



October 3, 2014

PUBLIC COMMENTS ON THE PUBLIC HEALTH STUDY OF THE MARCELLUS SHALE

The Maryland Environmental Health Network wishes to submit the following comments to Maryland agencies with regard to the Marcellus Shale public health study. Our overarching concern is that the negative health effects identified are not eliminated by implementing the recommendations of the Maryland Institute for Applied Environmental Health nor by the proposed Best Management Practices of the Maryland Department of the Environment.

To proceed with Unconventional Natural Gas Development and Production (UNGDP) at this time, in the belief that Maryland has established a gold standard that adequately protects human health and the environment, would be a mistake. The major message of the MIAEH report is that we cannot conduct drilling at this time in a safe manner.

1. **Science needs more time:** Maryland has achieved a landmark accomplishment, as the only state that is seeking to use science as the guide in determining whether and how UNGDP can take place safely in our state. We urge Maryland agencies to consider the comments and recommendations of the group of environmental health experts and public health professionals who met on September 12 to review the MIAEH report.
 - We attach the report of that symposium as part of our comments.
 - Continuing to be guided by science, Maryland should acknowledge that there is not adequate information to indicate whether and how UNGDP can be done safely at this time; therefore, a decision should not be made.
 - Calls for research into the health effects of UNGDP are now coming from academia, industry, and government. We attach a list of these recent calls, which indicate that Maryland will have new information to work from within several years.

2. **Feasibility & Implementation:** Maryland agencies must complete the steps of the Health Impact Assessment process, not for fidelity to that model (as it was never formally adopted) but because the most critical question provoked by the MIAEH report is: How will these recommendations be implemented? This question needs to be answered as part of the determination whether Maryland should allow UNGDP, *not afterwards*. Two mechanisms are need – an interagency task force and a panel of expert advisors.
 - An *inter-agency task force* that includes DHMH, MDE, DNR, and DLLR (MOSH) should be established. It should be constituted according to Open Meeting laws and include designated observers from industry, advocacy, and community groups, with standing to participate in defined tasks.

- This task force should undertake implementation planning as an essential step in determining *whether* the recommendations of the MIAEH report are feasible and *whether* they will constitute adequate health protections.
 - The healthcare infrastructure recommendations call for: convening committees; tapping community members for volunteer work; monitoring UNGDP activities, insurance coverage, and tax revenues; and training medical personnel. The recommendations do not specify if or how these activities will be funded. The burden should not be on the community.
 - Costs should be quantified and mechanisms for industry to cover these costs must be developed as part of the implementation plan.
 - Maryland should appoint *a panel of experts* to advise the inter-agency task force; this panel should be paid advisors with scientific credentials and no ties to industry.
 - These steps should be conducted with the same degree of transparency and accountability that was evidenced in the conducting of the health study process.
3. **Ethical Action:** If Maryland proceeds with UNGDP, vulnerable populations such as children and gas field workers, communities in Garrett and Allegany counties, as well as people throughout the state will be harmed. This is the message of the health study. Some harms cannot be avoided, either because industry technology at this time is inadequate (well cement and casing failures; diesel exhaust from trucks; lack of safe disposal options) or because of lack of regulatory structures and monitoring capacity (inability to enforce regulations, industry non-compliance, etc).
- Those most at risk must be fully informed and offered compensation.
 - A compensation fund from industry must be established and funded before permits are approved.
 - County agencies must receive technical assistance and funds to set up citizen monitoring programs for early detection of harm, and citizen complaint handling systems.
4. **Specific Problems Remaining in spite of Best Practices:** The nature of the negative health effects that are itemized by MIAEH makes it clear that the proposed Best Management Practices being developed by MDE, even if revised based on the health study and the risk assessment, cannot adequately protect the health of the Maryland public or the environment on which our wellbeing depends. Maryland must conduct further study of the following issues, because the health effects that could result are potentially severe and could affect large numbers of people, and because no Best Practice has yet been demonstrated in practice to result in sufficient protection:
- Birth Outcomes:** MIAEH cites peer-reviewed studies that have found adverse birth outcomes (including congenital heart and neural tube defects) associated with worsening air quality around well pads. However, the report does not include recommendations to address adverse birth outcomes. Establishing a birth outcomes surveillance system is an important recommendation (under cumulative exposure/risk), but it only allows the problem to be documented. No mechanism for preventing adverse birth outcomes is identified.
- Chemical Disclosure Laws:** The proposed BMPs written by the Maryland Department of the Environment allow industry the option to claim chemical formulas as trade secrets. MIAEH questions the legitimacy of claims of trade secrets and concludes that “public risk should outweigh commercial concerns especially where the potential risks are created by the trade secret claimant.”

- Toxicological profiles should be submitted for each chemical used and include potential health outcomes, routes of exposure, reactions with other chemicals used in the fracking process and chemicals commonly found in shale formations.
 - Adequate information including chemical mixtures used in the fracking process must be disclosed to medical professionals.
 - A Maryland ban on non-disclosure agreements should be implemented so that citizens, doctors, and public health professionals would be able to report all incidents of chemical exposure and evaluate trends in health outcomes related to “fracking” chemical exposures.
5. **Topics Omitted by MIAEH:** The following important issues are among many that were not addressed by MIAEH or were beyond the scope of the health study, but must be addressed in order to mount an effective public health response:
- How will Maryland finance the implementation and enforcement of both MIAEH recommendations and MDE proposed best practices?
 - How will the impacts on integrity of food sources, including possible toxic exposures of production animals and wildlife (hunting being a source of food supply) be assessed and addressed?
 - What system of incident reporting and tracking of waste disposal tracking (to address illegal dumping) will be created and how will it be funded?
 - How to address unknowns: UNGDP is a still relatively new and growing industry. In the rapidly evolving field of research about its health effects, we can be sure there are threats and risks that have not yet emerged and/or been studied.
 - Maryland policy-makers must ask: How do we address what we don’t know that we don’t know?
6. **State-wide – Systemic Assessment of UNGDP:** The health study does not address the full range of the UNGDP process and its potential health impacts on Maryland communities. These include the health effects of pipelines, traffic accidents outside of western Maryland, compressor stations, and downstream contamination and downwind pollution.
- Pipeline concerns include the presence of radon in the gas, and the decay products of radon that remain in the pipelines.
 - Compressor station concerns include emissions, continuous noise, and truck traffic. The location of compressor stations is not subject to adequate community and regulatory controls, as the Myersville case demonstrates, since this site is located relatively near to a school.
7. **Climate Impact:** Maryland must conduct an assessment of the health impacts of climate change and an analysis of the greenhouse gas impact of UNGDP. This analysis should be conducted in time for the legislature’s consideration of the renewal of the Maryland Greenhouse Gas Reduction Act in 2016. It should include addressing the opportunity cost of not developing an equivalent amount of infrastructure for renewable energy (regulatory, industry, local government capacity, etc.).

Climate impacts on health are being well identified by DHMH and it is inappropriate to treat a critical policy decision such as UNGDP, which blends health and energy policy concerns, without addressing climate.

Attachments:

- **Calls for Research**
- **Symposium Report**

**CALLS FOR RESEARCH ON
UNCONVENTIONAL GAS DEVELOPMENT AND ITS HEALTH EFFECTS**

AUGUST 2014

The following list indicates that many national groups -- from government, academia, and industry -- have recently called for more research into the health effects of hydraulic fracturing.

Calls from Government:

1) Trevor M. Penning, Patrick N. Breyse, Kathleen Gray, Marilyn Howarth, and Beizhan Yan Environmental Health Research Recommendations from the Inter-Environmental Health Sciences Core Center Working Group on Unconventional Natural Gas Drilling Operations July 2014 <http://ehp.niehs.nih.gov/1408207/>

This is a working group of the National Institutes of Health. “Conclusions: Exposure and health outcomes research related to [Unconventional Natural Gas Development Operations] is urgently needed and community engagement is essential in the design of such studies.”

2) The Health Effects Institute (HEI) June 2014 workshop: an independent research body focused on air pollution and funded in equal measures by the US Environmental Protection Agency and the motor vehicle industry.

HEI's intent is to "work toward development of a strategic scientific research plan to better understand potential impacts of unconventional oil and gas development". The stated reason for this effort is that “questions remain about potential impacts of unconventional oil and gas development on people and the environment. While oil and gas development is well underway in the Appalachian region, it represents only a fraction of what is expected in coming years.

Calls from Academia:

1) Seth B. Shonkoff, Jake Hays, & Madelon L. Finkel Environmental Public Health Dimensions of Shale and Tight Gas Development *Environmental Health Perspectives* <http://dx.doi.org/10.1289/ehp.1307866> 16 April 2014

“Conclusion: Despite a growing body of evidence, a number of data gaps persist. Most importantly, there is a need for more epidemiological studies to assess associations between risk factors, such as air and water pollution and health outcomes among populations living in close proximity to shale gas operations.”

2) Adgate, J. L., Goldstein, B. D., & McKenzie, L. M. Potential public health hazards, exposures and health effects from unconventional natural gas development. *Environmental Science & Technology*. 24 February 2014 <http://pubs.acs.org/doi/abs/10.1021/es404621d>

“Overall, the current literature suggests that research needs to address these uncertainties before we can reasonably quantify the likelihood of occurrence or magnitude of adverse health effects associated with UNG production in workers and communities.”

3) Jerome Paulson, MD Medical Director for National & Global Affairs; Director of the Mid-Atlantic Center for Children's Health & the Environment; Child Health Advocacy Institute *Children's National Health System* and Professor of Pediatrics and of Environmental & Occupational Health *George Washington University* – public letter to Christopher Abruzzo, Secretary, Pennsylvania Department of Environmental Protection 30 June 2014

“As a physician with significant expertise in environmental health, I want to point out that there is no information in the medical or public health literature to indicate that [Unconventional Gas Exploitation] can be implemented with a minimum of risk to human health. “

Calls from Industry:

1) American Petroleum Institute: Request for proposals – due August 29, 2014

“This Request for Proposals (RFP) solicits research proposals designed to quantitatively assess community exposure from operations related to unconventional resource development (URD), ... evaluate whether a causal relationship exists between community exposure to URD operations (including well construction, hydraulic fracturing and well production) and selected health outcomes. ... We anticipate that this work will lead to publications in peer-reviewed journals...”

2) Alan J. Krupnick, Raymond J. Kopp, Kristin Hayes, and Skyler Roeshot The Natural Gas Revolution: Critical Questions for a Sustainable Energy Future March 2014

This report published by Resources for the Future (RFF) identifies 24 critical questions that need to be addressed because: “It is time to take stock of what is known, what is uncertain, and what is unknown about the economic and environmental consequences of the natural gas revolution.”

Critical Question # 22 is: “The public is concerned about potential health effects from shale gas development, yet there are few studies that adequately demonstrate the impacts. How has public health (both mental and physical) been affected by shale gas development? What potential future impacts exist? And how could such impacts be reduced through policy?”

The report states that “... conflicting studies, unavailable data, an evolving regulatory landscape, and public concern could hamper the potential for economic benefits and environmental improvements from natural gas” and states that “experts at RFF aim to undertake research in as many areas as possible, working with other researchers and knowledgeable stakeholders who are also seeking to reliably resolve many of these ‘known unknowns’.”

*Submitted by The Maryland Environmental Health Network
As part of public comments on the public health study of the Marcellus Shale*

REPORT FROM A WORKING SYMPOSIUM ON THE MARYLAND PUBLIC HEALTH STUDY OF MARCELLUS SHALE

SEPTEMBER 12, 2014

REPORT DATED 9/26/14

Overview: On Friday September 12, 2014, the Maryland Environmental Health Network, the Chesapeake Chapter of Physicians for Social Responsibility, and the Alliance of Nurses for Healthy Environments co-hosted a symposium to assess the findings of the study, “Potential Public Health Impacts of Natural Gas Development and Production in the Marcellus Shale in Western Maryland” (the “Maryland Health Study”) by the University of Maryland Institute for Applied Environmental Health (MIAEH). The goal of the symposium was to develop recommendations on next steps for Maryland policy-makers with respect to issues raised in the study, not to achieve consensus or to record comments in detail. As was understood by the participants, the workshop did not attempt to achieve consensus or to record comments in detail.

This report summarizes the comments of the panelists and the outcome of small group discussions. A list of panelists and participants are found in the Appendix. Affiliations of individuals are for identification purposes only and do not reflect the endorsement of their institutions or agencies. Dr. Bernard Goldstein, professor emeritus and former dean of the School of Public Health at University of Pittsburgh, moderated the event. Forty people attended, including public health officials, researchers, graduate students, health advocates, and environmental regulators.

Although the comments of the symposium participants ranged across many topics, there was general agreement that: **(1)** this is a valuable study conducted with limited resources and time, **(2)** the state of the science on health effects of hydrofracturing is still inadequate for determining whether hydrofracturing can be done safely, **(3)** science is emerging that suggests health issues associated with various aspects of gas and oil well development that need to be better understood, **(4)** and that therefore, as a consequence, Maryland should not proceed with hydrofracturing at this time. However, the general view of the participants was that, in the event that Maryland does go forward with Unconventional Natural Gas Development and Production (UNGDP), there must be increased transparency in the industry, including prohibitions on trade secrets and other non-disclosure agreements that restrict the ability to report, publicly discuss, and research health issues associated with hydrofracturing.

Study Overview: The Maryland Health Study draws upon several methods of a rapid Health Impact Assessment (HIA) including: scoping, assessment of baseline health and potential health impacts of shale gas development, and a final report with recommendations for public health responses. The MIAEH research team reports seeking input from a wide range of stakeholders through public meetings, publication of a draft detailed scoping document, and individual discussions with interested parties.

In 7 out of eight broad categories of UNGDP associated hazards, the research team found there would be a high or moderately high likelihood of negative public health impacts from UNGDP: on local air quality, the healthcare infrastructure, worker health, community cohesion (due to increases in crime, traffic, substance abuse, and sexually transmitted diseases), harm to water quality, excessive noise, and the cumulative effects from all of the above.

MIAEH presentation: Dr. Donald Milton, director of the MIAEH, and Dr. Amir Sapkota, a member of the study team and MIAEH faculty, provided an overview of study methods and responded to several of the issues raised in the comments by peer reviewers. Dr. Sacoby Wilson of the study team and MIAEH faculty was also present. Dr. Milton mentioned climate impacts as an important topic omitted from the study due to resource and other constraints but deserving of analysis. He emphasized the importance of surveillance to establish baseline health status and monitor for negative health outcomes and acknowledged that risks to water quality were largely unknown due to absence of data – not presence of data showing no harm. During the question and answer section it was pointed out that contrary to the report, the leading cause of cancer death in Allegany and Garrett counties and also all of Maryland is lung cancer and lung cancer needs to be mentioned.

Panelist Comments: Seven panelists presented their responses to the MIAEH study and made suggestions for areas where Maryland policy-makers should focus their attention when addressing health issues associated with UNGDP in Maryland. There was general agreement on the valuable contribution that MIAEH made through this work. Panelist comments ranged across the breadth of topics covered by the MIAEH study, summarized here by topic rather than by speaker, and including points made in response by MIAEH team members and audience participants:

- **Air:** Companies should pay for air quality (AQ) monitoring; real time AQ monitoring and controls are readily available and it is realistic to demand that the industry use them to implement real time controls. Ultrafine particles should be included in the monitoring. Monitoring should not be limited to averages, as peak exposures can be extreme and cause acute effects that would be missed if using only averages. Focus should be on monitoring of human exposure to air pollutants from UNGDP. Monitoring should not be limited to NAAQS (National Ambient Air Quality Standards, limited to 6 pollutants regulated by EPA) , since many Hazardous Air Pollutants are emitted by UNGDP processes
- **Water:** For both surface and ground water quality monitoring, there is no equivalent early detection technology, and the extent of the impacts could be local or they could travel throughout a watershed outside the two counties being considered for UNGDP. A good starting point for monitoring water would be the disclosure of chemicals added to hydrofracturing water.
- **Setbacks:** A one-size-fits-all setback will not suffice because geology, topography, technology variables that even industry cannot predict, and other factors will dictate the safe distance for each site. Some combination of a site-by-site assessment and a minimum setback may be needed. Developing a methodology for site-specific setbacks will be challenging but should be conducted.

- **Site Accountability:** Accountability at well sites is currently difficult due to the number of steps in the process and number of contractors. Maryland should hold one company legally responsible for all activity at a site.
- **Unknowns:** Chemical, biological and physical exposures and their health effects can occur at many stages and toxicity of many hazardous agents to which people are being exposed has not been established. Health scientists need more time to study long term health effects of UNGDP due to the industry being new, and health data not being collected from the start.
- **Silica:** Silica exposures for workers can be controlled by wearing masks, but not for community at large. Crystalline silica particles are very small and remain airborne for extended periods (days) in outdoor air, and may cause people living, working or attending schools near these facilities to be at an increased risk of exposure. Health effects take decades to manifest
- **Local Involvement and Preparation for Impacts:** Preparedness programs must be developed, as counties must anticipate that people will be calling for help, and with questions or complaints. Local food supplies could be affected, for instance hunters donate deer meat to food banks, which could be contaminated. Help to inform the communities by starting discussions now in town hall meetings about the hazards and how to manage requests from the community and interactions with industry.
- **Local food supply:** Could be affected, for instance contaminated deer meat, which hunters donate to food banks. Start discussions now in town hall meetings about how to handle these things.
- **System Impacts:** Permits and regulations should take into account the context of how the individual site relates to the larger environment and community settings. Impacts will not be felt exclusively in these two counties, but throughout the state, both because of infrastructure development and because of environmental impacts, such as increased air pollution from site development and transportation. The state should consider the entire system in which gas drilling is taking place and its impact on Maryland.
- **Timeframe:** Use data from Pennsylvania and West Virginia to project the impacts in Maryland, e.g., potential increases in foster care, emergency room visits, and high school drop outs. Look beyond the short term to a 10-year horizon- the health, social, environmental, and economic impacts in 10 years.
- **Ethics:** If decisions are made not to protect people, be transparent about it. Do not hide information. Consider the ethics of these decisions. Remember the moral obligation to consider how pollution generated at sites will affect others. Vulnerable populations are often not observed, counted, or included in our data. Establish a risk profile of the industry for various outcomes, for example “it is estimated that due to benzene exposure 1 in 100,000 excess cancer cases may be observed.”
- **Radiation:** Radiation effects are a legitimate and rational concern. Analysis of radon data will be coming soon from PA and should be used to evaluate risk. In New York, radon in pipes is a concern. The toxic daughters of radon (or decay products) are of concern, so aging the gas until the radon deteriorates is not a solution. Again, health effects such as lung cancer are

manifested in the long term and are well known. We need monitoring of exposures through air, water, soil and food.

- **Advisory Committee:** Create an advisory committee drawn from all stakeholder groups including government, local and state, industry, and community, not just Western MD, and work out an implementation plan for the recommendations. Transparency and involving all stakeholders is crucial for policy-makers to navigate through a controversial area.
- **Cumulative Risks:** Cumulative risks have to be properly considered. For instance, in the case of being surrounded by wells and potentially exposed over a series of years. Be aware that new issues will be emerging – benzene study, radon data, and more. There is no standard method for a cumulative risk assessment; these methods must be developed and applied.
- **Role of Industry:** Industry must take responsibility for data collection and management. They must show “before” data as well as “after” data, and be responsible for disproving claims that UNGD has caused effects. Maryland should establish and ensure monitoring, early detection and standardized data collection. Also, Industry must pay for externalities, such as health clinics, social impacts, etc

Following the comments of the panel and discussion with participants, the meeting broke into four group discussions. Each group was charged with the same task: to choose priority issues and make recommendations on next steps for Maryland policy-makers. The responses of the small groups took a variety of forms.

Small Groups:

Group 1 Recommendations:

- Look at more systemic downstream impacts such as compressor stations
- Eliminate non-disclosure
- Specify uses for fees and severance taxes; monitoring, infrastructure, dealing with accidents
- Get baseline data – and understand the background before you start (ex. compressor station)
- Focus on morality and the ethical factors associated with the final decision
- Conduct the GIS mapping that was promised to evaluate extent of exposures related to proximity; this will be a valuable tool for regulatory and community empowerment
- We do not have enough information to make a sound scientifically based decision

Group 2 Recommendations:

- Collect more data – get background data for Maryland, and from other states
- UNGDP does not appear to be safe enough to approve at this time
- Projected new health care costs associated with UNGDP must be quantified
- Make a single entity responsible at each well pad for environmental compliance and safety
- Forbid non disclosure of hydraulic fracturing chemicals
- Assure that there will be adequate staff to inspect, monitor and enforce new regulations
- Clarify to industry, regulators and policy-makers that lack of data does not mean there is no risk

- Conduct a cumulative risk analysis – do not disregard multiple risks on the basis of lack of methodology
- Limitations of report should be listed
- Consider schools and children and exposures – setbacks from schools
- Lung cancer data is needed and should be tracked, given the radon, diesel exhaust, and other nuclides issues

Group 3 Recommendations:

- Assure complete transparency every step of the way: no non-disclosure clauses, trade secrets, and confidentiality agreements. Assure ready availability of all pertinent data
- Make standards be based on full impacts – look at best/worst case and most/least likely – and do not allow costs to be externalized
- Require industry to pay for bio-monitoring, health care costs, road repairs, and all damages
- Solve the water problem before allowing hydraulic fracturing – industry needs to achieve no casing failures

Group 4 Recommendations:

- Ban open pits, require recycling, manage flow-back for air emissions and leakage, prevent produced water from entering wastewater treatment plants.
- Gather both baseline health data in communities where gas development is planned as well as data on how to mitigate risks associated with UNGD
- Pass HB 1030 to prohibit non-disclosure agreements and require information on chemicals used
- Require the industry to contribute to a restitution fund or implement a severance tax to cover health care costs, road repairs, and state-wide health surveillance systems
- Check standard practices used in other states and adjust to MD
- Continue the moratorium while all this is being put in place

After the reports from small groups, participants briefly considered the path forward.

We face BOTH an incomplete information set AND an incomplete regulatory and surveillance structure with insufficient capacity for dealing with the development of UNGD in Maryland. What criteria will tell us when we have both in place? There was some consensus that Maryland must insist that industry study and solve the water problem, provide data, and contribute to funding a public health system equipped to monitor and detect for health impacts. 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 UNGDP. Maryland would benefit by waiting until the industry proves how to do this safely and, with improved technology and gas prices rising, we would benefit economically while protecting the health of our families and communities and engaging in environmentally sustainable practices.

Dr. Cindy Parker ended the meeting with summary reflections on the caliber of the conversations, and the opportunity before Maryland to learn from other states, before we make decisions. 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.

Appendix – List of Participants & Speakers

Moderator: Bernard Goldstein, MD, University of Pittsburgh Graduate School of Public Health

Panelists:

John Adgate, PhD, University of Colorado School of Public Health
 David Brown, ScD, Southwest Pennsylvania Environmental Health Project
 Elaine Hill, PhD, University of Rochester School of Medicine and Dentistry
 Michael McCawley, PhD, West Virginia University
 Keshia Pollack, PhD, Johns Hopkins Bloomberg School of Public Health
 Pouné Saberi, MD, University of Pennsylvania Center of Excellence in Environmental Toxicology
 Brian Schwartz, MD, Johns Hopkins Bloomberg School of Public Health

MIAEH Study Team Members Present:

Donald Milton, MD
 Sacoby Wilson, PhD
 Amir Sapkota, PhD

Other Symposium Participants

Dr. Lesliam Quiros Alcaia, Maryland Institute of Applied Environmental Health
 Dr. Christine Berg, Johns Hopkins Medicine
 Dr. Ann Bristow, Maryland Marcellus Shale Advisory Commission
 Jacob Bueno de Mesquita, MD Institute for Applied Environmental Health-UMD
 Veronika Carella, MD Children’s Environmental Health Coalition & Maryland Environmental Health Network
 David Costello, Maryland Department of the Environment (observing)
 Dr. Stephanie Fowler, National Cancer Institute
 Dr. Robyn Gilden, University of Maryland School of Nursing
 Lara Hall, Blaustein Philanthropic Group
 Rachel Hess-Mutinda, Maryland Department of Health & Mental Hygiene
 Elisabeth Hoffman, ClimateHoward
 Katie Huffling, RN, Alliance of Nurses for Healthy Environments
 Dr. Richard Humphrey, Johns Hopkins School of Medicine & Maryland Environmental Health Network
 Robert Kutchman, Allegany County Health Department
 Julie McDill, Mid-Atlantic Regional Air Management Association, Inc.
 Chelsie Miller, Maryland Department of Health & Mental Hygiene
 Megan Milliken, Town Creek Foundation
 Dr. Clifford Mitchell, Environmental Health Bureau, Dept of Health & Mental Hygiene (observing)
 Katey Mote, Baltimore City Health Department
 Dr. Cindy Parker, Johns Hopkins Bloomberg School of Public Health & Chesapeake Physicians for Social Responsibility
 Sara Rasmussen, Johns Hopkins Bloomberg School of Public Health
 Kristen Rawlett, University of MD-Baltimore
 Rebecca Rehr, Maryland Environmental Health Network
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Betsy Ringel, Blaustein Philanthropic group
Crystal Romeo, Maryland Department of Health & Mental Hygiene
Rebecca Ruggles, Maryland Environmental Health Network
Dr. Ana Rule, Johns Hopkins Bloomberg School of Public Health
Jim Swanger, Allegany County Health Department
Veronica Tinney, Children's National Health System
Dr. David Vanko, Towson University
Tim Whitehouse, Chesapeake Physicians for Social Responsibility
Dr. D'Ann Williams, Johns Hopkins Bloomberg School of Public Health
Stacy Woods, Johns Hopkins Bloomberg School of Public Health