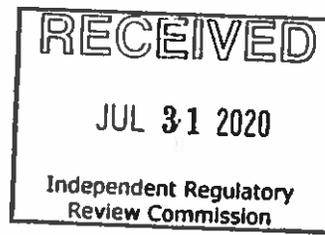


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Presentation to The Environmental Quality Board on proposed amendments for Control of VOC Emissions from Oil and Natural Gas Sources

Respected Board Members,

Thank you for this opportunity to share my thoughts on the proposed amendments for Control of VOC Emissions from Oil and Natural Gas Sources. I am Paul Shrivastava, currently resident of State College, Centre County, and 26-year resident of PA. I am an Engineer, and a Sustainability expert, working as, CSO at a major research university. Today, I am speaking as a citizen of PA, and a sustainability professional, and not on behalf of my employer institution. My professional expertise is in strategic economic planning, ecologically sustainable development and crisis management.

I support Environmental Quality Board on strengthening the Controls over VOC Emissions from oil and natural gas sources to close ALL loopholes, such as, exempting low producing wells, and potential sources of Methane, and eliminate reduction in frequency of inspections.

I would like to make a number of points for the Board to consider as you reach your decisions.

1. VOC Emissions are a **Grave Environmental problem**. Oil and gas operators in Pennsylvania are emitting large amount of methane (EDF's Pennsylvania Methane Data Project estimates it is 16 times of what is reported to the state — over 1.1 million tons annually in 2017 — this is wasted methane equivalent to yearly gas usage for more than 725,000 homes. Only 70,000 tons was reported to the state Department of Environmental Protection (DEP) that year. VOCs emitted from Pennsylvania sites, have doubled over previous EDF estimates.

17 Counties in the Commonwealth (Allegheny, Armstrong, Beaver, Berks, Bucks, Butler, Carbon, Chester, Delaware, Fayette, Lancaster, Lehigh, Montgomery, Northampton, Philadelphia, Washington and Westmoreland Counties) have elevated levels of Ozone, well beyond 2008 EPA standards for ozone NAAQS. For Pennsylvania to continue making progress in attaining and maintaining the 2008 8-hour ozone NAAQS, we need stringent uniform regulations free of all loopholes.

2. **Grave Economic Challenges for Pennsylvania**. The COVID pandemic has wreaked a heavy toll on the PA economy, resulting in over a million lost jobs, shrinking economy and tax revenues, and increasing poverty and food insecurity in many communities. Recovering from COVID must include solutions to our endemic ecological problems, including investing in clean and job creating renewable energy, while equitably and fairly employing fossil energy workforce. The economic future of Pennsylvania lies not in the Oil and Gas sector but rather in the clean renewable energy sector that Governor Tom Wolf encouraged in his Executive Order 2019-01 last year. Oil and Gas sectors should be viewed as part of transition to clean energy that will

sunset in a decade or so. In other words, Oil and Gas are transitional technologies and not strategic to the long-term future of the Commonwealth. **We need to hold all O&G operators to the same rigorous standards, protects human health, and creates jobs.** Pennsylvania has nearly 3,000 “orphaned” wells which should be properly capped and closed. This would both reduce pollution and create jobs a win-win response to the COVID crisis. North Dakota has proposed to use \$33.1 million in federal coronavirus aid to plug orphaned oil wells. The idea is both a jobs program for energy workers and an attempt to curb a growing environmental problem. Companies committed to verifiably, continually, reducing in Carbon can gain carbon credits for doing this work.

3. Technology exists and transparency is needed – to substantially reduce methane emissions at a relatively small cost. This can be accomplished by inspecting equipment regularly, frequently and by repairing leaks quickly. The reduction of VOC emissions can be accomplished with existing technologies, supplemented by clear goals, stringent procedures, periodic inspections, robust maintenance, with clear and frequent public reporting.

4. Stringent regulation of Methane and VOCs has many co-benefits. It will not only reduce environmental pollution, but reduce costs by saving and using wasted methane, it can lower health impacts of ground Ozone that is formed due to Methane and VOC ambient pollution. Methane and ground Ozone in Central County have been higher than New York City and Washington in past few months. and it will lead to healthier forests attracting more tourism on state lands. A more formal study of these co-benefits could be invited by the Environmental Quality Board to quantify the scale and scope of these co-benefits.

5. It’s a small price to pay. Department estimates that the proposed rulemaking will cost operators approximately \$35.3 million (in 2012 dollars). The value of the saved natural gas, in 2012 dollars, yields a savings of approximately \$9.9 million, resulting in a total net cost of approximately \$25.4 million for this proposed rulemaking. Compared to the size of the Oil and gas industry (revenues \$180 billion in 2018), or the health, environmental, tourism, co-benefits from reduction of VOC that would also be in billions of dollars, this investment is miniscule.

Thank you very much for this opportunity to share my thoughts. I would be happy to elaborate on any of these points in case you need that.