency rooms did not have appropriate hazmat protocols to handle spills and exposure events that happened mainly to natural gas industry workers and drivers.

2- I was curious about what the big vision for UNGD in state of Maryland may be. Will there be other related activities such as compressor stations, pipelines, export facilities, dehydrators? If so, then those would be in the surrounding counties and merit an impact assessment as well. Is Cove Point part of the plan? What is the impact of this export facility on Maryland? The exposure pathways of natural gas development don't begin and end with hydraulic fracturing. There are many steps in the life cycle. In fact some may have a far more significant impact on the community. These issues must be considered. Liquefied Natural Gas is a highly combustible substance. An explosion involving LNG will be infinitely more destructive and the export of the LNG happens downstream from hydraulic fracturing. I urge DHMH to give this serious consideration.

3- My other comments had to do with new information on water contamination involving the illegal use of diesel injection, impact on the food shed both in terms of food industry such wine making and food consumption such as dairy and meat from animals that have been exposed to water contaminated with flow-back, and impact of noise on cardiovascular medical illnesses such as hypertension.

4- Please consider the existing state of the counties in terms of number of mental health providers, motor vehicle accidents, prior conventional wells and superfund areas. They will all exacerbate the problems that may occur as a result of UNGD.

I appreciate the opportunity to offer my comments.

With Kind Regards

—
Poune Saberi, MD, MPH
Center of Excellence in Environmental Toxicology
University of Pennsylvania
Physicians for Social Responsibility
267 978 3934
poune@psrphila.org



Comments on Marcellus Shale Health Study

1 message

Shari Glenn <shariglenn1@gmail.com>

Tue, Sep 30, 2014 at 10:12 AM

To: dhmh.envhealth@maryland.gov

The Marcellus Shale Safe Drilling Initiative studied whether and how gas production can be accomplished without unacceptable risks and adverse impacts to public health, safety, the environment and natural resources. Unfortunately as the deadline for the Initiative's Advisory Commission work approaches, it becomes apparent that the process and any resulting decision cannot be complete without further investigation and study of the impacts likely caused by unconventional natural gas drilling operations or 'fracking' in western Maryland.

I have asthma. I have a personal concern about the "high likelihood" of gas development causing air pollution. The Mid-Atlantic already has some of the worst air in the country. There are days that I cannot go outside without trouble breathing. The report's lead author Dr. Donald Milton admits "there is a significant concern for air quality."

I like to drink water. The report found a "moderately high" chance of problems with water pollution. I have family in West Virginia and Western Pennsylvania. I have seen first-hand some of the problem with water pollution. My cousin in Marshall County, WV gets his water from a "buffalo" in his yard since his well water is not potable. I have friends in Butler County, PA that can no longer drink their water. The water pollution in Washington County, PA from fracking waste water has poisoned groundwater and drinking water. There was recently a case where the industry was found dumping toxic wastes into the Allegheny River. The fines from these infractions in no way offset the damage done to local residents. The industry sees them as "the cost of doing business".

I am concerned about climate justice. The strains on the health care system in the western Maryland counties along with increase in crime, drug abuse and other social problems from migrant gas industry workers puts an unfair burden on this already economically disadvantaged region. It seems Maryland, and the western counties in particular, would assume a high risk with little benefit from the extraction of natural gas through fracking. The money would not stay in the region, but the added costs would be absorbed by local and state taxpayers.

I like to visit Western Maryland. I love Deep Creek. My children ski there in the winter. I would hate to see this region of the state adversely impacted due to fracking. The high level of unknowns worries me.

I am an engineer. I was trained to do risk assessment. Although Maryland's health study is the first to assess health risks associated with unconventional gas development, the MIAEH scope of work did not include an assessment of the costs to counties, taxpayers, and businesses of health care and emergency responder service demands, related to accidents, new health problems, or uninsured workers. The problem in Pennsylvania with the state ignoring citizen health concerns and the lawsuits in Texas and other states should give Maryland reason to continue our fracking ban.

The report falls short as well in its research into long-term impacts that are known or suspected to arise from unconventional gas development in Maryland. For example, the study does not adequately address risks from spills or the disposal of toxic fracking fluids, or the potential effect on our food supply as such contaminants bio-magnify in soil and water. The study does not consider the future costs to families and the health care system from lost work or school days due to illness. The study also ignores the potential for fracking to worsen the impacts of climate change. Finally, the study looks only at Western Maryland, even though gas basins stretch across 19 Maryland counties, and fracking and its related infrastructure could impact communities statewide.

This fact is becoming more recognized not just by health professionals and environmental advocates, but the industry itself. A March report from Resources for the Future, a June workshop conducted by the Health Effects Institute, and a July call from the American Petroleum Institute (API) are three examples of industry-related calls for more research. Last month, API issued a request for proposals "to evaluate whether a causal relationship exists between community exposure to [Unconventional Resource Development] operations (including well construction, hydraulic fracturing and well production) and selected health outcomes."

I live in Howard County. I spend lots of time around our state in different counties. I am very worried that if fracking is allowed in the Marcellus Shale region of western Maryland, there would be nothing in the way of expanding to other regions in the eastern part of the state and the eastern shore. I have seen maps that show natural gas basins in these areas. Infrastructure is already being put in place to move this gas to Virginia, where the basins continue.

Respectfully submitted,

Shari Glenn
8313 Whitebark Court
Ellicott City, MD 21043



Please Delay Any Decision on Fracking

1 message

Gale Quist <twoquists@verizon.net>
Reply-To: twoquists@verizon.net
To: dnhmh.envhealth@maryland.gov

Tue, Sep 30, 2014 at 9:59 AM

To Whom It May Concern

First off, it seems obvious that pumping harmful or unknown substances into the ground, from whence we receive our precious drinking water, is just foolishly wrong!

Nonetheless, we commend you and your administration for establishing the Marcellus Shale Safe Drilling Initiative to study whether and how gas production can be accomplished without unacceptable risks and adverse impacts to public health, safety, the environment and natural resources. Unfortunately as the deadline for the Initiative's Advisory Commission work approaches, it becomes apparent that the process and any resulting decision cannot be complete without further investigation and study of the impacts likely caused by unconventional natural gas drilling operations or 'fracking' in western Maryland. Therefore, we ask that you delay any decision until more research in this rapidly evolving field is complete.

I base this request as a result of the recent health study released by the Commission on August 18th. The University of Maryland's Institute for Applied Environmental Health's (MIAEH) report: Potential Public Health Impacts of Natural Gas Development and Production In The Marcellus Shale In Western Maryland paints a less than manageable picture of fracking in Maryland offering no less than 52 recommendations for assessing and offsetting probable impacts.

Specifically, the study foresees a "high likelihood" of gas development causing pollution that could harm residents and workers, such as a "moderately high" chance of problems with water, soil and noise pollution from unconventional gas development. The report's lead author Dr. Donald Milton admits "there is a significant concern for air quality." The report also warns of strains on the health care system of the local counties and increases in crime, drug abuse, traffic accidents and other social problems arising from the influx of gas industry workers.

Although Maryland's health study is the first to assess health risks associated with unconventional gas development, the MIAEH scope of work did not include an assessment of the costs to counties, taxpayers, and businesses of health care and emergency responder service demands, related to accidents, new health problems, or uninsured workers.

The report falls short as well in its research into long-term impacts that are known or suspected to arise from unconventional gas development in Maryland. For example, the study does not adequately address risks from spills or the disposal of toxic fracking fluids, or the potential effect on our food supply as such contaminants bio-magnify in soil and water. The study does not consider the future costs to families and the health care system from lost work or school days due to illness. The study also ignores the potential for fracking to worsen the impacts of climate change. Finally, the study looks only at Western Maryland, even though gas basins stretch across 19 Maryland counties, and fracking and its related infrastructure could impact communities statewide.

This fact is becoming more recognized not just by health professionals and environmental advocates, but the industry itself. A March report from Resources for the Future, a June workshop conducted by the Health Effects Institute, and a July call from the American Petroleum Institute (API) are three examples of industry-related calls for more research. Last month, API issued a request for proposals "to evaluate whether a causal relationship exists between community exposure to [Unconventional Resource Development] operations (including well construction, hydraulic fracturing and well production) and selected health outcomes."

A number of peer-reviewed articles by scientists and public health researchers have been published this year

making a similar call. Long term studies are underway in Pennsylvania but more are called for and being planned. In July, a working group of the National Institutes of Health concluded that “[e]xposure and health outcomes research related to [Unconventional Natural Gas Drilling Operations] is urgently needed and community engagement is essential in the design of such studies.” In short, the process and especially its impacts on health remain incomplete and demand further study.

The Governor has said his decision will be decided by science. It is clear that the current Maryland health study is in some part lacking in this respect and where scientific (health) evaluations have been made they come with warnings of likely and probable impacts. This fact demands that the state continue research before deciding whether to make a decision on drilling in Maryland.

We urge Governor O'Malley to extend the commission's review of potential impacts, especially those mentioned above associated with health, until and unless there is clear, scientific evidence that unconventional natural gas drilling operations or 'fracking' will NOT cause significant harm to our health in Maryland.

Respectfully submitted,

Gale Quist
11201 Neelsville Church Rd.
Germantown, MD 20876

Fracking has been proved to be linked to important leaks of [methane](#) – a 23 times more potent greenhouse gas than carbon dioxide. To be considered as a climate-wise alternative, methane leaks should have to remain as low as two percent. However to [a recent study](#) (see reference below), those leaks are as high as six to twelve percent. This study found that a big switch from coal to gas would only reduce “technology warming potentials” by about 25% over the first three decades — far different than the typical statement that you get a 50% drop in CO2 emissions from the switch. And that assumed a total methane leakage of 2.4%. The study found that if the total leakage exceeds 3.2% “gas becomes worse for the climate than coal for at least some period of time.” Leakage of 4%, let alone 9%, would call into question the value of unconventional gas as any sort of bridge fuel. Colm Sweeney, the head of the aircraft program at NOAA’s Earth System Research Laboratory, who led the study’s aerial component, told the journal Nature: “We were expecting to see high methane levels, but I don’t think anybody really comprehended the true magnitude of what we would see.”

<http://www.pnas.org/content/early/2012/04/02/1202407109.full.pdf+html>

<http://thinkprogress.org/climate/2013/08/07/2426441/methane-leakage-gas-fields/#>

<http://thinkprogress.org/climate/2012/04/09/460384/natural-gas-is-a-bridge-to-nowhere-absent-a-carbon-price-and-strong-standards-to-reduce-methane-leakage/>

As more and more counties are getting drier, using energy sources that consumes vast amounts of water is just sheer madness. Each fracking job requires several million gallons of water, of which only around a quarter is being recovered. The remainder is just lost for ever. Fracking pushes us even further down the 'business as usual' route where our economy persists with the assumption that Earth's resources and services are so abundant they can be treated as infinite.

Shale gas drilling has been linked in many occasions to flammable drinking water. The Economist published an article on that earlier this year. Injecting in our environment a cocktail of water, sand and no less than hundreds of chemicals that can cause cancers or are neurotoxins. In the US fracking companies are under no obligation to disclose what chemicals they use. Not the kind of stuff I want anywhere near my property in Maryland (Allegany county).

Environmental and health concerns aside, fracking just doesn't make economic sense. The problem is one of production rates, which start high but fall fast. Shale gas production declines very rapidly as pressure within the earth closes up the fracking fissures. An article in Energy Policy noted that production at wells drops off by as much as 60-90% within the first year, and as Nafeez Ahmed has shown, the rapid decline rates of shale gas wells mean huge sums of money need to be continually ploughed into them to keep production going. As production declines, operators must drill new wells to sustain production levels. New drilling causes a glut of gas every time a new site comes into production, creating the perfect scenario for 'boom and bust economics'. The likely result is an unsustainable shale bubble: structural instabilities masked by temporary recovery.

From US Representative Maurice Hinchey: “If fracking is as safe as the industry claims, then gas companies have nothing to fear from federal oversight. The industry's alarmed reaction only raises more questions....The industry would prefer to rely on the very state regulators to whom they pay millions of dollars annually in permitting fees. We're already seeing what that relationship gets us. Pennsylvania levied fines on only 4 percent of drillers who violated the law. After one company in Pennsylvania contaminated drinking water for 16 homes, the fine was less than what the company earns in three hours. Amazingly, it was the largest fine ever levied. We all know that the air we breathe and the water we drink don't respect state boundaries. That's why Congress passed laws like the Clean Air Act, the Clean Water Act, and the Safe Drinking Water Act. The fracking industry should have to abide by those public health laws, just like everyone else.”



Fracking moratorium

1 message

Robert Portanova <novaport88@yahoo.com>

Tue, Sep 30, 2014 at 1:50 AM

Reply-To: Robert Portanova <novaport88@yahoo.com>

To: "dhmh.envhealth@maryland.gov" <dhmh.envhealth@maryland.gov>

Please listen to public health officials and officials in environmental protection and discontinue any and all efforts toward fracking in the state of Maryland. We need to set a precedent and act as an environmental role model for the rest of the country in how we deal with this question.

It is not worth the risk - that's the bottom line. All the money in the world gained from fracking will never solve the problems that fracking will create.

I am a Maryland resident and I would like my voice to be heard loud and clear.

Thank you.

Robert Portanova
Montgomery County



Please Say NO to Fracking

1 message

Flittner Versel <mversel@hotmail.com>

Tue, Sep 30, 2014 at 5:35 PM

Reply-To: mversel@hotmail.com

To: dhhmh.envhealth@maryland.gov

To Whom It May Concern

This summer, I saw first-hand the impacts of fracking in rural areas of Eastern Ohio. The environmental damage and social impact on affected communities is considerable, manifestly evident and greatly disturbing to the residents of those communities. Perhaps the worst impact is that the people so severely inconvenienced and disturbed by the degradation of their communities, feel entirely powerless to request their community and state authorities to assist them in mitigating the pressures they are experiencing. The people I met shared the assessment of fracking as "a lot of people making a lot of money and no one caring about us."

I commend you and your administration for establishing the Marcellus Shale Safe Drilling Initiative to study whether and how gas production can be accomplished without unacceptable risks and adverse impacts to public health, safety, the environment and natural resources. Unfortunately as the deadline for the Initiative's Advisory Commission work approaches, it becomes apparent that the process and any resulting decision cannot be complete without further investigation and study of the impacts likely caused by unconventional natural gas drilling operations or 'fracking' in western Maryland. Therefore, we ask that you delay any decision until more research in this rapidly evolving field is complete.

I base this request as a result of the recent health study released by the Commission on August 18th. The University of Maryland's Institute for Applied Environmental Health's (MIAEH) report: Potential Public Health Impacts of Natural Gas Development and Production In The Marcellus Shale In Western Maryland paints a less than manageable picture of fracking in Maryland offering no less than 52 recommendations for assessing and offsetting probable impacts.

Specifically, the study foresees a "high likelihood" of gas development causing pollution that could harm residents and workers, such as a "moderately high" chance of problems with water, soil and noise pollution from unconventional gas development. The report's lead author Dr. Donald Milton admits "there is a significant concern for air quality." The report also warns of strains on the health care system of the local counties and increases in crime, drug abuse, traffic accidents and other social problems arising from the influx of gas industry workers.

Although Maryland's health study is the first to assess health risks associated with unconventional gas development, the MIAEH scope of work did not include an assessment of the costs to counties, taxpayers, and businesses of health care and emergency responder service demands, related to accidents, new health problems, or uninsured workers.

The report falls short as well in its research into long-term impacts that are known or suspected to arise from unconventional gas development in Maryland. For example, the study does not adequately address risks from spills or the disposal of toxic fracking fluids, or the potential effect on our food supply as such contaminants bio-magnify in soil and water. The study does not consider the future costs to families and the health care system from lost work or school days due to illness. The study also ignores the potential for fracking to worsen the impacts of climate change. Finally, the study looks only at Western Maryland, even though gas basins stretch across 19 Maryland counties, and fracking and its related infrastructure could impact communities statewide.

This fact is becoming more recognized not just by health professionals and environmental advocates, but the industry itself. A March report from Resources for the Future, a June workshop conducted by the Health Effects Institute, and a July call from the American Petroleum Institute (API) are three examples of industry-related calls for more research. Last month, API issued a request for proposals "to evaluate whether a causal relationship

exists between community exposure to [Unconventional Resource Development] operations (including well construction, hydraulic fracturing and well production) and selected health outcomes."

A number of peer-reviewed articles by scientists and public health researchers have been published this year making a similar call. Long term studies are underway in Pennsylvania but more are called for and being planned. In July, a working group of the National Institutes of Health concluded that "[e]xposure and health outcomes research related to [Unconventional Natural Gas Drilling Operations] is urgently needed and community engagement is essential in the design of such studies." In short, the process and especially its impacts on health remain incomplete and demand further study.

The Governor has said his decision will be decided by science. It is clear that the current Maryland health study is in some part lacking in this respect and where scientific (health) evaluations have been made they come with warnings of likely and probable impacts. This fact demands that the state continue research before deciding whether to make a decision on drilling in Maryland.

We urge Governor O'Malley to extend the commission's review of potential impacts, especially those mentioned above associated with health, until and unless there is clear, scientific evidence that unconventional natural gas drilling operations or 'fracking' will NOT cause significant harm to our health in Maryland.

Respectfully submitted,
Malcolm Versel

Flittner Versel
6101 Calwood Way
Rockville, MD 20852



Public comment on the Marcellus Shale Public Health Report

1 message

Karin LaPadula <karin_lapadula@hotmail.com>

Sun, Aug 24, 2014 at 11:04 AM

Reply-To: karin_lapadula@hotmail.com

To: dhhm.h.envhealth@maryland.gov

To Governor O'Malley and the Maryland Department of Health and Mental Hygiene:

Have a backbone and some future vision, please. Do not allow fracking in our state. Focus instead on renewable energy. You won't win the presidency by pandering to the right or the false vision of jobs.

Thank you.

Sincerely,
Karin LaPadula

PS Oppose the Dominion LNG at Cove Point. It's not too late to reverse your previous spineless stance.

Karin LaPadula
10989 Park Drive
Lusby, MD 20657



DHMH EnvHealth -DHMH- <dhmh.envhealth@maryland.gov>

Public comment on the Marcellus Shale Public Health Report

1 message

Jacob Sheridan <axus.buy@gmail.com>

Sat, Sep 13, 2014 at 11:52 AM

Reply-To: axus.buy@gmail.com

To: dhmh.envhealth@maryland.gov

To Governor O'Malley and the Maryland Department of Health and Mental Hygiene:

I urge Governor O'Malley to extend the state's fracking moratorium.

Sincerely,
Jacob Sheridan

Jacob Sheridan
Orange Drive
Silver Spring, MD 20901



Fwd: Health Study Comments

1 message

Cliff Mitchell -DHMH- <cliff.mitchell@maryland.gov>
To: DHMH EnvHealth -DHMH- <dhmh.envhealth@maryland.gov>

Wed, Sep 17, 2014 at 8:56 AM

----- Forwarded message -----

From: **Shawn Bender** <shawnbender@beitzelcorp.com>
Date: Wed, Sep 17, 2014 at 8:58 AM
Subject: Health Study Comments
To: Cliff Mitchell <cliff.mitchell@maryland.gov>
Cc: Brigid Kenney -MDE- <brigid.kenney@maryland.gov>, Christine.Conn@maryland.gov

Dr. Mitchell,

Thank you for the tremendous effort that you have put into leading the health study for the MSAC. I would like for the following comments to be included on the record and felt that it was only appropriate for me to submit them through you.

Dear Department of Health and Mental Hygiene:

Thank you for the work that you have done for Governor O'Malley's MSAC in regards to potential health impacts. The results of this study will be very helpful as we strive to put in place the Gold Standard. Shale gas development is a very intense process that presents both risks and rewards. For full disclosure I want to make sure it is known that I work in the oil and gas industry as the manager of a workforce of more than 100 individuals who service the industry. As a team, we work with all phases of shale development, from well pad construction through the production phase.

This industry has not only provided us with good paying jobs, but has also helped us to reduce our total recordable incident rate (TRIR), as required to be tracked by OSHA, also referred to as the Total Recordable Cases (TRC). In 2008 our TRC rating was 7.77 and in 2013 our TRC was reduced to 1.5, during this time we were transitioning into the oil and gas industry and we contribute a large portion of this decrease in incidents to the safety culture that we were exposed to in this industry. According to the Bureau of Labor Statistics (US Department of Labor) in a report dated November 7, 2013 for the year of 2012: the TRC for the oil and gas extraction industry is 1.5, while the average for all sectors was 3.7. Please keep in mind that this report tracks both occupational injuries and illness. The industry has made a tremendous effort to reduce exposure to injuries and any other hazardous situations; this is evident through performance in relation to other sectors. Based on this first-hand, documented experience I would propose that Occupational Health would likely improve, not be negatively impacted as your report shows. If employees working directly with the processes discussed are staying safe by OSHA's standards, I would expect that the community would be safe as well.

The summary chart that shows the 8 primary pathways for health risk is misleading. Showing 7 of the 8 as High or Moderately High (in red and yellow respectively) certainly gives the impression that this industry will decimate our community when, based on the Occupational Health example given, it could actually have a positive impact. I would challenge that each of the areas shown as high don't take into account the potential positive impact. For

example, higher paid and insured workers could also improve our healthcare infrastructure. Our proximity to cities such as Morgantown, Cumberland, and Pittsburg would certainly help prevent an overload of the healthcare system. I would also point out that the percentage of population increase is not factored in to any of the reports referenced. For example, Garrett County already has a population density of roughly 3 times that of Garfield County Colorado, which would certainly reduce the impact to our healthcare system. The rate of development is also not discussed; based on the relatively small area to be developed in MD, it is very unlikely that we will ever experience the rate of development that has been experienced in some of the examples given.

Finally, I was very disappointed to hear that the proposed BMP's were not factored into your Hazard Evaluation Summary and I would strongly urge you to provide an addendum that shows how the proposed BMP's would potentially reduce the likelihood of negative public health impact. This health study is a great piece of work and I would hate to see it discredited for not taking into account the reality of what would actually occur based on the BMP's.

Thank you for considering these comments and I look forward to your final report.

Respectfully Submitted,

Shawn Bender

—

Clifford S. Mitchell, MS, MD, MPH
Director, Environmental Health Bureau
Prevention and Health Promotion Administration
Maryland Department of Health and Mental Hygiene
201 West Preston Street, Room 327
Baltimore, MD 21201
 [\(410\) 767-7438](tel:(410)767-7438) or 8418
Cliff.Mitchell@maryland.gov
dhmh.maryland.gov

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New Form Entry: Comment Form

2 messages

stauver@verizon.net <no-reply@weebly.com>
Reply-To: stauver@verizon.net
To: dhmh.envhealth@maryland.gov

Sun, Sep 28, 2014 at 9:13 AM

You've just received a new submission to your [Comment Form](#).

Submitted Information:

Name

Kathleen Gibbs

Email

stauver@verizon.net

Comment

Please ban fracking in the state of Maryland to preserve the health of our poorest citizens.

hhuxford@hotmail.com <no-reply@weebly.com>
Reply-To: hhuxford@hotmail.com
To: dhmh.envhealth@maryland.gov

Sun, Sep 28, 2014 at 3:06 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Holly Huxford

Email

hhuxford@hotmail.com

Comment

Given the baseline population health, vulnerabilities, and potential impacts of UNGDP, how can Maryland best protect public health if and when UNGDP goes forward?

Maryland can best protect Garrett and Allegany County public health by NOT ALLOWING UNGDP to occur! I've read the document and am not convinced that UNGDP will be in acceptable limits of any kind. If it is acceptable to our Governor then why not allow UNGDP to occur in Howard or Frederick County? There is land there to pursue this practice!

I object!



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2 messages

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Reply-To: stauver@verizon.net
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hhuxford@hotmail.com <no-reply@weebly.com>
Reply-To: hhuxford@hotmail.com
To: dhmh.envhealth@maryland.gov

Sun, Sep 28, 2014 at 3:06 PM

You've just received a new submission to your Comment Form.

Submitted Information:

Name

Holly Huxford

Email

hhuxford@hotmail.com

Comment

Given the baseline population health, vulnerabilities, and potential impacts of UNGDP, how can Maryland best protect public health if and when UNGDP goes forward?

Maryland can best protect Garrett and Allegany County public health by NOT ALLOWING UNGDP to occur! I've read the document and am not convinced that UNGDP will be in acceptable limits of any kind. If it is acceptable to our Governor then why not allow UNGDP to occur in Howard or Frederick County? There is land there to pursue this practice!

I object!



Public comment on the Marcellus Shale Public Health Report

1 message

Patricia Harcarik <PHarcarik@aol.com>

Thu, Aug 21, 2014 at 8:14 PM

Reply-To: PHarcarik@aol.com

To: dhmh.envhealth@maryland.gov

To Governor O'Malley and the Maryland Department of Health and Mental Hygiene:

I appreciate the UM study warning of fracking's health hazards. But I am appalled that the first step (the elephant in the room) doesn't get discussed. Hydro = water. The first step in hydraulic fracturing is to poison millions of gallons of water for each well drilled. California is suffering from an historic drought. There are places in the world where children are dying because they don't have clean water to drink. We think it's okay to poison millions of gallons of water? It's not like we can import potable water from outer space. Fresh water is a finite resource on our planet Earth. If we continue to poison water in the United States, it's only a matter of time when our children start to die.

Why are we allowing corporations to poison water?

In response, I urge Governor O'Malley to extend the state's fracking moratorium until and unless there is clear, scientific evidence that fracking would not poison planet Earth.

The study does not adequately address risks from the disposal of toxic fracking fluids, or how our food supply would be protected from potential soil and water contamination.

–The study ignores the potential for fracking to worsen the impacts of climate change – the #1 long-term public health threat we all face.

Even more concerning, as the researchers themselves note, comprehensive scientific data on the health impacts that fracking is already having in places like Pennsylvania is not yet available. The report's 52 recommended steps for minimizing potential health risks fail to address all of the safety concerns raised by the study. There is also little to no scientific evidence proving that many of the recommended steps – such as setting drilling wells back from homes by only 2,000 feet – would be sufficient to protect our health.

If fracking were to start in Maryland now, we'd be the next guinea pigs for testing the industry's impacts on people, and that's unacceptable. Governor O'Malley must protect our health by keeping Maryland's moratorium on fracking in place and ensuring we have the time and resources needed to get complete, science-based answers on all of the risks that fracking poses to our health.

Sincerely,

Patricia Harcarik
2528 Guilford Avenue
Baltimore, MD 21218



Public comment on the Marcellus Shale Public Health Report

1 message

Ernest Hilsenrath <ehilsenrath@verizon.net>

Thu, Aug 21, 2014 at 3:03 PM

Reply-To: ehilsenrath@verizon.net

To: dhmh.envhealth@maryland.gov

To Governor O'Malley and the Maryland Department of Health and Mental Hygiene:

The report released on August 18 outlining potential public health risks of fracking in Maryland. The study shows that fracking could cause significant short-term and long-term harm to the health of Maryland communities, and especially to children, the elderly, and people already suffering from illness. Even so, because of limited time and scope, and major gaps in available data, the report only scratches the surface of the health impacts that communities across Maryland could face if fracking happens here.

O'Malley allowed Cove Point to pass through your doings much to the dismay of your supporters. So you should make for this debacle to extend the state's fracking moratorium until and unless there is clear, scientific evidence that fracking would NOT cause significant harm to our health in Maryland.

There is also little to no scientific evidence proving that many of the recommended steps to avoid hazards-- such as setting drilling wells back from homes by only 2,000 feet -- would be sufficient to protect our health.

If fracking were to start in Maryland now, we'd be the next guinea pigs for testing the industry's impacts on people, and that's unacceptable.

Governor O'Malley must protect our health by keeping Maryland's moratorium on fracking in place and ensuring we have the time and resources needed to get complete, science-based answers on all of the risks that fracking poses to our health.

One of Gov O'Malley's strong supporter
- Ernest Hilsenrath

Ernest Hilsenrath
11248-2 Chase St
Fulton, MD 20759



Public comment on the Marcellus Shale Public Health Report

2 messages

Alan Edward Wilson <alanwilson1@juno.com>

Thu, Aug 21, 2014 at 11:13 AM

Reply-To: alanwilson1@juno.com

To: dhmh.envhealth@maryland.gov

To Governor O'Malley and the Maryland Department of Health and Mental Hygiene:

Dear Governor O'Malley,
What does the Maryland state health study say about the possible impact of "fracking" on the future health of people living nearby with COPD, or other respiratory illnesses?

Thanks,
Alan E. Wilson
2584 Aster Road
Port Republic, MD 20676
alanwilson1@juno.com

Alan Edward Wilson
2584 Aster Road
Port Republic, MD 20676

Alan Edward Wilson <alanwilson1@juno.com>

Thu, Aug 21, 2014 at 11:22 AM

Reply-To: alanwilson1@juno.com

To: dhmh.envhealth@maryland.gov

To Governor O'Malley and the Maryland Department of Health and Mental Hygiene:

Part II:
So, I smoked tobacco for many years (maybe some of it Maryland tobacco), and developed COPD. Can the State of Maryland assure me now that state approved "fracking" will not aggravate that self/state induced illness? Thanks for your concern, Governor.

Alan Wilson
[Quoted text hidden]

Environmental Health Bureau
 Marcellus Shale Comments
 Maryland Department of Health and Mental Hygiene
 201 W. Preston Street, Room 327
 Baltimore, MD 21201

Comments on the MIAEH public health study

The Maryland Institute for Applied Environmental Health offers stern warnings for our state should we decide to proceed with hydraulic fracking any time soon. Although 52 recommendations are included that might ameliorate some of the worst consequences, they should in no way lull us into thinking this process can be made safe for Marylanders.

I represent Howard County Climate Change, an all-volunteer organization of more than 1,000 members. Following are our key concerns:

- 1) **Scorecards:** One key concern with the scorecards is that the “moderately high” hazard ranking for cumulative exposure and water quality masks a much greater level of possible harm:

Cumulative Exposure

Evaluation Criteria	Score
Vulnerable populations	2
Duration of exposure	3
Frequency of exposure	2
Likelihood of health effects	2
Magnitude/severity of health effects	1
Geographic extent	2
Effectiveness of Setback	2
Overall Score	14
Hazard Rank	M

Production/Flowback Water Related Issues*

Evaluation Criteria	Score
Vulnerable populations	2
Duration of exposure	3
Frequency of exposure	2
Likelihood of health effects	1
Magnitude/severity of health effects	1
Geographic extent	2
Effectiveness of Setback	2
Overall Score	13
Hazard Rank	M

**Hazard rank predominantly driven by water quality issues*

These scorecards would have been in the “high” risk, red zone if the 1s had been 2s. And in both cases the only reason for the score of 1 for likelihood and magnitude of effects was that “evidence regarding the magnitude/severity of health effect could not be determined because of insufficient data.” These categories, with their promise of merely “moderately high” risk, offer a small measure of comfort where none is warranted. Of course, as Dr. Donald Milton pointed out at the recent shale advisory meeting: “That stuff in the middle [moderately high, yellow] is still important stuff. It’s not stuff to ignore.” But if ongoing and future research were to determine that the likelihood or magnitude of harms in these areas is higher, these two

areas of concern would receive a hazard rank of High/Red, and the overall chart below would be in the RED zone for all but two categories:

Topic	Likelihood of Negative Public Health Impact
Air Quality	High
Healthcare Infrastructure	High
Occupational Health	High
Social Determinants of Health	High
Cumulative Exposures/Risks	Moderately High
Flowback and Production Water-Related	Moderately High
Noise	Moderately High
Earthquakes	Low

High = high likelihood of negative health impacts, Moderately High = moderately high likelihood of negative health impacts, Low = low likelihood of negative health impacts

Also, the risk of harm from earthquakes is low only because Maryland so far has no plans to allow the underground injection of hazardous wastewater. That could change, as MDE has indicated it would consider applications for injection wells. Also, exporting the waste to another state with more lax regulations regarding injection, landfilling or incinerating raises environmental justice concerns. We should not cavalierly ignore harms we plan to outsource to citizens in other, more accommodating states. Bottom line: Industry has so far failed to come up with a safe way to dispose of this toxic and radioactive waste.

- 2) **Climate:** We understand that MIAEH was not charged with evaluating the climate implications of fracking in Maryland. This is a huge gap. Studies show methane, a far more potent greenhouse gas than CO₂, leaking at rates of 2 percent to as much as 9 percent at the drilling site. Unless the leakage rate is kept below 2 percent, fracked gas offers no improvement over coal for the climate. Plus, increased fracking will require more pipelines and compressor stations, which also leak methane. A recent study published in the journal *Environmental Research Letters* concluded that switching from coal to fracked gas will increase consumption, leave dangerous greenhouse gas emissions about the same and depress the production of renewable energy, which is precisely what we want to encourage. Maryland should assess this fracking's effects on climate and on renewables before proceeding.

3) **The 52 recommendations.** This list speaks volumes about the threats from this industry that won't easily be controlled. Many of the recommendations are unfunded or require area residents to police the industry. We find that unacceptable.

R1: Who will conduct and pay for these assessments of air quality and potential health effects?

R2: Who will assess whether the setbacks for well pads are sufficient? Studies have not been done to determine what setback is safe. And nothing will put diesel trucks at a safe distance. The roads can't be moved.

R14: Although you recommend 2,000-foot setbacks to protect air quality, no research shows this sufficiently protects public health.

R19: Who will pay for this air monitoring? (But thank you for including that peak exposures should be measured as well as chronic.) R19 e: What does that mean? What expectations should community members have?

R24: Who will conduct and pay for the soil monitoring?

R25: Thank you for recommending that wastewater not be used as dust suppressant or ice melt or spread on land. That has been done elsewhere, with devastating results for pets, wildlife and vegetation.

R26: Who will conduct research on radionuclides? Who will pay for it?

R33: Who will pay for the increased state and local highway patrols?

R38: You suggest that local communities monitor and ensure compliance with setbacks. That's a huge burden to impose on local residents. Of course, this is done in the Wild, Wild West of Pennsylvania. We know of at least one instance in which industry had placed the edge of a drill pad about 120 feet too close to a neighboring property. The property owner asked that the edge of disturbance be moved back. The drilling company offered cash instead and, if the water became contaminated, six months of water. The property owner refused. This is what companies will try to do.

R39: These maps are an excellent idea. Who will pay for this?

R42: Who will pay to train emergency and medical personnel?

R18, R29, R41, R44: So many committees, so little time.

R46: You recommend a birth outcomes surveillance system. As you know, mothers' proximity to fracking operations has been associated with underweight and deformed babies. Keeping a count of these babies is not enough. Those families and the community will pay for a lifetime of care for these children, thus socializing the costs while privatizing the profit. Industry profit should not trump the well-being of children in Maryland. And these families have not given consent for this experiment.

R47: You recommend a long-term study of dermal, mucosal and respiratory irritation. Again, these people have not given consent to being guinea pigs in this ongoing experiment.

R48: You suggest that someone develop a funding mechanism for public health studies. Is that like: First, find a million dollars? Who is to do this? What is the source of the money? (Tax revenues from drilling aren't collected until the gas is in production.)

R49-R52. One of the biggest draws of fracking has been the alleged job creation. And yet we see from studies and reports that these are dangerous jobs (usually given to nonresidents). Truck accidents are frequent, silica exposure is a concern, and more. A new report shows employees aren't even being paid adequately: A ProPublica review of U.S. Department of Labor investigations shows that oil and gas workers – men and women often performing high-risk jobs – are routinely being underpaid, and the companies hiring them often are using accounting techniques to deny workers benefits such as medical leave or unemployment insurance.

<http://www.propublica.org/article/for-oil-and-gas-companies-rigging-seems-to-involve-wages-too>

- 4) **Toxic chemicals/nondisclosure agreements:** We applaud your call for full disclosure of all toxic chemicals and their amounts and combinations. In addition, Dr. Donald Milton said at the last shale advisory meeting that the report inadvertently left out a statement that nondisclosure agreements between industry and harmed property owners “should be strictly illegal.” Leaving that out “was probably an oversight on our part,” he said. We hope you can make that clear to the commission and policy makers.
- 5) **Failure to definitively protect public health:** While we applaud MIAEH researchers for their difficult and extensive work for this report, we would like to have seen a more strenuous and urgent call for more research and evaluation before a decision is made to allow fracking in Maryland. Even though such a call was not part of your charge, we think it is your obligation to speak forcefully to protect the health of Marylanders.

So much is unknown, and what we do know is increasingly alarming. Research on this industry is in its infancy, with many studies in the pipeline. After the release of the report, in fact, Yale researchers released a study about health problems for people near fracking sites: “Reports of skin conditions were more common in households less than 1 kilometer from gas wells compared to those more than 2 kilometers from the gas wells. Reported upper respiratory symptoms also were greater in homes closer to wells. The study did not find a significant increase in grouped neurological, cardiovascular, or gastrointestinal symptoms among those living in homes closer to natural gas wells.”

<http://news.yale.edu/2014/09/10/more-health-symptoms-reported-near-fracking-natural-gas-extraction#.VCqdFGeA5CQ.facebook>

<http://ehp.niehs.nih.gov/wp-content/uploads/advpub/2014/9/ehp.1307732.pdf>

Another study, reported today (Oct. 2) but not yet published, indicates that “an increasing number of wells is significantly correlated with inpatient rates of

hospitalization.” <http://citizensvoice.com/news/study-more-gas-wells-in-area-leads-to-more-hospitalizations-1.1763826>

Unfortunately, too many states have rushed headlong, turning their citizens into guinea pigs and carving up forests and farmland with little regard for long-term consequences.

As you know, public health experts at last month’s Baltimore symposium organized by the [Maryland Environmental Health Network](#) reviewed the health report. They concluded: “As public health professionals whose responsibility is protecting the health of all Marylanders, we should not pretend that we’ll know what to do in the next couple of years — we acknowledge that it may take 10 years or more to fully understand the health ramifications of hydro fracturing, and importantly, how to mitigate the health risks associated” with unconventional shale gas production.”

https://mdehndotorg.files.wordpress.com/2014/08/sept_12_symposium_report.pdf

If you concur, we hope you will make that clear to the commission and policymakers.

When the medical community and public health experts remain silent, detached or neutral, the voice of industry will prevail and arbitrary deadlines will be imposed. We want to avoid that outcome in Maryland. Residents should not be in the position of having to prove that this industrial practice is unsafe. Absent evidence of safety, MIAEH should insist that the precautionary principle be heeded.

Sincerely,

Elisabeth Hoffman

5917 Gentle Call

Clarksville, MD 21029



New Form Entry: Comment Form

1 message

rayschreiber@gmail.com <no-reply@weebly.com>
Reply-To: rayschreiber@gmail.com
To: dhmh.envhealth@maryland.gov

Wed, Aug 20, 2014 at 9:07 AM

You've just received a new submission to your [Comment Form](#).

Submitted Information:

Name

Raymond Schreiber

Email

rayschreiber@gmail.com

Comment

just wanted to say I feel that it is a horrible idea...you can never take back what you ever destroy...and the amount of time it takes to repair it is immeasurable! please Maryland, keep our state beautiful:-)



Public comment on the Marcellus Shale Public Health Report

1 message

adele air <adeleair@comcast.net>
Reply-To: adeleair@comcast.net
To: dhhmh.envhealth@maryland.gov

Mon, Aug 25, 2014 at 8:27 AM

August 25, 2014

Dear Governor O'Malley
and Employees of the Maryland Department of Health and Mental Hygiene:

I strongly urge you, Governor, to extend the state's fracking moratorium until the scientific evidence is clear that fracking DOES NOT cause significant harm to the health of Marylanders and our environment.

I am deeply concerned about the content of the Maryland August 18, 2014 report on fracking and the fact that it overwhelmingly shows that fracking can cause significant short and long term health to our people and our environment.

I am deeply grateful that you had the insight to have the study created, however, the time and data that were available for the study is not sufficient to come to a rational conclusion on fracking and that researchers are saying that the comprehensive scientific data on the health impacts of fracking is simply not yet available shows that more time is needed to answer the questions that the current report was able not to address.

The fracking industry seems to be setting itself apart from the construction of the wells needed to perform fracking. Too many of these cement wells have failed in the past and why shouldn't they with the profound pressure they are subjected to. It is the failure of these wells that are causing many of the issues in regards to water and soil contamination.. The report's recommendation of a set back of a mere 2,000 feet from an occupied dwelling seems entirely insufficient.

Legislation does not now deal with, nor the study address the adequate safe disposal of toxic fracking fluids. Entire aquifers in the West that were originally deemed disposable have been hopelessly poisoned by fracking fluids; aquifers that might have been used to relieve some of California's drought. Water is too precious a resource to waste on an energy source that will be burned, once.

And of course there is "climate change" –
Consider this: Since the start of the industrial revolution, humans have burned through enough fossil fuels-coal, oil and natural gas to add 365 billion metric tons of carbon to the atmosphere. Each year we throw up another nine billion tons with an increase of about 6 percent annually. A little over four hundred parts per million - higher than any other point in the last 800,000 years; this on top of the carbon that is naturally released in the atmosphere.

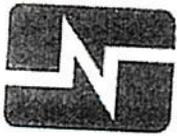
There is an exchange of gases where water (Atlantic, Chesapeake Bay) and air meet. When the carbon dioxide level in the air is unbalanced it is absorbed by our waters, which destroys the proper PH level needed to maintain aquatic life. Currently our waters are 30% more acidic than in 1800.

Once we start a-fracking there is no going back so why not take the time and do it right or not do it at all.

This is a hard decision and a political one, Let us take the high road and make sure that our actions, at least in Maryland, are in the best interest of your children, my children and the future generations that will inherit the consequences of our decisions.

Sincerely,
Adele Air
AdeleAir@comcast.net

adele air
10 Washinton Street
Middletown, MD 21769



**National
Nurses
United**

The National Voice for Direct-Care RNs

Washington DC
888 16th Street NW
Suite 640
Washington DC 20006
phone: 800-287-5021
fax: 202-974-8305

Oakland
2000 Franklin Street
Oakland CA 94612
phone: 800-287-5021
fax: 510-663-2771

The Honorable Martin O'Malley
100 State Circle
Annapolis, MD 21401

Dear Governor O'Malley,

We, the undersigned local, state and national organizations, urge you to protect the health of Maryland residents and demonstrate responsible national leadership by rejecting fracking. New scientific evidence, including the recently released study, "Potential Public Health Impacts of Natural Gas Development and Production," clarifies how shale gas extraction via hydraulic fracturing (fracking) would put the public health and wellbeing of Marylanders at risk.

When you announced the study three years ago, your laudable promise was to move forward with fracking only if it could be accomplished "without unacceptable risks of adverse impacts to public health, safety, the environment and natural resources." Since then, a compelling body of science has emerged that shows this standard cannot be met.

The recently released public health study – commissioned by the Maryland Department of the Environment and the Department of Health and Mental Hygiene, and conducted by the Maryland School of Public Health – found that fracking would pose significant impacts to public health in Maryland. In seven of eight research areas – including air quality, worker health, noise and crime, water quality and cumulative effects – the research team found a high or moderately high likelihood of negative public health impacts.

Further, the study shows that fracking would disproportionately affect vulnerable segments of the population and that most regulations would not minimize risks. Notably, researchers determined that well setback distances would not reduce exposure to negative health impacts in six of the eight research areas. Finally, they noted the unmanageable nature of these impacts and the lack of time and resources to conduct a full health impact assessment for all of Maryland.

They are not alone in these findings. Numerous new studies by leading scientists and public health researchers have uncovered serious risks from fracking. For example, an exhaustive 292-page Council of Canadian Academies report published this summer concludes that fracking is, "not demonstrated to be safe under any current regulatory framework" with "environmental impacts not clearly understood." In deciding to halt fracking, the German Federal Environmental Agency has similarly concluded, "As long as risks inherent in this technology cannot be predicted with certainty and thus controlled, there should be no fracking." These conclusions have been echoed in peer-reviewed studies in many U.S. journals, complemented by hundreds of important recent findings and peer-reviewed studies demonstrating significant risks and harms of fracking.(1)

OCT 09 2014

That's the bottom line: the science – which is quickly revealing new, and often worse, harms of fracking – clearly shows that no regulatory framework can protect public health, water and other important resources from the negative impacts of fracking.

It is not surprising that recommendations of the Maryland study, which suggest strategies for addressing these health impacts should you approve fracking, focus on how to monitor toxic exposures rather than prevent them. We remind you that detection is not prevention, and the mere presence of air monitors and publicly available lists of fracking chemicals do not, by themselves, protect children, pregnant women, the elderly, or any Maryland resident, from harm. Moving forward with fracking under these conditions, in which risks are measured but not eliminated, is tantamount to enrolling citizens as nonconsenting subjects in a *de facto* public health experiment.

We are also mindful that the Maryland study, while addressing many salient areas of concern in the scientific literature, is not exhaustive. Most strikingly, the study focuses solely on western Maryland even though a much greater area of the state would be targeted for fracking. As such, many risks specific to particular geography, geology, demographics and other factors have not been examined. Additionally, some relevant impacts—risks stemming from flooding and the fate of toxic wastewater—were not addressed at all. Nor did the scope of the study include possible public health issues in upstream communities, such as those located near silica frac sand mining and processing operations. (Silica dust is a proven cause of both lung cancer and silicosis.) The Maryland study does not capture the evidence for dangerous levels of benzene in the urine of gas field workers nor the finding of a higher prevalence of self-reported respiratory and skin problems among people living near gas wells; these results were published after the Maryland study was released.

In short, the Maryland study provides more than sufficient imperative to say no to fracking in Maryland on the basis of the negative health impacts it predicts. On the grounds that the study likely underestimates these risks due to limitations of scope and time, the justification and imperative for rejecting fracking is even greater. Hence, your mandate to determine whether fracking could be done without harm to public health has been answered: it cannot.

Now we urge you to take a decisive stance for the people of Maryland, in line with the science, by saying no to fracking. Instead, protect Maryland's important natural resources and set the stage for greater investment in renewable energy, the power of the 21st century. The eyes of the nation are watching, imploring you to protect public health and set a shining example for the rest of the country.

Sincerely,



When you consider introducing HVHF to this rural community, you must assess the negative consequences that will occur. Western Maryland is an isolated local without the advantage of adequate healthcare system that are predominate in the Washington metro area. Even, without acknowledging the actual dangers that may occur if fracking is introduced to the region, we know that there will be an extreme increase of traffic. Numerous trucks carrying toxic chemicals, will be traveling down rural roads. You can count on accidental chemical spills, and the stirring up of dust and gravel. Consequently, expect a monumental increase in respiratory decease and many other related health problems.

Another issue is the effect on the local economy. The tourist industry is the major source of income for Western Maryland residents. This area is famous for its pristine wilderness, enjoyed by many vacationers, and revered by environmental activists.

Is the need for HVHF that great that we can risk the disruption of the livelihood of the citizens of this region, and the destruction of a beautiful wilderness area?

From: hlast1@verizon.net

Sent: Tuesday, September 09, 2014 9:06:25 PM

To: governor.mail@maryland.gov

Subject: Contact Gov Form [Environment Issues] Chemical Disclosure when Fracking for Natural Gas

NAME

Howard Last

ADDRESS

6473 Skyward Court

Columbia, Maryland

21045

Phone Number: 410-381-8478

Original Message:

Dear Governor Oâ?TMalley;

We are writing to ask you to support a common sense proposal on chemical disclosure in the event that Maryland authorizes the extraction of natural gas through a process of known as hydraulic fracturing. Our proposal is designed to protect the health of Maryland families and to bring transparency to the oil and gas industry.

Our proposal has six important elements:

1. Chemical formulas and other agents injected into our environment must not be subject to disclosure restrictions under trade secret regulations.
2. Drilling operators must report the chemical ingredients and concentrations they use to a publicly accessible on-line database managed by the Department of Health and Mental Hygiene (DHMH).
3. Drilling companies must provide comprehensive data to DHMH, including toxicological profiles and epidemiological evaluations of chemicals and agents used in the production of natural gas, in addition to information on chemical changes that may occur as a result of the hydraulic fracturing of the well, including information on chemical reactions to other chemicals or substances.
4. Maryland would establish a process to ensure that health professionals could expeditiously obtain and share information needed to treat patients and to report public health concerns.
5. Maryland would prohibit non-disclosure agreements between drillers and local residents that restrict the ability of residents to discuss environmental or health issues associated with natural gas production.
6. Hydraulic fracturing companies would pay for the costs of these programs through permitting fees.

We applaud the Maryland Department of the Environment (MDE), Department of Natural Resources (DNR) and Department of Health and Mental Hygiene (DHMH) for working closely with the various interest groups in the development of best management practices (BMPs) for hydraulic fracturing in Maryland. However, the draft BMPs continue to create unnecessary barriers to understanding the potential health risks caused by the injection of hydraulic fracturing chemicals into the environment.

The risks posed by these chemicals are not hypothetical. A hydraulically fractured gas well typically requires between 60,000 and 100,000 gallons of chemical additives to be injected into the ground. Some of these chemicals are known or suspected carcinogens, endocrine disrupters, neurotoxins, or otherwise toxic to humans. In many instances, there is little or no information on the health effects of the chemicals being used. Evidence indicates that hydraulically fractured wells are leaking at unacceptably high rates, and these leakage rates will increase over time. We appreciate your attention to this issue and hope that you will support this common sense proposal.

Sincerely,

Howard Last

October 3, 2014

The report of potential hazards and already experienced hazards described in earlier studies and cited, be they in air pollution, water contamination and hazards to human health, frighten me a great deal. I intend to take a biking excursion in Western Maryland this fall and being in nature, cycling, hiking and camping is one of the most important aspects of my life. I would want to know that we are protecting our Maryland natural treasures, so that all people can enjoy them for many, many generations to come. Of course the livelihoods and health of the current residents of our westernmost counties should not be sacrificed, and the possibility of having jobs and having a healthy life are not at all mutually exclusive. If we work to have green energy sources used and produced in those counties and other counties, service jobs and new jobs in emerging green energy companies and state agencies can be created. We don't have to make the residents there feel that they must choose between jobs and health. That is also true for the people of the state of Maryland in general.

I also am very concerned for the people who often end up taking jobs in toxic environments. The study did not address the health risks of the likelihood of increased methane in the environment as one respondent noted. The very necessity of so much monitoring and attempts to safeguard underground water sources by separations in boundaries makes it painful to contemplate. Doesn't all this indicate that cleaner available sources of energy should be used and extractive activities be avoided? If the health of the residents will need so many armies of health workers to arrive to offset the hazards, doesn't that signal that fracking should not be approved?

MONTGOMERY VILLAGE, Md., July 30, 2013 – In the last few years the word “fracking” (or “frac”) has entered the common lexicon. It stands for the practice of fracturing underground formations to ease the production of gas, as the public understands it. Technically the practice is called “Hydraulic Fracturing” and has been practiced for many years in oil and gas production.

After an oil or gas well is drilled, the producing formation has to be “enhanced”. This is done in part by injecting fluids at high pressure to create fissures that allow the oil and gas to flow with more ease. This practice has been exempted from Federal Regulations due to the political and economic power of the oil and gas industry. In fact, when Congress passed the Safe Drinking Water Act (SDWA) in 1974, it gave EPA the authority to regulate injection into underground formations, but specifically excluded oil and gas production including hydraulic fracturing.

Similarly, gas wells, whether in coal or shale formations use the same techniques. The gas is usually held in tight formations that usually also contain water. The only way to extract the gas is to remove the water by creating fractures in the formations that eventually also allow the gas to flow. On December 2010 EPA completed a report on the impacts of producing gas from coal formations. This was used as the bases for not regulating the practice. Under the so called “[Halliburton loophole](#)”, hydraulic fracturing was excluded from any regulations by the Federal Government.

EPA has been ordered by Congress to conduct [additional studies](#) to determine the potential damage to ground water from hydraulic fracturing. This was prompted by reports of ground water contamination attributed to hydraulic fracturing. These studies are due to be completed next year.

Regulation

In fact, the regulation of oil and gas with regards to its potential contamination is the prevue of the states. In most cases the state agency that is responsible for the management of natural resources is given the task to protect ground water from the development and production of these resources. Many have called this arrangement a conflict of interest as the agencies derive a significant portion of their budget from the production of oil and gas.

Engineering

Engineers will tell you (I know, I am one), that if a well is drilled and completed properly, there is no chance for contamination of ground water.

The facts are that when you drill a deep hole through several formations using data that needs to be interpreted, it is a gamble. The data used to determine the safe way to drill are developed by remote sensing. That is, data points are developed by surface or borehole instruments that use sound or other physical agent to determine the characteristics of the formations. These then are interpolated into existing geological “maps”. While these techniques are marvels of engineering, they are not infallible and depend heavily on the interpretation of the operator doing the test. Faults and other characteristics may be missed or misinterpreted. Holes left from exploration or historic production may also be ignored or forgotten.

The actual fracturing of the producing formation may also cause problems. Without any ground truth data, confining formations may also be fractured and mineralized water and gas could migrate. There is also some evidence that either the [disposal](#) of injection of fluids from dewatering operations or the actual [hydraulic fracturing](#) may cause earth quakes.

Well completion

The completion of the well could also go awry. The ring formed between the hole and the metal casing has to be filled with cement to provide support and to prevent gas migration or cross contamination of aquifers. Cross contamination of aquifers happens when there is a conduit between a mineralized aquifer and a fresh water aquifer. In a recent documentary video, [Gasland 2](#), the researchers found using industry service provider records that about five percent (5%) of the cementing jobs failed. While the information in the video was cryptic, when a cement job fails it means that the cement did not return to the surface. This doesn't necessarily mean that there would be contamination; it only means that relative engineer certainty is lost. The well may leak, or there may be gas migration or cross contamination of ground water. Assuming that only a portion of them will actually allow migration, since the number of the gas wells drilled is in the hundreds of thousands, we could have ground water pollution crises.

Summation and other facts

Pollution of ground water is possible as part of the historic oil and gas exploration and production and the relatively new coal and shale gas extraction processes. 60% of this planet's potable water supply resides underground. There are also other possible effects like earthquakes.

Pollution of ground water is very difficult to find, monitor and determine cause. It is also very expensive to investigate.

The burning of natural gas instead of other fossil fuels has been promoted as a way to reduce greenhouse gases. However, accidental release of the gas could have a [worse](#) effect on climate change than carbon dioxide.

So far episodes of gas intrusion into water wells have been confined to places near the actual drilling and operations. The number of people affected is relatively small.

Most of the country is benefitting from the abundance of cheap natural gas and the employment that these activities provide.

Ergo:.

Chances are that very little will be done by the Federal Government to address environmental effects. President Obama has already said so. This is nothing new; we have turned a blind eye to traditional oil and gas exploration and production and their impact on the environment for almost 100 years.



Excellent care close to home

Please be informed that as the leader of Garrett County Memorial Hospital, I raise concerns about lifting the moratorium on Unconventional Natural Gas Development (UNGD), otherwise referred to as hydraulic fracking. The concerns I raise center around the fact that Garrett is identified as a Medically Underserved Area (MUA) as well as a Health Provider Shortage Area (HPSA). The County of Garrett has a medically underserved population that is particularly vulnerable in that the mortality rate for preventable cancers is already high. The mortality rate for breast and colorectal cancer is 25% higher than the rest of the nation and 15% higher for prostate cancer.

In seven out of eight broad categories of UNGDP associated hazards, the MIAEH research team found there would be a high or moderately high likelihood of negative public health impacts from UNGDP, including local air quality, substance abuse, harm to water quality, excessive noise, along with cumulative effects, not to mention that the chemicals used in hydrofracking are known carcinogens. It is incumbent upon this industry to approach the community with transparent information about the processes and chemicals used in such processes.

The information available, along with the regulatory surveillance structure has insufficient capacity to accommodate the development of UNGD in Maryland. As a public health leader in the community, it is not clear what the long term effects would be to public health. Furthermore, I stand firm that Maryland would benefit by waiting until the industry proves how to do this safely and with improved technology in such a way that there is not unmitigated risk placed upon the community.

Mark Boucot, MBA, FACHE
C/O Garrett County Memorial Hospital
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Oakland, MD 21550
301-533-4173