

BEFORE THE ZONING HEARING BOARD OF MT. PLEASANT TOWNSHIP
WASHINGTON COUNTY, PENNSYLVANIA

IN RE: :
:
SUBSTANTIVE VALIDITY CHALLENGE :
TO ORDINANCE NO. 105, CHAPTER 200 :
:

FINDINGS OF FACT AND CONCLUSIONS OF LAW
OF THE MT. PLEASANT TOWNSHIP ZONING HEARING BOARD

I. Overview and Preliminary Matters

1. On May 27, 2016, Citizens for Pennsylvania's Future ("PennFuture") on behalf of itself and several individuals identified as members thereof¹ filed an appeal challenging the validity of the Mount Pleasant Township ("Township") Zoning Ordinance No. 105, Chapter 200 (as amended by Ordinance 122) ("Zoning Ordinance") (A copy of which is attached and collectively known as **Exhibit A**), which permits certain types of oil and gas operations as conditional uses in all zoning districts, subject to compliance with numerous specific requirements and conditions set forth therein. See Notice of Substantive Validity Challenge ("Validity Challenge") attached hereto as **Exhibit B**. The Township was represented by their solicitor, Thomas McDermott. Through correspondence from their respective legal counsel, Range Resources—Appalachia, LLC ("Range Resources"), MarkWest Energy Partners, L.P. ("MarkWest") and Kathy Yonker, George Yonker, Yonker Family Industries, FLP and Zenith Management, LLC (collectively, the "Yonkers") intervened in the Validity Challenge.

2. The Mount Pleasant Township Zoning Hearing Board ("Board") conducted evidentiary hearings on dates that were mutually agreed upon by the parties and their respective counsel identified herein. These dates were: July 26, 2016; September 6, 2016; September 22, 2016; October 20, 2016; November 7, 2016; November 22, 2016; December 19, 2016; January 10, 2017 and January 26, 2017. During these hearings, the parties were afforded an opportunity to present witnesses and exhibits into evidence.

3. Members of the Board that heard the evidence presented were: Chairman Barry Johnston; Vice Chairman Ron Stewart; Member Tom Menzies; and Alternate Member Bud Osbourne.

4. A list of the exhibits admitted into evidence is attached as **Exhibit C**.

¹Dencil and Patriticio Backus, Danielle Burfield, Erin Gilbert, Susan Gilbert, Herby and Beck Mroz, Kim Perri, Kim Staub, Eileen Steding, Anita Steigerwald, and Kathy Utchell (herein referred to individually as an "Objector").

5. The following witnesses were called by PennFuture to testify:
 - a. Eileen Steding;
 - b. Susan Gilbert;
 - c. Dencil Backus;
 - d. Rebecca Mroz;
 - e. Kimberly Staub;
 - f. Anita Steigerwald;
 - g. Williams Hughes²;
 - h. Dawn Fiori;
 - i. Dencil Backus;
 - j. Ned Ketyer, M. D.;
 - k. Thomas Daniels;
 - l. Christopher Timmins; and
 - m. Seth Shonkoff.
6. The following witnesses were called by Range Resources to testify:
 - a. Anthony Gaudlip;
 - b. Christopher Long;
 - c. Ross Pifer;
 - d. Jerry Dent, II;
 - e. Bonnie Lee Reese;
 - f. Regis Mucha; and
 - g. Paul Battista.
7. The following witnesses were called by the Yonkers:
 - a. George Yonker; and
 - b. Kathleen Yonker.
8. The following witness was called by the Township:
 - a. Erin Sakalik.

²The Board sustained objections to the testimony of Mr. Hughes, and as a result he did not testify.

9. Following the presentation of all of the above witnesses and exhibits, the floor was opened to the public on January 26, 2017³, and the following individuals made public comments:

- a. Charles Wingert;
- b. Jeanine Miles;
- c. Paul Battista;
- d. Tom McMaster;
- e. George Yonker;
- f. Kathy Yonker;
- g. Wayne Roth;
- h. John Campbell;
- i. Lori Ward;
- j. Joey Ogburn;
- k. Eileen Steding;
- l. Jane Worthington;
- m. Cathy Cilik;
- n. Erin Gilbert; and
- o. Donna Seaver.

II. Township Zoning Ordinance.

10. The Township is a Township of the Second Class, organized under the Pennsylvania Second Class Township Code, 53 P.S. §65101 *et seq.*

11. In 2006, the current Zoning Ordinance was adopted by the Township Board of Supervisors. See Exhibit A. The 2006 Zoning Ordinance regulated all land uses within the Township.

12. On June 22, 2011, the Township Board of Supervisors adopted Ordinance No. 122, amending the 2006 Zoning Ordinance. See Exhibit A. As noted in more detail below, Ordinance No. 122 amended the 2006 Zoning Ordinance with respect to the regulation of oil and gas activities. Its adoption followed an extensive legislative process spanning a two-year period that included:

³ A separate public notice was placed in the newspaper prior to the January 26, 2017 hearing making the public aware that at this hearing, the public would be provided with an opportunity to speak and provide comment to the Zoning Hearing Board.

- a. Nine (9) Planning Commission meetings: June 1, 2009, October 5, 2009, November 2, 2009, February 1, 2010, April 5, 2010, June 7, 2010, December 6, 2010, January 3, 2011, and April 4, 2011. Township Exhibit 1.
- b. Ten (10) Township Board of Supervisors meetings: February 25, 2009, December 16, 2009, January 27, 2010, February 24, 2010, March 24, 2010, June 21, 2010, January 26, 2011, March 23, 2011, May 25, 2011, and June 22, 2011. Township Exhibit 1.
- c. Creation of a Zoning Advisory Committee, comprised of 14 members appointed by the Township Board of Supervisors, and chaired by Dencil Backus. (Mr. Backus testified in the within proceedings as noted below.) The Zoning Advisory Committee met two to three times a week over a several month period, and ultimately made recommendations to the Township Board of Supervisors with respect to the content of the proposed ordinance. Township Exhibits 1, 13.
- d. The consideration of multiple draft ordinances. Township Exhibits 5, 6, 7, 8.
- e. Retention of John Smith, Esquire, as special legal counsel to review the draft ordinance. Township Exhibit 1.
- f. Two public hearings before the Township Board of Supervisors. Township Exhibits 2, 3.
- g. Ultimately, adoption of Ordinance No. 122 by the Township Board of Supervisors at the public meeting held on June 22, 2011.

13. Prior to the adoption of the 2006 Zoning Ordinances and Ordinance No. 122, previous Township zoning ordinances provided for minimal regulation of oil and gas activities.

14. The zoning ordinance adopted by the Township Board of Supervisors on May 9, 1966 ("1966 Zoning Ordinance") authorized oil and gas wells and underground storage areas as a permitted use by right in all zoning districts, subject to:

- a. A 300-foot setback requirement; and
- b. A general requirement that the site be maintained in good condition and harmonize with the character of structures in the district in which it is located.

1966 Zoning Ordinance, Section 18; Range Resources Exhibit 21.E.

15. The zoning ordinance adopted by the Township Board of Supervisors on June 8, 1978 ("1978 Zoning Ordinance") authorized oil and gas wells and underground

storage areas as a permitted use by right in all zoning districts, subject to the same requirements as the 1966 Zoning Ordinance. 1978 Zoning Ordinance, Section 18; Range Resources Exhibit 21.D.

16. The 2006 Zoning Ordinance authorized oil and gas wells as a permitted use by right in all zoning districts, subject to:

- a. Compliance with federal, state, and local permitting and bonding requirements;
- b. Submission of a plan addressing transportation and maintenance of Township roads; and
- c. Submission of an emergency response plan.

Range Resources Exhibit 21.C.

17. Ordinance No. 122 dramatically increased the nature and scope of the Township's regulation of oil and gas activities compared with the prior zoning ordinances. While those ordinances authorized oil and gas wells as a permitted use by right, subject to the limited regulations noted above, Ordinance No. 122 sets forth a substantial number of regulations for not only oil and gas wells, but a number of other oil and gas activities. Additionally, instead of obtaining administrative approval of an oil or gas well as a permitted use by right, an operator must now apply for and obtain approval as a conditional use, thus triggering the extensive public notice and public participation requirements of the Pennsylvania Municipalities Planning Code, 53 P.S. §10101 *et seq.* ("MPC").

18. Ordinance No. 122 has amended the 2006 Zoning Ordinances to further regulate oil and gas wells by requiring the following:

- a. **Zoning Certificate.** A zoning certificate must be obtained prior to the commencement of drilling, and in connection therewith an applicant must provide information regarding royalty owners, copies of leases and permits, contact information, a certification that the site is not in a wetland or floodplain, the names and addresses of property owners within 1000 feet and a certification that they have been notified, anticipated construction start and completion dates, and a plot plan delineating property lines, buildings, water wells, water sources, and rights-of-way;
- b. **Grading Permit.** An applicant must obtain a grading permit, if applicable, under the Township's subdivision and land development ordinance, and provide evidence of an approved erosion and sedimentation control plan;

- c. **State and Federal Compliance.** An applicant must demonstrate compliance with all applicable state and federal regulations and provide evidence of obtaining all required permits before initiating any work;
- d. **Setbacks.** An applicant must submit information on setbacks from protected uses, public and private schools, and adjacent property lines and rights-of-way;
- e. **Screening.** Temporary screening panels are required to be erected for noise abatement, unless waived by the Township as part of the conditional use process;
- f. **Access Roads.** Access roads must be located at least 50 feet from adjacent property lines, must be paved for the first 50 feet, and be constructed with limestone for another 150 feet. They must be constructed and maintained in order to limit dust. Dust abatement is required and there is a prohibition on using certain substances for it;
- g. **Truck Routes.** An applicant must submit a road use plan, and keep a log of actual usage on a daily basis. In conjunction with the Township, the applicant is to designate hauling routes so as to limit impact on local roads. An applicant must post bonding for overweight vehicle travel;
- h. **Road Use Maintenance Agreements.** Applicants must apply for a road use maintenance agreement, pay prescribed fees, and adhere to all conditions of the agreement;
- i. **Fee Reimbursement.** An applicant must reimburse the Township for all reasonable professional fees;
- j. **Signage, Site Identification.** Visible well site signage is required at the entrance. The signage must include, among other things, emergency contact information;
- k. **Lights.** Lighting must be directed in such a manner that it does not directly shine on a public road, protected use, adjacent property, or other property in the vicinity of the well site. To the extent possible, lighting shall be directed downward, and turned off except when personnel are working or motion detectors are activated;
- l. **Operation Times.** Site construction is limited to 7:00 a.m. to 7:00 p.m., Mondays through Saturdays. The drilling phase is exempted;
- m. **Water Impoundments, Fresh/Waste.** Impoundments must be registered, and are subject to a number of permitting, notice, reporting, setback, fencing, bird netting, and signage requirements;

- n. **Emergency Response Plan.** An emergency response plan is required. An applicant also must provide first responder orientation and training;
- o. **Engine and Motor Enclosures.** All engines and motors involved in active drilling and fracturing used to facilitate the movement of gas or regulate its pressure must be enclosed in a permanent structure;
- p. **Supervisory Personnel.** Bunk housing of workers is prohibited not only on the well site, but anywhere in the Township. There are certain exceptions for supervisory personnel, for whom the applicant must complete a registration form and pay a temporary user fee; and
- q. **Supplemental Regulations.** An applicant also must comply with the Zoning Ordinance's supplemental regulations applicable to all uses, as well as the procedural and general standards applicable to conditional uses.

Zoning Ordinance at Sections 103.5.

19. The Zoning Ordinance also places geographic limitations on other types of oil and gas activities. For example, compressor stations are not permitted in the R-3 and R-4 Districts, processing facilities are not permitted in the R-1, R-2, R-3, R-4, and B-1 Districts, and pipelines and metering stations/above ground gathering facilities are not permitted in the R-4 District. See Ordinance No. 122, at Use Chart. (See the last page of Range Exhibit 21B.) In those districts where these types of facilities are authorized, as either uses by right or as conditional uses, they are generally subject to requirements similar to those for oil and gas wells. In addition, compressor stations, processing plants, and metering stations/above ground gathering facilities are subject to setbacks of 1,000 feet from any protected use, 2,500 feet from any public or private school, and 100 feet from adjacent properties or rights-of-way. Zoning Ordinance at Sections 103.1., 103.2, and 103.4.

20. Significantly, the Zoning Ordinance recognizes that the Township's regulation of oil and gas activities do not occur in a vacuum, and that these activities are extensively regulated by the Commonwealth of Pennsylvania. See the Zoning Ordinance at Sections 103.1, 103.2, 103.3, 103.4, 103.5, and 103.5.

21. On October 23, 2013, the Township Board of Supervisors adopted Resolution No. 2013-I. (PennFuture Exhibit 5). That resolution invoked Section 609.2 of the MPC and declared the below referenced portion of the Zoning Ordinance, in existence at that time, substantively invalid, and directed that the Township Board of Supervisors to proceed to prepare and consider a "curative amendment" to correct this limited invalidity. Specifically, Resolution No. 2013-I stated:

1. The Board does hereby formally declare its zoning ordinance to be substantively invalid insofar as it fails to adequately provide for the principal use of impoundment or other storage facilities for water and other fluids in connection with Oil and Gas Wells and proposes to prepare a curative amendment to overcome such invalidity.
2. The Board makes the following specific findings setting forth the declared invalidity of the zoning ordinance:
 - a. The use of impoundment or other storage facilities for water or other fluids in connection with Oil and Gas Wells is not permitted, as a principal use, and is a use which requires revision.
 - b. Revisions should be made which adequately provide for the availability of impoundments or other storage facilities for water or other fluids in connection with Oil and Gas Wells so as not to be exclusionary, consistent with the community objectives and zoning purposes set forth in the zoning ordinance.
- 2.(3.) The Board shall immediately begin to prepare and consider a curative amendment to the zoning ordinance to correct the invalidity described herein, with input as appropriate from the Township Planning Commission, any consultants and the public.

22. At no time subsequent to the adoption of Resolution No. 2013-I did the Township Board of Supervisors adopt any amendment to the 2006 Zoning Ordinance or Ordinance No. 122 addressing the subject matter of Resolution No. 2013-I.

III. PennFuture's Validity Challenge.

23. The Validity Challenge by PennFuture alleges that the 2006 Zoning Ordinance, as amended by Ordinance No. 122 (the Zoning Ordinance), is invalid for the following reasons:

- a. The Township Board of Supervisors never adopted a curative amendment subsequent to the adoption of Resolution No. 2013-I;
- b. The Zoning Ordinance violates the substantive due process rights of Township residents guaranteed by Article 1, Section 1 of the Pennsylvania Constitution and the Fourteenth Amendment to the United States Constitution. PennFuture asserts that the Zoning Ordinance constitutes "irrational zoning" because it allows shale gas operations "to be located across all zoning districts, including zoned

districts where incompatible uses are allowed such as in the residential and agricultural districts.”; and

- c. The Zoning Ordinance violates the rights of Township residents to clean air, pure water, and the preservation of the natural, scenic, historic and esthetic values of the environment guaranteed by Article I, Section 27 of the Pennsylvania Constitution, commonly known as the Environmental Rights Amendment (“ERA”). PennFuture asserts that under the ERA the Township had an obligation to assess and determine whether any proposed project, law, regulation or ordinance would cause unreasonable actual or likely degradation of air and/or water quality or other protected features of the environment, and if it failed to do so it violates the ERA. PennFuture claims that the Township failed to account for these concerns in allowing shale gas development to occur across all zoned districts, in contravention of the “rights and expectations” of its citizens.

24. PennFuture’s Validity Challenge concludes by requesting that the Board declare the 2006 Zoning Ordinance, as amended by Ordinance No. 122 (the Zoning Ordinance) invalid and “halt all consideration of conditional use or other permits for industrial shale gas development.”

IV. Issue of Standing

25. Prior to the commencement of the proceedings addressing the substance and merits of the PennFuture Validity Challenge, objections were made challenging the Standing of PennFuture to proceed with its Validity Challenge.

26. The first night of hearings was devoted to the issue of PennFuture’s standing to proceed with its Validity Challenge, at which time all parties in interest were permitted to present witnesses.

27. PennFuture called six (6) witnesses to testify as to their membership in PennFuture, their relationship to Mt. Pleasant Township and the impact of oil and gas development on them. Public comment was also received.

28. Those residents testified that: they had resided in the Township for varying lengths of time, they had experienced increased truck traffic in the Township from oil and gas development; oil and gas development will negatively impact the community’s character and aesthetics; the belief of at least one resident that oil and gas development has decreased the value of their home; they have encountered truck traffic in the Township from oil and gas development; they have seen increased traffic on their

street as a result of oil and gas development; and oil and gas development generates noise.

29. Those residents also testified that they lived in varying proximities to well pads and a Fort Cherry School.

30. The Board finds that the testimony of the witnesses/residents called by PennFuture credible and relevant.

31. After hearing the witnesses as presented by PennFuture, the Board, by a unanimous vote of its members, determined that PennFuture had standing to bring its Substantive Validity Challenge and allowed them to proceed.

V. PennFuture's Validity Challenge Case in Chief

32. After the ruling of the Board that PennFuture had standing to proceed in this matter, PennFuture proceeded to present witnesses testifying generally as follows:

33. PennFuture proceeded with the presentation of its witnesses and exhibits by first calling William Hughes.

34. After an offer of proof was requested and made, the Board determined that Mr. Hughes was not an expert witness, and that his fact testimony was not relevant to these proceedings.

35. PennFuture next called Dawn Fiori, a resident of the Township. Ms. Fiori testified generally that she lived in the Township when a well and pipeline was constructed near her property line and a compressor station was constructed across the street; construction of the well pad near her home lasted about six weeks; the impacts of the construction ceased when the well construction was complete; she experienced noise, light, inconvenience, and stress from the construction of the well and pipeline and operation of the compressor station; and she was concerned for the safety of her children during construction. The Board has given Ms. Fiori's testimony due consideration.

36. PennFuture next called Dencil Backus, a resident of the Township. Mr. Backus testified that: the oil and gas rights under his current property are leased, but that he is not the owner of those rights; his back property line is located within 200 feet of a well pad and that there is a pig launcher about 100 feet from his property line; his house is located approximately 2,500 to 3,000 feet from a well pad; he cannot see the well pad from his house; prior to or during development of the subject well pad and also the "pig launcher" he arranged for a survey, water testing, and air testing, however, he did not provide the results of these efforts to the Board; the subject well pad construction and operation affected the use of his property, however, after drilling at that well pad, he has not experienced much noise impact, with the exception of the pig launcher, and that noise is "relatively infrequent", and it is not loud and is a hiss that lasts for a couple minutes and is not louder than a lawn mower or car engine; it is his position that it is inappropriate

to place shale gas activity in a residential zone; and he is located approximately 1.98 miles from a new well pad.

37. Mr. Backus continued in his testimony relevant to his involvement in developing the Township Ordinance 122 amending the Zoning Ordinances. Mr. Backus testified that: he was a member of the citizens' zoning advisory committee ("ZAC") which was created in November 2009 to advise the Township Board of Supervisors on oil and gas matters; he served on the ZAC as its coordinator; the ZAC existed until March 31, 2010, during which time the ZAC met two to three times a week; the committee studied actual oil and gas activities, and gathered ordinances from other communities; in his capacity as coordinator of the ZAC, he made a Power Point report to the Township Board of Supervisors at its February 24, 2010 meeting; this report concluded with a recommendation that oil and gas wells be authorized as a conditional use in the Township's A-1, R-1, R-2, B-1, and I Districts; the ZAC presented a draft ordinance to the Township Board of Supervisors in the process of developing the Township Ordinance 122; the Township Board of Supervisors conducted two public hearings; at the April 12, 2011 public hearing, he urged the Township Board of Supervisors to adopt Ordinance 122 stating "So please do not abandon conditional use as part of that ordinance, and please do pass this ordinance with all due speed".

38. Finally, Mr. Backus testified that he served on the Township Board of Supervisors between December 2013 and December 2015, however, he was not on the Township Board of Supervisors when it adopted the amendment Resolution No. 2013-I, but joined it shortly thereafter. Additionally, he testified that while a Township Supervisor, the Township Board of Supervisors hired a consultant to evaluate the Zoning Ordinance and facilitate discussions with the Township Planning Commission, and that while he served as a member of the Township Board of Supervisors he never proposed eliminating oil and gas wells as an authorized use in the A-1 and R-1 Districts or any other district.

39. The Board finds that the testimony of Mr. Backus is genuine, sincere, and relevant to the legal challenge to the validity of the Township's Zoning Ordinance, and his testimony is given appropriate weight.

40. PennFuture next offered the testimony of Ned Ketyer, M.D., a pediatrician. Dr. Ketyer is a member of the American Academy of Pediatrics, the American Academy of Pediatrics Council of Environmental Health, the Allegheny County Medical Society and other professional organizations. He also has practiced pediatric medicine in Washington County for 26 years.

41. Dr. Ketyer is not a toxicologist, an epidemiologist, or an expert in air modeling, and does not do formal health risk assessments and has not published articles on the health effects of gas development.

42. Dr. Ketyer acknowledged that health risks depend upon exposure and that exposure depends upon the amount of emissions, the proximity to the emissions, and the duration of the exposure. He further testified that he assumed that gas development results in exposures to harmful air emissions because of what he has seen and smelled, but he has not reviewed the available actual air emissions data.

43. Although Dr. Ketyer acknowledged it is relevant, he was not aware of and had not reviewed the ChemRisk study, published by Maskrey, *et al.* in a peer-reviewed journal, monitoring air quality at the Fort Cherry School and a nearby downwind residence in the Township during development of the Chiarelli well pad by Range Resources.

44. Upon cross-examination, Dr. Ketyer admitted that he was not aware of relevant data and sampling from the Pennsylvania Department of Environmental Protection; the Allegheny Health Department monitoring two well pads; certain peer reviewed articles relevant to the matter at hand; monitoring data from Washington County (where the Township is located); or statistics or studies for well pads.

45. In rebuttal to the testimony of Dr. Ketyer, Range Resources offer the testimony of Professor Ross H. Pifer. (Professor Pifer's testimony is addressed further below, except as it relates to the rebuttal of Dr. Ketyer which is stated immediately below.)

46. Professor Pifer noted in his testimony that none of the health studies on which Dr. Ketyer relied were based on actual air monitoring data to determine the extent of exposure, but rather were based on exposure surrogates not validated with actual air monitoring data.

47. Furthermore, as stated by Professor Pifer, many of the health studies on which Dr. Ketyer relied were based on surveys of persons who were asked to report subjective common health symptoms that are commonly experienced, with no medical validation of these reports.

48. It was also noted that the epidemiologic studies on which Dr. Ketyer relied used invalidated exposure proxies rather than actual exposure data, had major methodological limitations, uncertainties and inconsistent findings, and are at best hypothesis-generating studies.

49. Professor Pifer continued by stating that the Jemielita study referenced by Dr. Ketyer did not use measures of actual exposure, but rather was an ecological study looking at trends in hospital inpatient data across zip codes, which did not allow for evaluation of individual level data on factors that could influence hospital admissions, such as lifestyle and medical factors. In addition, the authors relied on yearly data such that hospital admissions in the early part of a year could be erroneously correlated with wells in the zip code which had not yet been developed. Finally, the authors made a very

large number of statistical comparisons such that it is possible that by random chance alone there may be some statistically significant associations.

50. Further, Professor Pifer noted that the Tustin survey study on nasal and sinus symptoms, migraine headaches, and fatigue referenced by Dr. Ketyer did not use any actual exposure data, but rather used exposure proxies. It did not consider the temporal relationship between unconventional natural gas development and symptoms, and it had a low survey response rate and a greater tendency of study participants with poor health to respond to the survey resulting in a potential for selection bias. Significantly, the people in the highest exposure group tended to live farther north than the people in the other three exposure groups resulting in spatial confounding, which was acknowledged by the authors themselves. Finally, the study had few survey respondents who lived in the counties with the greatest amount of unconventional natural gas development activity, limiting the results of the study.

51. Continuing, Professor Pifer testified that the Rasmussen study on asthma exacerbations referenced by Dr. Ketyer did not use any actual exposure data, but rather used exposure proxies. The study had additional major limitations including its omission of a number of Pennsylvania counties with extensive unconventional natural gas development, its control for just a small number of potential confounding factors, its lack of consideration of the actual timing and location of the exposure event triggering the asthma exacerbation, and an unusual study design which used different event and contact dates for cases and controls. In addition, counties with a great deal of unconventional natural gas development were not associated with asthma exacerbation outcomes. The study results are inconsistent with the data of the Pennsylvania Department of Health which demonstrates that areas with a lot of unconventional natural gas wells have among the lowest asthma inpatient hospitalization rates in the state.

52. Based on the above findings of fact, including the rebuttal of Professor Pifer, the Board does not find Dr. Ketyer's opinion that emissions from unconventional natural gas development are abundant and pose a threat to humans and human health credible to the extent necessary to consider in this matter.

53. PennFuture next offered the testimony of Dr. Thomas Daniels, as an expert in urban and rural land use planning and agricultural preservation/conservation.

54. The Board has concerns as to the testimony of Dr. Daniels regarding land use planning in the Township with respect to oil and gas matters as he was not sure which zoning districts he had observed in the Township; he has never visited an unconventional natural gas well pad either during drilling or production; he has never drafted a complete zoning ordinance or comprehensive plan, or a zoning ordinance or comprehensive plan containing provisions related to oil and gas development; he has never been retained to provide consulting or other services to a municipality with respect to oil and gas; he does not have any municipal clients where there are ongoing active oil and gas operations; he

has not served on either a planning commission or a zoning hearing board; he is unfamiliar with any of the state permitting processes required for oil and gas development in Pennsylvania, including well permits, prevention preparedness and contingency plans; and he is unfamiliar with the oil and gas well setback requirements imposed by state law.

55. Dr. Daniels opined that oil and gas development is an “industrial” use that should not be placed in residential and commercial districts. However, Dr. Daniels has never personally observed the impacts from oil and gas development that he relies on as a basis for his opinion and admits that these impacts are also generated by agricultural and residential uses.

56. In rendering his opinions, Dr. Daniels did not compare the impacts of oil and gas development with the noise, traffic, dust, lighting, runoff, odors, fires, and other impacts associated with residential and agricultural uses. However, he did acknowledge that a farm could cause more earth disturbance than an oil and gas well pad.

57. Dr. Daniels acknowledged he was unaware that Section 3215(a) of the Oil and Gas Act requires a 500-foot setback between an unconventional natural gas well and an existing building or water well. He was also unaware that application of Section 3215(a) results in less than 50% of the Township’s land mass being available for oil and gas well development.

58. Dr. Daniels acknowledged that the number of regulations in the Zoning Ordinance applicable to oil and gas operations far exceed those applicable to other uses, such as junkyards, slaughterhouses, and windfarms. Dr. Daniels also acknowledged that the Zoning Ordinance contains a number of “performance standards” applicable to all uses, including oil and gas. These standards address floodplains, steep slopes, subsurface conditions, vibrations, glare, fire hazards, radioactivity and electrical disturbance, odors, air pollution, erosion, and water pollution.

59. Dr. Daniels was generally aware that the Township Board of Supervisors recently granted conditional use approval to Range Resources for a new well pad. However, he was not aware that the Township Board of Supervisors had imposed a significant number of conditions on that approval, addressing lighting, odors, noise, vibrations, access drive and roads, dust control, public safety, site security, and hours of operation.

60. Dr. Daniels acknowledged that oil and gas development is subject to the Oil and Gas Act, the Clean Streams Law, and PADEP regulations implementing the same.

61. Based on the above findings of fact, the Board does not accept Dr. Daniels’ characterization of unconventional natural gas development as an “industrial”

use, and his opinion that Ordinance No. 122 is inconsistent with the Township's comprehensive plan and violates basic zoning principles.

62. PennFuture next offered the expert testimony of Dr. Christopher Timmins, an economist. Dr. Timmins is employed by Duke University, Department of Economics and he obtained his PhD in Economics from Stanford University. He is also published in numerous peer reviewed research papers on energy and environmental economic issues, as well as the effects of shale gas development (e.g. noise, light and air pollution, increased truck traffic and groundwater contamination risk).

63. Dr. Timmins did statistical research for the entire state of Pennsylvania and concluded that ground-water dependent homes in the state that are within a kilometer of gas wells have a drop in home values compared to homes with public water available, although he did not testify that he conducted any studies specific to the Township or that his study findings are present in the Township.

64. Dr. Timmons did not collect any information as to any actual contamination of water wells anywhere in the state.

65. Dr. Timmins did not analyze housing data specific to the Township and he testified that he would not be able to derive anything statistical from just data on one township.

66. In his study, Dr. Timmins included both vertical and horizontal wells, despite acknowledging that there are differences in terms of impact of operations and royalty payments.

67. In his study, if there was a property sale after the well was drilled and already in production, Dr. Timmins considered those to be in the same category as a well that was being developed during the time of sale even though Dr. Timmins acknowledged that there are differences between activities during the active development phase and after the well is in production.

68. In his study, Dr. Timmins did not have the ability to determine whether a property was sold with or without mineral rights or whether there was a gas lease on the property even though he acknowledged that these factors would impact price.

69. Dr. Timmins acknowledged that his study does not answer the question of whether more ground-water dependent homes (which generally have more acreage) lost value because the seller retained more valuable mineral rights.

70. In his study, Dr. Timmins concluded that his findings were the result of purchasers' perception of risk to ground-water, not due to actual ground-water contamination. As a result, Dr. Timmins concluded that this impact can be mitigated by making public water more available, testing water wells, and tightening regulations around the operation and drilling of unconventional natural gas wells.

71. Dr. Timmins acknowledged that since his study, the availability of public water in the Township has increased; that water wells within a set distance from unconventional natural gas wells are tested before any drilling takes place, and additional testing is conducted in the event a water supply within 3,000 feet of the wellbore is alleged to be impacted, and that water supplies determined to be impacted must be replaced by the operator; and that regulations regarding the drilling and operation of unconventional natural gas wells have been tightened. Correspondingly, Dr. Timmins acknowledged that in light of these changes, he would like to redo the study.

72. Dr. Timmins acknowledged that there are positive economic impacts of gas development that include lower priced energy, a reliable domestic energy source, a positive and substantial impact on total employment and income for local residents, royalties for homeowners which among other things can allow homeowners and farmers to maintain a home that economically they may not otherwise have been able to maintain, increases in the tax base, and increases in population and business activity.

73. Although the conclusion of Dr. Timmins was generally that gas development has a negative impact on property values, based on the above findings of fact extrapolated from Dr. Timmins' testimony, the Board rejects the conclusion that Dr. Timmins' study demonstrates that there is an adverse effect of gas development on property values in the Township.

74. PennFuture having presented the witnesses in its case in chief, Range Resources proceeded to present its case in chief.

VI. Range Resources Case in Chief

75. Range Resources began its case by offering the testimony of Anthony Gaudlip with regard to the Commonwealth and Township permitting processes applicable to the development of unconventional natural gas wells by Range Resources and oil and gas operators more generally.

76. Mr. Gaudlip is an employee of Range Resources and serves as Range Resources' Director of Civil/Environmental Engineering and Construction. In this capacity, he manages the team that is responsible for unconventional natural gas well pad permitting and development, including associated water and road infrastructure. He has served in this same role in connection with the company's development of unconventional natural gas wells in the Township.

77. Mr. Gaudlip testified that Range Resources developed its first Marcellus well in 2004, the Renz Number 1 well, located in the Township. Range Resources has over 5,000 producing wells in Pennsylvania, 4,000 conventional and 1,000 unconventional. It presently has 64 producing wells in the Township.

78. Mr. Gaudlip testified that Range Resources has paid approximately 140 million dollars in royalties and bonuses to property owners in the Township. It has also donated over 10 million dollars to charities in Washington County. Pursuant to Act 13, Range Resources pays "impact fees" to the Commonwealth. From these sums, 2.4 million dollars has been paid to the Township for the years 2011 through 2015.

79. Mr. Gaudlip testified as to the process of Range Resources drilling an unconventional gas well, beginning with the evaluation of a number of factors before it selects a site for an unconventional natural gas well pad. He explained that as part of the process, Range Resources will look at alternative locations to access the reservoir. This phase concludes with a well pad sketch, which also configures road access and post construction storm water management.

80. Mr. Gaudlip testified that the next step is field reconnaissance, where Range Resources personnel meet with and obtain input from the landowners regarding the preliminary design, most notably location of the pad and any access roads. Other factors reviewed during this stage include utility locations, speed limits, road and bridge weight limits, road turning radii and sight distances, and other matters, such as wetlands and new structures, that might not have been noticed as part of the review process.

81. As the process continues, Mr. Gaudlip testified that professional engineers, working with the company's environmental consultants and consulting engineers, design the unconventional natural gaswell pad, including the access road and post-construction storm water features.

82. Of note, Mr. Gaudlip testified that to reduce the environmental impact of surface disturbance, Range Resources utilizes horizontal drilling, where an operator can access more of a reservoir from a single unconventional natural gas well pad than in the past with vertical drilling. A conventional vertical well pad is about one-half acre and can drain about 25 acres of reservoir, whereas an unconventional horizontal well pad is about three and one-half acres and accesses nearly 2,000 acres downhole.

83. Mr. Gaudlip continued by stating that as a result of the above, on a per acre basis, earth disturbance versus reservoir development, horizontal drilling has one tenth the surface disturbance impact compared with vertical drilling.

84. Mr. Gaudlip continued by stating that the final step in the process is permitting. At the state level, an operator must obtain approval of an Erosion and Sedimentation Control General Permit (ESCGP-2) issued by the PADEP, a well permit for each well, a water management plan, and various water obstruction and encroachment permits.

85. Mr. Gaudlip then testified to the extensive review and analysis process that must be complied with after the ESCGP-2 is issued by the PADEP. The issues that must be addressed by Range Resources or similar companies include, but are not limited

to: earth disturbance, both for construction erosion and sedimentation control and for permanent storm water management; identifying endangered or protected plant and animal species near the site; addressing permanent, post-construction storm water features, similar to what one would address in any residential or commercial development; and the preparation of a Preparedness, Prevention and Contingency Plan ("PPC Plan"), which details the measures for emergency response for prevention of spills on locations.

86. In addition to the ESCGP-2, Mr. Gaudlip testified that an operator also must apply for and obtain a well permit from the PADEP. This well permit application includes a well plat, which identifies all water wells and water supplies within 3,000 feet, all landowners within 1,000 feet, any coal owners, and any municipalities within 3,000 feet.

87. Mr. Gaudlip continued in his testimony as to the extensive process in which a well operator must engage to drill and operate an unconventional gas well, and he gave numerous examples. He further explained that as a result of the increased Pennsylvania regulatory oversight of unconventional natural gas development, the number of inspections of unconventional natural gas wells has increased five-fold, although the number of violations is down 67%.

88. Although the Township does not have any express setbacks for unconventional natural gas wells, Mr. Gaudlip testified that Range Resources or any other oil and gas operator is subject to the setback requirement of the Oil and Gas Act (Act 13) that any wellbore be located at least 500 feet away from any existing building.

89. Because of the requirements of the Oil and Gas Act (Act 13), including the application of the 500-foot setback, the amount of surface acreage available in the Township for unconventional natural gas well development is reduced to 47% of its land mass.

90. Continuing on, Mr. Gaudlip testified that in addition to the state regulatory requirements for unconventional natural gas development, Range Resources or any other operator must comply with the Township's ordinance requirements. He gave such examples with respect to the most recently constructed well pad, beginning with Range Resources' required application to the Township for conditional use approval pursuant to the Zoning Ordinance. That process included review and recommendation by the Township Planning Commission; a publicly advertised hearing before the Township Board of Supervisors; and approval by the Township Board of Supervisors at a subsequent public meeting.

91. As a result of this process in the most recent application by Range Resources in the Township, Mr. Gaudlip testified that the Township Board of

Supervisors' written decision imposed approximately 60 conditions on that approval, addressing compliance with laws, regulations and permits, light control, odor control, noise control, property access road, use of Township roads, vehicle equipment routes, designated routes during production, school traffic coordination, on-site security, bunk housing, hours of operation, notice of commencement, and scheduling.

92. The Board finds that overall, the testimony of Mr. Gaudlip demonstrated that outside of the control of the Township, there are in place considerable protections of the residents of the Township relative to unconventional gas operations.

93. The Board finds Mr. Gaudlip's testimony credible and that it was directly relevant to the issues related to unconventional gas development in the Township.

94. Range Resources next offered the testimony of Ross H. Pifer, an expert on the interplay between and compatibility of unconventional natural gas development and agriculture and rural uses in the Commonwealth of Pennsylvania. His qualifications were not challenged by any party.

95. In his various capacities at Penn State, Professor Pifer has had the opportunity to visit unconventional natural gas well sites approximately 50 times, and at all stages of development. His research has focused on unconventional natural gas development, and the interface between agriculture and residential, commercial and unconventional natural gas development. He has written numerous of law review and other articles on unconventional natural gas development and agricultural issues, and he frequently speaks on those subjects throughout the United States to audiences including landowners, lawyers, legislators, and other government officials.

96. Professor Pifer has testified at Pennsylvania legislative hearings before the agricultural, environmental resources, and energy committees. The subject matter of these presentations has included leasing issues and the scope of local government regulation of the oil and gas industry. He also served on a work group for the Governor's Pipeline Infrastructure Task Force, addressing the issues that agricultural landowners face with pipeline development.

97. Professor Pifer has testified as an expert on the compatibility of unconventional natural gas operations within agricultural or rural communities in proceedings before the zoning hearing boards in Allegheny Township, Westmoreland County and Pulaski Township, Lawrence County. Both zoning hearing boards found Professor Pifer qualified as an expert on this subject, found his testimony credible, and agreed with his findings.

98. Professor Pifer testified that there is a long history of oil and gas operations safely coexisting within rural communities located in the Commonwealth and that at the beginning of the 21st century, prior to any unconventional natural gas

development, the Commonwealth ranked third nationally in the number of active gas wells, with over 46,000.

99. Professor Pifer continued that there likewise is a 150-year history of oil and gas development safely coexisting in the Township and surrounding rural communities in Washington County; and that as of 2000, there were 558 active oil and gas wells in Washington County.

100. Professor Pifer testified that modern unconventional natural gas development has taken place primarily in Pennsylvania's rural counties, with Washington County having the most wells drilled; 1,475 as of November 2016, with the predominant land use on which this development is taking place being agricultural or forest land.

101. Professor Pifer explained that unconventional natural gas development relies upon two key technologies, hydraulic fracturing and horizontal drilling. Although both are referred to as new technologies, horizontal drilling has been in existence since 1929 and hydraulic fracturing since 1947.

102. The testimony of Professor Pifer found that as is relevant to the Township, unconventional natural gas development has a more positive impact on agricultural development compared with conventional development in that it can reduce the surface impact of drilling. For example, Professor Pifer stated that a conventional well may drain 20 to 40 acres, while an unconventional natural gas well pad now may effectively drain up to 2,000 acres. This results in a comprehensive drilling program utilizing conventional wells requiring a far greater number of well pads, possibly a magnitude of 30 to 60 times more than would a program utilizing modern horizontal wells. As a consequence, by reducing the number of well pads, associated impacts such as those arising from the installation and use of access roads are reduced through use of unconventional well drilling techniques.

103. Professor Pifer continued to provide testimony applicable to the Township by testifying that with horizontal drilling, it is not necessary to disturb the surface of each parcel. Although the surface impacts from unconventional natural gas development differ from those associated with conventional well development, these differences do not adversely affect the compatibility of unconventional natural gas development operations with agricultural operations and other rural land uses. Professor Pifer opined that in aggregate, the direct impact of unconventional natural gas development will cause less agricultural land to be removed from production in comparison with conventional development.

104. Professor Pifer identified approximately 55 municipal ordinances (14 for Washington County municipalities) and county zoning ordinances governing approximately 100 municipalities where unconventional natural gas wells, single family residences, and agricultural uses are all authorized in the same zoning district. Moreover,

in roughly half of those ordinances, unconventional natural gas uses are authorized as a permitted use by right. By comparison, the Zoning Ordinance requires an applicant to go through the much more rigorous conditional use process.

105. Again applying his testimony to the Township, Professor Pifer testified that unconventional natural gas development is consistent with agricultural uses. He stated that landowners with agricultural operations have received significant financial benefits from unconventional natural gas operations, and that they have used lease revenues to improve their agricultural operations. Those revenues also have made it easier for farmers to undertake inter-generational transfers of their farms and generally have provided them with more economic stability. (This testimony was supported during the public comment portion of the hearings.)

106. As with Mr. Gaudlip, Professor Pifer testified to the protections of the citizens of the Township by laws and regulations at the State level. For example, but not by way of limitation, Professor Pifer testified that Pennsylvania has enacted laws designed to provide special protections for agricultural lands. Two of those laws are the Farmland and Forest Land Assessment Act (also known as the "Clean and Green Law"), 72 P.S. §5490, and the Agricultural Area Security Law, 3 Pa.C.S.A. §901 ("AASL"). Both of these laws provide protections and benefits as to how specially designated farmland may be used to ensure that the land is preserved for future agricultural uses. Both of these laws explicitly allow for unconventional natural gas development on the specially designated farmlands protected by these laws.

107. It was Professor Pifer's expert opinion that to a reasonable degree of professional certainty unconventional natural gas development is compatible with agricultural and rural land uses and can safely coexist within the Township.

108. The Board finds Professor Pifer credible and an expert with respect to the interplay between and compatibility of unconventional natural gas development and agriculture and rural uses in the Commonwealth of Pennsylvania; and the Board accepts his opinions and findings set forth above.

109. Range Resources next offered the testimony of Dr. Christopher Long, as an expert on the alleged health effects of air emissions from unconventional natural gas development.

110. Dr. Long routinely does human health risk assessments in his capacity as an environmental and health consultant for Gradient in Cambridge, Massachusetts, and he has published extensively concerning toxicology, air exposures, and human health risk assessment in peer-reviewed journals.

111. Dr. Long has reviewed a large number of materials that have included peer-reviewed published studies on air quality impact in the Marcellus Shale region; a

number of governmental reports, as well as governmental datasets pertaining to air quality in the Marcellus Shale region; and a number of commissioned studies of air quality in the Marcellus Shale region. Also, he has visited active well pad sites in the Township as well as the Fort Cherry School.

112. Dr. Long testified that the review of air quality data is important to a risk assessment because it is a basic tenet of toxicology that the dose to which a person is exposed determines whether there will be a harmful effect.

113. Dr. Long informed the Board that the PADEP has placed continuous monitors for PM_{2.5} (fine particulate) downwind in areas of dense unconventional natural gas development, including: the Holbrook monitor in Greene County; the Towanda monitor in Bradford County; and the Tioga County monitor. Dr. Long stated that a comparison of the data from these monitors to those in areas without unconventional natural gas development shows the same variability in PM_{2.5} levels with the average concentrations of PM_{2.5} a bit lower in the gas activity areas.

114. More relevant to the area in close proximity to the Township, Dr. Long testified that the PADEP Houston monitor in Washington County, which is downwind in an area of dense unconventional natural gas development, as well as that the Towanda and Tioga County PADEP monitors, record continuous NO₂ (nitrogen dioxide) levels. No 1-hour NO₂ measurement at these locations were above the health-protective 1-hour National Ambient Air Quality Standard ("NAAQS"), and the measurements were generally far below those standards.

115. Continuing, Dr. Long stated that the PADEP has O₃ (ozone) monitors in South Fayette, Towanda, Holbrook, Charleroi, Washington, Florence, and Tioga County, all in regions with unconventional natural gas development. Despite a dramatic increase in the number of unconventional natural gas wells in these regions, there has not been a corresponding dramatic increase in ozone levels.

116. Dr. Long continued to provide government and third party (peer reviewed) generated data in support of his position that air pollutants in areas of unconventional natural gas activities were similar to those in other areas and/or were not expected to harm the health of the general population.

117. It was Dr. Long's expert opinion within a reasonable degree of scientific certainty that there is now available a sizable body of ambient air monitoring studies that can be used to assess the nature and potential health risks in community level air exposures that may arise from unconventional natural gas development activities. This body of data does not support claims of widespread air exposures of public health concern for typical unconventional natural gas development operations.

118. The Board finds that Dr. Long, as an expert with respect to toxicology, air exposures, and human risk assessment, is credible and it accepts his opinion and findings as set forth above.

119. Range Resources next offered the testimony of several Township residents who testified to the history of gas well operations in the Township and their farm operations in the Township.

120. The general testimony of these Township residents was that: unconventional natural gas development procedures were not bothersome or a burden; the residents were able to farm their land up to the edge of the pads and the wells did not noticeably interrupt their farming; testing did not reveal contamination of well water; the royalties from gas well operations were used to purchase machinery for the farm and for improvements; one resident experienced temporary and permanent negative impacts from residential development near his property, which included noise, loss of his pristine view, and increased traffic; Range Resources had improved the roads of the Township.

121. The Board finds the testimony of these residents of the Township persuasive as to the positive impact of gas development in the Township.

122. Range Resources next offered the testimony of Jerry Dent as an expert on the impact of environmental issues on property values.

123. In preparation for his testimony, Mr. Dent visited the Township, including gas well pads; reviewed the Yonker Well Pad application to obtain information concerning typical well pad development by Range Resources; reviewed a map showing the well pads located in the Township; viewed a videotape depicting unconventional natural gas well development; reviewed photographs of unconventional natural gas well pads; reviewed the testimony of Range Resources' witness, Tony Gaudlip, regarding Range Resources' operations; reviewed a zoning map of the Township; reviewed a map showing the availability of public water in the Township; reviewed demographic information for the Township; reviewed real estate sales data for the Township; reviewed reports concerning the economic impact of unconventional natural gas development; reviewed literature concerning the impact of unconventional natural gas well development on housing prices; and reviewed the report and testimony of Dr. Timmins.

124. Mr. Dent reviewed the "Washington and Jefferson Analysis of Economic Impact of Unconventional Shale Development" and a report entitled "Marcellus Natural Gas Development's Effect on Housing in Pennsylvania" because the local economy impacts on the real estate market. These reports indicated to him that local unconventional natural gas development has had a positive economic impact and that there is a second wave of gas employees that come into gas development areas resulting in an increase in the demand for housing.

125. Mr. Dent also reviewed a report entitled "Shale Gas Drilling and Farm Real Estate Values", which indicated that such development in three Pennsylvania counties will create about \$466 million dollars in total wealth for farmers, or about \$130,000 per farm, which may help farmers upgrade equipment and technology to improve the profitability of their operations.

126. Mr. Dent testified that the impact of environmental issues on real estate value is governed by the Uniform Standards of Professional Appraisal Practice ("USPAP"), which are the generally accepted standards for appraisal in North America. USPAP requires that there be contamination above a regulatory level, and if such contamination is present, USPAP requires an evaluation of its impact on cost (to investigate, remediate, and monitor), use, and risk (market perception/stigma). USPAP requires that an appraiser look at market data in the relevant area to determine if there is stigma. If these factors are present, the appraiser must then determine causation.

127. Mr. Dent continued by stating that under the USPAP generally accepted standards, it is not appropriate to use a state-wide regression analysis to determine that real estate in the Township has (or has not) suffered an impact in value.

128. Mr. Dent looked at repeat sales for approximately 60-70 residential properties in the Township where there was a sale of the property before unconventional natural gas development and another sale after unconventional natural gas development. In addition to purchase price, he looked at the distance between each property and the nearest well pad, whether the property was on well water or public water, and whether mineral rights were transferred with the property.

129. Based on his review of this information, Mr. Dent concluded that using local market-based data as required by the applicable standards, there is no evidence of a systematic diminution of residential property values due to unconventional natural gas development in the Township.

130. The Board finds that Mr. Dent is an expert on the impact of environmental issues on property values and it finds credible his opinion and findings of fact set forth above. However, as there exists a substantial number of variables that effect housing values, the Board also finds that his testimony is not of significant importance to the Board's determination.

VII. Testimony of Kathy and George Yonker

131. As the Board had provided standing to Kathy and George Yonker, their testimony was introduced as residents of the Township who had first hand knowledge of the impact of gas development in the Township as it relates to residents of the Township, and in particular their family.

132. Mrs. Yonker testified that her residence is on a two-acre parcel, and the remainder of the 118-acre property is in hay production.

133. She also testified that her oil and gas rights are leased to Range Resources, and that Range Resources had proposed a well pad on her property. She also stated that she anticipates that well development will disturb approximately 15 acres of land, with the final pad disturbing approximately six or seven acres. The proposed well pad would be located closer to her home than to any other residence.

134. It was also stated that her family will continue to farm their property after the well is constructed on it, just as four (4) of their neighbors and many other people in the area have done, as she did not believe that the well pad would interfere with her families' use and enjoyment of their property.

135. Mrs. Yonker testified that the additional income from their families' gas wells allowed her to care for her mother for four years before her passing, and that they have also used the royalties to buy new equipment, pay for medical expenses, and pay people to work on the farm.

136. Mr. Yonker stated that he believed that the unconventional natural gas well pad that is being developed on his property is compatible with residential and agricultural uses.

137. The Board takes note of the testimony of Mr. and Mrs. Yonker.

VIII. Township Evidence/Witness

138. The Township presented its case by presenting the testimony of Erin Sakalik, the Township Manager and Secretary.

139. As Township Secretary, Ms. Sakalik maintains custody of the Township's documents, including ordinances, resolutions, and minutes.

140. Ms. Sakalik authenticated various Township records that establish the legislative history of the Zoning Ordinance and Ordinance No. 122. (See Township Exhibits 1-18 and Finding 12 above.)

IX. PennFuture Rebuttal

141. PennFuture proceeded by offering the rebuttal expert testimony of Seth Shonkoff who has been the executive director of PSE (Physicians, Scientists, and Engineers) – Healthy Energy since December, 2012. Dr. Shonkoff is an environmental public health scientist with more than 14 years of research experience in air, water and climate research. Dr. Shonkoff has prepared more than 30 peer reviewed journal articles,

technical reports and book chapters on topics ranging from public health, environmental, air quality, and water quality dimensions of energy, oil and gas development.

142. Dr. Shonkoff did not find error in the basic information presented by Dr. Long's report, but found fault with his failure to closely look at the findings of the studies and failure to evaluate the ability of many of the studies to answer the questions related to air quality and public health pertinent to the instant matter.

143. Through cross examination, it was established that Dr. Shonkoff has authored a report in which he outlined tactics to prevent further use of hydraulic fracturing, and he identified numerous recommendations and goals for groups seeking to fund efforts to prevent unconventional natural gas development.

144. In his report in this proceeding, Dr. Shonkoff further accused Dr. Long of utilizing a "go-to tactic" of a number of industries, including the tobacco industry that aim to block increased regulations and scrutiny of their products by pointing to other sources of a health hazard to deflect attention away from those hazards posed by their product or process.

145. Dr. Shonkoff relied on a literature review that he published in which he counted the number of articles that discussed potential air effects, water effects, and health effects due to unconventional natural gas development and placed them into one of two categories: those that concluded that there may be an issue in one of these areas and those that did not.

146. Dr. Shonkoff acknowledged that in so doing he put an article into the "yes" category if there was any concern raised about the effect of unconventional natural gas development and that he did not attempt to analyze the quality of the findings or the studies' methodologies.

147. Neither in his testimony nor his report did Dr. Shonkoff offer any identification of the health studies in his literature review, nor did he discuss any of their methodologies and findings.

148. Dr. Shonkoff acknowledged that consistent with Dr. Long's testimony, the epidemiological studies do not prove causation.

149. Despite this acknowledgment, Dr. Shonkoff characterized Dr. Long as concluding that because the epidemiological studies do not prove causation, they were "useless", when in fact Dr. Long characterized these studies as "hypothesis-generating", a conclusion with which Dr. Shonkoff agreed.

150. Dr. Shonkoff cited the McKenzie and Casey birth outcome studies, but acknowledged that he was not aware of the criticism of the McKenzie study by the Colorado Department of Public Health and Environment and acknowledged that the authors of these studies came to inconsistent and opposing conclusions.

151. Dr. Shonkoff acknowledged that many health outcomes discussed in the literature are not specific to chemicals associated with unconventional natural gas development, *e.g.*, headaches can be caused by a number of factors, rashes can be nonspecific, and asthma can be induced through a number of pathways complicating the path of assessing associations between exposures and health outcomes.

152. Dr. Shonkoff acknowledged that health risks depend for the most part on the amount of exposure.

153. Dr. Shonkoff acknowledged that consistent with Dr. Long's testimony, the epidemiological studies rely on exposure surrogates rather than actual air monitoring data, but he did not discuss or analyze the validity of any of the exposure surrogates used.

154. Of the articles Dr. Shonkoff listed in his literature review as discussing issues with air quality, only six of the 40 related to Marcellus Shale development.

155. Dr. Shonkoff acknowledged that the review of emissions must be geographic-specific because emissions from development in one shale play can differ from emissions from another shale play.

156. Dr. Shonkoff continued by citing several articles related to air impacts from Marcellus Shale development, however, most did not include air monitoring; only one included a benzene citizen grab sample in Pennsylvania, which Dr. Shonkoff acknowledged was no higher than we would often have short-term exposure to in an urban environment or at a gas station or in traffic; and others involved estimates of potential emissions and not actual monitoring data.

157. On cross examination, Dr. Shonkoff admitted that these articles also acknowledged a well-designed regional study, concluded that their data indicated greater impacts of benzene emissions from urban and combustion sources than from natural gas related sources and that the measured concentrations were below levels of health concern.

158. Dr. Shonkoff criticized the various sources of actual air monitoring data relied upon by Dr. Long because some had constituent detection limits that were too high to pick up potentially harmful levels; some did not include monitoring during all phases of development; some did not monitor for enough constituents; some did not monitor for potential "hot spots" and could not observe and quantify episodic spikes; and it is not possible to tell if a given well site or constellation of well sites near the monitors are representative of other operations.

159. Although Dr. Shonkoff noted that some data sources did not include monitoring during the drilling phase, during flowback, and during the production phase, he ignored that other data sources included these phases. For instance:

- The PADEP and ACHD monitors are in place presently and are capturing not only emissions from nearby unconventional natural gas

development in production, but also from the constellation of well pads in the general area which are in production. Dr. Shonkoff acknowledged that the concentrations of PM_{2.5} and air toxics, including benzene, from the PADEP monitors were not particularly high.

- The ACHD monitors were in place during all phases, including drilling and flowback. Dr. Shonkoff acknowledged that he did not review this data.
- The WVU/Pekney study included monitoring during drilling activities, flowback, and production.

160. The only data source Dr. Shonkoff criticized for having constituent detection limits that were too high to pick up potentially harmful levels is the PADEP short-term ambient air study, which is only one of 13 data sources relied upon by Dr. Long.

161. Dr. Shonkoff characterized any monitoring that was done more than 500 feet from the unconventional natural gas well pad as “regional” in nature and not picking up air pollution “hot spots” and therefore criticized Dr. Long’s reliance on it. In so doing, he did not offer any data to support his theory of “hot spots” other than the Brown article, and he acknowledged that the Brown article modeled hypothetical emissions and merely concluded that depending upon the meteorological conditions at a given time, more emissions can travel to a certain area. He also acknowledged that in everyday life we are exposed to short-term peaks of both PM_{2.5} and VOCs through activities of daily living.

162. Dr. Shonkoff testified that Dr. Long’s conclusion that the available air monitoring data is inconsistent with the results of health studies (which do not rely on actual air monitoring data) was not valid because among other things, the monitors were not located within 500 feet (the Pennsylvania setback limit) of the well pad and therefore did not provide information regarding “local” exposures.

163. Contrary to this position, the health studies that Dr. Long found to be inconsistent with actual air data were based on distances far in excess of 500 feet, specifically:

- Tustin, Rasmussen, Casey, Stacy – used exposures with no minimum distance cut-off;
- Jemielita – used exposures in an entire zip code;
- Rabinowitz – compared symptoms between those less than 1 km and more than 1km from well pad; and

- McKenzie – compared outcomes between those less than 10 miles and more than 10 miles from unconventional natural gas development.

(As such, if the actual air data supported these effects, one would expect to see harmful levels of emissions at these distances which are far greater than 500 feet.)

164. Despite criticizing Dr. Long for relying on “regional” air studies, Dr. Shonkoff criticized Dr. Long for not discussing the Vinciguerra article, which measured regional ethane in ambient air in Baltimore and Washington, DC. Dr. Shonkoff acknowledged that ethane is not a harmful pollutant.

165. Except for methyl mercaptan, the odorant placed in natural gas pipelines to assure detection, and silica, Dr. Shonkoff offered no chemical constituents that he believed should have been monitored and were not

166. Dr. Shonkoff pointed to a 2011 methyl mercaptan reading at the Yeager Impoundment as “especially pertinent to this case”; however, impoundments in the Township have been closed and reclaimed.

167. Dr. Shonkoff cited a study on methyl mercaptan which indicated that the primary symptom is odor and that there are no long-term health implications to exposure. With respect to silica, Dr. Shonkoff cited only to a study of occupational exposures on the well pad.

168. Dr. Shonkoff criticized Dr. Long’s reliance on the Brigich compressor station study because he believes that the federal government’s ATSDR authored an inaccurate executive summary, did not do a combined cancer risk assessment, and did not conduct adequate sampling.

169. Dr. Shonkoff also criticized Dr. Long for not discussing the H₂S findings; however, Dr. Long expressly discussed these findings in his Report.

170. Despite testifying that his opinion was based on a “deep read of all of the epidemiologic studies as well as a number of the studies that I thought were important with respect to ascertaining the potential air pollution exposures from unconventional natural gas development”, the only literature concerning health effects from unconventional natural gas development Dr. Shonkoff cited in his report and his testimony were his 2016 literature review (with no discussion or analysis of any of the articles) and the McKenzie and Casey studies on birth outcome, all of which have significant limitations as discussed above.

171. The Board finds Dr. Shonkoff testimony to be equivocal, not properly founded, and not credible. As such, the Board has disregarded Dr. Shonkoff's testimony.

X. Board General Findings

172. The Board considered the testimony of the public after the close of all other testimony. Although concerns were expressed regarding the health affects of unconventional natural gas development, the majority of the testimony supported the continued development of unconventional natural gas wells in the Township.

173. The Board finds that the actual/physical disruption caused by the development of individual unconventional natural gas wells in the Township is relatively short in duration and does not constitute a continuing and substantial disruption to the residents of the Township.

174. Unconventional natural gas development is compatible with and essential to the continued viability of agricultural and rural residential life in the Township.

Conclusions of Law

I. Jurisdiction and Standard of Review.

1. PennFuture's Validity Challenge is within the Board's jurisdiction. Under Section 909.1(a)(1) of the MPC, 53 P.S. §10909.1(a)(1), the Board has exclusive jurisdiction over "substantive challenges to the validity of any land use ordinance, except those brought before the governing body pursuant to sections 609.1 and 916.1(a)(2)". 53 P.S. §10909.1(a)(1).

2. Zoning ordinances carry a strong presumption of validity; the challenger faces "an extremely heavy burden" to invalidate an ordinance. *McClimans v. Board of Supervisors of Shenango Township*, 529 A.2d 562 at 564 (Pa. 1987) & *Plaxton v. Lycoming Co. Zoning Hearing Bd.*, 986 A.2d 199 (Pa. Commw. Ct. 2009). To overcome this presumption, an objector faces the high burden of establishing that the challenged provisions are "arbitrary and unreasonable and have no substantial relationship to promoting the public health, safety and welfare." If the validity is debatable, the legislative judgment controls. *Plaxton* at 207.

3. As summarized by the Commonwealth Court, "[a] legislative enactment can be declared void only when it violates the fundamental law clearly, palpably, plainly and in such a manner as to leave no doubt or hesitation in the mind of the court." *Plaxton* at 205, *citing Adams Outdoor Adver. v. Zoning Hearing Bd. of Smithfield Twp.*, 909 A.2d 469 (Pa. Commw. Ct. 2006), *appeal denied*, 923 A.2d 1175 (Pa. 2007).

4. Notably, "[w]hether a statute is wise or whether it is the best means to achieve the desired result are matters left to the [legislative body], and not the courts. Moreover, the [legislative body] is presumed to have investigated the question and

ascertained what is best for . . . the good of the people.” *Khan v. State Bd. of Auctioneer Examiners*, 842 A.2d 936, 947 (Pa. 2004).

5. The presumption of constitutionality may be overcome only if an ordinance is “unreasonable, arbitrary, or not substantially related to the police power or interest that the ordinance purports to serve.” *Penn St., L.P. v. E. Lampeter Twp. Zoning Hr’g Bd.*, 84 A.3d 1114, 1120 (Pa. Commw. Ct. 2014) (quoting *In re Realen Valley Forge Greene Assocs.*, 838 A.2d 718, 728 (Pa. 2003)).

6. Pursuant to the MPC, the Township’s ordinances cannot be challenged or invalidated for alleged inconsistencies or failures to comply with a comprehensive plan. 53 P.S. § 10303(c).

7. Differences in opinion over policy decisions cannot be used to invalidate a zoning ordinance.

II. Standing and Ripeness.

8. At the July 26, 2016 hearing, there was a challenge to PennFuture’s standing to bring the Validity Challenge and the ripeness of that challenge. As a result, PennFuture presented testimony on standing, and PennFuture, Range Resources, and the Township, offered legal argument on the limited issues of standing and ripeness. The Board found that the issue of ripeness is not implicated in the challenge.

9. As the enabling legislation and source of the Township’s zoning power, the MPC dictates the Township’s parameters for enacting and administering zoning regulations. 53 P.S. §10601. The MPC provides that: “Persons aggrieved by a use or development permitted on the land of another by an ordinance or map, or any provision thereof, who desires to challenge its validity on substantive grounds shall first submit their challenge to the zoning hearing board for a decision thereon under section 909.1(a)(1).” 53 P.S. §10916.1(b).

10. The standing witnesses presented by PennFuture live in the Township and/or live or work in close proximity to unconventional natural gas facilities, wells, operations and the like in the Township, and/or have family members within in close proximity to unconventional natural gas facilities, wells, operations and the like.

11. Civic and community organizations may establish standing based upon their members’ standing, provided that individual members establish that they are aggrieved.

12. After hearing the testimony of the parties and receiving their respective legal arguments, the Board determined first that because of witnesses regarding actual and likely harm and the fact that this is a challenge globally to the Township’s ordinances; and two, because at least two witnesses testified that they either worked at

the local school or have family at that school that is approximately .7 miles from a new gas well pad, PennFuture has standing to bring this challenge.

III. The 2013 Curative Amendment Declaration.

13. PennFuture argues that because the Township previously declared a portion of Ordinance No. 122 invalid for failure to permit oil and gas water impoundments anywhere in the Township, and thereafter did not pass a curative amendment or reaffirm it, Ordinance No. 122 and any permits or approvals issued under it are invalid.

14. Pursuant to Section 609.2 of the MPC, if a municipality determines that its zoning ordinance, or any portion thereof, is substantively invalid, the municipality must, by formal action: (1) declare the ordinance or a portion thereof invalid and prepare and enact a curative amendment to overcome the invalidity; or (2) reaffirm the ordinance's validity within 180 days. 53 P.S. § 10609.2. The Pennsylvania Commonwealth Court has explained that the municipal curative amendment process affords a municipality that perceives zoning ordinance provisions to be vulnerable to a landowner validity challenge an opportunity to cure the perceived invalidity and avoid the harsh remedies imposed when a landowner challenge prevails. *Lehigh Asphalt Paving & Const. Co. v. Bd. of Supervisors of E. Penn Twp.*, 830 A.2d 1063, 1072 (Pa. Commw. Ct. 2003). Accordingly, the municipal curative amendment process merely protects a municipality from a landowner validity challenge while the municipality's proposed curative provision is pending enactment; it does not rescind the existing provision or prevent a landowner from proceeding under the original ordinance for special exception or conditional use approvals. *Id.* ("Nothing in Section 609.2 [of the MPC] suggests that ordinary land development plans may not be filed based upon the provision of the original ordinance").

15. On October 23, 2013, the Township Board of Supervisors formally invoked the municipal curative amendment process by declaring the portions of Ordinance No. 122 as it fails to adequately provide for the principal use of impoundment or other storage facilities for water and other fluids in connection with Oil and Gas Wells.

16. By invoking the municipal curative amendment process the Township had by statute 180-days to correct this infirmity related to the exclusion of impoundments, and the Township failed to meet this deadline to correct this specific invalidity.

17. The Board finds that the failure of the Municipality to adopt a curative amendment to the sole issue of water impoundments in the Township does not invalidate the entire ordinance and does not impose a moratorium on all development until the alleged deficiency is remedied.

18. The Board further finds that the Township's utilization of the municipal curative amendment process nearly three years ago does not render Ordinance No. 122 or the balance of Zoning Ordinance invalid.

IV. Validity of Zoning Ordinance as a whole.

19. Zoning ordinances that permit unconventional natural gas development across multiple zoning districts, including residential and agricultural areas, have been held to be valid subsequent to the plurality decision in *Robinson Township v. Commonwealth*, 83 A.3d 901 (Pa. 2013).

20. The Board finds that unconventional natural gas development is compatible with agricultural and rural uses.

21. Under Pennsylvania law, an ordinance may be struck down for violating substantive due process under Article I, Section 1 of the Pennsylvania Constitution, only if it restricts a constitutionally protected right and is not narrowly tailored to promote a compelling state interest.

22. Consistent with due process protections, Pennsylvania municipalities may reasonably limit constitutionally protected property rights by enacting zoning ordinances pursuant to their police power to protect or preserve the public health, safety, morality, and welfare.

23. The Zoning Ordinance promotes the public health, safety, and welfare of the community by requiring that unconventional natural gas development comply with rigorous state and federal permitting requirements, and by supplementing those requirements with additional standards and criteria aimed at mitigating local impact.

24. Where an ordinance restricts a landowner's constitutionally protected private property rights, a substantive due process inquiry requires balancing "[the] landowners' rights against the public interest sought to be protected by an exercise of the police power."

25. Where a municipality has enacted a zoning ordinance for a lawful purpose, courts do not assess whether the zoning ordinance will achieve its purpose and the [legislative body] is presumed to have investigated the question and ascertained what is best for . . . the good of the people.").

26. The Township has in this case taken great lengths to achieve its purpose and has investigated the best interests of the residents of the Township.

27. The Township has allowed oil and gas wells in the Township prior to Act 13, and the Township has recognized the development of oil and gas in the Township as a valid part of life in the Township.

28. The enactment of the Zoning Ordinances / Ordinance No. 122, following hearings and substantial citizen participation, explicitly provided for unconventional natural gas wells as a conditional use throughout the Township. This is consistent with Section 603(i) of the MPC, 53 P.S. §10603(i), which requires that "[z]oning ordinances shall provide for the reasonable development of minerals in each municipality."

29. To not permit unconventional natural gas development would violate state law.

30. The Township did not act irrationally, unreasonably, capriciously or arbitrary when adopting the Zoning Ordinance.

31. PennFuture's application of the *Robinson* case is misplaced in that Robinson overall did not negate the ability of municipalities to implement zoning as they deemed proper. Further, *Robinson's* application for the most part addressed the Commonwealth's inability to dictate zoning to municipalities.

32. PennFuture's application of the *Robinson* case is further misplaced in that the language of the *Robinson* case applied to zoning issues on a statewide basis, and not at the local level, which is the situation in the instant matter.

33. The Township Board of Supervisors acted within its constitutional police power in adopting the Zoning Ordinance to further the general welfare of its citizens by permitting them to benefit economically from unconventional natural gas resources and royalties, in order to help their livelihood and way of life.

34. Inclusion of the Township's comprehensive application review process and environmental impact analyses in the permit process is evidence that the challenged Zoning Ordinance is aimed at mitigating potential negative effects on the public and the Zoning Ordinance therefore upholds citizens' due process rights.

35. Applying these standards here, PennFuture has failed to meet its burden of overcoming the presumptive constitutionality of the Zoning Ordinances.

36. The Township Board of Supervisors' adoption of Ordinance No. 122 was a rational legislative policy decision on its part, that neither PennFuture nor this Board is empowered to negate.

37. Although the Zoning Ordinances permits unconventional natural gas wells in all zoning districts, there are substantial and significant conditions that can be and have been imposed to protect the health, safety and welfare of the Township.

38. As early as 1966, the Township zoning ordinances authorized oil and gas wells as a permitted use by right in all zoning districts with almost no additional requirements. That has changed significantly in comparison to the Zoning Ordinances at issue here.

39. Some of the residents testifying for PennFuture moved into the Township when the then applicable zoning ordinances were far less restrictive with regard to oil and gas development than the Zoning Ordinance that are now being challenged.

40. PennFuture's generalized and speculative complaints about traffic, environmental impacts, and devaluation of property fails to demonstrate an "adverse"

effect or “an interest beyond the common interest of all citizens that the law be obeyed”, and are insufficient to sustain their Validity Challenge.

41. In applying the substantive due process balancing test, the Board concludes that the Township Board of Supervisors properly weighed the Township’s public interest in adopting the Zoning Ordinance.

V. The Environmental Rights Amendment.

42. For the reasons discussed above, the Board concludes that the Zoning Ordinance does not violate the Environmental Rights Amendment to the Pennsylvania Constitution.

43. Additionally, in light of the extensive two-year legislative process in which the Township engaged prior to adopting Ordinance No. 122, the Board concludes that the Township’s obligation under the Environmental Rights Amendment to “assess and determine whether any proposed project, law, regulation or ordinance would cause unreasonable ‘actual or likely’ degradation of air and/or water quality or other protected features of the environment” has been met.

44. The Board finds that the Township was not obligated to undertake its own technical analysis and engage its own team of technical experts, and that the Environmental Rights Amendment does not require municipalities to engage in costly technical analysis studies prior to adopting zoning ordinances. Nor does the Environmental Rights Amendment require municipalities to displace and/or duplicate the extensive environmental, health, and safety regulation of unconventional natural gas operations undertaken by state and federal agencies.

45. Pennsylvania law does not require that where land is zoned for agriculture, the only use for which that land may ever be used is for strictly agricultural purposes. In fact, Section 605 of the MPC expressly provides that multiple types of uses may occur within each district. 53 P.S. § 10605

46. Invalidating the Zoning Ordinances / Ordinance No. 122 for the reasons argued by PennFuture would prohibit the development of oil and gas rights and could potentially constitute an unconstitutional taking and violation of the prohibition against ex post facto laws.

47. None of the witnesses or evidence presented suggested or demonstrated that the process used by the Township Supervisors to develop and approve the planning regulations or Amendment 122 was arbitrary, capricious or accomplished outside of MPC requirements. On the contrary, evidence provided by the Township shows a deliberative process conducted over several years and involving both public meetings and a citizen advisory committee.

CONCLUSION

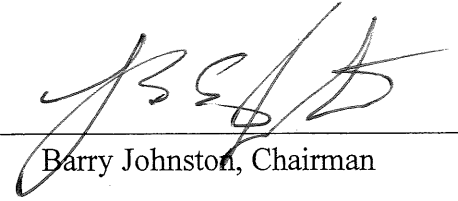
PennFuture has failed to meet the heavy burden imposed upon it by applicable law to invalidate the Zoning Ordinances of Mt. Pleasant Township (Ordinance No. 105, Chapter 200 / as amended by Ordinance No. 122), and as a result, the Board hereby DENIES PennFuture's Validity Challenge.

Respectfully submitted:

MT. PLEASANT TOWNSHIP
ZONING HEARING BOARD

Dated: 3/27/2017

By: _____


Barry Johnston, Chairman