

Minutes, April 20, 2012, meeting of the Marcellus Shale Safe Drilling Initiative Advisory Commission; approved on May 18, 2012.

The Commission held its seventh meeting in the Merle S. Elliott Conference Center Room 213 at Hagerstown Community College. In attendance were Chairman David Vanko and Commission members Shawn Bender, Steven Bunker, George Edwards, John Fritts, Peggy Jamison, Heather Mizeur, Dominick Murray, James Raley, Paul Roberts, William Valentine, Nick Weber, and Harry Weiss. Also in attendance were staff of state agencies and members of the public.

The Commission expressed its gratitude to Hagerstown Community College for hosting the meeting once again. Chairman Vanko called the meeting to order at 10:00 am. The draft minutes of February 27, 2012 were approved unanimously without change.

Chairman Vanko gave an overview of the agenda and introduced Dr. Dave Brezinski, who gave a presentation on the geology of the Marcellus Shale in Maryland. Questions and discussion followed the presentation.

Commissioner Weber asked if there was any risk of earthquakes caused by the injection of water deep underground in Maryland. Dr. Brezinski replied that there is little chance for that in Maryland. He also noted that none have been evident in the Accident storage field. The earthquake in Youngstown, Ohio, was related to ancient faults in the basement rock. Commissioner Roberts asked how much is known about the hydrology of western Maryland. Dr. Brezinski answered that most studies have been done on fresh water, which is shallow: usually less than 500 feet below the surface.

Commissioner Bunker asked about hypersaline water trapped in the shale. The response is that some liquid saltwater is trapped in tiny fractures and that some Marcellus Shale even contains solid halite. In response to a question about the Utica Shale, Dr. Brezinski said that the Utica Shale is about 2000 feet deeper than the Marcellus, formed in a similar way, and is thicker than the Marcellus Shale in Maryland. Dr. Brezinski said that the deeper the shale, the less likely it is to contain wet gas. Chairman Vanko asked Dr. Brezinski to speak to naturally occurring radioactive material (NORM) in shale. Dr. Brezinski replied that radioactive elements tend to be attracted to organic matter and under anaerobic conditions, they get deposited in organic-rich shales and coal. NORM could be present in the flowback from fracturing in the Marcellus Shale, but the data he has seen showed low levels of NORM. Mr. Weber asked if companies could drill into the Marcellus and Utica shales from the same well pad. Dr. Brezinski said the companies hope to do just that.

The next item on the agenda was a presentation on industry practices by Mr. Glen Bengel, a Professional Engineer with extensive experience drilling and cementing wells. He emphasized that constructing wells properly is a moral obligation as well as good business.

He noted that best practices and design criteria are location-specific. The work must be planned, designed, executed, and evaluated. The whole system must be tested. Data are subject to interpretation, so a combination of tests and knowledge about what actually happened at the site is critical to determine if the well was properly constructed. When asked who decides whether the data indicate that the driller can go to the next stage, he said that it varies from state to state. In some areas local regulators review the logs, and regulator review is common when drilling is on federal or state land. In these cases, approval must be given by the regulators who review the data before the work proceeds; e.g., the cement integrity tests may be reviewed before fracing can begin.

Commissioner Valentine asked what happens when defects are apparent; e.g., if data indicate that the cement did not bond properly. Mr. Bengé said that there are repair techniques but that the better alternative is to get it done right the first time. Commissioner Valentine asked about abandonment of wells. Mr. Bengé said that heavy fluids are placed in the well to prevent the gas from rising, or a plug is inserted in the well. Information from the initial cementing guides the plan for abandonment of the well.

Commissioner Mizeur asked if the API standards and guidelines were voluntary and about the degree of compliance. Mr. Bengé said the API publishes guidance but that States could make them mandatory. He said that incidents were often the result of not following the recommended practices. Commissioner Mizeur then asked if these guidelines were reviewed regularly. Mr. Bengé said that the regulations are reviewed regularly to determine what should be adjusted. He said that API sometimes reviews failure analysis, and that API Guidance 65-2 was revised after the failure of the Macondo well.

In response to questions from Commissioner Roberts, Mr. Bengé discussed API Guidance Documents that address issues relevant to drilling generally and hydraulic fracturing specifically. He said these would be a great starting point for Maryland's best practices, but that some won't apply and some may not be stringent enough. We shouldn't adopt anything less stringent than the API Guidance. We must apply sound engineering judgment.

Commissioner Fritts asked if any states had especially good standards and lots of experience. Mr. Bengé said that Texas, Oklahoma, Wyoming, and Montana were good examples. He said that the Colorado regulations were good, but that Colorado defers to Bureau of Land Management standards. Germany and Norway have good programs.

Chairman Vanko asked if Mr. Bengé was familiar with the draft report that the EPA released on Pavilion, Wyoming. Mr. Bengé said that he had seen the cement logs and they "didn't look good" but that you cannot make a judgment from just the logs.

Mr. Weber asked about the extent to which intermediate casing should be cemented: should it be cemented all the way up to the surface? Mr. Bengé said that leaving an area uncemented allows you to monitor the annulus pressure and detect problems. If you

bring the cement all the way to the surface, you have taken a “belt and suspenders” approach, but you have eliminated a monitoring point. Mr. Weber then asked how well pipes were monitored over time with respect to degradation. Mr. Bengé answered that if you install a packer to isolate the annulus and find that the pressure drops, you know something is wrong. He also talked about downhole safety valves, also called Surface Controlled Sub-surface Safety Valves (SCSSV), which operate in a fail-safe mode. That is, hydraulic control pressure used to hold open a ball or flapper assembly will cut off the flow of gas from the well if the control pressure is lost.

Commissioner Mizeur asked Mr. Bengé if he could provide the Commission with copies of comments on the API standards from experts in the industry that call for more stringent standards. Mr. Bengé said yes. He warned, however, that prescriptive regulations will be used as a ceiling by poor drillers. A poor driller who experiences an incident may defend himself by saying “I did everything you said to do.”

The next item from the agenda was the status of the best practices research by Dr. Keith Eshleman. He described the work he was currently doing and his plan to pull together experts from critical disciplines. He plans to identify and review best practices used or proposed elsewhere and make recommendations to the state, including an explanation of the rationale. He plans to hold a forum to gather the most up-to-date information. Questions and discussion followed the update.

There was some discussion of the availability of digital GIS data layers that would be helpful to Dr. Eshleman (these included Maryland geology, locations of karst terrain and underground coal mines, distributions of endangered species and other high-value assets). DNR has some and will provide them to Dr. Eshleman.

Chairman Vanko asked whether API might be able to provide a petroleum engineer to assist Dr. Eshleman. Drew Cobbs said that he would make an inquiry.

Commissioner Weber asked Dr. Eshelman about consulting with other states. Dr. Eshelman replied that he was doing that, and that he was finding very few best practices for some of the activities identified in his work plan. Senator Edwards remarked that the industry techniques will evolve, and that we should use what we have to write regulations and revise them in the future as needed. He also questioned how much money would really be needed to complete the studies.

Commissioner Weber noted that the USGS recommended that New York monitor both deep and shallow wells for contamination up gradient of the well pad, at the well pad and down gradient of the well pad. Drinking water wells are generally not deep wells.

There was some discussion about whether Dr. Eshleman needs additional time to complete his work. After some discussion, the Commission voted in favor of an extension to the end of 2012.

The next item from the agenda was an overview of the 2012 Legislative Session given by Joe Gill of the Department of Natural Resources, and Brigid Kenney of the Maryland Department of the Environment. Among the highlights: the Study Fee bill passed the House but not the Senate; neither proposed Severance Tax bill was enacted; the rebuttable presumption bill passed and is awaiting signature; and no SOPA bill was introduced.

The Study Fee bill would have provided two years of baseline environmental data for about 25% of the streams in heavily-leased areas, and six monitoring wells. Without this study, we are currently monitoring streams at 12 existing sites, and a voluntary monitoring program is on process. One alternative under consideration is to require applicants for drilling permits to conduct baseline studies for one year.

Joe Gill said that in addition to the baseline monitoring, the agencies had estimated that mapping/survey work would cost approximately \$30,000, and that the economic study would cost about \$100,000. Senator Edwards said that, at a minimum, the applicant should have to sample all drinking water wells within a radius around the well for methane and other contaminants.

Brigid Kenney informed the commission that the best practices study being conducted by Dr. Eshleman is being funded with MDE special funds, and the intention was to restore those funds with proceeds from the Study Fee. She noted that a general theme that seemed to influence some legislators was the Maryland need not be more stringent than neighboring states.

Questions and discussion followed the presentation.

Some Commissioners expressed disappointment that the Administration had not pressed harder for the passage of the bills. Commissioner Raley said that the Counties want a comprehensive bill, done right and done soon. DNR and MDE should take the lead and get such a bill passed. In response to a question about why Maryland doesn't just use the API standards, Ms. Kenney noted that Glen Bengé had commented on the need to consider local conditions, which the API standards do not do. In addition, she said, Best Practices are only a part of what the Executive Order requires.

Commissioner Mizeur suggested a moratorium on drilling until the funding for the studies comes through, citing a public opinion poll that suggested Maryland residents across the state favored more research before drilling. Commissioner Bender replied that making a moratorium based on one poll would be ill-advised. Commissioner Bunker asked if MDE had sufficient authority to defer issuing a permit or to deny a permit in the absence of a moratorium. Ms. Kenney briefly reviewed the Department's authority and said that MDE has the authority to withhold the permit if MDE feels the proposed activity poses a threat to the environment and public health. She said that she thought the Department would, at a minimum, need the Best Practices report before it could consider issuing permits.

Commissioner Fritts commented saying that the state did not get the funding it needed from the General Assembly and now it is looking for shortcuts. He asserted that these studies need to be done, and they need to be done correctly. Joe Gill reassured the Commission that funding issues did not mean the Departments were cutting corners.

There was some discussion whether the fees, if the fee bill passed, would have been paid by the industry or the landowners who allow drilling. Senator Edwards said in the real world the money would come out of the land-owner's pocket. Brigid Kenney said that there could be contractual agreements between the company and the land-owner that would allow that money to be considered an expense that was deducted from royalties.

Commissioner Roberts asked Mr. Gill and Ms. Kenney whether the Departments have a close relationship with industry and whether they meet regularly. They answered that they had no regular meetings and probably met more often with environmental groups than with industry.

Senator Edwards reminded the Commission that this is the Marcellus Shale "Safe Drilling Initiative," not the "Don't Drill Initiative." He was disappointed that the Administration had not submitted bills. He suggested that the Commission should look at tapping the Oil & Gas fund to pay for the studies; the money in this fund came from industry.

Commissioner Raley remarked on how important gas drilling could be to the local economy and asked about the Administration's support for the Marcellus Shale bills in the 2012 session. Ms. Kenney said that the Departments had testified in favor of some bills, including the severance tax bill, although the Departments did not take a position on what the tax rate should be. In written comments and testimony, the Departments pointed out concerns about some bills, and in some instances worked with the sponsors to revise the bills.

Commissioner Vanko asked about the possibility of using money in other MDE funds and asked Ms. Kenney to report back. Chairman Vanko asked if the Departments could comment on the idea of using the Oil & Gas fund. Commissioner Mizeur commented that Oil & Gas fund money is still public money.

Commissioner Fritts recalled that when the Commission first started talking about a severance tax, Commissioner Roberts mentioned that the number had to be related to the need. He felt this still had not been done.

Commissioner Raley asked that the next Commission meeting be closer to Garrett County. Staff promised to find locations more convenient to the residents of Garrett and Allegany Counties.

Because the meeting ran late, the Commission did not take public comment; however, some Commissioners remained at the Conference center afterwards to speak individually to members of the public.

The meeting was adjourned at 1:46 pm. The next Commission meeting will be on May 18 at a time and place to be determined.