MINUTES
OIL AND GAS TECHNICAL ADVISORY BOARD MEETING
APRIL 23, 2013

A meeting of the Oil and Gas Technical Advisory Board (TAB) was held on April 23, 2013 in Room 105 of the DEP Rachel Carson State Office Building, Harrisburg.

TAB MEMBERS PRESENT

Burt Waite, Gary Slagel, Arthur Yingling and Samuel Fragale.

DEPARTMENT OF ENVIRONMENTAL PROTECTION STAFF PRESENT

Deputy Secretary Scott Perry, Deputy Secretary Alisa Harris, Dan Lapato, Kevin Sunday, Kurt Klapkowski, Eugene Pine, Elizabeth Nolan, Shamus Malone, Stephen Brokenshire, Joseph Adams, Todd Wallace, Jessica Shirley, Trisha Salvia, Jason Oyler and Darek Jagiela attended from DEP.

INTRODUCTION AND OPENING REMARKS

Gary Slagel informed the meeting that he would be taking up the duties of Chairman Watson in his absence and called the meeting to order at 10:00 a.m. Introductions followed.

DRAFT PROPOSED RULEMAKING, 25 PA. CODE CHAPTER 78, SUBCHAPTER C (SURFACE ACTIVITIES) – PRESENTATION AND DISCUSSION OF DRAFT PROPOSED RULEMAKING LANGUAGE AND TIMELINE

Slagel asked Deputy Secretary Perry to outline what he saw the process for the meeting should be. Perry responded that we would go over changes made to the document since the February 20, 2013 meeting. Several good comments were received between February and April but they raised issues that could not be addressed without the proposed rulemaking process stalling. Perry stated that he'd like to move this document forward as a proposed Rulemaking for the Environmental Quality Board (EQB) in July 2013. He then asked TAB to create subcommittees and workgroups with relevant stakeholders and have additional meetings to discuss the comments that were received since February. Perry said he has received comments from several industry and environmental groups such as Western Pennsylvania Conservancy, Anadarko, PIOGA, Pennsylvania Environmental Council through the Environmental Defense Fund, Marcellus Shale Coalition, and Terra Aqua. Perry hoped to hold these meetings from the beginning of the proposal in July, until finalization, which he clarified will be a multi month process. Slagel said that he'd like to determine what comments are needed to be addressed today and what could be covered in subcommittee meetings down the road. Burt Waite asked Perry about the forms that will accompany the package and if they will accompany it to the EQB in July. Perry responded that they would not be ready at the proposed stage, but that they will be finished before the rulemaking is final. Perry noted one form, the Public Resources Evaluation Form, will require fairly considerable discussion. He reassured TAB that the rulemaking will not be implemented before all required forms have been created. Perry said that up for TAB consideration would be items such as Storage of Brine or Flowback Water in Centralized Tanks, Odor Control Issues at Centralized Impoundments, and Review of Potential Geologic Hazards from Hydraulic Fracturing.

Perry started off with the issues about with tank farms, stating that is currently an option to hold wastewater in a centralized impoundment through an Oil & Gas approval, but if you wish to store it in a tank, you have to use a Waste Management permit. Scott said the Department is looking to amend these rules to incorporate similar storage requirements and permitting for tank farms. Perry said with respect to centralized impoundments, the Department received comments about air quality emissions from

impoundments being a problem, but that the Department hasn't found this to be an issue. Perry did note that the odors that are associated with bacteria and failure to removal hydrocarbons and organic compounds before wastewaters are stored in an impoundment are the root cause, and further regulations around dealing with these issues could help alleviate public concern about air quality issues. Perry questioned if we should contemplate additional provisions more akin to the Department's centralized impoundment measures of a double lined system with leak protection to prevent significant leakage from these impoundments. Perry then said he would want to discuss these changes with TAB before implementing them.

Perry stated he would go through page-by-page with changes to and comments that were received on the proposed rulemaking. Slagel asked about the previous items and if they would be discussed today. Perry said those items would need to be discussed in the subcommittees at a later date. Slagel asked for a clarification on restoration to prior original land use under section 78.65(d)(1)(iii), expressing concern that the standard not be restoration to historic land use. Perry asked if TAB had a recommendation for clarification, to which Slagel replied land use shortly prior to the disturbance, and that change was made.

Perry noted that the Department altered the definition of condensate which was obtained through API, and asked for TAB's review. Slagel agreed that the definition was appropriate.

Slagel asked about the definition of Mine Influenced Water (MIW), and asks about how far the Department is going to be going with the concept of its uses. Perry stated that use of the term "impaired" in the definition related to streams on the 303d list as having been impaired by mine-influenced water, and is intended to provide appropriate storage for particular water.

Slagel raised a concern about the inclusion of "seismic operations" in the definition of "oil and gas operations," citing timeline of development concerns. Perry responded that the purpose for including seismic relates to PPC Plan development, because seismic operations tend to not be aware of their obligations to control erosion and sediment, and the point is to make them aware of their responsibilities.

Perry then said the Department added a definition for "regional groundwater table" to section 78.1 as it relates to the Department's allowance of manipulation of the seasonal high groundwater table but not the regional groundwater table to meet the Centralized Impoundment requirements.

Slagel said they received a comment from an company that defining "regulated substance" with reference to the Act 2 definition could result in fresh groundwater being considered a "regulated substance. Klapkowski noted that the term "pollutional substance" was less clear than "regulated substance." While it is possible that fresh water could be sometimes considered a regulated substance, it would be an unusual circumstance. Klapkowski said that at least "regulated substance" was a statutory definition, so the General Assembly agreed that it was a proper definition for remediation situations.

Yingling asked about the definition of "temporary pipelines," which states that temporary pipelines "transport materials used for the development of a well site." Brokenshire said this language refers to situations such as when the company builds a pit and fills it with fresh water prior to the construction of the well site. Perry agreed that the Department will remove this provision.

Perry noted that two definitions – "unconventional formation" and "unconventional well" – were deleted from the prior draft of the proposed rulemaking because the Act 9 regulations went final since that time and those definitions were changed by that rulemaking.

Yingling asked about the definition of "water source", as there appears to be a contradiction between the first and second paragraphs of the definition. Nolan stated that the language in the definition is from the 2012 Oil and Gas Act and that they are not contradictory. She added that the term is only used in the

water management plan section of the regulations, and if paragraph (2) waters are used for completion and not discharged, a water management plan is not required. Perry stated that the impact on the environment is zero in such cases, so no analysis is required.

Perry discussed several changes to section 78.15. First, Perry noted that electronic permit application submission will be available before the regulations are finished. Section 78.15(a) will make this electronic submission mandatory and Perry expressed the importance to the Department of electronic permit application submission in terms of data accuracy and efficiency.

Perry discussed a change to section 78.15(e) relating to the Pennsylvania Natural Heritage Program (PNHP) which allows the use of an initial well's PNHP clearance for all wells on a single well pad.

Slagel asked for clarification of the Department's position on the parent and subsidiary relationship that would trigger inclusion in reports under section 78.15(c). Perry responded that this would be a "substantial control" standard but would be willing to discuss this in more detail. Perry outlined the changes related to submission of this information in that section, tying it to the permit process and eliminating the need to report if new permits applications are not submitted.

Slagel raised a concern about the use of the phrase "species or critical habitat" in section 78.15(d), which differs from the 2012 Oil and Gas Act's use of the phrase "habitats of rare and endangered flora and fauna and other critical communities" in this context. Perry acknowledged the ongoing discussion surrounding these requirements and stated that the Department must protect threatened and endangered species and their critical habitats under Federal law. "Critical habitat" is a defined term under that law and the habitats are designated as part of threatened and endangered species protection. Perry explained that the PHNP process is how the Department meets that obligation. Perry referenced the language in section 78.15(f)(iv) that states "other critical communities means special concern species," which has been consistent Department policy across the board. This provision allows for the PNHP process to be used, but does not necessarily require it. Perry gave an example of an operator who is in an area where timber rattlesnakes are found. Rather than submit to the PNHP process every time a permit application is submitted, the operator can use their prior knowledge to state to the Department that the timber rattlesnake is present and here's how we will address that concern, which will provide adequate protection but avoid unnecessary process.

Slagel raised a concern about the "may adversely impact" language in section 78.15(d) and what it meant. Perry responded that for PNHP-covered species, it would be a PNHP "hit." For species of special concern, which do not have the same level of protection, the PNHP process could be used, but does not need to be accessed. The 2012 Oil and Gas Act requires the Department to protect "other critical communities" and if that phrase does not mean "special concern species," he did not know what it could mean.

Yingling asked if the Department could define the term "corridor" as it is used in section 78.15(f)(1)(ii)? Perry responded that corridor is a defined term and those state and national rivers are clearly marked on the appropriate maps, are available to operators and have been used for many years.

Slagel asked whether the distances listed in section 78.15(f) relate to the vertical wellbore only? Perry responded that he was correct and we are asking folks to describe the pad and access road. Clarifying language was added to this section.

In section 78.15(f)(1)(vi), Slagel asked for clarification that this paragraph only applied to public water supplies. Nolan responded that he was correct, and that the definition of "water purveyor" in section 3203 of the 2012 Oil and Gas Act limits the scope of this paragraph.

Slagel asked how readily available are the "functions and uses of public resources" under section 78.15(f)(3)(ii)? Perry responded that there should be a discussion with the agency controlling the resource to determine what the functions and uses consist of for the particular public resource. He added that there should be a discussion leading to a strong guidance document on how to conduct these reviews. Slagel also asked whether there was a definition for "probable harmful impact" as used in section 78.15(g)? Perry responded that the term comes directly out of the statute, and that the Department considers there to be a similar standard as the legal standard of preponderance of the evidence. Regarding the same subsection, Yingling raised the question who determines "the optimal development of the oil and gas resources"? Perry responded that this is a balancing test, and that the Department will take economics into account and the value of the public resource versus the value of the oil and gas resource both need to be considered when imposing permit conditions

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Perry noted relating to section 78.51(d)(2) that there had been some back and forth about the meaning of the term "exceeded" when discussing water supplies and the requirement to provide a replacement supply after impact. The Department's position is that if a water supply was better than drinking water standards prior to drilling and is impacted, the operator must meet that higher standard when replacing the water supply, not merely meet drinking water standards. The bottom line is that the water supply owner gets the better of the pre-existing water quality or drinking water standards when the water is replaced.

Next, Perry described changes to section 78.52(d) based on TAB's comments concerning the timing of submission of water supply survey results to the Department and the supply owner. The updated regulation only requires submission within 10 days of the completion of the entire survey. The issue of providing the landowner or water purveyor their individual results prior to the completion of the survey was raised and changes will be made to reflect that correction. In section 78.52(c), "certified" has been changed to "Pennsylvania accredited" to reflect the requirements of 25 Pa.Code Chapter 252.

Waite asked a question what the meaning of "within 1,000 feet of the wellbore" meant a radius around the wellbore? Perry responded that it did and acknowledged that this could be a significant area but noted that there are ways to limit the effort required including database review. The issue of liability for plugging was also discussed, along with situations where landowners refuse access or fail to respond to survey requests.

PUBLIC COMMENT

Bonita Hoke provided comments on behalf of the League of Women Voters of Pennsylvania (LWV). In addition to expressing general support for strong regulation of the environmental impacts of oil and gas resource development, the LWV expressed support for specific sections of the proposed rule. LWV also had several specific suggestions for changes. First, extend the timeframe for public agency response in section 78.15 from 15 to 30 days. Second, include the term "site-specific" throughout the regulations to avoid boilerplate solutions. Third, extend the consideration of industrial impacts beyond simply public resources. Fourth, expand fencing requirements. Fifth, notifications should be buttressed with additional documentation, such as video recording. Sixth, increase setback distances. Seventh, extend long-term monitoring of restored well sites and disposal sites. Eighth, mandate testing of wastes for TENORM prior to disposal. Ninth, the LWV does not support the change in terms from "pollutional substances" to "regulated substances." Tenth, regulations should reflect limitations currently in place on public lands, such as prohibition of pits or the use of aeration. Finally, the LWV opposes those proposals relating to use of brines without consideration of cumulative impacts. LWV also suggested changes to the binding/financial assurance sections of the rulemaking.

DRAFT PROPOSED RULEMAKING, 25 PA. CODE CHAPTER 78, SUBCHAPTER C (SURFACE ACTIVITIES) – CONTINUED DISCUSSION OF DRAFT PROPOSED RULEMAKING

Returning to the TAB comments, Waite asked whether sections 78.55(a) and (b) require the same report? Perry responded that (a) is intended to capture oil and gas operations other than well operations.

Slagel asked if an approved "aboveground modular structures" under section 78.56(a)(2) would need to be approved again before being broken down and used at another site? Perry responded that no additional approval would be required prior to reuse.

Relating to section 78.58(f), Slagel asked for clarification of the Department's waste characterization requirements, especially in terms of when and how many samples must be taken and suggested that this be added as a workgroup topic to be discussed parallel to the rulemaking process. Perry agreed and also suggested that adding flowback characterization on a geographic basis and over time from initial stimulation be discussed. Finally, Perry suggested that a discussion about addressing storage of this waste in tanks versus centralized impoundments, hydrocarbon removal and odor control be a part of the discussion.

Section 78.59b(e), Slagel asked why the "20 inches above seasonal high groundwater" is a part of the freshwater impoundment requirements? Perry responded that separation between surface and ground water is important to protect water quality, and that these are engineered structures and "floating the liner" would be a significant problem. Slagel followed with a question regarding how the seasonal high groundwater table would be determined and documented? Perry stated that in certain sections we require a person with specific technical training to make this determination, but in all cases the operator would decide the appropriate methods for the particular impoundment and document that determination.

At 12:00, the TAB broke for lunch. The meeting was called back into order at 12:47 p.m. Perry continued to go through the changes to the draft proposed rulemaking since the previous TAB meeting. TAB members had questions concerning section 78.59c. Slagel asked why professional registered engineers were excluded from preparing site characterization and groundwater testing systems in subsection (j). Perry replied that those activities were considered more the practice of geology than engineering but will take the comment under advisement. Yingling echoed API comments and asked whether the Department considered other protective options for monitoring well casing standards in paragraph (i)(4). Fragale has been using protective jersey barriers. Perry stated that this proposal was developed with the help of an individual who has installed many groundwater monitoring wells and wants to take it back to him for input.

Regarding section 78.61(b), Yingling asked about how the Department views the issue of what is above the casing seat and what is below. Nolan replied that the defining point is the end of the surface casing, which is a defined term in section 78.1.

In section 78.64a(h), Slagel suggested adding "their" between "ensure" and "integrity" in the first sentence. This change was made.

Section 78.65(d), Slagel asked whether we should make reference to drilling the "final well" on a pad as a condition starting the clock on restoration. Perry noted that the concern is addressed in a later sentence. Slagel noted that there should be an allowance in section 78.65(d)(1)(ii) to allow operators to make a

demonstration that the listed areas are in fact pervious. The suggestion was noted for further consideration. In section 78.65(d)(1)(iii), Slagel suggested adding a paragraph (F) to specifically include "workover operations (including restimulation), diagnostic assessment and testing, and emergency response." The Department intended to have safety included here so emergency response will be added and the others considered.

Slagel commented that in section 78.65(g), a copy of the restoration report should only need to be provided to the surface landowner upon request. Perry indicates that subsection (g) represents a compromise from requiring landowner consent prior to allowing for disposal of drill cuttings on site.

Section 78.66, Slagel asked why there is a need for the Spill Policy after this section is adopted. Perry responded that the Spill Policy is needed until the regulation is finalized to cover spills and releases in the interim. Waite asked about chloride-contaminated soils, and whether we could take it before the Cleanup Standards Scientific Advisory Board to develop the soil standards? Perry says he will make sure the issue gets passed to the CSSAB for consideration.

Regarding borrow pits and section 78.67, Slagel expressed a concern that the regulation may preclude using one borrow pit for multiple sites. If a good borrow pit is established it should be allowed to be used for multiple sites. Perry replied that the point is to have borrow pits be used not just for multiple sites but multiple operators as well, with a single operator identified for purposes of bonding and restoration.

Next discussed was section 78.68. Slagel noted that most if not all the requirements are addressed in Chapter 102 and asked why it is being replicated. Stephen Brokenshire says it's the Department's understanding that the pipeline operators wish to be under the jurisdiction of the Oil and Gas program. Therefore, the purpose is to identify the program's jurisdiction. Perry added that some of these provisions are contemplated in Chapter 102, but in these regulations it's given better specificity. Slagel asked if these are meant to complement 102, and give a scope of authority in 78 to the Oil & Gas Program. Nolan noted that operators would still be required to comply with additional provisions in Chapter 102.

Waite raised a concern about limiting the time operators must retain records under section 78.68b(m). Brokenshire discussed other program's requirements. The Department agreed that an ending point should be added and would develop an appropriate timeframe.

Section 78.68a, Yingling indicated that the use of additives in horizontal directional drilling and the need for Department approval should be clarified. Perry agreed and stated that additives must be approved prior to use but that the Department will add an "approved additive" list to the Oil and Gas website. If an additive is on that list, it may be used without prior approval from the Department and the section will be changed to reflect that concept.

Section 78.69(c) requires a reuse plan and Slagel questioned how specific the Department intended this to be? Perry stated he feels it is fairly broad, and operators have demonstrated they've met the terms of those plans with 71% direct reuse, and another 14% going to treatment plant for treatment prior to reuse and then the rest going to disposal wells. Nolan noted that section 95.10, referenced here, does contain a list of specific items to be included in the reuse plan. Perry noted that much of the work is already done in order to comply with the residual waste regulations.

The next section discussed was 78.73. Slagel noted that this overlapped with earlier discussion relating to finding abandoned and orphan wells and should be included in a workgroup discussion. Slagel expressed

concern with landowners allowing access and whether the Department will intercede on behalf of the operator to force the landowner to either allow access or seek access for Department staff. The Department has stepped in in the past, and either gotten access for the operator or used our staff to perform the work and then seek reimbursement from the operator. The access issue was added to the follow-up list for further work.

Slagel asked about how the Department determines the completion date in section 78.122(b). The Department's position is that it is determined to be when the well is capable of producing.

Waite raised a general question on in response to concerns raised by PIOGA and PIPP, whether the Department can do anything to explore how these regulations may be made more flexible under the small business provisions of Act 76. Perry replied that the Department feels that the proposed regulations adequately delineate provisions between conventional and unconventional wells and the risks each pose. Because most small operators have conventional wells, and there should not be significant impacts on conventional well operators, small businesses should be protected by this rulemaking. Perry also noted that he would welcome comments on any specific provisions that harm small businesses. Waite asked whether the Department will perform a cost analysis for compliance with the new rules? Perry responded that the analysis is part of our regulatory analysis form which is submitted to the Independent Regulatory Review Commission and available to the public.

Perry requested that TAB recommends to the EQB to approve the proposed rulemaking for publication and comment, with the provisos that the changes discussed were made and that the Department and TAB will continue the discussion on the topics that were identified during the rulemaking process. Waite commended the Department for engaging the public on these issues before bringing the proposed rulemaking to TAB and made the motion requested by Perry. Yingling seconded the motion and the motion was approved 4-0.

Slagel asks if we've reviewed how we are going to move forward from a subcommittee standpoint. Scott says that as a committee we can discuss that offline so to speak and work with the Department to identify the appropriate Stakeholders. Slagel suggests a conference call. Alisa Harris suggests picking out stakeholders from the commenters on the revisions.

DRAFT PROPOSED RULEMAKING, 25 PA.CODE CHAPTER 78, SUBCHAPTER B (PERMITS, TRANSFER AND OBJECTIONS) -PRESENTATION AND DISCUSSION OF EVALUATION OF PERMIT FEES, DRAFT PROPOSED RULEMAKING LANGUAGE AND TIMELINE

Perry then gave a presentation about the Department's proposed rulemaking addressing permit fees. Section 78.19(f) requires the Department to review its well permit fees at least every 3 years, and prepare a report for the Environmental Quality Board (EQB) recommending any changes necessary to properly fund the program. This provision was added in 2009, so the report is currently due. The program currently has 202 fulltime employees as a result of the 2009 permit fee increase. The Department has also allocated all $6 million from the 2012 Oil and Gas Act impact fees disbursement in November 2012 and then again in July 2013. The Department is using these funds to sustain the program and move towards a digitization of record keeping, with the goal of a more transparent and more efficient program. The current budget of the Oil & Gas program is unsustainable at its current rate. At current expenditure and revenue rates the program will be insolvent by the next fiscal year, expecting a $4.8 million deficit by the end of FY 2013-2014.

As a result, the Department is proposing a rulemaking to the EQB that would increase horizontal unconventional wells to a flat $5000 fee and vertical unconventional wells to a flat $4200 fee. Conventional operators do not appear to be responsible for the Department's workload, so their fees will remain as they are established today.

Personnel costs are the greatest cost to the program, and it appears that the Department needs to add additional policy staff to subsurface activities in central office, additional water quality specialists and oil and gas inspectors, and solid waste specialists out in the Districts. Slagel asked if we discussed this fee increase with industry associations and Perry said that we did. TAB asked what the Department is asking from them in terms of a formal action and Perry noted that because this is not a technical rulemaking, the presentation is for information only and TAB is not required to take any formal action on the proposed rulemaking.

PUBLIC COMMENT

Emily Krafjack said she was talking to people in her community and that they thought about regulation changes, and most people don't understand what is being proposed. She was surprised to find out the number one comment people were making to her is about their water supply. She says that we continue to have water issues, and we need to get to zero – small percentages are not acceptable. She says she supports the proposed changes in section 78.52(d)(2).

Her next comments relate to section 78.68 and address runoff from the development of pipelines and gathering lines. With the pipelines going in there's more water runoff; on the first day of Trout season people were complaining about the chocolate stream. She says she keeps seeing all these right-of-ways being cleared, and knows there's going to be more water runoff issues. She gave an example where the gathering line is being crossed by another operator. She says the operator is going beyond their requirements, but that there are 200 yards completely compromised by these operations. She asked why the section 78.1 definition of gathering pipeline was changed. Perry noted that we received a comment about how far the Department was drifting into other issues, so we drew back the definition not to be overbroad. Section 78.68(a) horizontal directional drilling and inadvertent returns should be looked into.

Her next comment requested fencing around certain areas relating to oil and gas development. Finally Ms. Krafjack noted that there appears to be a perception that the northern tier has had methane bubbling up in streams historically. She wondered what regulations are going to come into play to prevent this from happening in the future. Perry agreed that there have been methane migration issues, and he also agreed that once the aquifer is contaminated it is difficult to remediate the problem. The Department does have the necessary tools to address these problems but it is a process that needs to be worked through in each case.

NEW BUSINESS

Gary Slagel asked if there is any other new business. David Allard, Director, Bureau of Radiation Protection, presented the Department's study of technologically enhanced naturally occurring radioactive material (TENORM) in the oil and gas industry. The Department regulates TENORM through the solid waste program. The study has three basic goals - to make sure we do not have any environmental impacts, worker and public exposure concerns, and proper handling of wastes that are being generated in oil and gas development. Director Allard stated that we do not expect any issues the vertical wellbore drill cuttings, but some of the horizontal cuttings from the wet gas areas are setting off radiation monitors at landfills. The study will look at TENORM from a cradle to grave perspective - the drilling, the fracing, the transport of the waste and water, and the gas itself. The Department is going to be sampling gas at the well head and downstream processing and at storage sites for radiation. The schedule is first to start with the liquid in centralized wastewater treatment facilities, then the gas well pads, and then the landfills. The

plan is to have all the sampling done in the next 12 months, with the report completed in 14 months. The Department will start writing the report as soon as the data begins to come in. Permafix is the contractor doing the sampling. DEP staff will be present when Permafix takes the samples. Slagel asked if the facilities will be named in the report. The Department is sensitive to security concerns and would prefer to keep the sampled facilities anonymous. Allard says there are security concerns. Waite asked if the Department is asking operators to cooperate. He said in the oil and gas industry, that the Oriskany tends to have elevated uranium level, but that Marcellus Shale has less active thorium than the Oriskany.

ADJOURN

Gary Slagel motions to adjourn. The motion is approved 4-0 and the meeting is adjourned at 2:35 p.m.