

Minutes of November 25, 2014, meeting of the Marcellus Shale Safe Drilling Initiative Advisory Commission

Approved: December 8, 2015

The Commission held its 34<sup>th</sup> meeting on November 25, 2014, at Allegany College in Cumberland, MD. In attendance were Chairman David Vanko and Commission members Senator George Edwards, Delegate Heather Mizeur, Commissioner James Raley, Commissioner William Valentine, and Commissioners Ann Bristow, Steve Bunker, Jeff Kupfer, Cliff Mitchell, Paul Roberts, Nick Weber, and Harry Weiss. Commission staff Dr. Christine Conn and Brigid Kenney were present, as well as other agency personnel and members of the public.

Chairman Vanko called the meeting to order. The minutes of the November 5 meeting were adopted unanimously without change.

The next agenda item was an update by Matt Rowe, Deputy Administrator of MDE's Science Services Administration, on the comments received on the draft risk assessment. He clarified that the word "localized" in the risk matrix referred to a geographic area in the vicinity of the activity, and not to population density. He pointed out that the Ricardo risk assessment that was commissioned by Citizen Shale and the Chesapeake Climate Action Network, also defined as a moderate consequence "Localized environmental effect" and gave examples of a discharge or incident resulting in potential effects "in the vicinity of the release point or incident" or ongoing effects "in the vicinity of a site." Mr. Rowe said that he did not have a precise distance in mind, but that it would be more like 1,000 feet than a mile.

Mr. Rowe said that he had received comments from 5 of the seven people who had agreed to review the risk assessment and that they represented a good cross section of opinion. In addition, he received comments from several agencies and organizations and 18 members of the public. He also received a few thousand emails voicing opposition to fracking but not actually commenting on the draft. Commissioner Weber noted that he didn't see that we had requested comments from the Society for Risk Assessment, even though he had given the staff names. Commissioners Bristow and Weber said that they would like to see DNR and the State Highway Administration (SHA) as commenting agencies, since their comments were posted online.

Mr. Rowe identified common themes raised by the comments:

1. Failure to address climate change
2. Potential to decrease property values/economic downsides
3. Surface and groundwater impacts from spills, releases or well failure
4. Critical to have adequate compliance/enforcement.
5. Impacts from Explosions/emergency response capability
6. Need for more risk categories, more use of insufficient info., or too much use of N/A
7. Failure to address on-site worker risks
8. Failure to consistently address cumulative risks

10. Traffic severity underestimated
11. Need to clarify uncertainty in assessments
12. Overall underestimation of Risks.
13. Best practices not in regulation, so can't assume
14. Recommendations for additional specific best practices
15. Certain risks and UGWD phases (i.e., well plugging and abandonment, refracturing) not fully explored or not explored at all.
16. Potential for valley air stagnations
17. Inconsistency in document formatting, presentation, and consistency both across RA and between the Exec Summary and RA.
18. No differences in risk ranking between scenarios
19. More clarity needed around how risk conclusions were made
20. Insufficient data risks not appropriately highlighted or reflected in the risk ranking

Mr. Rowe drew a distinction between risk ranking and the decision whether a risk is acceptable. The team performing the risk assessment ranked the risks; it did not decide which risks were acceptable. He explained that the timeline for completing the work is condensed. The risk assessment teams are reviewing the comments and identifying which, if any, would require a material change in the risk assessment. These will be brought to the attention of Commission staff before they finalize the draft Final Report. The final risk assessment will probably be complete in mid-January and the response to comments will be posted.

Chairman Vanko noted that the list of risks to be evaluated had been completed a year ago and asked if any of the commenters had identified additional risks or risk pathways. If so, we should note them for the record. Mr. Rowe agreed. Commissioner Bristow said that it would be helpful to see a list of the "original" 65 risks. She said that agriculture and livestock issues should be evaluated, as well as the impacts on the food chain and companion animals.

Commissioner Weber commented that if insufficient information is available to evaluate a risk, the precautionary principle would dictate that the unknown risk be rated as high; also, what does Not Assessed (NA) really mean? Mr. Rowe said that NA often meant that the risk did not occur in the phase of work being considered, or was otherwise not significant enough to be assessed. Mr. Rowe said that the final risk assessment would more clearly indicate where there was insufficient knowledge. Commissioner Bristow argued that identifying them is not enough – they should be ranked high because of the precautionary principle.

Chairman Vanko then opened up the discussion to take questions and comments from the public.

Jim Guy asked if the State would consider adding a new risk category and evaluating it. Mr. Rowe said that would be difficult.

Rebecca Ruggles asked about the comments on the surface water and ground water impacts. Mr. Rowe said that commenters thought the risks were higher than they had been ranked.

Nadine Grabania said that the SHA comments raised lots of issues about weight limits, road geography, etc. How will those agency comments inform the process? Mr. Rowe said that the SHA comments were mostly supportive of the BMPs and did not contain anything that would change the risk ranking. Ms. Grabania said that the Garrett County Shale Gas Advisory Committee is going to make recommendations to the County about roads. Shouldn't the risk be rated as higher because there is no guarantee that the County will act on the recommendations? Mr. Rowe said the risk assessment was done assuming that the best practices were in place. The CGDP could address some traffic and road damage issues. Chairman Vanko noted that this discussion demonstrates how critical the proposed practices are for managing the risks; if the practices are not implemented, the risks may be higher.

Jim Guy said risk analysis is just one part of risk management. He suggested that the State set up a risk review board to evaluate risks, monitor effectiveness, and implement additional practices if necessary. Mr. Rowe said that the baseline monitoring and continuing monitoring will help manage the risks.

Commissioner Roberts asked if the Departments asked for additional money for a risk assessment. Mr. Rowe said that the Departments got a deficiency appropriation for monitoring, but that we had not asked specifically for money for a risk assessment. Commissioner Roberts asked "What good is the final risk assessment if it is not finished until after the third report? Mr. Rowe assured him that the State would make sure that any changes to the risk assessment are communicated to the staff, who will take it into account before issuing the final report, even if the final risk assessment document and response to comments are not released until mid-January. The final risk assessment and the final report will be sent to the Governor's office.

Commissioner Weber asked how the risk assessment would change if the best practices were not fully implemented. The Ricardo risk assessment did not assume best practices.

Commissioner Bristow noted that DNR made comments on waste handling – how do we evaluate those comments? Mr. Rowe said that DNR pointed out that certain waste management options are allowed. MDE evaluates the waste management options on a case-by-case basis and is not required to approve an option. For example, the current regulations allow land farming if it is approved after a review of the particular facts, but that means that it is not automatically approved. DNR, not being a regulatory agency, may not have understood the process and did not have the same comfort level MDE has with the process. Commissioner Bristow expressed her concern about the large amounts of wastes and said she is not comfortable with individual decisions. Mr. Rowe said that is why we require permits for activities. The system works as long as the Department has sufficient resources. Commissioner Weiss said waste must be classified on a case by case basis: test it and apply science. Maryland has testing procedures that can evaluate the waste. Certain oil and gas wastes are exempt from the federal hazardous waste laws, but the states are free to regulate them. They can be tested for the ignitability, corrosivity, reactivity, and toxicity characteristics.

Commissioner Weber said that Maryland does not have experience with this type of waste. He referred to a Rozell and Reaven study from 2012 that found that evaluated five pathways of water contamination and found that wastewater disposal had a much larger risk than the others. Commissioner Roberts asked whether DNR formally requested closing the hazardous waste loophole for oil and gas wastes. Ms. Kenney said MDE explained why it did not intend to lift the exemption in the Response to Comments section of the Interim Final Best Practices Report.

The next topic on the agenda was the impact of shale gas drilling on the health care infrastructure. Ms. Kenney went over a memorandum that had been distributed in advance of the meeting. It contained information about the rate of fatal and non-fatal injuries among oil and gas workers. Applying those rates to the peak shale-gas employment years for Allegany and Garrett Counties resulted in a prediction of less than 1 fatality even in the years of highest employment. Non-fatal injuries peaked for Garrett County at 39 per year among gas workers and 43 among workers in spinoff jobs. For Allegany County, the peak was 15 nonfatal injuries among gas workers and 16 nonfatal injuries for workers in spinoff jobs. The memorandum also noted that tourism resulted in over 1 million person-trips to Garrett County in the year August 2008 to July 2009, demonstrating that the County had some experience with sudden increases in population. The Environmental Health Division of the county health departments might experience a significant increase in calls relating to testing of drinking water wells, odors, noise, etc. if drilling were to occur. This would burden the staff.

Rodney B. Glotfelty, RS, MPH, the Health Officer for Garrett County, was present to discuss the health care infrastructure. Mr. Glotfelty said that Maryland has better local health departments than most of the other states where shale gas development occurs. In his opinion, Garrett and Allegany Counties have a very robust health care system. He noted that logging has a rate of 86.4 fatalities per 100,000 workers, compared to 27.5 for oil and gas workers. Agriculture and coal mining also have high fatality rates. The Garrett County health care system is able to deal with traumatic injuries, and it has skilled orthopedic surgeons. He noted that on a big weekend, 5,000 to 10,000 skiers may come to Garrett County. Ski injuries and even fatalities occur.

Mr. Glotfelty disagreed with the statements in the MIAEH health study that the Western Maryland health care infrastructure would not be able to serve the influx of shale gas workers without potentially negatively impacting public health. In his opinion, the system will be able to assimilate the expected new workers. He noted that Mountain Laurel Medical Center, a Federally Qualified Health Center, has a location in Oakland and is about to open a new facility in Grantsville. Local physicians are actively seeking to add patients to their practices and the hospital is recruiting new doctors.

Mr. Glotfelty acknowledged that the fire and ambulance services, because they are volunteer-based, are fragile. This is a need that has been identified in the community health survey. Strategies are being developed to reduce the number of emergency calls that aren't really

emergencies, and to engage high school students, but ultimately the system will have to include more paid staff. He said Garrett County had lost its Health Professional Shortage Area designation in 2012, but regained it because of the transient tourist population. In response to a question from Delegate Mizeur, Mr. Glotfelty said that the county had not lost its designation as a Medically Underserved Area and is still eligible for federal funding.

Commissioner Roberts said that Garrett County should expect to receive a lot of calls from citizens and that Mr. Glotfelty should seek funding and plan for that and also develop a tool kit for citizens who need assistance. Mr. Glotfelty said that capacity within the Environmental Health Division had been freed up by recent changes in the subdivision rules that reduced the number of perc tests done. He said that severance tax money could help fund the needs during peak years, but that he thinks severance tax money should be used for business development, not government functions. Commissioner Roberts pointed out that severance taxes will not be collected until gas is actually produced and sent to pipelines. Mr. Glotfelty noted that in Battlement Mesa, Colorado, the county funded a new position in anticipation of the need.

Commissioner Weber asked how citizen complaints about air pollution and odors would be addressed. Mr. Glotfelty said that responsibility for responding to those types of issues, and noise complaints, should be shifted to the industry. His office currently fields similar complaints, particularly about wood-fired boilers. He said the State should handle enforcement if an odor emanated from a drill site. In response to a question from Commissioner Kupfer, Mr. Glotfelty said that the important point is that the system can handle the types of injuries that might occur. He said that the system could manage another 50 injuries a year and pointed out that Memorial Hospital in Oakland is a Level III Trauma Center and that there is a Level I trauma Center in Morgantown, WV.

Mr. Glotfelty said that MIAEH documented an uninsured rate of 14%, but that 1733 people signed on to obtain insurance after the Affordable Care Act passed, and that he thinks that the rate is now lower. He said that many injuries will be handled under Workers' Comp and that well-paid gas industry workers may be able to pay for their medical care.

Commissioner Bristow said that monitoring for air pollution will be very important. Mr. Glotfelty agreed that the mountainous terrain can lead to pockets of higher pollution. Commissioner Bristow said that there is a need for monitoring inside homes and that industry will not fund that. Mr. Glotfelty said that the studies in the western United States are probably not representative of conditions in Garrett County and that the setback requirements here should reduce the problems of odor and air pollution. Commissioner Roberts pointed out that we're stuck with the setbacks in the existing regulations unless new regulations are adopted. Mr. Glotfelty noted that the existing setback is 1,000 feet from an occupied building. Commissioner Roberts said some jurisdictions have greater setbacks. Chairman Vanko said that he has pointed out numerous times that topography and inversions are a concern and that the CDP can be used to address this concern. Glotfelty noted that the rate of development is also a factor.

Commissioner Weber asked if the injury and fatality rates quoted included truck traffic accidents. Dr. Mitchell clarified that they did, if the truckers were employed by the oil and gas industry, but it might not include other truck drivers. The injuries are those reported under OSHA. Commissioner Weber pointed out that these statistics did not include members of the public injured or killed in traffic accidents with trucks. Mr. Glotfelty said it was important to plan the truck traffic to avoid times when school buses would be on the road.

Commissioner Weber asked if we could calculate the injury rates for automobiles. Ms. Kenney said that SHA had provided some data on the occurrence of traffic-related deaths and injuries for Western Maryland, but there was no way to use that data to predict changes that might occur if gas development occurs.

The public was invited to offer additional comments.

Rebecca Ruggles said that the evaluation of health infrastructure did not address the need for “environmental health professions” who could diagnose individuals in the community who might be injured by air or water pollution from gas development. Mr. Glotfelty said that Western Maryland has a small population, and that some specialists might not be available locally. He described a tele-medicine program that works for Garrett County for child psychiatry.

Robert Paye spoke in support of Mr. Glotfelty’s position that the health care infrastructure is robust. He said there is no reason to think that all of the jobs will be filled by outsiders. He provided a letter from Barry Ronan, President and CEO of the Western Maryland Health System, which expressed his opinion that health care providers in Allegany and Garrett Counties have more than enough capacity to meet the estimated increased demand and still provide excellent service to all the people in their service area.

Nadine Grabania said she has seen reports that public health system infrastructures in shale areas can be compromised if the system is not prepared, and mentioned Tioga County specifically. She urged the Counties to evaluate those findings. Lastly, she said that many of the workers will be coming in from out of state.

Jim Guy said that what he was hearing was not consistent with the MIAEH study – would Dr. Mitchell comment? Dr. Mitchell said that MIAEH gathered data, but didn’t get everything and may not have had the most recent information. He said MIAEH did not consider the best practices, so they were evaluating the worst case – the outcome you might anticipate if the risks are not mitigated. Mr. Guy asked if anyone had first hand experience or had talked to anyone who had. Mr. Glotfelty said that the county is close to areas where intensive shale development is occurring. He keeps current and has not seen any reports of a public health crisis. He has attended meetings and talked with people with first hand experience.

Dave Ramsey said he had worked in emergency response for years, and that issues about responses to calls had improved, but that manpower is still an issue and additional gas workers

will exacerbate the problem. Have we looked at it? Ms. Kenney answered that the MDE emergency management director had consulted with the counties and they understood the need to plan.

Michael Hartman asked if any studies had looked at the health care impacts caused by the workers rather than the industry. Mr. Glotfelty said that there are studies that show socioeconomic impacts that will inform the counties' plans. If the question is whether the system is resilient enough to address sexually transmitted diseases and bar fights, the answer is yes.

Senator Edwards said that SHA has records of accidents and can act when road improvements are needed. He suggested that we might find data about the impacts on roads near a deep coal mine that opened in Grantsville two years ago.

Following lunch, Dr. Conn gave a presentation on the draft final report. Delegate Mizeur asked how much money it would cost to implement the recommendations. That has not been determined, but the agencies will be talking about setting the right permit fee. Chairman Vanko asked if the Departments want a recommendation from the Commission. Delegate Mizeur said it has to be in the regulations.

There was a brief discussion about one company in the west that is mixing and pressurizing fracking fluid at a central site and piping it to well pads as much as a mile away. Chairman Vanko said that he did not think the pressure could be applied from a central location. Commissioner Roberts said that a centralized location just shifts the impacts.

Commissioner Roberts asked about monitoring plans. Ms. Kenney said that monitoring could be very site-specific and could be handled case by case. Commissioner Roberts said that monitoring is very important for increasing the public's comfort with gas development.

Commissioner Weber asked if seismic testing would require a large scale clearing of trees. Chairman Vanko said seismic testing usually does not require much clearing.

Commissioner Kupfer asked for clarification of the recommendations for legislation. Ms. Kenney indicated that the recommendations were only for things that could not be done by regulation. For example, the current statutory enforcement provisions need to be improved, but that would require legislation.

Commissioner Kupfer said that he could support, or at least live with, most of the recommended best practices; however, some of the recommendations are not "best practices" because they are unproven. He cautioned against blanket statements that all the best practices must be implemented to make hydraulic fracturing safe.

Commissioner Weber said that Hannah Wiseman, commenting on the draft risk assessment, noted that there was little data that the best practices work. Dr. Conn said that if new techniques are developed, we will need to adapt.

Senator Edwards said that he thinks it is not appropriate to send proposed regulations to the Joint Committee on Administrative, Executive and Legislative Review in December. AELR may not even be able to muster a quorum. He said that, out of fairness to the legislature, MDE should wait at least until the first of the year so AELR can give the proposal fair consideration.

Commissioner Bristow asked about TENORM. Ms. Kenney said that the Department would have to specify the test methods and thresholds. Commissioner Bristow asked what other bills might be needed. Ms. Kenney said a SOPA.

Jim Guy asked why the Commission would recommend moving forward with gas development when it is evident that it will cause harm. Chairman Vanko said that the State will make the decision and that the Commission is not unified. Will the Commission vote? Commissioner Roberts said a vote would be meaningless.

Commissioner Weiss suggested that there may be some things that the Commission could agree on. He described the issue as “We are considering a new kind of oil and gas development. What is the best way to regulate it if it happens?” He suggested statements like “The present regulations are inadequate” or “the State needs a new regulatory program that should be based on the best practices recommended in the report.” Delegate Mizeur said there are additional options. She suggested that the Commission might say that there is too much we don’t know so we should study it more before deciding. She herself does not feel that she has enough information to say that Marcellus Shale gas development should go forward. Commissioner Weiss said that it will be an iterative process; as we learn more, we could revise the regulations. Commissioners Bunker and Kupfer supported the ideas that we need regulations and that the current regulations should be updated. Commissioner Weber said the Commission should review the regulations.

Senator Edwards said that the regulations need to be updated, that AELR may have suggestions on how to update them, and that the regulations will always have to change to keep up with new technology. Some people think the proposals are too strict, others not strict enough. The next Governor and the Secretaries of the Departments will implement the program. He thinks the Commission should endorse the concept of new regulations. If the industry starts slowly and ramps up, MDE might have enough people to start. If we need more money for the program, maybe we can use severance tax money. He reminded everyone that this is a property rights issue. Citizens own their mineral rights and they need the companies to develop the resource because the companies are the only ones with the capital to drill. The citizens will profit and there will be jobs, too.

Dr. Mitchell said that not everything we recommend may be accepted. We should identify the most important provisions, or state what the Commission supported. Chairman Vanko said that



enforcement and baseline monitoring are very important, although he is not sure 2 years of baseline data are necessary. Commissioner Weiss mentioned that the New York Times had done a good series on enforcement (or lack of it) in the Bakken Shale. Commissioner Weber asked if Maryland had an Environmental Bill of Rights like that in Pennsylvania's Constitution. Commissioner Weiss said that only two states do, and Maryland is not one of them. In Pennsylvania, it is a grand policy, but it must be implemented through statutes and regulations.

Jim Guy asked where he could find more detail on the structure of the CGDP process. Dr. Conn directed him to the Interim Final Best Practices Report. He then asked if pipes for water are a good idea, why not require pipes for transmitting the gas, too. He was told that gas is transmitted through pipes – that's how the companies do it. He then said that landowners need advice on dealing with landmen and gas companies. He was told that Maryland's attorney general had issued a paper for landowners and that Penn State had helpful information on its site. Robert Paye said that the Garrett County Bar Association had done a presentation with the attorney general about two years ago.

Mr. Paye then asked about the cumulative impact of the CGDP coupled with all the permitting. Will a company be able to appeal the Department's decision on the CGDP. He finds it incredible that the cumulative effect of the location restrictions and setbacks is to put 85% of the surface off limits for well pads. He wants the Commission to think about the effect of the recommendations – will any exploration or production even want to come to Maryland?

Michael Hartman asked if the state could restrict water withdrawals in times of drought. The answer is yes.

Gina Angiola, a retired physician, said that the setback of 1,000 feet was inadequate because respiratory problems have occurred within 1,500 feet, and a well blowout caused damage to vegetation at a distance greater than 1,500 feet. She also objected to the trade secret provisions. Industry should not get to decide what is a trade secret; physicians should not have to keep the information they get confidential and public health research will be stymied. Commissioner Weiss asked why this industry and not all others? Dr. Angiola said that she would apply it to all industry – people should get information and warnings about anything that could potentially harm humans. Dr. Mitchell noted that this industry is unique in that it has actively sought to restrict dissemination of information in other states. Rebecca Ruggles and Dr. Angiola said that the rights of the public to know should prevail. Commissioner Bristow said that by recognizing trade secrets we would defeat public health research. Ms. Kenney pointed out ways that public health research could be done and published within the regulations we are suggesting, and noted that all monitoring data must be disclosed to MDE. Dr. Mitchell suggested that examples of how the regulations would play out in real life situations would be helpful.

Paul Durham asked whether the Environmental Policy Act has any bearing on these regulations. That statute is quite limited and does not apply to the promulgation of regulations. He asked if a Surface Owners Protection Act could be introduced. That is a possibility.

Michael Hartman said that the USGS has identified other shale deposits in the State. Is the Commission addressing them, too? Chairman Vanko said this was a Marcellus Shale Commission.

Jim Guy asked about the use of concrete pipes. Chairman Vanko explained that the operators monitor the cement and the cementing process.

Billy Bishoff said that when this process started, the risk to ground water was the most important issue. We've gone far afield in dealing with air pollution, noise and exploratory wells.

Larry Wolfe said that he had significant experience with construction and unions. Some people have good jobs with good benefits working on gas pipelines and Marcellus Shale wells in West Virginia and Pennsylvania. These are good projects that bring economic growth. We could decide to stop development so we don't have to build more schools or expand highways, but we would be losing opportunities. Truck drivers with Commercial Drivers Licenses are regulated and there are safety programs. He thinks the Counties should consider requiring that a certain percentage of employees must reside within 50 miles of the job site. He noted that some best practices aren't really best practices. He is concerned about the risk rankings because they may not be objective. Maybe the noise and dust associated with gas development will be perceived as a comedown from country living, but are they worse than downtown Oakland or Cumberland? We violate the rights of mineral owners if we make gas development too difficult. We should manage the risks. Coal mining and logging have risks, too.

The meeting adjourned at about 3:30.