



October 21, 2019

Patrick O'Neill, Chairman  
Air Quality Technical Advisory Committee  
16<sup>th</sup> Floor Rachel Carson State Office Building  
P.O. Box 2063  
Harrisburg, PA 17105-2063

Dear Chairman O'Neill:

At the October 17<sup>th</sup> meeting of the Air Quality Technical Advisory Committee (AQTAC or Committee), the Pennsylvania Department of Health (DoH) made a presentation<sup>1</sup> entitled "Oil and Natural Gas Production Health Concerns in Pennsylvania." On behalf of the members of the Marcellus Shale Coalition (MSC), the broader industry in the Commonwealth, and their employees and families who take seriously their obligation to protect the health and safety of our communities, please consider this additional information around this very important and complex topic.

First and foremost, it must be stressed that our member companies understand the importance of safeguarding our environment and the health of our fellow citizens. Their employees, after all, overwhelmingly are local residents who live and raise their families in the region where they work. They are as vested as anyone in ensuring that their operations are safe and protective of public health and our shared environment.

The DoH presentation compiles a list of ailments that some members of the public have complained about, affixes a reference to oil and natural gas production, and references that other studies have found an "association" between the two. Fortunately, several members of the Committee questioned the DoH as to what constitutes an "association". However, the DoH should have clearly stated the difference between an association or correlation – which is largely though not exclusively a reference to physical proximity – and *causation*, which draws a definitive link between a specific activity and a specific health impact.

By presenting the findings and conclusions of other studies, without having conducted its own peer review of the data, methods, sample size and potential shortcomings of the studies, the DoH is lending credibility to these findings and conclusions. It is insufficient, given the weight that the general public understandably affords to its government agencies, simply to qualify these studies as conveying information compiled by others. Studies and researchers can have shortcomings, biases and incomplete conclusions that outweigh any value that they may bring to a discussion as serious as public health, particularly when doing so undermines the credibility of an industry that is so critically important to the Commonwealth.

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<sup>1</sup> Available on AQTAC website:

[http://files.dep.state.pa.us/Air/AirQuality/AQPortalFiles/Advisory%20Committees/Air%20Quality%20Technical%20Advisory%20Committee/2019/10-17-19/AQTAC\\_101719\\_ONGP\\_final\\_2.pdf](http://files.dep.state.pa.us/Air/AirQuality/AQPortalFiles/Advisory%20Committees/Air%20Quality%20Technical%20Advisory%20Committee/2019/10-17-19/AQTAC_101719_ONGP_final_2.pdf)

## PA Department of Health Evaluation of Existing Literature

To this very point, it is important for the Committee to know that the DoH participated in a comprehensive review and evaluation of epidemiologic literature specifically examining health studies evaluating citizens living near oil and gas operations. This study, entitled “*A Systematic Review of the Epidemiologic Literature Assessing Health Outcomes in Populations Living near Oil and Natural Gas Operations: Study Quality and Future Recommendations*”<sup>2</sup>, was published in June 2019.

Conducted in partnership with the Colorado Department of Public Health and Environment, the reviewers examined the methods utilized by twenty epidemiological studies. Of the twenty, only four were rated by the reviewers as having a “moderate level of certainty” with respect to the ascribed health impact outcomes. The other sixteen studies received a rating of “low certainty.” Importantly, the researchers noted:

*“The majority of findings from the studies were ranked as low certainty, primarily due to limitations of the study designs that make it difficult to establish clear links between exposures to substances potentially emitted directly from oil and natural gas operations and the health outcomes evaluated. These limitations are inherent to observational epidemiologic studies and include indirect exposure measurements, confounding bias, and subjective methods to determine health outcomes.”*

## Air Quality Impacts

As noted by PA Department of Environmental Protection (PA DEP) staff at the Committee meeting, the Commonwealth has conducted both a short-term and a long-term<sup>3</sup> air quality study to examine the effects of unconventional shale gas development on public health. Neither study found significant nor concerning ambient air quality impacts associated with unconventional natural gas development. Likewise, a comprehensive, two-year air quality evaluation which collected data throughout every phase of development and production from an unconventional well site in the Fort Cherry School District (Washington County) found that PM<sub>2.5</sub> and volatile organic compounds (VOCs) concentrations were consistently below health-based air comparison values and did not pose acute or chronic health concerns. This study and analysis was provided to PA DEP and is also available publicly<sup>4</sup>.

These studies come at a time when the citizens of Pennsylvania are benefitting from historic reductions in criteria air pollutants. Consider that, since 1995, VOC emissions are down 51%, while sulfur dioxide and nitrogen oxide emissions are down 82% and 72%, respectively, since

<sup>2</sup> Bamber, Hasanali, Nair, et al: <https://www.mdpi.com/1660-4601/16/12/2123/htm>

<sup>3</sup> Long-Term Ambient Air Monitoring Project: Marcellus Shale Gas Facilities – July 2018 – [http://files.dep.state.pa.us/Air/AirQuality/AQPortalFiles/Monitoring%20Topics/Toxic%20Pollutants/Docs/FINAL\\_Long-Term\\_Marcellus\\_Project\\_Report\\_071018.pdf](http://files.dep.state.pa.us/Air/AirQuality/AQPortalFiles/Monitoring%20Topics/Toxic%20Pollutants/Docs/FINAL_Long-Term_Marcellus_Project_Report_071018.pdf)

<sup>4</sup> Public Health Evaluation of Ambient Air Near a Shale Gas Well Site and School Campus: Results from Long-term Air Monitoring at the Yonker Well Site Nearby the Fort Cherry School Campus in Washington County, PA: <http://www.rangeresources.com/docs/default-source/files/public-health-evaluation-of-ambient-air-near-a-shale-gas-well-site-and-school-campus.pdf>

1990. Many of these recent reductions are attributable to increased use of natural gas in the electric power generation sector.

### **Birth Impacts and Respiratory Ailments**

Perhaps nowhere else are the implications of “associating” health outcomes and oil and gas production activity more apparent than with references to birth impacts and respiratory ailments. For example, one of the studies (Shaina L. Stacy, et al) cited by the DoH in its presentation examined the association of low birth weights and unconventional natural gas development in southwestern Pennsylvania. This particular study, published in June 2015, was funded by the Heinz Endowment, which is an avowed anti-natural gas organization that has also funded numerous organizations dedicated to stopping natural gas development. The study was not peer-reviewed, and acknowledged several of its own limitations, ironically including a definition of ‘low-birth weight’ that is not recognized by the medical community, nor the National Institutes of Health, as ‘low-birth weight.’

Yet, even these authors state unequivocally in their publication,

*“It is important to stress that our study does not say that these pollutants caused the lower birth weights.”*

With respect to respiratory ailments, an analysis of the DoH’s own 2015 Asthma Focus Report, which examined asthma statistics between 2009 – 2013, shows that the asthma hospitalization rate in the top five northeastern shale-producing counties in PA are far below hospitalization rates in nine neighboring non-shale producing counties. In fact, the hospitalization rate for the five shale-producing counties were all less than 10 per 10,000 residents, while the average for the non-shale producing counties examined were all in excess of 112 per 10,000 residents. In total, asthma hospitalization rates across Pennsylvania decreased by 26% between 2009 and 2013 – a time of significant unconventional natural gas activity.

### **Unconventional Wastewater and Dust Suppression**

In response to a question from the Committee, the DoH attributed some complaints they received from residents to oil and gas wastewater (brine) used for dust suppression on roadways. This statement was offered at the meeting in context to unconventional shale gas development, which the DoH noted accounted for the vast majority of the complaints lodged with the DoH health registry. It is important for the Committee members to understand that unconventional brine is not – and has never been – used for dust suppression or sprayed upon roadways. This prohibition was codified in PA DEP’s update to its oil and gas standards in October 2016<sup>5</sup>. Unconventional wastewater has not been treated and discharged into waterways since 2011 and is either recycled or properly disposed of in an approved disposal well. The MSC would welcome the opportunity to meet with DoH staff and explain the differences between conventional and unconventional operations, and the different standards applied to each activity.

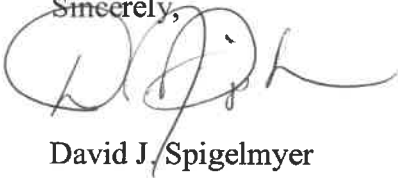
<sup>5</sup> 25 PA Code §78a.70: <https://www.pacode.com/secure/data/025/chapter78a/chap78atoc.html#78a.70>.

With respect to drinking water complaints, Pennsylvania remains one of two states in the nation without water well construction standards. Several studies, including a study conducted by Penn State University<sup>6</sup> in consultation with state agency partners, has found significant pre-existing contamination of private water wells in Pennsylvania. Notably, several of these studies were conducted prior to widespread unconventional natural gas development in the Commonwealth. The MSC supports legislation that would establish water well construction standards, and notes that any complaints submitted to PA DEP are fully investigated. In fact, under existing state law shale gas operators are *presumed* responsible for any impacts that occur within 2,500 feet of a well and within twelve months of completing a well, unless it is definitively demonstrated to be the result of another cause.

### Conclusion

Earlier this summer, the MSC partnered with API-PA and the PA Independent Oil and Gas Association in a letter<sup>7</sup> to Governor Tom Wolf outlining the critical importance of rigorous, scientific-based studies when evaluating the health impacts of any industry – and particularly before assigning a link between those health impacts and a particular activity or industry. A copy of that letter is linked to below. We remain committed to working closely with the Governor and his Administration to advance our mutually shared goal of safe and responsible development of Pennsylvania’s shale gas resources.

Sincerely,



David J. Spigelmyer

cc: Honorable Rachel Levine, MD  
Secretary of Health  
Honorable Patrick McDonnell  
Secretary of Environmental Protection

<sup>6</sup> Penn State Extension: *What We Learned from a Study of Over 700 Water Wells in Pennsylvania*. Swistock et al <https://extension.psu.edu/programs/mwon/information/webinars/what-we-learned-from-a-study-of-over-700-water-wells-in-pennsylvania/pdf-copy-of-slides>

<sup>7</sup> MSC, API, PIOGA Reaffirm Commitment to Public Health, Safety in Pennsylvania – July 23, 2019: [https://marcelluscoalition.org/wp-content/uploads/2019/07/API\\_MSC\\_PIOGA-Letter-to-Governor.pdf](https://marcelluscoalition.org/wp-content/uploads/2019/07/API_MSC_PIOGA-Letter-to-Governor.pdf)