

**Pennsylvania Department of Environmental Protection**  
**AIR QUALITY TECHNICAL ADVISORY COMMITTEE MEETING**  
Minutes  
April 11, 2019

**Air Quality Technical Advisory Committee (AQTAC) Members Present**

Michael Winek	Joseph Duckett
Nancy Parks	Kevin Stewart
John Walliser	John Tissue
Gary Merritt	Michael Fiorentino
Judy Katz	Joseph Guzek
Jim Sewell	Patrick O'Neill
Jayne Graham	R. J. Shaffer
Charles McPhedran	John Shimshock

**Department Staff Present:**

Kirit Dalal	Jennie Demjanick
John Krueger	Allen Landis
Krishnan Ramamurthy	David Clark
Naishadh Bhatt	Bo Reiley
Hitesh Suri	Valerie Shaffer
Viren Trivedi	Jesse Walker
Susan Hoyle	Bob Bonner
Kristen Furlan	Mark Gorog
Charles Boritz	Ann Mathew
Chris Trostle	Shahed Noyon

**Others Present:**

Ryan (Impacted resident)	Peter DeCarlo – Drexel University
Roy Rekeying – All4	Kim Kaal– Shell
Josh Worth – Wawa	Mike Sherman - Range
Robert Altenburg – Penn Future	Thomas Au – Sierra Club
Andrew Williams – EDF	Hayley Book – PA PUC
Jeannine Hammer – EQT	Jennifer Flannery - CEC
Regina Henry – EQT	Leeann Leiter – Earthworks
Robert Routh – Clean Air Council	Jen Quinn – PA Sierra Club
Katie Edwards – Clean Air Council	Pat Henderson – MSC
Mollie Michel – Moms Clean Air Force	Kim Laskowsky – MSC
Matt Walker – Clean Air Council	
Andy Werner – ERM	

**CALL TO ORDER**

Patrick O'Neill, AQTAC Chair, called the April 11, 2018, meeting to order at 9:15 a.m. in Room 105 of the Rachel Carson State Office Building, 400 Market Street, Harrisburg.

## **ADMINISTRATIVE ITEMS**

Introductions were made by AQTAC members and the audience.

### *Approval of Minutes*

The minutes of the December 13, 2018 meeting were discussed by the AQTAC members. Joe Duckett commented on page #3 of the minutes by clarifying the misunderstanding about the carbon canister or a collection device. The term slightly carbon was used in the minutes. Chris Trostle responded by explaining that it is the carbon filter that absorbs gases within a collection device and didn't know why the word slightly was included in the minutes. The members decided to remove the word slightly. The minutes were approved by a vote of 15-0-1.

## **INFORMATIONAL ITEMS**

### *Draft Proposed Control of VOC Emissions from Gasoline Dispensing Facilities (Stage I and II)*

Chris Trostle provided an overview of the Proposed Control of VOC Emissions from Gasoline Dispensing Facilities rulemaking, including a PowerPoint presentation.

Josh Worth of Wawa from the audience asked what the frequency would be of the rotatable adapter test. Chris Trostle responded that it would be the same as the leak test schedule.

Mr. Duckett asked if there is a compatibility issue of any sort regarding the pressure monitoring systems. Chris Trostle responded no, and that this type of system is already installed at most gas dispensing facilities. Gasoline dispensing facilities (GDF) just need to install an additional sensor which costs around \$5,000. They also need to make use of computer programming and install some other equipment.

Mr. Duckett further asked about the calculation used to estimate how much gasoline is lost and whether it is based on actual factors or mass balance. Chris Trostle responded that the estimates were based on the emission factors mentioned in his presentation. The averages DEP used were specific to PA. The in-use controls factors were those which EPA gave in their widespread use analysis. EPA stated that there is below 60% in-use control efficiency if the vapor recovery system is inspected once every two years; 86% if the systems are inspected annually and 92% if they are inspected every six months. Mr. Duckett also asked if DEP has any independent way of measuring it. Chris Trostle responded no, and that DEP used the EPA analysis. DEP also looked at other states' analyses and saw that they have determined that in-use control efficiency is often below 60% for most uninspected systems.

Kevin Stewart mentioned emission factors identified on slide #6 and asked for more explanation about the source of the throughput values. Chris Trostle responded that those numbers are based on a survey that DEP conducted which had a response rate over 60%. DEP updated this list of current GDFs by eliminating the GDFs which dropped out and by adding the new GDFs. DEP placed the GDFs in three different bins. The number of facilities in each bin was multiplied by average gasoline throughput from each bin that DEP obtained in the survey, to determine overall throughputs in each of the three bins.

Kevin Stewart stated that the presentation listed three factors for emissions, but he thinks there is a fourth category which includes the fuel transfer from the gas pump to some type of non-control container such as a can or a trailer with small operating equipment, etc. Mr. Stewart asked whether there is an emission factor for those type of uses, and, if there is, what the throughput values are and how it factors into the percentage of total emissions. Chris Trostle responded that for those types of emissions DEP would use an emission factor and DEP did not consider the non-road sources because Stage II does not affect that source category. Mr. Trostle also stated that those emissions are not included in the analysis for this rulemaking and that those emissions would be in addition to those in this analysis.

Jayme Graham expressed a concern for the deadline of December 31, 2022, for the removal of Stage II, as required by the regulation. Chris Trostle responded that DEP will take comments on this and thinks the regulation could be finalized in less than two years based on the desire of some representatives from the industry to decommission and because many GDF owners want it to be sooner. Nancy Parks commented that the middle of 2020 would be appropriate. Ms. Graham then asked if the annualized cost includes the capital cost. Chris Trostle responded that the capital cost will be mostly for decommissioning and the annualized cost will be for the testing and the wear and tear of the hoses, etc.

John Shimshock asked a question about the air analysis and the fuel efficiency and commented on the decreased demand for gasoline in the market and the source of those numbers. Chris Trostle responded that there are two primary reasons: one is the FHWA (Federal Highway Administration) and another one is the projections contained in the MOVES model. The FHWA study is more accurate in real time. DEP was expecting an increase as given in the original Stage II incompatibility analysis for the 2012-2020 timeframe, but the actual increase was not as great. The new analysis projects a decrease in fuel use in the 2014-2024 timeframe.

Patrick O'Neill asked if the emissions are different in the Philadelphia and Pittsburgh area during refueling than the emissions in the slide presentation. Chris Trostle responded affirmatively. In an analysis of the incompatibility issue, Philadelphia's gas has a Reid vapor pressure (RVP) of 6.95 pounds per square inch (psi) or slightly greater. Currently in Allegheny County, due to the low RVP gasoline, it is about 8 psi, but with RVP going away in the Pittsburgh area it is closer to 10 psi. Mr. O'Neill asked for clarification for the reason for this and asked if there are more older cars in Philadelphia area. Chris Trostle answered that Philadelphia has a reformulated gasoline requirement and that the RVP value used to be lower. Mr. Trostle said he believes that, since car standards have gotten tighter for VOC emissions, EPA has slightly altered reformulated gas, so the RVP has increased in favor of a formulation that favors reducing NO<sub>x</sub>. The RVP is still low, with a value of between 6.8 and 7.2 psi and in Pittsburgh it will be around 9-10 psi in future years.

Mr. O'Neill confirmed from the last meeting that the rulemaking only applies to Counties in Pittsburgh and Philadelphia area. Mr. O'Neill asked for further clarification on why it is not to be applied to rest of the State and whether it is going to control or reduce ozone temporarily. Chris Trostle responded that yes, it is an ozone control measure and the rest of the state is looking pretty good for ozone. DEP can reserve this measure as a contingency measure if the standards become more stringent. Mr. O'Neill further clarified his question and asked if there any calculations applying the 2015 ozone standards or if there is any effect on the transport of emissions in areas

surrounding Philadelphia, such as Berks and Lancaster Counties. Chris Trostle responded that atmospheric modeling would be required to analyze that and, as far as VOCs are concerned, they don't transport as well as NO<sub>x</sub>. Mr. O'Neill suggested DEP look into the impact of ozone in the surrounding counties.

Nancy Parks suggested to consider other areas in the state and particularly in Centre County. She stated that there are several events throughout the year and a great amount of emissions come from the transportation sector. Chris Trostle recommended Ms. Parks make a recommendation on the concurrence letter and DEP' Policy Office staff can consider it, or people can make a comment during the comment period. Right now, DEP is only proposing to maintain vapor leak monitoring in these 12 counties (5-county Philadelphia area and 7-county Pittsburgh area).

Nancy Parks asked for clarification on presentation slides #14 and #15. Ms. Parks asked if the listed emissions on slide # 14 are from the minimum levels or from the control level. Chris Trostle responded that the whole point of the Stage II rulemaking is to control 90% of the throughput. These small stations are 2% of the throughput and DEP is not considering them. Ms. Parks asked further if the numbers presented for VOC emissions are only from the ozone season and if they are modeled or measured estimates. Chris Trostle responded that the numbers are calculated or estimated. Ms. Parks clarified that for some stations there is a low range and the high range. Mr. Trostle confirmed that was true. Ms. Parks asked for further clarification that the numbers are not the average numbers of emissions created during ozone season, but they are measured numbers during ozone season vs. non-ozone season. Chris Trostle responded that those are ozone season summer day numbers. The numbers are derived from an emission factor for the fuel that is used during the ozone season. Ms. Parks asked about how close these numbers are to the actual numbers. Chris Trostle responded that they are somewhere in the range, but DEP cannot predict the in-use control of these stations. The stations have never been inspected.

Michael Winek made a comment that this rule applies to 7-county Pittsburg-Beaver Valley Area. The Allegheny County Health Department (ACHD) also has a regulation on this issue and would like to know from ACHD if they have any concerns. Ms. Jayme Graham assured Mr. Winek that ACHD is working with DEP to be more consistent with the timeline so that they do not have lots of lag time between DEP regulation and the ACHD regulation being revised.

Patrick O'Neill asked if anyone, including the audience, had any further questions or comments. Mr. O'Neill took motions from the committee for DEP to proceed with taking the rulemaking for the Control of VOC Emissions from Gasoline Dispensing Facilities before the EQB. The motion was made by Judy Katz and seconded by Joseph Duckett, before the committee voted on their concurrence with the recommendation to proceed.

Mr. O'Neill opened the discussion for comments and explained that official comments can be made during the comment period or by making a motion for the proposal to be amended (committee only).

Nancy Parks advised a further consideration by DEP to include Centre County. Initially, Ms. Parks made a motion to amend the proposal, but later withdrew her motion after a discussion with AQTAC members; DEP counsel, Ms. Kristen Furlan; and detailed explanation given by Mr.

Krishnan Ramamurthy on context, including the proposed benefits of approving this rulemaking now instead of further delaying. The committee discussed making a further recommendation to have a separate rulemaking to apply this regulation to rest of the state, including Centre County.

After an extensive discussion among the committee members about a motion to include Centre County, Ms. Parks stated she would withdraw the motion, as long as a separate motion is made for a separate rulemaking to expand the applicability. The original motion of the recommendation for DEP to proceed further with the rulemaking for the Control of VOC Emissions from Gasoline Dispensing facilities and take it before the EQB was made. The committee approved the recommendation by a vote of 16-0-0.

Nancy Parks requested to make a second motion on the proposed rulemaking. Kristen Furlan clarified that a second motion cannot be made on whether to recommend that DEP take the rulemaking before the EQB, but that Ms. Parks could recommend to AQTAC to make a separate motion. Ms. Parks made a recommendation to AQTAC for a separate motion for DEP to include Centre County as part of this program as a separate effort. Ms. Furlan read the motion made by Ms. Parks as follows “*Nancy moves that AQTAC recommends to DEP to look at Center County, in particular, to be included in this program, and then Patrick added “as a separate effort.”*” Ms. Furlan asked whether this is the motion and Ms. Parks confirmed that it was, and Kevin Stewart seconded the motion.

Mr. O’Neill asked if anyone wanted further discussion or had any comments. No one had comments or requested additional discussion. The committee voted to make a separate motion. The vote on the separate motion was disapproved by a vote of 2-12-3.

*Draft Proposed RACT Rulemaking for Control of VOC Emissions from Oil and Natural Gas Sources*

Krishnan Ramamurthy provided a preliminary overview of the draft proposed Reasonably Available Control Technology (RACT) rulemaking for control of VOC emissions from oil and natural gas sources, which is a companion document to the New Source Performance Standards (NSPS). EPA is reconsidering certain provisions of the NSPS at the industry’s request, and subsequently proposed to withdraw the control technique guidelines (CTGs) to prevent states from having to adjust to changes to the CTG based on the reconsideration. DEP commented against the withdrawal of the CTG and has incorporated the changes proposed from the reconsideration into the proposed rule. To date, EPA has not finalized the withdrawal of the CTG. Mr. Charles Boritz gave a PowerPoint presentation on the draft proposal.

John Shimshock asked about the definition of a fugitive emissions leak for optical imaging (OGI). Charles Boritz responded that the current definition is in the proposed draft rule and is currently implemented in GP-5 (general permit) and GP-5A. Using an OGI camera, any visual emission is a leak, which is required to be repaired as soon as practicable, but no later than 15 days after detection, unless there is an extenuating circumstance. For Method 21, the fugitive emissions leak definition is an instrument reading of 500 parts per million (ppm) as methane. If the instrument reading is higher, the repair provisions will apply although it is possible for operators to adjust for background methane levels.

Joseph Duckett understands the adoption of CTG and that DEP proposes to go beyond the CTG requirements. Mr. Duckett stated VOCs aren't the limiting factor for ozone in Pennsylvania and asked for the rationale to go beyond the CTG requirements. Mr. Ramamurthy responded by explaining why there are two provisions that go beyond the CTG. It is required that the proposed rule be no less stringent than the CTG. In addition, DEP did not want to roll back any provision that is currently implemented through Exemption 38, GP-5, or GP-5A. The LDAR (leak detection and repair) requirement is more stringent than the CTG, because there is a quarterly instrument-based inspection frequency, as opposed to the CTG recommended semiannual inspection frequency. This aligns the LDAR requirement with other DEP required LDAR programs and removes the requirement to track which components are to be inspected at what frequency based on different construction or installation dates. For completely grandfathered sources, for example those operating before the conditional exemption and before GP-5, the sources will be meeting just the CTG recommended requirements.

Jayne Graham commented that DEP compares the requirements against the general permit. Ms. Graham asked why there is no definition in the beginning of the regulation for conventional or unconventional, and stated she assumes its earlier definition in 25 Pa. Code Chapter 78 would apply. Charles Boritz responded that DEP may need to add the definitions because the language was introduced after the source applicability for storage vessels was put into a dual tier. Mr. Boritz stated that the definitions were omitted due to an oversight. A possible reason for the oversight is that the CTG does not recognize Pennsylvania terminology for conventional vs. unconventional wells; to the EPA all wells are applicable oil or natural gas wells.

Kevin Stewart asked what is meant by "2 % of total components for fugitive emission leaks" stating that there is no definition for the term "component." Charles Boritz responded that in Annex A, the components referenced in that statement is defined under fugitive emission components. DEP may have to amend the language to read as "2 % of the total fugitive emissions components." Mr. Stewart asked what the origin is of the threshold for the 15-barrel oil equivalent (boe). Charles Boritz responded that the threshold comes directly from the CTG and is based on EPA's analysis which determined that it is not cost effective to implement an LDAR program when a well produces less than 15-boe per day. DEP preserved this threshold because it is from the CTG.

Mr. Stewart asked what the dollar per tons ratio was at that threshold according to EPA. Charles Boritz was not certain, but the major effect of the low production threshold (and using Pennsylvania terminology which is not recognized by EPA) is that approximately 99.75 % of conventional wells and approximately 13 % of the unconventional wells are below that threshold. The threshold may be a relief to smaller owners and operators who can be exempted from LDAR requirements based on the lower production threshold. There is a second classification of exemption which is based on the gas to oil ration (GOR) where, if the well has less than 300 standard cubic feet of gas per barrel oil produced, it is also exempt from LDAR but the owners shall keep the records of the GOR determinations.

Michael Fiorentino asked if individual reciprocating compressors located at a well site are covered under GP-5 and GP-5A. Charles Boritz responded that yes, in GP-5 and GP-5A the reciprocating

compressors are required to make scheduled rod packing changes; however, DEP made a BAT (best available technology) determination that that requirement was cost effective under the GP-5A. That requirement is not covered under the CTG and any compressor on a well site is exempt from CTG requirements. DEP maintained that in the proposed rulemaking.

Mr. Fiorentino asked further why it was not important and why DEP made the decision to not incorporate this into the proposed rule. Charles Boritz responded that based on information DEP has for the number of compressors at well sites, it is rare to have sources of this type. However, the frequency may increase since the adoption of GP-5A, as it allows owners to install these compressors. In general, facilities maintain their equipment to the best to their ability and may not replace the rod packing under the regulatory requirements of 3 years or 26,000 operating hours but do replace them in cases where leaks are found.

Nancy Parks asked why DEP is not regulating methane directly. Charles Boritz responded that natural gas is very well known as a mixed compound of methane, VOC, ethane, and other trace gases, which can include carbon dioxide, nitrogen, oxygen and so on. After analyzing the VOC RACT, DEP determined it will implement more stringent thresholds for certain storage vessels and increase the instrument-based LDAR inspection frequency. DEP did not see any advantage to require a methane-specific type rule. Ms. Parks asked how much methane can be expected to be reduced along with the VOC. Charles Boritz responded that a new analysis shows the total VOC emissions reduction is approximately 10,437 tons per year and methane emissions reduction is approximately 28,080 tons per year. Using a simple ratio, DEP estimates about 14 tons of methane reduced for every ton of VOC reduced. By taking the ratio of VOC and methane based on the statewide average gas composition in the technical support document for GP-5 and GP-5A, there are 19 tons of methane reduced for every ton of VOC reduced.

Ms. Parks asked if this is the best way DEP can mitigate methane emissions or if there is another way which may be costlier but more effective. Charles Boritz asked for her advice with any suggestions and mentioned that DEP is very confident in the work which has been done in the past two years and believes that this rulemaking is the most cost-effective way. Mr. Boritz continued that it is possible to find more reductions, but every time he looked at the numbers, they did not change too much.

Ms. Parks stated that she was curious what other states are doing and whether or not there is something better in the [RBLC] Clearinghouse than what DEP is proposing. Krishnan Ramamurthy responded that it is typical for DEP to examine what other states are doing before proposing a rule. The oil and gas sector is unique because the CTG is only applicable to ozone non-attainment areas including ozone transport regions. Several states have oil and gas operations, but do not have ozone non-attainment areas; for example, Ohio, Oklahoma, and Arkansas. However, Ohio is taking the initiative and developing a regulation. Ohio has reached out to DEP and has taken advantage of our earlier work on the GP-5. New York has also initiated the rulemaking process despite having a moratorium on hydraulic fracturing in the state. Colorado received a lot of limelight and recognition for their regulation which pre-dates the CTG; however, they have larger VOC sources and focused on the control of VOC, with methane reduction as a co-benefit. DEP has no problem examining what other states are doing and looking for better ideas that may be appropriate for Pennsylvania. Pennsylvania has implemented a conditional

exemption, GP-5, and GP-5A which require comprehensive, robust controls. These requirements were implemented before the sudden surge of the Marcellus Shale operations, so that slice of sources that are grandfathered was very small. That's why the estimated emissions reductions aren't a huge number; if there were a tremendous number of legacy sources, the emissions reductions would have been much higher.

Nancy Parks stated further that she feels strongly that DEP does not have enough staff to do inspection and enforcement in Pennsylvania and asked if DEP would use a different approach if better staffed. Krishnan Ramamurthy responded that DEP structured its program this way because oil and gas operations are not like the typical point sources that can be inspected annually. Therefore, DEP implemented the compliance demonstration report and stack test evaluations to monitor oil and gas operations on a more continuous basis rather than visiting them for annual inspections. Each regional office can choose to inspect an operation at any time the submitted reports give justification. DEP has structured the program effectively for the resources at hand; of course, if DEP had more personnel, it would be possible to inspect more frequently. One reason for the more frequent LDAR program is to look at the LDAR report and gauge how the operator is maintaining their site. Some operators have asked why DEP couldn't maintain the annual inspection frequency of the conditional exemption. Other commenters want more frequent inspections and didn't want a reduction in frequency based on an operator's performance. It is one of the things DEP has to balance. DEP looks at the annual report to see what companies are not in compliance and focus our attention on them. That's the best use of our resources to make an effective program.

John Walliser asked Krishnan Ramamurthy to confirm that there is no concern about legacy emissions. Mr. Ramamurthy responded that, unlike Wyoming or Colorado which have long-term oil and gas sources on a larger scale with greater emissions, Pennsylvania's Conditional Exemption 38 has resulted in much lower legacy emissions. Therefore, DEP will capture the sources which were grandfathered prior to the permit exemption in the proposed rule.

Nancy Parks asked how many grandfathered sources are there. Charles Boritz responded that, based on the well spud date for the unconventional sites, there are approximately 5,657 wells that were spud before August 10, 2013. Between August 10, 2013, and September 18, 2015, there were 2,219 wells spud, and there were 1,086 wells spud after September 18, 2015.

Michael Fiorentino stated that it was indicated earlier, there are around 5,600 grandfathered unconventional wells and not very many reciprocating compressors at the unconventional wells and that this regulation will produce 20,000 tons per year of methane reduction. Mr. Fiorentino then asked how DEP quantifies them and how many tons of methane will be left uncontrolled by virtue of leaving out certain categories regulated under GP-5. Charles Boritz responded that using the proposed threshold, DEP missed the potential to reduce in total 182 tons of VOC and 750 tons of methane that would be emitted. Mr. Fiorentino again asked how DEP quantifies the number of reciprocating at the around 5,600 grandfathered unconventional wells. Charles Boritz responded that DEP does not have those numbers at this time, as it is difficult to accumulate the data. DEP was initially looking at fugitive emissions, as the potential to be more stringent by implementing the Pennsylvania LDAR plan. It is taking DEP a lot more time to develop those numbers and

analyze that population of reciprocating compressors. It will take some time, but DEP will get back to AQTAC with those numbers for compressor stations at the well sites.

Michael Fiorentino then asked how DEP can give the foregone emissions of 112 tons of methane from fugitive sources if DEP had not quantified the emissions from compressors at the grandfathered wells. Charles Boritz responded that DEP would have to go more stringent than the CTG to achieve any additional emission reductions. Under the CTG those compressors at well sites are exempt from RACT. Krishnan Ramamurthy added that in RACT, if you look at the exemption in RACT, it says exempted except for the compressors and DEP never really exempted the compressors. Compressors at well sites would likely not have happened, otherwise DEP would have captured them under the permitting process. Mr. Fiorentino asked if compressors would have gone through BAT (best available technology). Mr. Ramamurthy responded that, because compressors did not have exemption, they would have gone through BAT, either through plan approval or the GP-5 which, at the very beginning, could be used for compression activities at well sites. It does not appear to be a common thing; in the future it may be, because of the GP-5A.

Mr. Patrick O'Neill asked if anyone had any further questions and explained the procedure about the public comments.

### **PUBLIC COMMENT**

Andrew Williams, Environmental Defense Fund (EDF), commented on the proposed RACT for existing natural gas facilities, noting that it is beneficial to handle the impacts of methane and VOC leaks and venting in natural gas production. Mr. Williams mentioned that EDF and their partners, including many from oil and gas industry, have done intense research and established that the methane emissions from the oil and gas sector are the larger issue. Methane is responsible for 25 % of the climate change impact we experience today. Mr. Williams indicated that 2018 estimates released by the International Energy Association (IEA) predict that 50% of the methane emissions are coming from oil and gas industry and can be reduced at no net cost. Mr. Williams recommended the following improvements to the rule as stated in his written testimony: (1) explicitly apply each control to both VOCs and methane as allowed under the state Air Pollution Control Act; (2) remove the exemption from the low producing wells; (3) remove the variable frequency provision in the leak detection and repair (LDAR) section while retaining the quarterly inspection provision; (4) expand the definition of fugitive emission component to include intermittent vent controllers; (5) require no bleed requirements for pneumatic controllers and pumps, if feasible; (6) include clear criteria for what constitute an alternative leak detection method. At minimum, the rule should require that an alternative method must achieve equivalent emission reductions as required OGI or Method 21 devices, and the application and approval to use an alternative method should be subject to public notice and comment; (7) add methane controls for the existing dehydrators, liquid unloading and pigging operation; (8) require a 98 % destruction removal efficiency for flares; and (9) extend the rule to sources in the transmission and storage segment of the natural gas supply chain. (If anyone is interested to see the written testimony, it will be available through the Division of Air resource Management).

Mr. Williams added that EDF have had several conversations with DEP and they have presented their concerns a couple of times. They provided comments during two previous AQTAC meetings.

Mr. Williams stated that there are several good things throughout the proposed rule which Mr. Boritz covered in his presentation.

Joseph Duckett asked Mr. Williams whether the several studies that he referenced would be submitted to the Department. Mr. Williams responded that yes, EDF had done it in the past and will be doing so again.

Robert Routh, Clean Air Council, commented that natural gas production in Pennsylvania is on the rise. On behalf of Clean Air Council, Mr. Routh mentioned these three key recommendations in his written testimony: (1) expand the scope of the draft rule to directly regulate methane emissions from the existing facilities; (2) expand the legal basis for the rule under the state Air Pollution Control Act, which provides DEP clear and considerable authority with flexibility to regulate methane emissions from the existing sources; and (3) remove low producing well exemption from the draft rule's LDAR requirements. Clean Air Council also urged DEP to: remove the LDAR step-down provision and expand the definition of "fugitive emissions components" to include intermittent-bleed pneumatic controllers; mandate no-bleed requirements for pneumatic controllers and pumps; include criteria to constitute an alternative leak detection method; cover additional sources currently absent from the rule, including liquids unloading, pigging operations and reciprocating compressors at well sites; require 98% destruction efficiency for the combustion control devices; and regulate tank batteries rather than just individual storage vessels.

Peter DeCarlo, Drexel University, provided perspective of the research conducted by his team on VOC and methane emissions from natural gas development in Pennsylvania during 2012 and 2015. Mr. DeCarlo is concerned about excluding the direct regulation of methane from the rule and believes that both methane and VOCs should be addressed by the rule. Mr. DeCarlo mentioned the impact on the methane to VOCs ratios in dry versus wet gas regions and commented that the leaks in the dry gas region would emit substantially more methane than leaks in the wet gas region. Mr. DeCarlo urged DEP to re-examine the thresholds for what constitutes a leak. Mr. DeCarlo differentiated the above ground versus underground leaks and their impacts on the atmosphere, as underground leaks have more time to spread out before coming to the surface. Mr. DeCarlo commented that the underground leakage is more dangerous, since high level concentration can build up and can lead to an explosive situation. Mr. DeCarlo expressed a concern about the exemption for low producing wells and urged DEP to remove exemptions for low producing wells, as they proportionally tend to emit more than higher producing wells.

Joseph Duckett asked if Mr. DeCarlo is suggesting that the methane emissions are more important than the atmospheric ozone. Mr. DeCarlo asked for clarification on Mr. Duckett's question and asked in what context Mr. Duckett meant his question. Mr. Duckett explained it seemed like Mr. DeCarlo was suggesting that it is more important to control methane than VOCs, but VOCs are controlled for ozone reduction. Mr. DeCarlo responded that yes, methane is part of the problem for climate and that background ozone will also increase/decrease in response to methane emissions. Mr. DeCarlo continued that, to an extent, yes methane is more important than ozone, and that it is quite important for the climate target set by the state government for reducing the greenhouse gas emissions. He emphasized that the Methane should be reduced 26% by 2030 and 80% by 2050.

John Shimshock requested to include the citation for the research conducted by group the at Drexel University. Mr. DeCarlo assured the committee that he will send the citation to DEP and mentioned that there is also data available for anyone's review.

Patrick O'Neill confirmed that Mr. DeCarlo will be sending the information to DEP and asked for the DEP contact. Mr. Ramamurthy suggested that Mr. DeCarlo send that information directly to Mr. Boritz.

Robert Altenburg from PennFuture commented that he agrees with previous commenters and supports the direct control of emissions from methane. Mr. Altenburg indicated that last January, Governor Wolf made a commitment of reducing carbon pollution and the goal which was set seems like a logical extension of the past trend of carbon reduction seen in the state, but we don't have a method to get there with as business as usual. Mr. Altenburg stated that according to the industries report about leakage generated in the gas industry and the data coming from US EIA, we may have already reached a point where more emissions are coming from the gas sector than the coal sector. He stated that replacing the coal plants with the gas plants and increasing our gas production will make us move forward in the future. Mr. Altenburg asserted we (Pennsylvania) need to do more and have a direct regulation for methane. He informed that the Air Pollution Control Act has a limit on DEP authority, as for as implementing Section 129 of Clean Air Act, which is the National Ambient Air Quality Standards (NAAQS). There is no NAAQS for methane, as it is regulated differently. DEP does have the authority to include methane and regulate it. Mr. Altenburg mentioned that he was listening to WITF radio, talking about this regulation particularly, and when someone suggested direct regulation of methane, a DEP spokesperson mentioned that DEP needs to do this regulation to comply with CTGs. Mr. Altenburg agreed and supported the idea, but also pointed out that it's not only restricted to CTGs, and that DEP can go further and beyond CTGs to regulate methane.

Thomas Au from Sierra Club commented that there is definitely an ozone problem in Pennsylvania in addition to the climate issues. Mr. Au suggested that DEP take certain steps to control pollution which contributes to both the ozone and the climate problem. Mr. Au stated that we (Pennsylvania) have the opportunity here to post regulations to reduce the fugitive emissions of both methane and VOCs. Mr. Au suggested DEP should take advantage of its authority to do that. Mr. Au stated that what attendees heard today suggested the proposed regulation is not comprehensive enough to control fugitive emissions from many sources. Mr. Au indicated that Sierra Club supports moving forward with the regulation to reduce the emissions from all these sources.

Leann Leiter, Earthworks' Community Empowerment Project, commented that real, measurable methane reductions are needed instead of inconsistent, unquantified and minimal cuts that may be a side benefit of VOC reductions. Ms. Leiter commented that, according to latest National Climate Assessment, the magnitude of the human health benefit of lowering ozone levels via methane mitigation is substantial and is similar in value for climate change benefits. Ms. Leiter is deeply concerned that the draft rule exempts lower producing facilities. The exemption does not distinguish between conventional and unconventional oil and gas sources. Ms. Leiter urged DEP to treat all oil and gas sources equally and not to grant the special exemptions.

Kim Laskowsky of Washington County, PA, stated she was a victim of pollution from oil and gas sources in her neighborhood commented on the health effects of pollution from these sources. Ms. Laskowsky indicated that there are 16 wells fracked in her neighborhood in Washington County, PA and at least 78 wells within a 10-mile radius of her residence. Ms. Laskowsky drew attention to the effects of the pollution on the health of her neighbors, her own health, the children in her neighborhood, and the future generations. Ms. Laskowsky urged DEP to take strict action to control the methane pollution from oil and gas producing sources in the neighborhood.

At the end of public comments, Patrick O'Neill asked if there was any further discussion from the committee.

Kevin Stewart stated that he heard a strong case with respect to methane emissions associated with dry gas operation that are not being addressed by this regulation. Given the fact that DEP has chosen to go beyond the CTG in certain respects, Mr. Stewart asked if there is any reason why DEP has not chosen to specifically and directly regulate methane emissions. Charles Boritz responded that there were many recommendations to regulate methane directly, and that DEP has stated before, and he reiterates now, that there is a great collateral benefit of methane reduction with the VOC reductions due to the CTG. Mr. Boritz further stated that when talking about methane emissions reductions ten to twenty times the level of VOC emissions reduction with the current proposal, there is not enough reason to alter course, although evidence presented to the contrary will be evaluated during the comment period.

Mr. Boritz clarified that some of the RACT requirements for different sources show that there is no reason to differentiate between wet and dry gas. There is a lot of talk about the difference between wet and dry gas and how those differences affect potential emissions and applicability, primarily of storage vessels where applicability is based solely on VOC emissions. A source would have to emit much more gas, and therefore methane, in the northeast region of the state to reach the VOC threshold. The methane emissions equivalent to the VOC threshold will likely be much higher than those tanks will ever actually emit, because the tanks in the northeast are full of water with trace amounts of methane and VOC. Therefore, there are not a lot of methane emissions according to DEP's required inventory reporting for water/condensate tanks, which is what these tanks would be. There is only 2% VOC content by weight in these types of storage vessels; therefore, you will not see significant reduction in the northeast or other dry gas areas.

However, the applicability of other sources, such as pneumatic controllers, have nothing to do with VOC emissions. All the requirements center on natural gas emissions, where the amount of methane and VOC is based on the individual composition of the gas. The higher the methane content, the higher the methane emissions reduction based on the requirements. In the northeast, by limiting the emissions of natural gas to six standard cubic feet per hour, and the gas is 98% methane by weight, you will reduce more methane than in the southwest where the gas may only be 50%-60% methane by weight. Diaphragm pumps and all the others on the list, especially fugitive emissions, are the same. There are no VOC applicability thresholds and the requirements effectively reduce both methane and VOC emissions. The requirement to look for leaks is not dependent on VOC or methane content of the gas and will be conducted at the same frequency across the state. So, there is no real potential for methane emission reductions without changing applicability thresholds, removing exemptions, or regulating additional sources. At the current

time, with the exception of storage vessels, this proposal effectively regulates methane sources just as easily as VOC sources, and to the same degree.

Judy Katz asked what the timing is for approving this rule and if there is a sanction clock, or anything like that, in the event the rule is not approved. Charles Boritz responded that, since the CTG was finalized on October 27, 2016, the requirement was to submit a SIP revision by October 2018. EPA has not started the sanction clock, to his knowledge, because of the proposed withdrawal of the CTG.

The committee voted on the recommendation for DEP to proceed further on the Proposed RACT Rulemaking for Control of VOC Emissions from Oil and Natural Gas Sources and present the proposal to the EQB. The committee approved the recommendation by a vote of 10-4-1.

#### *Volkswagen/Driving PA Forward update*

Valerie Shaffer provided an overview of the Driving PA Forward grant and rebate programs using the Driving PA Forward website.

Kevin Stewart inquired whether DEP is having any problems or issues in distributing the money under the competitive programs or rebates programs and if people are applying. Valerie Shaffer responded that DEP had a tremendous response. Word is out, and DEP is getting a good response and being successful in distributing the money.

Nancy Parks asked if DEP received any application from Centre Region Transportation Authority in Centre County. Ms. Shaffer responded that the name does not look familiar, but she was not 100% sure about it.

Jayne Graham stated that some people told Allegheny County and the school district that there was a state program to distribute the funding for school buses. Ms. Shaffer asked Ms. Graham to clarify if she was referring to the DERA Clean Diesel program. Ms. Graham clarified that she was asking about the program where the school buses are replaced on a 12-year replacement schedule. Ms. Shaffer responded that DEP is getting lots of applications and anything prior to 2009 or newer is eligible to apply. The applicant would need to provide the proof of scrapping the old buses, including pictures; etc. Ms. Shaffer stated that program is closed for this year and will be open to distribute \$3 million for next year; DEP had \$6 million this last round for 2018-2019.

Patrick O'Neill acknowledged that there are three ports, including the one in Philadelphia County, Allegheny County and in Erie. Mr. O'Neill asked if any one of the ports talked about or approached DEP to utilize electric shore power. Ms. Shaffer responded that DEP opened the door but did not receive any feedback as of yet.

Kevin Stewart asked if DEP had any idea about helping oceangoing vessels operators with the shore power options. Ms. Shaffer responded that one of these programs is for ferries, tugs, and freight switchers, but she was not sure about outreach to this group and can find out.

Jayme Graham asked about the time frame for the program for tugs, ferries, and freight switchers and if it would be open in April. Ms. Shaffer responded that it would probably open in May and would be the last funding program to open.

Patrick O'Neill stated that sounds like the current Class 8 grant program is oversubscribed, and the Onroad Rebate Program is oversubscribed and asked if there is any other programs available, and if money is still available. Ms. Shaffer responded that no, DERA (PA State Clean Diesel Grant) is closed. Mr. O'Neill asked if DEP got any more applications for this program. Ms. Shaffer responded that yes, the requested amount was over the allotted amount. DC Fast (and Hydrogen Fueling Grant Program) and Level 2 (EV Rebates) are still open. DEP is currently looking at the projects. Level 2 is a rebate program and DC Fast is a competitive grant program, and that one is oversubscribed as well, but DEP will be evaluating all applications when scoring.

Nancy Parks asked if all available money has been used up or only the funds available for this year. Ms. Shaffer responded that only the funds for this year have been used up. Ms. Parks asked if people can still apply. Ms. Shaffer assured Ms. Parks that yes, the programs will reopen, but DEP has not set the date yet. The programs will be open for next year, but the Class 8 is still accepting the applications for the Class 8 program but not for the Onroad Rebate Program.

Nancy Parks asked if these applications will be carried over for 2020. Ms. Shaffer clarified that the programs will carry over, but the applications would not, as unsuccessful applicants would have to reapply after the application closing date(s). Ms. Shaffer confirmed that, yes, for the Class 8, since those are the competitive grant programs, DEP has put the deadlines out there, so the programs won't close for a certain time., Class 8 was oversubscribed, but since it's a competitive grant program, applications will be scored to see which projects get awarded the available funding. The application due date for the next and last round of funding under the Class 8 program for this year is September 23, 2019.

#### *Report on Rulemakings / State Implementation Plan (SIP) Revisions*

Kirit Dalal provided an update on rulemakings and SIP revisions.

John Tissue asked about the timeframe for the RACT III rulemaking. Kirit Dalal responded he thinks that the deadline for RACT III in marginal non-attainment areas for the OTR (Ozone Transport Region) is August 20, 2020 [Actual date is August 3, 2020]. Mr. Tissue asked Mr. Dalal to confirm whether it is for the same sources or will it be different. Mr. Dalal responded that it will be for the same sources, as we (DEP) have a list of CTGs that we have to go through; and hopefully this time we have less case-by-case RACT sources. Also, DEP has an option of requesting that RACT II is equivalent to RACT III.

Nancy Parks asked when DEP expects to have the public comment period open for the Stage II and the Oil and Gas rule which were discussed today. Mr. Dalal responded that the rules will open for public comments after they have gone through the Environmental Quality Board (EQB).

John Tissue stated that, at the last AQTAC meeting, he proposed that a number of Title V facilities were changing back to synthetic minor facilities and asked if DEP has looked into this. Mr. Dalal

responded that he will check with the permit staff to see if there were any calculations done on which facilities would like to convert to synthetic minors. Mr. Tissue indicated that, according to his notes, there are 310 Title V facilities, and out of 210, only 2 of them generated 95 % Title V fee, so the balance of 208 of those are synthetic minors. Mr. Tissue calculated that there will be 5 % reduction and some of these facilities may switch to avoid the \$10,000 fee. John Krueger responded that he looked into it and reviewed the projected revenues and DEP expenses. The question is how many facilities could convert from Title V to synthetic minors in the current proposed fee structure before we (DEP) run into a problem. Mr. Krueger indicated that based on his assumption and on the current fee schedule he evaluated, if 30-40 facilities were to switch from Title V to Non-Title V (synthetic minor), that would be a problem. DEP received and is considering one of the comments which stated that the synthetic minors maintenance fee is too low, that some of the synthetic minor facilities are significant or complex facilities, and the fee should be higher than what it is proposed.

Kevin Stewart asked if DEP lost around 30-40 facilities, if it will be difficult or if it is an assumption that DEP will lose about 30-40 facilities, which will be a significant problem. John Krueger responded that DEP can't predict if facilities will elect to do anything, but yes, if DEP did not change its proposal and if there are 40 facilities lost, it will be a problem. Mr. Stewart commented that he understands that 208 facilities currently are Title V facilities and 90% of those facilities generate Title V fees. He asked if DEP looked into the emission inventory to evaluate the number of facilities which report more than Title V threshold or to see really how many facilities are there. Mr. Krueger responded that you have to make different assumptions on things, and that DEP understands his concern and DEP would take note of it. Mr. Stewart also had concerns about how the Department would distribute the comments that would be received on the Title V fees regulation. Mr. Krueger stated that the official comment period, was scheduled to open on Saturday (April 13). He said, the notice will be published in the PA Bulletin on April 13 and DEP will have a 60-day comment period.

### **OTHER AQTAC BUSINESS / OPEN DISCUSSION**

A request was made for all current committee members to send their nominations for the next term of memberships.

Patrick O'Neill confirmed that all of the concerns from the previous minutes were addressed; except three of them, including: exploring the relationship between VOCs and methane from all drilling sources and quantifying and provide a presentation to AQTAC. Mr. O'Neill asked if the presentation today addressed this item and Nancy Parks indicated that yes, somewhat it was covered, but it (the request for presentation) was not really about the regulation itself; instead it was about the ethane crackers. Mr. O'Neill recognized that it was as separate issue on the list about the impact of ethane crackers in Pennsylvania and Ohio. Mr. O'Neill asked if it is an item that can be addressed. John Krueger responded that it can be addressed by a staff member from the permit section, but that person was not available at that time. It was decided that someone from the permit section can talk to representatives of the ethane cracker, one which is under construction in Pennsylvania and the one being constructed in Ohio. The permit section staff member will be able to address it in the next AQTAC meeting. Mr. O'Neill indicated that the last outstanding item on the list was about the air quality fee request made by Joseph Duckett in the

last meeting. Mr. O'Neill acknowledged that the rule would not be open for comments until this weekend (following the meeting) but asked if DEP has received any public comments on the fees regulation yet. John Krueger responded that DEP has received comments from this committee as well as Small Business Compliance Advisory Committee (SBCAC) and Citizens Advisory Council (CAC).

Next Meeting: The next AQTAC meeting is scheduled for 9:15 a.m. on Thursday, June 13, 2019, in Room 105 of the Rachel Carson State Office Building, 400 Market Street, Harrisburg, PA.

Adjournment: Michael Fiorentino made a motion to adjourn, and it was seconded by Kevin Stewart. With no further business before AQTAC, Patrick O'Neill adjourned the meeting at 3:30 PM.

Minutes prepared by Hitesh Suri, Air Quality Program Specialists. For additional information, please contact Kirit Dalal at [kdalal@pa.gov](mailto:kdalal@pa.gov) or 717-772-3436, or visit the AQTAC Web page at: <http://www.dep.pa.gov/Business/Air/BAQ/AdvisoryGroups/Air-Quality-Technical-Advisory-Committee/Pages/default.aspx>