COMMONWEALTH OF PENNSYLVANIA
ENVIRONMENTAL HEARING BOARD

PROTECT PT	:	
	:	
v.	:	**EHB Docket No. 2023-074-W**
	:	**(Consolidated with 2022-072-W)**
COMMONWEALTH OF PENNSYLVANIA,	:	
DEPARTMENT OF ENVIRONMENTAL	:	**Issued: June 3, 2025**
PROTECTION and WCAA UPSTREAM,	:	
LLC, Permittee	:	

A D J U D I C A T I O N

By MaryAnne Wesdock, Judge

Synopsis

The Board upholds the issuance and renewal of permits for the drilling and operation of two unconventional gas wells. Based on the testimony and record at the hearing, the Board finds that the preponderance of the evidence does not demonstrate that the Department failed to fulfill its statutory or constitutional duties in issuing and renewing the permits. However, the Board exercises its discretion to amend the permits to incorporate the terms of a consent judgment addressing noise and light mitigation, truck traffic and air monitoring.

Introduction

On August 17, 2022, the Department of Environmental Protection (Department) issued permits to Apex Energy (PA) (Apex or Permittee) for the drilling of the Drakulic 1H and 7H unconventional gas wells in Penn Township, Westmoreland County. Apex elected not to drill the Drakulic wells while the appeal was pending, and instead sought a two-year renewal of the permits,

which was granted on August 15, 2023.[1] The permits and renewals were appealed to the Environmental Hearing Board (Board) by Protect PT, a grassroots nonprofit organization formed "to ensure the safety, security, and quality of life for people in Penn Township, Trafford and surrounding areas from unconventional natural gas development." (Notice of Appeal, Docket No. 2022-072-W, para. 7; Notice of Appeal, Docket No. 2023-074-W, para. 1.)

On May 13, 2025, the parties filed a Joint Stipulation to Amend Caption advising the Board of Apex's name change to WCAA Upstream, LLC (WCAA) and asking that the caption be amended to reflect the name change. The Board issued an order amending the caption on May 14, 2025. Although WCAA is now the permittee, the actions in this matter were taken by Apex, and the transcript and exhibits refer to "Apex." In order to avoid any confusion, we simply refer to WCAA/Apex as the Permittee.

Previously in this matter, the Board issued opinions in February and October 2024 dismissing certain issues from the case. *See Protect PT v. DEP and Apex Energy (PA), LLC*, 2024 EHB 191 (Opinion and Order on Motion for Partial Dismissal) and *Protect PT v. DEP and Apex Energy (PA), LLC*, 2024 EHB 683 (Opinion and Order on Department's and Apex's Motions for Partial Summary Judgment). In January 2025, an eight-day hearing was held before the Honorable MaryAnne Wesdock in Pittsburgh, PA. Protect PT's post-hearing brief was filed on March 24, 2025 and the Department's and Permittee's briefs were filed on April 22, 2025. Protect PT's reply brief was filed on May 12, 2025. Additionally, the Board conducted a site view on April 17, 2025.

[1] A well permit expires one year after issuance if drilling has not commenced. 58 Pa. C.S. § 3211(i); 25 Pa. Code § 78a.17(a). An operator may submit a request for a two-year renewal accompanied by a fee, a surcharge and an affidavit affirming that the information in the original application is still accurate and complete. 25 Pa. Code § 78a.17(b).

FINDINGS OF FACT

1. The Appellant is Protect PT, which is a registered fictitious name for Promote PT, Inc., a Pennsylvania nonprofit with a registered address in Trafford, Pennsylvania. (Joint Stipulation, para. 2)

2. The Department of Environmental Protection (the Department) is the agency with the duty and authority to administer and enforce the Oil and Gas Act, Act of February 14, 2012, P.L. 87, No. 13, 58 Pa. C.S. §§ 3201-3274, Section 1917-A of the Administrative Code of 1929, Act of April 9, 1929, P.L. 177, *as amended*, 71 P.S. § 510-17; and the rules and regulations promulgated thereunder. (Joint Stipulation, para. 3)

3. Permittee, WCAA Upstream, LLC (WCAA) (formerly Apex Energy (PA), LLC (Apex)) is a Delaware limited liability company that is engaged in the exploration and production of natural gas. (Joint Stipulation, para. 1)

4. Permittee is an upstream natural gas development company. "Upstream" is the segment of the gas industry that drills wells and produces natural gas. (Tr. 19)

The Permits

5. On July 13, 2021, Permittee applied for permits for two unconventional gas wells known as the Drakulic 1H and 7H wells (the Drakulic wells). (Joint Stipulation, para. 5; Stipulated Ex. 2)

6. The Drakulic wells are to be constructed on a site known as the Drakulic well pad (the Drakulic site), located at 1059 First Street, Trafford, PA 15085, in Westmoreland County. (Joint Stipulation, para. 4)

7. The Department issued permits for the Drakulic wells (the permits) on August 17, 2022. (Joint Stipulation, para. 6; Stipulated Ex. 3 and 4)

8. In issuing the permits, the Department prepared a Record of Decision that includes the Department's findings and conclusions regarding its decision to issue the permits. (Joint Stipulation, para. 7; Stipulated Ex. 5)

9. During the permit review process, the Department coordinated with the Department of Public Health to respond to public comments regarding public health. (Tr. 1260; Stipulated Ex. 5)

10. During the permit review process, the Department's lead permit reviewer requested that the Department's emergency response director review the Permittee's emergency response plans in response to public comments regarding the emergency response plans. (Tr. 1261; Stipulated Ex. 5)

11. Permittee revised its emergency response plans in accordance with recommendations made by the Department's emergency response director. (Tr. 1261)

12. During the permit review process, the Department's lead permit reviewer coordinated with the Department's air section to respond to public comments regarding air issues. (Tr. 1261-62; Stipulated Ex. 5)

13. During the permit review process, in response to public comments regarding potential spills, the Department requested that Permittee modify its Preparedness, Prevention and Contingency Plan, which it did. (Tr. 1262)

14. Protect PT appealed the permits on September 16, 2022 (the Issuance Appeal). (Joint Stipulation, para. 8; Notice of Appeal at Environmental Hearing Board Docket No. 2022-072-W.)

15. The term of a well permit is one year from issuance unless drilling is commenced or the Department renews the permit for a period of two years. 58 Pa. C.S. § 3211(i); 25 Pa. Code § 78a.17. (Joint Stipulation, para. 9.)

16. On July 20, 2023, Permittee applied for a two-year renewal of the permits. (Joint Stipulation, para. 10; Stipulated Ex. 6 and 7)

17. The Department renewed the permits on August 15, 2023 (the permit renewals). (Joint Stipulation, para. 11; Stipulated Ex. 8 and 9)

18. In renewing the permits, the Department prepared a Record of Decision on renewal that includes the Department's findings and conclusions regarding its decision to renew the permits. (Joint Stipulation, para. 12; Stipulated Ex. 10)

19. On September 14, 2023, Protect PT appealed the permit renewals (the Renewal Appeal). (Joint Stipulation, para. 13; Notice of Appeal at Environmental Hearing Board Docket No. 2023-074-W)

20. The Issuance Appeal and the Renewal Appeal were consolidated by the Board at Docket No. 2023-074-W. (Environmental Hearing Board Docket No. 2023-074-W, docket entries 6 and 7; Joint Stipulation, para. 14)

The Drakulic Well Site and Operations

21. The proposed Drakulic well site is located just off State Route 130. (Tr. 738)

22. At the time of the hearing in January 2025, the site was primarily wooded. (Tr. 738; Joint Stipulation, para. 4)

23. The well site is upland with moderate to steep slopes to the west and flat land to the east and northeast. (Tr. 455, 471)

24. There are residential properties to the north and to the east of the proposed site; it is rural to the south. (Tr. 738)

25. The Drakulic wells are unconventional gas wells that will be drilled into the Marcellus Shale formation. (Tr. 36)

26. The first step of putting a gas well into operation is to acquire property rights, i.e., leases for natural gas in a particular area, followed by a site selection process and permitting of the well. (Tr. 735)

27. Construction of the well pad will consist of building the physical pad itself, as well as roads leading to and from the site. (Tr. 103-04)

28. Construction of the well pad involves the movement of dirt. Bulldozers and front loaders will be used for the construction. (Tr. 742)

29. Once the well pad is complete, the gas wells are drilled using a drilling rig to construct the vertical and horizontal sections of the well. (Tr. 104, 735)

30. Once the gas wells are drilled, "well completion" takes place, which consists of hydraulic fracturing in the lateral portion of the wells in the Marcellus Shale. (Tr. 104, 124, 735)

31. The well casing of the horizontal section of the well is perforated to allow the fracturing fluids to be pushed into the formation. (Tr. 752, 757)

32. Water, sand and chemicals are then pumped at pressure down the wellbore through the perforated holes in the casing into the Marcellus Shale formation, causing fracturing of the Marcellus Shale. (Tr. 757)

33. Because the pressure of the earth is great, the fractures tend to re-close, so they are held open with sand that is part of the hydraulic fracturing process. (Tr. 758)

34. The gas molecule is smaller than the sand particle which allows the gas to flow through the fractures and into the borehole. (Tr. 759)

35. Once hydraulic fracturing has taken place, the fluids used in the hydraulic fracturing process flow back through the well. (Tr. 104)

36. The wells are then put into production, which means they are connected to a pipeline and begin to flow gas. (Tr. 104, 124)

37. Water produced during the production of gas will be collected on-site and emptied periodically. (Tr. 124)

38. When the wells are in production, the site consists of the production unit at the wellhead and a storage tank for collected water. There is no drilling equipment. (Tr. 124)

39. The well pad will be lined with an impermeable membrane. (Tr. 742-43)

40. There will also be a containment berm, with a liner that goes over the top and is tucked under a layer of gravel. (Tr. 746, 747)

41. There will be a liner placed between the gravel and rig mats. (Tr. 746)

42. During well production, the original well pad liner remains in place. Individual units on the site, such as water tanks, have their own containment. (Tr. 763)

43. Permittee performs leak detection and repair testing. (Tr. 767)

44. At the time of the hearing, Permittee had put 41 unconventional wells into production, and an additional eight wells were in the process of being completed. (Tr. 736)

45. The proposed wellbore path for the Drakulic wells will pass under residential properties. (Tr. 26)

46. The "kickoff" point is where the vertical portion of the unconventional wellbore begins to turn to the horizontal portion. (T. 61)

47. The kickoff point for the 1H well will occur at a true vertical depth of 5,830 feet. (Stipulated Ex. 1, p. 4 of Well Location Plat)

48. The kickoff point for the 7H well will occur at a true vertical depth of 5,529 feet. (Tr. 61; Stipulated Ex. 2)

49. Most properties near the Drakulic site are serviced by the municipal water supply. (Tr. 738)

50. There are approximately 96 private water supplies within 3,000 feet of the wellbores. (Stipulated Ex. 1 and 2, p. 2A–2E; Tr. 155)

51. Permittee intends to conduct predrill testing on private water supplies. (Tr. 769)

52. Although corporate designee, Christopher Hess, testified that Permittee did not search for public resources in the area of the proposed wells, as defined in the Oil and Gas Act, (Tr. 63–65, 68), the identification of "public resources" was part of the permit applications for the 1H and 7H wells. (Tr. 123)

53. The Department did not consider the proximity of the proposed well pad to schools and playgrounds when issuing the permits for the 1H and 7H wells because they did not consider schools and playgrounds to be a public resource. The Department did consider schools and playgrounds when granting the renewal of the permits. (Tr. 191–92)

54. The Department did not consider requiring Permittee to increase the setback requirement of its well pad for schools and playgrounds. (Tr. 192)

55. Penn Township imposes an additional 100-foot setback from structures beyond what is required by the Department. (Tr. 740)

56. Permittee does not own the surface or mineral rights to the property where the Drakulic wells will be drilled. The Permittee has a lease with the mineral owner, the Drakulic family. (Tr. 30-31) The surface owner is PT Property Management, LLC. (Tr. 47)

57. As of the date of the hearing in this matter, January 15 through January 27, 2025, the wells at the Drakulic site had not been drilled. (Joint Stipulation, para. 15.)

58. Construction of the well pad can take approximately 2-3 months. Drilling and completion (i.e., hydraulic fracturing) of the well can take up to 6 weeks. (Tr. 104)

59. Once the wells are put into production, the surface owner, PT Property Management, LLC intends to construct a residential housing plan in the area of the site. (Tr. 740-41)

The Consent Judgment

60. Permittee initiated a lawsuit in the Federal District Court of the Western District of Pennsylvania against Penn Township and the Penn Township Zoning Hearing Board (Zoning Hearing Board) to challenge the Zoning Hearing Board's denial of permits for multiple well pads within Penn Township. (Protect PT Ex. JJ; Apex Ex. 11)[2]

61. The federal litigation was resolved through a settlement agreement resulting in a Consent Judgment dated December 16, 2016 involving Permittee, Penn Township, the Penn Township Zoning Hearing Board and the Penn Township Board of Commissioners. (Protect PT Ex. JJ; Apex Ex. 11)

62. Protect PT and the Department are not parties to the federal Consent Judgment. (Tr. 812; Protect PT Ex. JJ; Apex Ex. 11)

[2] For the sake of clarity, we refer to Permittee's exhibits as "Apex Exhibit" since that is how the exhibits are identified in the record.

63. Among other things, the Consent Judgment requires the following: a) an air modeling and hydrogeological study (Protect PT Ex. JJ/Apex Ex. 11, Section 9(b); Tr. 815); b) the construction and maintenance of sound walls on the well pad during drilling and construction operations (Protect PT Ex. JJ/Apex Ex. 11, Section 9(c); Tr. 816); c) mechanisms to mitigate light, including downward facing light sources and translucent bags around light sources to reduce glare (Protect PT Ex. JJ/Apex Ex. 11, Section 9(c); Tr. 817); d) third-party noise monitoring during drilling and completions (Protect PT Ex. JJ/Apex Ex. 11, Section 9(d); Tr. 817); e) establishment of a 24-hour emergency hotline (Protect PT Ex. JJ/Apex Ex. 11, Section 9(g); Tr. 817); f) air emission monitoring during drilling and completion activities and notification to the township regarding any air monitoring that exceeds OSHA standards (Protect PT Ex. JJ/Apex Ex. 11, Section 9(h); Tr. 817-18); and g) management of truck traffic to avoid queuing on township roads, minimization of truck traffic during school bus hours, and elimination of truck traffic congestion around school bus stops (Protect PT Ex. JJ/Apex Ex. 11, Section 9(j); Tr. 818)

64. The Consent Judgment provides for continued federal jurisdiction over compliance with and enforcement of the agreement. (Tr. 819; Protect PT Ex. JJ/Apex Ex. 11, para. 6, Bates stamp 0000046)

65. The Record of Decision prepared by the Department prior to issuing the permits states that the Department "discussed the [Consent Judgment][3] with Penn Twp. and Apex" and learned from Penn Township that the Permittee was in compliance with it. (Exhibit 5 to Joint Stipulation, p. 2)

[3] The Record of Decision refers to the document as "Consent Order." (Stipulated Ex. 5.)

66. The "Air Quality" section of the Record of Decision prepared by the Department prior to issuance of the permits states that the Department "considered the air monitoring required by the Penn Twp. [Consent Judgment]." (Exhibit 5 to Joint Stipulation, p. 3-4)

67. The Department determined that the Consent Judgment addressed many of the objections to the permit that were received during the permit application process pertaining to dust, noise, light, aesthetics and air quality. (Tr. 1288)

68. The Department elected not to include permit conditions that it felt were addressed by the Consent Judgment. (Tr. 1288-89)

Protect PT and the Surrounding Community

69. Protect PT is a non-partisan organization founded to ensure the safety, security and quality of life for people in the Penn-Trafford area. (Tr. 262) It has further branched out to areas beyond Penn-Trafford in Allegheny and Westmoreland Counties. (Tr. 263)

70. Protect PT's activities include education, legal advocacy, environmental monitoring and sustainability programs. (Tr. 264-65)

71. Ms. Gillian Graber is the Executive Director of Protect PT. (Tr. 257)

72. Ms. Graber holds a Bachelor of Science degree in computer technology and professional communications and an associate degree in multimedia communications and graphic design. (Tr. 260)

73. Protect PT was formed in 2014 when Ms. Graber and her husband learned about the proposed well pad at the Drakulic site. (Tr. 258)

74. Protect PT has eight employees, including an environmental scientist who conducts monitoring for area residents. (Tr. 261-62)

75. Ms. Graber has testified at approximately 14-15 hearings involving well pads. (Tr. 263)

76. Ms. Graber lives approximately 2,400-2,500 feet from the proposed Drakulic site, or less than ½ mile. (Tr. 272)

77. Ms. Graber's home is downhill and downwind of the Drakulic site. (Tr. 338)

78. The source of Ms. Graber's water is the Wilkinsburg-Penn Joint Water Authority. (Tr. 274-75)

79. 932 people live within ½ mile of the Drakulic well site. (Tr. 289)

80. Approximately 3,000 people live within one mile of the Drakulic site and approximately 5,000 people live within 2 miles of the Drakulic site. (Tr. 289)

81. Approximately 37,000 people live within 3 miles of the Drakulic site. (Tr.702)

82. Within a 3-mile radius of the Drakulic site are the following facilities: Forbes Regional Hospital, 7 schools, 5 parks, 12 churches, 4 housing facilities and 3 assisted living facilities. (Tr. 701–02)

83. The Level Green Elementary School is located approximately one mile from the Drakulic site. (Tr. 190, 291, 1298)

84. The Level Green Presbyterian preschool is located approximately ¼ mile from the Drakulic site. (Tr. 291)

85. There is a playground located 1,974 feet from the Drakulic site. (Tr. 190)

86. The Level Green ballfield is located 2,410 feet from the Drakulic site. (Tr. 190)

87. Penn Township has a setback requirement of 600 feet. (Tr. 954)

88. As a resident living in proximity to the Drakulic site, Ms. Graber has been given no instructions on how to evacuate the site in the event of an emergency. (Tr. 334)

89. Ms. Graber's concerns regarding the Drakulic site are as follows: the location of the site and proximity to homes, schools, playgrounds, and places of worship; air emissions; diesel from truck traffic; water runoff; truck traffic on twisting narrow roads and overturned trucks; noise, light, and dust; 24/7 operation impacting her children's ability to sleep and go to school the next day; and a lack of information in the emergency response plan. (Tr. 282-83; 378–79)

90. The roads leading to the Drakulic site are "twisting and turning" and steep. (T. 282)

91. Ms. Graber was run off the road by a school bus on a blind curve in the area of the Drakulic site. (T. 282-83, 384)

92. Ms. Graber is a member of the Westmoreland Hazard Mitigation Team. (Tr. 397)

93. Protect PT requested that the Department hold a public hearing on the permit applications but the request was denied. (Tr. 285; Stipulated Ex. 5)

94. Protect PT participated in a Section 3251 hearing in 2016 regarding the proposed Drakulic pad but declined a subsequent Section 3251 hearing that would have been held prior to the issuance of the permits in question in this appeal. (Tr. 280, 347-48, 359)

95. Protect PT has received complaints from its members regarding Permittee's Quest site related to dust and noise. (Tr. 388)

96. Ms. Graber observed sand billowing at the Quest well site while the well was being fracked. (Tr. 386-87)

97. Dr. Larry Irr is a member of Protect PT. (Tr. 222)

98. Dr. Irr holds a Ph.D. in analytical chemistry from the University of Pittsburgh and spent nearly 41 years working at the Westinghouse Bettis Atomic Power Laboratory in West Mifflin, PA until his retirement in 2022. (Tr. 220)

99. Dr. Irr lives 0.45 miles from the proposed site of the Drakulic well pad. (Tr. 219)

100. Dr. Irr's water service is provided by the Wilkinsburg-Penn Joint Water Authority public water system. (Tr. 228, 245)

101. Dr. Irr's neighborhood consists of 44 people, which includes 22 adults and 22 children. (Tr. 218)

102. Dr. Irr has the following concerns regarding the Drakulic site: He is concerned about the gas wells leaking and substances getting into groundwater, exposure to toxic chemicals, and the lack of an emergency response plan for the neighborhood. (Tr. 211)

Groundwater

103. Stratigraphy is the layers of rock in a particular area. The layers are called strata. (Tr. 1266)

104. Lithology is the description of the strata in an area. (Tr. 1267)

105. Protect PT presented expert testimony by geologist John Barone. Mr. Barone holds both a Bachelor of Science and Master of Science degree in geology. (Tr. 422; Protect PT Ex. LL)

106. Mr. Barone has nearly 50 years' experience in the field of groundwater geology. (Tr. 423-45; Protect PT Ex. LL) He does not have experience with upstream oil and gas well sites. (Tr. 449)

107. Mr. Barone was admitted as an expert in geology, geohydrology, physical geology, physical geohydrology, engineering geology and engineering geohydrology. (Tr. 447, 451) All these areas relate to hydrogeology. (Tr. 449)

108. Permittee presented expert testimony by Michael Krehel, vice president and senior technical advisor of Netherland Sewell, a consulting firm primarily focused on the upstream oil and gas industry. (Tr. 996-97)

109. Mr. Krehel holds a Bachelor of Science degree in petroleum and natural gas engineering and has over 40 years' experience in the oil and gas field. (Tr. 1000)

110. Mr. Krehel was admitted by the Board as an expert in petroleum engineering. (Tr. 1006)

111. The Department presented expert testimony by lead permit reviewer, Andrea Mullen. Ms. Mullen is a licensed professional geologist and holds a Bachelor of Science with a certificate in environmental studies and a Master of Science degree in geosciences. (Tr. 1244–45)

112. Ms. Mullen has taken part in water supply complaint investigations, which involved looking at groundwater flows to determine if it was feasible that an oil and gas drilling operation could have impacted a water supply. (Tr. 1248-49)

113. Ms. Mullen was admitted as an expert in geology and hydrogeology. (Tr. 1255)

114. The permeability of the soils at the Drakulic site ranges from low to high with a tendency toward moderate to high. (Tr. 456)

115. Due to the soil's permeability, precipitation or other surface water will drain quickly. (Tr. 456)

116. The deepest fresh groundwater in the area of the Drakulic site is likely at a depth of 200 feet. (Tr. 464, 1273-74)

117. Private water wells in this area are generally drilled to a maximum depth of 500 feet. (Tr. 1273-74)

118. The shallow groundwater supplies the private water supplies in the area of the well site. (Tr. 464)

119. Based on regional data, there are likely to be natural fracture networks in the area of the Drakulic well site. (Tr. 463, 1277-78)

120. There are other wells located in the vicinity of the Drakulic site, including other unconventional wells, conventional wells, and historic or abandoned wells. (Tr. 472; Apex Ex. 12 and 13)

121. There is depth information available for all but two of the historic wells referenced in Mr. Barone's report. For the wells for which there is data, they were drilled no deeper than 3,500 feet. (Tr. 1271-72)

122. The design of Permittee's McIlvaine 5HN well is representative of how the wells at the Drakulic site will be constructed. (Tr. 778, 1011)

123. The McIlvaine well contains five concentric strings of steel casing in the well that are cemented to the surface and go down to a depth of 2,500 feet. (Tr. 1011-12; Apex Ex. 4)

124. The cement and casing provide isolation from the interior of the wellbore to the formations that the wellbore penetrates and also provide structural integrity. (Tr. 781, 1012)

125. During the production phase, the casing provides protection to prevent what is inside the wellbore from escaping out into the formations. (Tr. 1013)

126. The design of the wells at the Drakulic site calls for the surface casing string to be installed to a depth of 830 feet, which is below fresh groundwater. (Tr. 1014)

127. The Marcellus Shale formation is at a depth of approximately 7,500 feet true vertical depth, or 1 ¼ miles below the surface, in the area of the Drakulic site. (Tr. 772, 1015, 1272, 1275)

128. True vertical depth is the actual depth from a point below the surface to the surface, whereas total measured depth includes the twists and turns one takes to get to that same point. (Tr. 772)

129. The Drakulic 1H well will be drilled to a true vertical depth of 7,571 feet. (Stipulated Ex. 1, p. 4 of Well Location Plat)

130. The Drakulic 7H well will be drilled to a true vertical depth of 7,506 feet. (Stipulated Ex. 2, p. 4 of Well Location Plat)

131. The rock layers between the depth of where the wells will be drilled and the depth at which fresh groundwater is found include sandstones, siltstones, carbonates and shales. (Tr. 1016)

132. The Tully Limestone is shallower than the Marcellus Shale. (Tr. 1017-18)

133. The direction of flow in the wellbore depends on what part of operation is ongoing: During completion in hydraulic fracturing, the flow is downhole through the lateral and through the perforations and into the formation. Immediately after the completion is finished, the direction of flow comes into the wellbore and up to surface. (Tr. 1012-13)

134. The Drakulic wells will be extraction wells, designed for producing hydrocarbons from the formation. (Tr. 1022-24)

135. After completion (hydraulic fracturing) is executed, there is a pressure sink. The flow wants to go from high pressure to low pressure. After completion, the higher pressure would be in the formation. The lower pressure would be in the wellbore. As the well is turned on to flow back and produce, the fluids and hydrocarbons in the formation preferentially flow toward the wellbore into the lateral and out the top of the well. (Tr. 1035-36)

136. Department regulations require operators to conduct an area of review for the purpose of identifying active wells, inactive wells, orphan wells, abandoned wells, and plugged and abandoned wells within 1,000 feet measured horizontally from the vertical well bore and 1,000

feet measured from the surface above the entire length of a horizontal well bore. 25 Pa. Code § 78a.52a(a) and (b).

137. The operator must submit a report summarizing the area of review, including a plat showing the location and GPS coordinates of the identified wells, a monitoring plan for wells that are required to be monitored, and other information. 25 Pa. Code § 78a.52a(c).

138. The purpose of the area of review study is to avoid collisions with other wells when drilling and to avoid communication between wells. (Tr. 784-85)

139. "Communication" signifies communication of gas or liquids between one well and another. (Tr. 792)

140. For a communication event to occur between two wells, at least one of the wells must have an integrity issue or have been abandoned and unplugged. (Tr. 513, 793, 1030-31)

141. Existing wells that are in the same formation as where the operator intends to drill, in this case, the Marcellus Shale formation, pose a greater risk. (Tr. 924-25)

142. To its knowledge, Permittee has never had a communication event occur with one of its wells. (Tr. 793)

143. Permittee had completed its area of review studies for the Drakulic 1H and 7H wells at the time of the hearing and the plats were introduced into evidence as Apex Exhibits 12 and 13.

144. The Department's Guidelines for Implementing Area of Review (AOR) Regulatory Requirement for Unconventional Wells lists the risk level as "high" for wells plugged prior to 1956, orphaned and abandoned wells, and abandoned wells whose plugging status is unknown. (Tr. 508-09; Protect PT Ex. XX)

145. Apex Exhibit 14 lists wells that Permittee identified in its area of review study for the Drakulic 1H and 7H wells. (Tr. 785)

146. Apex Exhibit 14 identifies 24 wells in the area of review as being at "higher" risk of a communication event. (Apex Ex. 14)

147. Apex Exhibit 14 also identifies 17 wells as having an undetermined status but a "negligible" risk. (Apex Ex. 14)

Air Quality

148. Protect PT presented the expert testimony of Marc Glass who holds a Bachelor of Science degree in environmental science and completed course work for a Master of Science in soil science. (Tr. 563)

149. Mr. Glass's work has included groundwater sampling, air sampling and surface water sampling, as well as work on petroleum-related projects (Tr. 564-66; Protect PT Ex. TT)

150. In 2012 Mr. Glass became a member and owner of Downstream Strategies, an environmental consulting firm, where he developed the environmental monitoring and remediation division. (Tr. 566)

151. Mr. Glass is a licensed remediation specialist in the state of West Virginia and this is the majority of the work that he does. (Tr. 567, 599)

152. Mr. Glass has done sampling at and around unconventional oil and gas well pads. (Tr. 569-70)

153. Mr. Glass was admitted by the Board as an expert in environmental science, fate and transport, air quality monitoring, and environmental remediation. (Tr. 577, 608)

154. Fate and transport involves the tracking of a contaminant once it is released into the environment. (Tr. 576)

155. Permittee offered expert testimony by Tom Muscenti, Mr. Muscenti holds a Bachelor of Science in chemistry and a Master of Science in chemical engineering. (Tr. 1060) He

is an air quality consultant and approximately 2/3 of his work involves upstream oil and gas operations, primarily in Pennsylvania in the Marcellus Shale formation. (Tr. 1058, 1061–63)

156. Mr. Muscenti is employed as regional director and air quality consultant with Trinity Consultants. (Tr. 1057-58) Approximately 75% of his work is in the oil and gas industry. (Tr. 1058)

157. Mr. Muscenti serves as Permittee's air quality consultant and he has been to six or seven of Permittee's well pads. (Tr. 1063–64)

158. Mr. Muscenti was accepted as an expert in air quality. (Tr. 1065).

159. Unconventional natural gas drilling involves air emissions which differ during the various phases of the operation, from preproduction to drilling to hydraulic fracturing and flowback and finally to production. (Tr. 612-13)

160. Particulate matter is associated with unconventional natural gas operations. (Tr. 631, 639-40)

161. Particulate matter is likely to be emitted from operations at the Drakulic well site, but the experts disagree as to the amount. (Tr. 635, 1087-88, 1172)

162. The Consent Judgment between Permittee and Penn Township requires Permittee to monitor air pollutants, including particulate matter, during drilling and completion activities at the Drakulic site. (Protect PT Ex. JJ; Apex Ex. 11; Tr. 667, 817-18)

163. Ambient air monitoring in Westmoreland County shows attainment of the National Ambient Air Quality Standards for ozone and particulate matter 2.5 (PM2.5). (Tr. 671, 1079)

164. The 2024 PM2.5 standard is 9 micrograms per cubic meter. The most recent three-year average for Westmoreland County was below that limit, at 7.8 micrograms per cubic meter. (Tr. 1096-97)

165. None of the ambient air monitoring is done within five miles of the Drakulic site. (Tr. 1100)

166. Other counties where oil and gas operations take place, including Bradford, Wyoming, Tioga, Greene and Washington Counties, are in attainment with National Ambient Air Quality Standards. (Tr. 1080)

167. Gas well operators are required to report annual air emissions for certain constituents, including volatile organic compounds (VOCs), benzene, formaldehyde, and particulate matter. (Tr. 666)

168. The gas that will be produced at the Drakulic site, and generally in Westmoreland County, is dry gas. (Tr. 765, 1066-67; Apex Ex. 5)

169. Dry gas produces very low levels of VOCs. (Tr. 766, 1067-68)

170. The wells at the Drakulic site will be operated under Pennsylvania Air Quality Permit Exemption 38(c) (exemption 38(c)). (Tr. 1073)

171. Exemption 38(c) exempts unconventional gas well operations from needing an air permit if emissions are below a certain level. (Tr. 1072-74)

172. If annual emissions reporting were to show that the Drakulic site is exceeding the limits of exemption 38(c), Permittee would be required to obtain an air permit for the site. (Tr. 1094-95)

Radon

173. The Department presented the expert testimony of Bryan Werner, a program manager within the Department's Bureau of Radiation Protection. (Tr. 1348) Mr. Werner holds a Bachelor of Science degree in physics and a Master of Science degree in radiation protection physics. (Tr. 1349, 1351; DEP Ex. 6)

174. Mr. Werner spent approximately 40-60 hours of classwork on the topic of radon. (Tr. 1352)

175. Mr. Werner was involved in the Department's TENORM study as a reviewer. (Tr. 1357)

176. Mr. Werner was admitted as an expert in health physics and radiation protection, including the evaluation of radon air emissions. (Tr. 1358)

177. TENORM is technologically enhanced naturally occurring radioactive material. (Tr. 809-10)

178. An example of TENORM is the radioactive material that is naturally occurring in the Earth's geology and is brought to the surface through gas drilling. (Tr. 810)

179. Permittee has a Radiation Protection Action Plan (Radiation Plan). (Tr. 809; Apex Ex. 10)

180. Permittee's Radiation Plan provides for monitoring of radioactivity while bringing up drill cuttings. (Tr. 810)

181. Permittee has not encountered radiation monitoring levels in excess of a regulatory threshold. (Tr. 810-11)

182. Radon is released during the decay of uranium-238; it occurs after the decay of radium-226. (Tr. 620)

183. Uranium is a primordial (existing since the beginning of the earth) naturally occurring radioactive material. (Tr. 1363)

184. Radium-226 exists naturally in the environment, particularly in soils and rocks. (Tr. 1360; DEP Ex. 9)

185. Radium-226[4] is associated with fluids and drill cuttings generated from the Marcellus Shale. (Tr. 620, 622, 1384)

186. Radon is released by the rocks associated with the Marcellus Shale that are brought to the surface during flowback, as well as the gas that originates in the Marcellus Shale. (Tr. 620-21, 1384-85)

187. Pennsylvania has some of the highest radon levels in the world due to the Commonwealth's geology and near-surface soils, sediment, and rocks that have a slightly higher percentage of uranium, thorium and radium that is naturally occurring. (Tr. 1361, 1366-1367)

188. In Pennsylvania, the average public indoor dose of radioactive radon gas is just under 600 millirem, which is approximately twice that of the rest of the country. (Tr. 1361)

189. Exposure to radon includes exposure to radon progeny. (Tr. 1362)

190. Wherever radium-226 is present, it constantly undergoes radioactive decay to produce radon gas (radon-222). (Tr. 623)

191. A half-life is the amount of time required for half of a material to decay into a progeny of the original material. (Tr. 623, 1363)

192. Radon has a half-life of 3.8 days. (Tr. 623) In other words, it takes 3.8 days for half of the radon originally present to decay into another radioactive progeny. (Tr. 623-24)

193. There is no safe level of radon exposure. (Tr. 625, 632, 1170-71)

194. EPA has established an action level for indoor air radon levels that exceed 4 picocuries per liter. (Tr. 1382)

[4] Page 620 of the transcript refers to "Radium-262" but we believe this is an error and is supposed to read "Radium-226."

195. The EPA level of 4 picocuries per liter for radon exposure is not a health-based standard; it is simply a practical, manageable exposure level for homeowners to meet. (Tr. 625, 1382)

196. The average indoor exposure to radon in Westmoreland County is 7.6 picocuries per liter. (Tr. 1368; DEP Ex. 10)

197. Radon in the outdoor air dissipates quickly and presents only a low risk. (Tr. 1374-76, 1391-92)

198. To reach higher levels, radon requires a confined space to concentrate. (Tr. 1376)

199. How far radon travels from a particular well site is a function of how the gas moves in the atmosphere. (Tr. 630)

200. The Department did a study of outdoor radon monitoring at state parks in 2017-2018 and it showed averages of 0.1 to 0.3 picocuries per liter in counties where the most oil and gas exploration was done. The numbers were the same as those in areas where there is no oil and gas exploration. (DEP Ex. 11; Tr. 1371)

201. The Department's TENORM study looked at the TENORM impacts associated with oil and gas operations within Pennsylvania. (Tr. 1385; Protect PT Ex. GG)

202. The study showed ranges on the unconventional well pad sites to be between 0.2 and 1.7 picocuries per liter. (Tr. 1389; Protect PT Ex. GG)

203. The TENORM study showed no discernable difference between values for radon normally in the atmosphere versus the air at the edge of an unconventional well site. (Tr. 1390)

204. The TENORM Study showed that at a broad spectrum of the unconventional well sites featured in the study, there was not an increase in ambient radon levels. (Tr. 1391)

Emergency Response Planning

205. Protect PT presented the expert testimony of Silverio Caggiano regarding emergency response planning. (Tr. 531)

206. Mr. Caggiano served as a fire fighter with the Youngstown Fire Department for 39 years, and he retired as the battalion chief. (Tr. 515)

207. Mr. Caggiano has been involved with HAZMAT response for 30 years and has experience with drafting Preparedness, Prevention and Contingency (PPC) Plans and Emergency Response Plans, including site-specific Emergency Response Plans. (Tr. 517, 522–24)

208. Mr. Caggiano was recognized by the Board as an expert in emergency response and in planning and preparedness control. (Tr. 525, 529–30)

209. A PPC Plan contains information dealing with preparedness and prevention of spills or releases of chemicals. (Tr. 92–93; Stipulated Ex. 13)

210. An Emergency Response Plan is utilized for emergencies such as a loss of well control or larger spills that cannot be immediately cleaned up. (Tr. 92; Stipulated Ex. 11)

211. There are two types of Emergency Response Plan: system-wide and site-specific. (Tr. 793-94)

212. The system-wide Emergency Response Plan is a blanket plan that applies to all Permittee's sites operating in the state of Pennsylvania. (Tr. 793–94; Stipulated Ex. 11)

213. The site-specific Emergency Response Plan operates as an appendix to the system-wide plan and provides specific information for the location at issue. (Tr. 794; Stipulated Ex. 12)

214. Permittee's site-specific plan consists of an addendum to its system-wide plan with specific information for the Drakulic location. (Tr. 794; Stipulated Ex. 12)

215. Each well pad has a "mailbox" with a binder in it. The binder contains the Emergency Response Plan, the PPC Plan, and the safety data sheets for chemicals that are on site. (Tr. 805)

216. Safety data sheets contain chemical abstract service numbers (CAS numbers)[5] that are used to identify each chemical. (Tr. 536-37)

217. The CAS number can be used by first responders to research a chemical and determine characteristics about the chemical that are necessary for public safety. (Tr. 536-37)

218. The CAS number can also be used to identify chemicals that are listed by their trade name or as proprietary. (Tr. 536-37)

219. Safety data sheets are kept on-site when the corresponding material is brought onto the site. (Tr. 805-06)

220. Section 4.3 of Permittee's system-wide Emergency Response Plan states as follows: "[Safety data sheets] including those for Company-supplied materials, are supplied at well locations during the phases of site operation including but not limited to, drilling and completions. Contractors that bring their own hazardous materials on site provide their own [safety data sheets] and keep them on site while they are working." (Stipulated Ex. 11, p. 6)

221. Apex Exhibit 9 contains safety data sheets for a number of products used at Permittee's other sites. (Apex Ex. 9)

222. Permittee has a contract with a specialty first responder to handle emergencies that may occur at the wellhead. (Tr. 797, 799)

223. In the experience of Permittee's corporate designee, Mr. Hess, loss of well control events – such as an uncontrolled release of natural gas or fluids – are rare. (Tr. 798)

[5] The transcript incorrectly identifies this as a "CAST" number.

224. Permittee has never experienced an uncontrolled release, commonly known as a blowout. (Tr. 799)

225. The procedures to be followed should an uncontrolled release occur are set forth in Permittee's system-wide Emergency Response Plan. (Tr. 799; Stipulated Ex. 11, p. 11-15)

226. Permittee's system-wide Emergency Response Plan states as follows: "In the event of a worst probable release, residences, public buildings, bodies of water, and roads within a half mile of the well site (identified in the site-specific well pad [emergency response plan]) will be assessed for potential impact in consultation with the county 911 . . . Other hazards and emergency scenarios previously described in this [emergency response plan] may impact the public. Consultation with the County 911 Center will determine the appropriate response actions specific for the incident, site, and prevailing weather conditions." (Stipulated Ex. 11, p. 15)

227. If the public needs to be evacuated due to an incident at one of Permittee's wells, it will be handled by local first responders. (Tr. 802)

Public Health

228. Protect PT presented the expert testimony of Makenzie White. Ms. White holds a Master of Public Health degree with a concentration in community and behavioral health sciences and is on the staff of Protect PT as an environmental consultant. (Tr. 681, 688; Protect PT Ex. NN)

229. Ms. White has worked with communities impacted by oil and gas operations and has worked on health impact assessments (Tr. 683, 685–86)

230. In 2024 Ms. White co-authored a chapter on Pennsylvania shale gas development for a World Public Health textbook. (Tr. 689)

231. Ms. White was admitted by the Board as an expert in public health, including the health impacts of unconventional oil and gas drilling. (Tr. 699)

232. Apex presented the expert testimony of Julie Panko who holds a Bachelor of Science degree in industrial hygiene and is a certified industrial hygienist. (Tr. 1125–26) In this role, she has evaluated gas well sites and the potential for air pollution. (Tr. 1127, 1129–30)

233. Ms. Panko was accepted by the Board as an expert in industrial hygiene, as well as occupational and environmental health risk assessment. (Tr. 1135–36)

234. Due to its small size, PM2.5 is easy to breathe into one's lungs. It can cause respiratory and cardiovascular issues. (Tr. 708)

235. Health studies conducted by the University of Pittsburgh showed a correlation between proximity to oil and gas operations and health effects including asthma exacerbations, low birth weight and childhood cancer. (Tr. 707)

236. The University of Pittsburgh health studies used proximity to the oil and gas sites as a proxy for actual exposure. (Tr. 711 and 1160)

Compliance History

237. The Department's Andrea Mullen previously held the position of environmental compliance specialist in the Department's Northcentral Regional Office. (Tr. 1246) In this role, she evaluated cases referred for enforcement actions. (Tr. 1247)

238. Ms. Mullen's compliance work was in the field of oil and gas. (Tr. 1247)

239. Permittee received a notice of violation for failing to supply information to identify chemicals designated as "trade secret" in reports filed with the Department. (Tr. 105)

240. To identify trade secret chemicals in reports provided to the Department, the operator provides a code. (Tr. 106, 110)

241. A December 11, 2020 Department inspection report noted a well integrity violation at Permittee's Klylien 1 site under 25 Pa. Code § 78.88(d). (Tr. 884-85)

242. The December 11, 2020 report also noted a violation for well construction and operation under 25 Pa. Code § 78.73(a). (Tr. 885)

243. Other observations noted at the Klylien 1 site were corrosion of feed line and extreme corrosion of production casing. (Tr. 886)

244. At its Herminie site, Permittee received a violation for a spill of drilling mud outside its containment area. (Tr. 835)

245. At its Quest site, Permittee received a violation for failure to notify the Department of a spill of mercaptan. (Tr. 833)

246. At its Fatur site, Permittee received a violation for erosion and sedimentation control issues. (Tr. 829-30)

247. Protect PT obtains information regarding an operator's compliance history by using interactive reports on the Department's website. (Tr. 306)

248. Protect PT Executive Director Gillian Graber used an interactive tool on the Department's public-facing website to review Permittee's history of violations. The results of her search were admitted into the record as Protect PT Exhibit WW. (Tr. 311, 1437–38)

249. Protect PT Exhibit WW has a cover page stating that "an inspection report may cite multiple violations that are related to a single event or incident that occurred at a site, facility or sub-facility." It also states that the inspection type code may vary "as issues are being addressed and resolved to restore the site, facility, or sub-facility back to compliance." (Protect PT Ex. WW, Cover page)

250. In its review of the applications for the issuance of the Drakulic 1H and 7H permits, the Department found no violations at the Drakulic site. (Stipulated Ex. 5)

251. In its review of the applications for the issuance of the Drakulic 1H and 7H permits, the Department reviewed compliance at other sites operated by Permittee and found that there were no outstanding orders, one outstanding consent order and agreement with which Permittee was in compliance, and no pattern of non-compliance over the previous five years. (Stipulated Ex. 5)

252. At the time of the Department's review of the applications for issuance of the Drakulic 1H and 7H permits, Permittee had 22 notices of violation, 126 resolved notices of violation, 12 open enforcements and 17 closed enforcements. (Stipulated Ex. 5)

253. In its review of the applications for the renewal of the Drakulic 1H and 7H permits, the Department found no violations at the Drakulic site. (Stipulated Ex. 10)

254. In its review of the applications for the renewal of the Drakulic 1H and 7H permits, the Department reviewed compliance at other sites operated by Permittee and found that there were no outstanding orders and no pattern of non-compliance in the previous five years. (Stipulated Ex. 10)

255. At the time of the Department's review of the applications for renewal of the Drakulic 1H and 7H permits, Permittee had 41 notices of violations, 127 resolved notices of violation, 11 open enforcement actions and 20 closed enforcement actions. (Stipulated Ex. 10)

256. The Department consults an internal database to review compliance, as well as coordinates with its compliance program. (Tr. 156, 1282)

257. The manner in which the Department considers compliance history with respect to a permit application is to reach out to the applicant with regard to any ongoing compliance issues and provide the applicant with an opportunity to fix the problem. (Tr. 157–58)

258. Thomas Donohue is the Department's Environmental Program Manager, and in this role he is the manager for subsurface permitting across the Commonwealth of Pennsylvania. (Tr. 150)

259. Mr. Donohue was unable to confirm whether the open enforcements listed in the Department's Record of Decision for the permit issuances were the same open enforcements listed in the Record of Decision for the permit renewals. (Tr. 160)

260. Mr. Donohue was unable to state the number of notices of violation that had been resolved between the time of the Department's initial review of the permit applications and the review of the renewal applications. (Tr. 160-61)

261. Mr. Hess lives approximately ½ mile from the Moritz well site operated by Range Resources. (Tr. 845-46) He experienced noise from the site for approximately eight to nine months while the well pad was being drilled and completed. (Tr. 846-47) Following drilling and completion activities, his experience is that the well site is quiet and unlit. (Tr. 847)

DISCUSSION

Standard of Review

This matter involves a third-party appeal by Protect PT of unconventional gas well permits issued to Permittee by the Department. As such, Protect PT has the burden of proof. 25 Pa. Code § 1021.122(c)(2). To be successful in a third-party appeal, the party challenging the Department's permit decision "must show, by a preponderance of the evidence, that the Department acted unreasonably or in violation of the Commonwealth's laws or the Pennsylvania Constitution in issuing the permit." *The Delaware Riverkeeper Network v. DEP*, 2018 EHB 447, 472-73 (citing *United Refining Co. v. DEP*, 2016 EHB 442, 448, *aff'd*, 163 A.3d 1125 (Pa. Cmwlth. 2017)). In other words, Protect PT's evidence must be greater than the evidence supporting the Department's

determination that the issuance and renewal of the permits for the Drakulic wells "was reasonable, appropriate, and in accordance with applicable law." *Liberty Township v. DEP*, 2024 EHB 36, 76.

A party who challenges the issuance of a permit by the Department may not simply speculate that issues may occur; rather, it must show by a preponderance of the evidence that the problems it alleges are likely to occur. *Id.* at 76-77; *Benner Township Water Authority v. DEP*, 2019 EHB 594, 633. "When a party raises technical issues, it must come forward with technical evidence to support its challenge, which many times will require competent and appropriate expert witness testimony." *Liberty Township*, 2024 EHB at 77 (citing *Liddick v. DEP*, 2018 EHB 207, 216; *Prizm Asset Management Co. v. DEP*, 2005 EHB 819, 844).

In *Shuey v. DEP*, 2005 EHB 657, we explained that an appellant challenging a permit cannot simply come forward with a list of problems and then rest its case. Rather:

> [i]t must prove by a preponderance of the evidence that these problems have occurred or are likely to occur. We are a trial court, expert in environmental issues including technical matters and, as such, our decisions must be based on the record developed before us.

Id. at 712.

Protect PT asserts that, in meeting its burden of proof, it is not required to prove that the harm it has alleged is more likely than not to occur. In support of its argument, it cites to the Commonwealth Court's holding in *United Refining Co. v. Department of Environmental Protection*, 163 A.3d 1125 (Pa. Cmwlth. 2017) wherein the Court discussed the burden of proof that an appellant must meet when challenging a permit issued by the Department. There the Court stated that the appellant was not required "to prove every factual detail by a preponderance of evidence" nor "to prove that it was more likely than not that harm would occur." *Id*. at 1133. The Court stated:

> We agree with Petitioner that, to the extent that the Board's discussion of the burden of proof could be interpreted to require Petitioner to prove every factual detail by a preponderance of evidence or require Petitioner to prove that it was more likely than not that harm would occur, such an interpretation would impose a higher burden than required. The Board was required to determine whether, based upon its factual findings, Petitioner proved by a preponderance of the evidence that the Department acted arbitrarily or abused its discretion. We can envision a scenario where the likelihood of the harm occurring is significant but *less* than fifty percent likely. The severity of the possible harm, however, could be so immense that issuing a permit could be determined to be abuse of discretion. To require a petitioner to prove a fifty percent or greater likelihood that the harm will occur would unduly restrict the Board's ability to consider the reasonableness of the issuance of a permit under this or any other similar scenario.

Id. However, the Court made it clear that the burden is on the appellant to prove, *by a preponderance of evidence*, that the issuance of the permit was arbitrary or an abuse of discretion. *Id.* This means that Protect PT must show that the evidence in favor of its proposition is greater than that opposed to it. *Liberty Township,* 2024 EHB at 76-77. This is the standard we apply in determining whether Protect PT has met its burden of proof in this matter.

It is also important to remember that the Board's review is *de novo* and, therefore, we can consider evidence that was not before the Department when it made its decision, including evidence developed by all parties since the filing of the appeal. *Delaware Riverkeeper*, 2018 EHB at 473. "*De novo* review involves full consideration of the case anew." *O'Reilly v. DEP*, 2001 EHB 19, 32 (quoting *Young v. Department of Environmental Resources*, 600 A.2d 667, 668 (Pa. Cmwlth. 1991)). As former Chief Judge Krancer explained in the seminal case, *Smedley v. DEP*, 2001 EHB 131:

> This is not merely a mechanical recitation of the allocation of power to the Board. The important point is that this description of the Board's function outlines the nexus between the rights of the appellant challenging a DEP action and defenders thereof. The Board operates at that center-point. The Board does not review a

> matter before it on the basis of an already developed record. The Pennsylvania Legislature and the Commonwealth Court have unambiguously delineated that the Board is a judicial tribunal of *first* impression. The Board protects the procedural due process rights of persons who allege and can prove that they are adversely affected by an action of DEP, a governmental agency. Under the Environmental Hearing Board Act the Board is established as a quasi-judicial body to review appeals from DEP actions and no action of the Department adversely affecting a person shall be final until the Board has heard the appeal. 35 P.S. § 7514(c); *Fiore v. DER*, 665 A.2d 1081, 1086 (Pa. Cmwlth. 1995). The Board proceeding is the *first* instance that a party challenging a DEP action has the right to judicial-type discovery and, in turn, to present evidence so developed to an independent quasi-judicial tribunal. 35 P.S. §§ 7513(a), 7514(c), 25 Pa. Code § 1021.111. The Board is the *first* opportunity any party challenging a DEP action has to a full adjudicatory hearing where one can present a full case in open court with the rights to subpoena witnesses, examine and cross-examine witnesses and present oral and documentary evidence. 35 P.S. §§ 7514(a), (f); 25 Pa. Code §§ 1021.85-1021.98, 1021.107-1021.108.

Id. at 156-57 (emphasis in original).

Exercising our *de novo* review, we consider the evidence presented by the parties in order to determine whether Protect PT has met its burden of proof.

History of this Matter

In June 2014 representatives of Permittee met with staff of Penn Township and presented a plan that consisted of seven proposed well pad sites for the drilling of unconventional gas wells.[6] This plan included the Drakulic site. Permittee submitted notices pursuant to Act 14, which requires that applicants for certain Department permits must provide written notification to the municipality where the project is located. At the time of the June 2014 meeting and the Act 14 notices, Penn Township's zoning ordinance permitted oil and gas drilling in all areas within the

[6] The information set forth in this section is taken from the Consent Judgment entered into between Apex and Penn Township, which will be discussed herein, as well as the decision of the Commonwealth Court in *Protect PT v. Penn Twp. Zoning Hearing Bd.*, 220 A.3d 1174 (Pa. Cmwlth. 2019), which involved a challenge by Protect PT to Penn Township's zoning ordinance.

Township as a special exception subject to certain criteria. In January 2015 the Penn Township Commissioners amended the Township's zoning ordinance to add the following provision:

> The applicant shall demonstrate that the drill site operations will not violate the citizens of Penn Township's right to clean air and pure water as set forth in Art. I Sec. 27 of the Pennsylvania Constitution (The Environmental Rights Amendment). The applicant shall have the burden to demonstrate that its operations will not affect the health, safety, or welfare of the citizens of Penn Township or any other potentially affected land owner. The application submitted shall include reports from qualified Environmental individuals attesting that the proposed location will not negatively impact the Township residents' Environmental Rights, and, will include air modeling and hydrogeological studies as potential pathways that a spill or release of fluid may follow.

(Protect PT Ex. JJ/Apex Ex. 11.)

In the Fall of 2015, Permittee submitted applications to Penn Township's Zoning Hearing Board for special exception for the seven well sites, including Drakulic. Along with its applications, Permittee submitted risk assessment reports on air modeling and hydrogeological studies. Hearings were held on three of the sites, not including Drakulic. The Zoning Hearing Board denied Permittee's applications for the three sites on the basis that Permittee had not demonstrated that it would not violate the aforesaid provision of the zoning ordinance. With regard to the Drakulic well pad, as well as two other sites, Permittee asserted that its applications were deemed approved which the Township and Zoning Hearing Board contested.

Permittee filed suit against Penn Township and the Zoning Hearing Board in the United States District Court of Western Pennsylvania. The parties ultimately entered into a Stipulation which was entered as a Consent Judgment by the Court (Consent Judgment). *Apex Energy (PA), LLC v. Penn Township*, Civil Action No. 16-759 (December 16, 2016) (Protect PT Ex. JJ; Apex Ex. 11.) Under the Consent Judgment, the Township agreed to issue the special exception permits for the three sites for which hearings had been held in exchange for Permittee agreeing to conduct

certain activities aimed at alleviating concerns raised by the Township with regard to operations to be conducted at the sites.

Pursuant to the Consent Judgment, Permittee agreed to take a number of actions at its well sites, including the Drakulic site, which included the following:

- Provide a study including air modeling and hydrogeological studies regarding potential pathways that a spill or release of fluid may flow.
- During pre-production, construct and maintain sound walls on all sides of the pad to absorb and mitigate sound, light and airborne materials.
- Provide for third-party noise monitoring during construction, drilling and completions stages of development.
- Provide a site plan or testimony of a Pennsylvania Registered Professional Engineer certifying that the well pad will meet all setback requirements unless landowner consent is obtained for a waiver from Penn Township's 600-foot setback requirement.
- Plant and vegetate the well pad.
- Establish and maintain a 24-hour emergency hotline telephone number to be used by the Township representatives, employees, contractors and volunteer fire companies to contact Permittee in the event of emergency.
- Provide for monitoring by a third-party expert of air quality emissions and particulate content during drilling and completion activities.
- Mitigate the direction or deflection of light sources off the pad.
- Ensure that no trucks or construction vehicles will be staged or queued on any public roads within the Township, including consulting with the local school district to coordinate and

minimize truck traffic during regularly scheduled school bus stops, and minimizing the idling of trucks on the well pad.

(Protect PT Ex. JJ/Apex Ex. 11, paragraph 9 of Stipulation adopted by the Consent Judgment.) The Department is not a party to the Consent Judgment; nor is Protect PT. The Consent Judgment will be discussed in more detail later in this adjudication.

In or around 2015 or 2016, Protect PT requested and received a conference pursuant to Section 3251 of the Oil and Gas Act, Act of February 14, 2012, 58 Pa. C.S. §§ 3201 et seq. That section provides that "any person having a direct interest in a matter subject to [Chapter 32 - the Oil and Gas Act] may, at any time, request that a conference be held to discuss and attempt to resolve by mutual agreement a matter arising under this chapter." *Id*. at § 3251(a). The Section 3251 conference was attended by Protect PT's Executive Director, Ms. Gillian Graber, several Department officials and Permittee's General Counsel and Executive Vice President, Christopher Hess. Additionally, in 2016 or 2017, Ms. Graber had a meeting with various representatives of the Department, including then-Secretary Patrick McDonnell. She expressed her concerns about the proposed location of the Drakulic wells' proximity to homes, schools and playgrounds and pointed out where she believed those structures were not included in Permittee's materials. She also expressed concern over what she believed to be a lack of emergency planning. (Tr. 276-78.)

The Department issued permits for the Drakulic 1H and 7H wells in July 2018 (the 2018 permits), and the permits were appealed by Protect PT. EHB Docket No. 2018-080-R. The 2018 permits were renewed in 2019, and the renewals were also appealed by Protect PT. EHB Docket No. 2019-101-R. The appeals were consolidated at the earlier docket number. On July 23, 2021, the Department moved to dismiss the appeals on the grounds that the 2018 permits had expired.

On August 6, 2021 Protect PT filed a Praecipe to Withdraw the Appeal, and the consolidated appeals were dismissed.

Permittee subsequently reapplied for permits for the Drakulic 1H and 7H wells, which were issued by the Department on August 17, 2022 (the permits). Protect PT appealed the permits on September 16, 2022. The permits were renewed on August 15, 2023, and the renewals were appealed by Protect PT on September 14, 2023. These permits are the subject of the current appeal which is consolidated at EHB Docket No. 2023-074-W.

Protect PT and the Neighborhoods Surrounding the Drakulic Site

Before diving into the merits of the specific claims, we take a moment to briefly outline the involvement of Protect PT and the concerns of its individual members in this appeal. Gillian Graber is the Executive Director of Protect PT and a resident of Penn Township, Ms. Graber formed Protect PT in December 2014 in response to news that Permittee was seeking to construct an unconventional well pad on the Drakulic site, less than ½ mile from her home. The first meeting of Protect PT was held in her living room. Since then, the organization has grown to a full-time staff of eight, including an environmental scientist and a staff attorney.

Ms. Graber testified that when she attended the Section 3251 conference for the 2018 permits she took a list of requests with her that she believed were "pretty reasonable" and asked Permittee to consider them. Her list of requests included concerns about truck traffic, air emissions, and the safety of children in the area, in particular with respect to school buses. She stated that all her requests were denied. (Tr. 281.) As a result of her experience with the first Section 3251 conference, which failed to answer her questions or alleviate her concerns, she did not request a similar conference prior to the issuance of the permits which are the subject of this

appeal. (Tr. 347-48.) However, Protect PT did request a public hearing on the permit applications, which the Department denied. (Tr. 284-85.)

Ms. Graber provided meaningful and substantive testimony. At the time she learned about the proposed well pad at the Drakulic site her children were ages four and six, and she stated she was very concerned about how the well operations would impact their health and the health of her community. She poignantly described her neighborhood as follows:

> [W]hen we moved to the neighborhood, there were things that I knew I wanted to do and the reasons why we moved there. One of them was, because we have such a small road, my kids could learn how to ride bikes. They were four and six at the time…[O]ne of the reasons why we picked this neighborhood, too, is because trick-or-treating is the biggest thing for our community. We actually have a food truck on one of the . . . tees to the cul-de-sacs . . . [T]he fire department actually will block off [Route] 130 so the trick-or-treaters can get across here because there is . . . a playground here and all of the trick-or-treaters from . . . Larry's [Dr Irr's] neighborhood and up here, these are all new houses and these are all families, all these kids go down and down here and circle Belleauwood and come back up.

(Tr. 287)

In the past 10 years, Ms. Graber has attended a number of well pad hearings in her role with Protect PT and has testified at 14-15 of them, and has been actively involved in advocating for the community. (Tr. 263.) She described her experience in leading Protect PT as follows:

> [W]e engaged at the local level in order to have the voices heard of the community because that was, you know, very important to the community members that we engaged with . . . [S]o that was, like, really the beginning . . . going to the local hearing. You know, we were selling candy bars to pay for our attorney and, you know, engaging -- trying to find experts that would testify for free because we didn't have money. And we would also start looking at compliance history. We started doing some citizens' science monitoring. First, it was noise monitoring, water monitoring, and air monitoring. We still do those things to this day, only it has evolved a lot.

(Tr. 261.)

Ms. Graber's concerns include the following: the location of the site and proximity to homes, schools, playgrounds, and places of worship; air emissions; diesel and safety issues from truck traffic; water runoff; noise, light, and dust; 24/7 operation impacting her children's ability to sleep and go to school the next day; and a lack of information in the emergency response plan. In particular, she is concerned about the safety of drivers and children using the same roads as trucks accessing the Drakulic site, as they are twisting and turning. Level Green Elementary School is approximately one mile from the Drakulic site. Level Green Presbyterian Church, which runs a preschool, is approximately one-quarter mile from the site. There are also playgrounds in the area.

Dr. Larry Irr, a member of Protect PT and a resident of Penn Township, also provided testimony in opposition to the suitability of this site for unconventional gas well activities. His home is approximately 0.45 miles from the proposed Drakulic site. Dr. Irr expressed concern over what he perceives as a lack of emergency response preparedness, the potential for the leakage of chemicals into groundwater, and exposure to toxic chemicals. Dr. Irr testified that he is pro-fracking but is concerned about its impact when done in residential neighborhoods. Dr. Irr holds a Ph.D. in analytical chemistry and spent nearly 41 years working at the Westinghouse Bettis Atomic Power Laboratory. Based on his experience, he is familiar with emergency response planning and the handling of chemicals. He expressed his concern with the Drakulic site as follows:

> When I worked at Bettis…we were well regulated. We had to be so careful with the chemicals that we handled…When I come home, all these chemicals are being put into the ground and there is no, you know, evacuation plan for our neighborhood.

(Tr. 255.)

In addition to concerns over emergency response planning, site suitability, truck traffic, groundwater protection, air emissions, and nuisance issues, the members of Protect PT have raised concerns about protection of public resources and public health. Protect PT also contends that the permits should have been denied based on what it perceives to be Permittee's poor compliance history. We review the propriety of the Department's action in issuing and renewing the Drakulic permits under the Oil and Gas Act, Act of February 14, 2012, P.L. 87, 58 Pa. C.S. §§ 3201 et seq., and the underlying regulations at 25 Pa. Code Chapter 78a, as well as under Article I, Section 27 of the Pennsylvania Constitution. Because Protect PT relies heavily on Article I, Section 27 in its challenges to the permits, we discuss herein what the Board considers in reviewing challenges brought under that provision.

The Department's Obligations Under Article I, Section 27

Article I, Section 27 of the Pennsylvania Constitution, known as the Environmental Rights Amendment, provides as follows:

> The people have a right to clean air, pure water, and to the preservation of the natural, scenic, historic, and esthetic values of the environment. Pennsylvania's public natural resources are the common property of all the people, including generations yet to come. As trustee of these resources, the Commonwealth shall conserve and maintain them for the benefit of all people.

PA. CONST. art. I, § 27.

Protect PT argues that the Department's obligations under Article I, Section 27 are distinct from its obligations under the Oil and Gas Act. It points out that a declared purpose of the Oil and Gas Act is to "[p]ermit optimal development of oil and gas resources of this Commonwealth." 58 Pa. C.S. § 3202(1).[7] Protect PT argues that the Oil and Gas Act is not environmental legislation

[7] The complete language of this provision reads:

but, rather, legislation that allows for and regulates the extraction and development of oil and gas. In contrast, the focus of Article I, Section 27 is on the preservation of natural resources.

In *Center for Coalfield Justice*, 2017 EHB 799, Chief Judge Beckman articulated the Department's duties and responsibilities under Article I, Section 27 following the decision of the Pennsylvania Supreme Court in *Pa. Environmental Defense Foundation v. Commonwealth*, 161 A.3d 911 (Pa. 2017) (*PEDF*):

> The Supreme Court, citing [*Robinson Township v. Commonwealth*, 83 A.3d 901 (Pa. 2013], held that Section 27 grants two separate rights to the people of Pennsylvania. 2017 Pa. LEXIS at *38. The first right, which the Supreme Court describes as a prohibitory clause, places a limitation on the state's power to act contrary to the right of citizens to clean air and pure water, and to the preservation of natural, scenic, historic and esthetic values of the environment. *Id.* The second right reserved under Section 27, according to the Supreme Court, is the common ownership by the people, including future generations, of Pennsylvania's public natural resources. *Id.* The Supreme Court then notes that the third clause of Section 27 creates a public trust, with the natural resources as the corpus of the trust, the Commonwealth as the trustee and the people as the named beneficiaries. *Id*. at *39. The Supreme Court in *PEDF* next turns its attention to defining the Commonwealth's responsibilities as trustee. After discussing private trust law principles, it finds that the Commonwealth has two basic duties as trustee: 1) prohibit the degradation, diminution, and depletion of our public natural resources, whether the harms result from direct state action or the

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(1) Permit optimal development of oil and gas resources of this Commonwealth *consistent with protection of the health, safety, environment and property of Pennsylvania citizens*.

58 Pa. C.S. § 3202(1) (emphasis added).

The other declared purposes of the Oil and Gas Act are:

(2) Protect the safety of personnel and facilities employed in coal mining or exploration, development, storage and production of natural gas or oil.

(3) Protect the safety and property rights of persons residing in areas where mining, exploration, development, storage or production occurs.

(4) Protect the natural resources, environmental rights and values secured by the Constitution of Pennsylvania.

Id. at § 3202(2)-(4).

> actions of private parties and 2) act affirmatively via legislative action to protect the environment. 2017 Pa. LEXIS at *41-42.

Center for Coalfield Justice, 2017 EHB at 855.

The Board has recognized that the subjects of the *Robinson Township* case (legislative action) and the *PEDF* case (money) "do not translate quite as directly to the more typical permitting cases that come before the Board." *Id*. at 856. However, based on our review of the *PEDF* opinion and the plurality decision in *Robinson Township* that was generally endorsed by the *PEDF* opinion, the Board has developed the following standard in assessing whether there has been compliance with Article I, Section 27:

> We first must determine whether the Department has considered the environmental effects of its action and whether the Department correctly determined that its action will not result in the unreasonable degradation, diminution, depletion or deterioration of the environment. Next, we must determine whether the Department has satisfied its trustee duties by acting with prudence, loyalty and impartiality with respect to the beneficiaries of the natural resources impacted by the Department decision.

Delaware Riverkeeper, 2018 EHB at 493 (citing *Friends of Lackawanna v. DEP*, 2017 EHB 1123, 1163; *Center for Coalfield Justice,* 2017 EHB at 862). Importantly, "in order to satisfy its obligation to act in a prudent manner, a trustee with responsibility for environmental permitting, such as the Department, should consider the environmental effects of its permitting action before proceeding to grant a permit." *Id.* at 493.

In performing this assessment, we recognize that "compliance with statutes and regulations is not necessarily coextensive with the fulfillment of the duties laid out in Article I, Section 27." *Liberty Township*, 2024 EHB at 141 (citing *Friends of Lackawanna*, 2017 EHB at 1161). *See also Center for Coalfield Justice*, 2017 EHB at 860 (By rejecting the *Payne v. Kassab* test,[8] the

[8] *Payne v. Kassab*, 312 A.2d 86, 94 (Pa. Cmwlth. 1973), set forth a three-part test for determining compliance with Article I, Section 27 including the first prong of the test which stated, "Was there

Pennsylvania Supreme Court in *PEDF* rejected the notion that the Article I, Section 27 standard is coextensive with compliance with the statutes and regulations that govern clean water and clean air). Thus, a demonstration of compliance with the Oil and Gas Act and the regulations of Chapter 78a may not be enough to demonstrate that the Department has fulfilled its duties under Article I, Section 27. However, as the Board recently explained in *Citizens for Pennsylvania's Future v. DEP*:

> [A]s a practical matter, an appellant challenging a Department action that is otherwise compliant with the applicable statutes and regulations needs to explain what more the Department should have done to fulfill its responsibilities under the ERA. It will generally not be enough to merely restate the other arguments in the case relating to regulatory violations and reframe them as constitutional violations. *Liberty Twp. v. DEP*, 2024 EHB 36, 140; *Del. Riverkeeper Network [v. DEP,* 2022 EHB 103].
>
> The [Environmental Rights Amendment] requires the Department to fully consider the environmental effects of its action, but that duty will often be described in the regulations. The ERA precludes actions that result in an unreasonable degradation, diminution, depletion, or deterioration of the environment, but what is reasonable or unreasonable will often be established and delineated by regulation. There may be some daylight between full compliance with the applicable regulatory programs and acting with prudence, loyalty, and impartiality, but a successful appellant will need to explain.

EHB Docket No. 2023-026-L, *slip op.* at 71-72 (Adjudication issued May 16, 2025).

In considering each of Protect PT's arguments set forth below, we assess whether the Department has considered the environmental effects of its decision to issue and renew the permits for the Drakulic well site and correctly determined that it will not lead to unreasonable degradation, diminution, deletion or deterioration of the environment. We also consider whether the

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compliance with all applicable statutes and regulations relevant to the protection of the Commonwealth's public natural resources?" The test was rejected by the Pennsylvania Supreme Court in *PEDF*, 161 A.3d at 930.

Department has acted with prudence, loyalty and impartiality with respect to the beneficiaries of the natural resources impacted by its decision. As the party challenging the issuance of the permits, Protect PT bears the burden of demonstrating that the Department violated its constitutional duties under Article I, Section 27. *Logan v. DEP*, 2018 EHB 71, 115 (citing *Stedge v. DEP*, 2015 EHB 577, 617; *Brockway Borough Municipal Authority v. DEP*, 2015 EHB 221, 250.)

As to the first part of the test, we find that the Department has considered the environmental effects of its decision. Upon both issuing and renewing the permits, the Department issued a Record of Decision memorializing the process by which it reviewed the permits and the conclusions of its review. In the Record of Decision for the issuance of the permits, the Department noted that it considered public resources, streams, wetlands, navigable waters, threatened and endangered species, and environmental justice areas. The Department also considered comments it received in connection with the permit applications, including comments related to public health, emergency response planning, air quality, spill responses, site design and engineering, as well as the Department's duties under Article I, Section 27. With respect to its duties under Article I, Section 27, the Department's Record of Decision provides:

> Based on DEP's review of the applications and the aforementioned information, including but not limited to the surface site's protections required under erosion and sedimentation regulations, site containment and waste management requirements, the production zone's distance and geologic separation from the deepest fresh groundwater, air quality regulations and site plans, DEP concluded that, pursuant to the site-specific requirements and the DEP's regulations generally, the public will be protected and the environment and public natural resources will be conserved and maintained, should these permits be issued.

(Stipulated Ex. 5.)

Ms. Andrea Mullen, the permit reviewer for the Drakulic applications, testified that a permit review for an unconventional well typically involves ensuring that the application is

complete and all documents submitted, followed by a technical review. Mr. Christopher Hess, Permittee's General Counsel and Executive Vice President, testified that the Department's review of the Drakulic permit applications lasted approximately 13 months, whereas, in his experience, the typical review and approval process for a well permit is 30 to 60 days. In addition to the extended review process, the Department states that it also requested information from Permittee not normally required as part of an oil and gas permit application, including information related to objecting parties' concerns as to site suitability, air quality, and waste disposal.

During her review, Ms. Mullen coordinated with the Department of Health regarding public health concerns, with the Department's emergency response director regarding emergency response concerns, and with the air quality section regarding air quality concerns. When concerns were raised by staff in another agency or program within the Department, Ms. Mullen conveyed the concerns to Permittee for correction. Throughout the extended review process, the Department considered and addressed a wide variety of objectors' concerns relating to environmental protection and coordinated with other agencies and divisions on matters that required more subject-matter expertise. We believe that these actions satisfy the Department's obligation to consider the environmental effects of its action.

We next consider whether the Department correctly determined that its actions will not lead to the unreasonable degradation, diminution, deletion or deterioration of the environment.

Site Suitability

One of the challenges raised by Protect PT is that the Department abused its discretion and violated Article I, Section 27 by issuing permits that introduce "heavy-duty industrial uses – natural gas development and processing – into a densely populated residential suburban area." (Protect PT Post-hearing Brief, p. 56.) It argues that the Department failed to consider whether

the site was suitable for industrial use and whether the established setbacks are sufficient to protect the environment and the health, safety and welfare of residents in the area. Specifically, Protect PT states:

> The Department's authorization of these operations was done regardless of whether the site [is] suitable for industrial use, whether the industrial use is compatible with existing uses and expectations, and whether dictated accompanying setbacks are sufficient to protect the environmental health, safety, and welfare of residents in the area. [citation omitted] The Permits provide no protection for the environment, public resources or for public health as there is no full identification of chemicals that will be used and emitted, there is no air or groundwater monitoring required, and the Department has willfully ignored the proven health impacts that include an increase in childhood cancers.

(Protect PT Post-hearing Brief, p. 57.)

The Department does not dispute that the operation of the well site is an industrial activity and concedes that it will be temporarily disruptive during the drilling and hydraulic fracturing of the wells. (DEP Post-hearing Brief, p. 55.) However, the Department argues that it conducted a thorough permit review that "involved significant internal and external coordination [ ] and made every effort to ensure protection of the environment for current and future generations." (*Id*.)

The Oil and Gas Act establishes a 500-foot setback from unconventional gas wells to existing buildings or private water wells. 58 Pa. C.S. § 3215(a).[9] The setback distance is measured from the vertical wellbore. To put this distance into perspective, 500 feet is the length of slightly over 1½ football fields. There was no evidence introduced at the hearing regarding the closest residence or building to the Drakulic wells. However, Ms. Graber testified that her home is approximately 2,400 - 2,500 feet or ½ mile; Dr. Irr's home is also approximately ½ mile.

[9] Penn Township, in which many of the members of Protect PT reside, has a setback requirement of 600 feet.

Additionally, as noted earlier, the Level Green Presbyterian Church operates a preschool approximately 0.25 miles from the site. Given its proximity to this residential neighborhood, we do not doubt that the Drakulic well site will have some impact on the surrounding community. The question becomes what level of impact and whether, in issuing the permits, the Department acted unreasonably or contrary to law or violated its duties under Article I, Section 27 of the Pennsylvania Constitution.

Pennsylvania's laws allow oil and gas operations, including unconventional drilling which incorporates the use of hydraulic fracturing. These activities are permitted and regulated by Pennsylvania's Oil and Gas Act, 58 Pa. C.S. § 3201 *et seq*. and the underlying regulations at 25 Pa. Code Chapter 78a. It is understood that there will be impact from oil and gas operations. *See Delaware Riverkeeper,* 2018 EHB at 506 (The permitting process involves some environmental impact); *Brockway Borough Municipal Authority*, 2015 EHB at 250 (Article I, Section 27 allows for "controlled" development, rather than no development). The goal is to allow development while ensuring protection of the environment and the public health, safety and welfare. As the Board explained in *Brockway Borough*:

> The majority of environmental permitting regimes contemplate some amount of environmental impact, whether it be a discharge to waters of the Commonwealth, or the surface and subsurface disturbances associated with oil and gas development. *See, e.g*., 35 P.S. §§ 691.202, 307, & 402; 58 Pa.C.S. § 3211. The permitting regimes require that the proposed environmental impact be carefully vetted through an application process and a review of that application by the Department. The question then becomes whether the Department's decision to permit the discharge of pollutants or temporary diminution in flow was unreasonable.

2015 EHB at 243.

Permittee notes in its post-hearing brief that the suitability of the Drakulic site for oil and gas development has been litigated in a series of other lawsuits and appeals. First, Protect PT

appealed the Penn Township Zoning Hearing Board's approval of Permittee's special exception application for the Drakulic wells. The trial court affirmed the decision of the Zoning Hearing Board and found that the Zoning Hearing Board did not err in determining Permittee's operations would not adversely impact the community. That decision was then appealed to the Commonwealth Court, which ultimately found that there was no apparent error in the Zoning Hearing Board's decisions. Second, Protect PT also filed a validity challenge to Penn Township's ordinance establishing a mineral extraction overlay district covering the area where the proposed Drakulic site will be located. That challenge was appealed to both the trial court and Commonwealth Court, and neither court was persuaded by Protect PT's argument that the Drakulic site was unsuitable for oil and gas development.

However, while those cases examined the suitability of the Drakulic site from a zoning perspective, we are charged with considering the environmental impacts of the Department's decision and to determine whether that decision was reasonable. Protect PT argues that there will be unreasonable impact to groundwater, air quality, public health and public resources, thus making this site unsuitable for oil and gas development. We consider each of Protect PT's arguments below.

Groundwater Protection

Protect PT objects to the issuance and renewal of the permits for the Drakulic site because it believes the wells present a risk to groundwater and local water supplies. It contends that chemicals used at the well site can enter the groundwater through spills and leaks. It also asserts that chemicals injected into the wells can migrate through subsurface fractures and abandoned wells to shallow groundwater and private water supplies.

Spills

There is no dispute that a number of chemicals and hazardous materials will be stored and used on the Drakulic site. Protect PT asserts that these materials pose a threat to groundwater in the event of a spill or leakage. Christopher Hess, General Counsel and Executive Vice President, testified regarding the containment practices that Permittee intends to employ to ensure that, should a spill occur, it will not impact waters of the Commonwealth.[10] The site-specific containment plan for the Drakulic site is set forth within Permittee's Preparedness, Prevention, and Contingency Plan (PPC Plan) which details the primary, secondary, and supplemental containment measures for materials to be used on the site. According to Mr. Hess, Permittee intends to provide several layers of successive containment. First, there is an initial pad liner that is buried underneath the site and covered with gravel. On top of the gravel covering the initial pad liner, another liner is placed before wooden rig mats are laid down. Next, there is a collapsible containment berm that is about 8 to 10 inches tall that goes around the edge of the rig mats. The berm is filled with foam and has a liner that goes over the top. In addition to this initial containment, there is individual containment associated with specific items.

We recognize that spills or leaks may occur, and that is the reason for including provisions in the permits requiring Permittee to take steps to contain any such spills or leaks. As Judge Labuskes astutely noted in the Board's recent adjudication in *Citizens for Pennsylvania's Future, slip op.* at 53, "The fact that there *might* be 'problems' is why environmental permits are required."

[10] Mr. Hess testified that Permittee has never had a release to the environment that impacted waters of the Commonwealth. However, in its post-hearing brief, Protect PT highlighted a July 2017 violation issued to Apex for failure to control and dispose of various fluids and materials in a manner that prevents pollution to waters of the Commonwealth, as well as an August 2019 inspection by the Department that revealed that industrial waste was being discharged into waters of the Commonwealth. While these incidents are listed in Protect PT Exhibit WW, which is a search of Permittee's compliance history by Protect PT Executive Director, Gillian Graber, no testimony was provided as to either of those alleged violations.

We find that Permittee's spill containment practices will be protective of groundwater at the Drakulic site.

Well Integrity

Protect PT asserts that Permittee offered no specifications on how the Drakulic wells will be designed and constructed but simply relied on the design of wells at another well site. It argues that without this critical information, there was no basis for the Department to conclude that the wells' design will be protective of groundwater. Wells with inadequate casing or wells that are poorly constructed can allow gas and other fluids to leak into surrounding aquifers.

At the hearing, Permittee's expert Mr. Michael Krehel testified that the design and construction of the Drakulic wells will be the same as that at Permittee's McIlvaine well site. He based his understanding of the McIlvaine wells on information provided to him by Mr. Hess. Based on his understanding of the wells, Mr. Krehel explained the design and construction of the McIlvaine wells as follows: There are five concentric strings of steel casing in the well, going down approximately 2,500 feet. He explained that the casing isolates the interior of the well bore from the surrounding formations and provides structural integrity. The cement serves as an additional feature providing isolation between the external surface of the casing to the borehole and within annular spaces between the casing strings, isolating both flow and pressure. He stated that, essentially, the casing and cement serve to ensure that anything that is inside the well bore stays inside and does not escape out into the surrounding formations. He further explained that one of the strings of casing, a surface casing string, is designed specifically to be protective of fresh groundwater. In Mr. Krehel's opinion, the well design proposed for the Drakulic wells is consistent with standard industry practice and will be protective of groundwater.

The Department's permit reviewer, Andrea Mullen, testified that, "as someone who's reviewed hundreds of well permits," she believed the design described by Mr. Krehel meets the Department's regulations. (Tr. 1265.) She also explained that the casing and cementing of the well, as described by Mr. Krehel, ensures the segregation of the production zone from shallower groundwater.

While we recognize that Mr. Krehel's testimony pertained to the McIlvaine wells, we have no reason to doubt that the same design and construction will be utilized for the Drakulic wells. Based on the testimony provided by Mr. Krehel, which was not rebutted, we are convinced that the design of the Drakulic wells is protective of groundwater. While Protect PT cited various violations at the McIlvaine site, none appear to involve well design or integrity. We find that the evidence supports the conclusion that the well design proposed for the Drakulic site provides protection for groundwater.

Migration through Fractures

The wells proposed for the Drakulic site are unconventional wells targeting the Marcellus Shale formation. The Permittee's Mr. Hess provided an overview of how the wells will be constructed: The wells are first drilled vertically and then turned laterally into the shale formation. Once the wells are drilled, hydraulic fracturing takes place in the lateral portion of the well. This involves perforating the casing of the horizontal section of the well in order to allow fracturing fluids, consisting primarily of water as well as sand and chemicals, to be pushed into the surrounding formation. The fluids are pumped at pressure down the wellbore through the perforated holes in the casing into the Marcellus Shale formation, causing fracturing of the shale. The sand is used to keep the fractures open for extraction of the gas. Because the gas molecule is

smaller than the sand particle this will allow the gas to flow through the fractures and back into the borehole.

Protect PT argues that chemicals injected into the shale during hydraulic fracturing can move through existing fractures as well as fractures created by the drilling and fracturing of the wells, and eventually end up in shallow groundwater and water supplies. In support of its argument, Protect PT offered the expert testimony of Mr. John Barone, a certified professional geologist with nearly 50 years of experience in geology and hydrogeology. In Mr. Barone's opinion, chemicals introduced into the injection zones at the active well can migrate via fractures to historic conventional wells in the area that have not been properly plugged or that otherwise lack well integrity. In order for such a communication event to occur between the Drakulic wells and historic conventional wells in the area, there must exist a "fracture network," consisting of naturally occurring fractures or fracturing created by the drilling and hydrofracturing of wells. Mr. Barone believes that such a subsurface fracture network could exist in the area of the Drakulic site. Based on regional characterizations, it is his opinion that there are natural joints and fractures across all lithologies found at the site. He relied on regional data because, in his opinion, there is almost no change in the characteristics across the extent of the particular rock formation. Mr. Barone opined that, by virtue of the fracture networks, injected fluid could travel from the Drakulic wells to a conventional well that is not properly plugged and cemented. From there, it can enter the shallow water table as it comes up through the borehole or through neglected and deteriorating casing of abandoned wells in the area, and then from the shallow groundwater table to domestic water wells.

Protect PT argues that this concern for a communication event is heightened based on information contained within Permittee's Area of Review, which consists of a survey of wells

within a 1,000-foot radius of the proposed Drakulic wells.[11] According to Apex Exhibit 14, there are 61 gas wells within the Area of Review of the proposed Drakulic wells. These include what are referred to as historic wells that were drilled decades ago. The Area of Review provides information regarding each well, including the well operator and status, well coordinates, and depth, where known. Also included is a category labeled "AOR TGD Risk Classification," which relates to the Department's technical guidance document entitled "Guidelines for Implementing Area of Review (AOR) Regulatory Requirement for Unconventional Wells" (guidance document). (Apex Ex. 14; Protect PT Ex. XX.) The guidance document provides information regarding the risk of a communication event occurring, with risk levels falling at negligible, lower, moderate, or higher. Pursuant to the guidance document, 24 of the 61 wells in the Drakulic Area of Review were classified as being at a "higher" risk of communication. (Apex Ex. 14, pages 924-25.) In addition to the 24 wells identified as higher risk, there are a number of wells having a status of "undetermined" or "abandoned" that Protect PT asserts should be classified as "higher" risk, rather than the "negligible" classification given to them.

Based on the existence of the higher risk wells, as well as Mr. Barone's belief that there is extensive fracturing in the stratigraphy of the area, it is his belief that fluids injected into the strata during the hydraulic fracturing process have the potential to enter abandoned wells in the area of the Drakulic site and eventually enter groundwater, thus posing a risk to water supplies. He recommends that a detailed structural analysis be conducted at the site via both literature reviews

[11] The Area of Review survey must be undertaken prior to drilling pursuant to 25 Pa. Code § 78a.52a. This regulation requires a well operator to identify active wells, inactive wells, orphan wells, abandoned wells, and plugged and abandoned wells "within 1,000 feet measured horizontally from the vertical well bore and 1,000 feet measured from the surface above the entire length of a horizontal well bore."

and coring of the borehole. He further recommends monitoring the flow regime in the area before, during, and after installation of the wells, and assessing the chemical quality of the groundwater.

Permittee sought to discredit Mr. Barone by pointing out what it perceived to be flaws in his understanding of the Drakulic wells. For example, Permittee states that Mr. Barone misidentified the depth of the Marcellus Shale, where the Drakulic wells will be drilled, by 1,000 feet. We gather that this assertion stems from Mr. Barone's testimony that the Marcellus Shale is at a depth of 6,500 feet whereas the permit application materials and the Department's and Permittee's experts put the Marcellus Shale at a depth of 7,500 feet. However, we are not convinced this was an error on the part of Mr. Barone. The permit application materials and Permittee's and the Department's experts state that the "true vertical depth" of the Marcellus Shale is 7,500 feet. The Permittee's Mr. Hess helpfully described "true vertical depth" as "the actual depth from a point below the surface to the surface."[12] (Tr. 772.) However, Mr. Barone was asked by counsel for the Department, "And approximately *where below sea level* is the Marcellus Shale formation?" (Tr. 499) (emphasis added.) In response, he identified the depth of the Marcellus shale as being at a depth of 6,500 feet below sea level. (*Id*.) He was not asked about true vertical depth. There is no definition in the record for "depth below sea level" nor any indication that this measurement is the same as "true vertical depth." As such, we cannot find Mr. Barone's measurement to be indicative of a lack of understanding as to where the Marcellus Shale is located.

Permittee also points out what it perceives to be an error in a conceptual model prepared by Mr. Barone. The conceptual model is a drawing prepared by Mr. Barone to demonstrate how a communication event could occur between the Drakulic wells and historic conventional wells

[12] In his testimony, Mr. Hess described this as the "total" vertical depth, however, based on the totality of his testimony, we understand him to be talking about "true" vertical depth.

located in the area of the Drakulic site. On the drawing, Mr. Barone labeled the lateral portion of the Drakulic well as "injection." Permittee sees this as evidence that Mr. Barone mistakenly believed the Drakulic wells to be injection wells, i.e., wells that are designed to put fluids into the ground rather than take them out. However, we read this label as simply indicating that several perforations will be made in the lateral portion of the well which will then "inject" fluid into the surrounding shale to create fractures, i.e., the injection that takes place as part of the hydraulic fracturing process.

In order for a communication event to occur as suggested by Mr. Barone, the following conditions need to be true: (1) the historic conventional wells in the area of the Drakulic site must pose a risk of allowing a communication event to occur and (2) the fracture networks associated with the proposed Drakulic wells and the fracture networks associated with the historic conventional wells must intersect. For the first of these conditions to be true, the historic conventional wells must have been improperly abandoned.[13] In other words, the wells were not plugged or properly cased and cemented to prevent interaction with groundwater. Since the Area of Review for the Drakulic site lists 24 wells as being "higher risk" and a number of additional wells with an "undetermined" status, we understand this to mean that the wells' integrity is

[13] Mr. Hess testified that when a reference is made to abandoned wells in the oil and gas industry, it generally refers to wells that have been plugged and abandoned. (Tr. 789.) He noted that an abandoned well, in the sense that people commonly think of them, is actually referred to as an orphaned well in the industry. (*Id*.) Under the Oil and Gas Act, an "abandoned well" is a well "(i) that has not been used to produce, extract or inject any gas, petroleum or other liquid within the preceding 12 months; (ii) for which equipment necessary for production, extraction or injection has been removed; or (iii) considered dry and not equipped for production within 60 days after drilling, redrilling or deepening." 58 Pa. C.S. § 3203. However, we understand the testimony of most of the witnesses, when referring to "abandoned" wells, as referring to the common usage of that term, i.e., a well that is no longer in operation and that may or may not be plugged or properly cemented.

compromised or there is simply not enough information to know whether the well presents a risk. Therefore, we find that the first condition is met.

For the second of the above conditions to be true, the historic conventional wells would need to have been drilled to a depth that would allow for the intersection of fracture networks. In Mr. Barone's opinion, the interception intervals between the Drakulic wells and the historic conventional wells do not have to coincide for a communication event to occur, but they do need to be close enough for contaminants to flow between them. Mr. Barone acknowledged that he did not have direct information regarding the depth of historic conventional wells in the area surrounding the Drakulic site. However, it is his belief that the wells extend down to the Marcellus Shale, i.e, to the same formation where the Drakulic wells will be drilled. He based this opinion on records he examined from the Department of Environmental Protection and Department of Conservation and Natural Resources (DCNR), but those records were not produced. Based on sources that he reviewed, he believes that the gas-producing layers above the Marcellus Shale would have been uneconomical to drill and the drilling technology at the time allowed operators to drill to depths greater than 5,000 feet. Thus, it is his opinion that the historic conventional wells in the area of the Drakulic site were likely drilled to the Marcellus formation and, therefore, present a risk of communication with the Drakulic wells.

In his expert report, Mr. Barone identified 52 abandoned wells in the area of the proposed Drakulic wells that he believes pose a risk of communication with the Drakulic wells. In his opinion, the lateral portion of the Drakulic wells will pass near the abandoned wells in the same formation, and fractures and flow paths connecting the injection zone with the abandoned wells will allow contaminants to flow to and through the abandoned wells to shallower domestic water wells.

Permittee offered Mr. Michael Krehel to rebut Mr. Barone's testimony regarding the likelihood of a communication event occurring between the Drakulic wells and historic conventional wells at the site. Mr. Krehel is a licensed professional engineer with over 40 years of experience involving oil and gas operations, and particularly the upstream oil and gas industry. In Mr. Krehel's opinion, there is no reasonable basis to conclude that the operations associated with the proposed Drakulic wells are likely to result in a communication event with area historic wells or contamination of fresh groundwater formations. Mr. Krehel disagreed with Mr. Barone's testimony that historic wells in the vicinity of the Drakulic site were drilled to the Marcellus formation. In his experience, historic conventional wells targeted shallower formations, and unconventional production was not even thought of at the time. To his knowledge, the approximate depth of conventional wells is between 2,500 and 3,500 feet. He testified that shales such as the Marcellus Shale were not considered to be formations for gas production at the time the wells were likely drilled. He further testified that the ability to conduct horizontal drilling and multi-stage hydraulic fracturing would have been required to make the Marcellus Shale formation commercial, and those technologic advancements were not available at that time.

In addition to Mr. Krehel's testimony, the Department offered Ms. Andrea Mullen, a licensed professional geologist and the lead permit reviewer for the Drakulic wells. Ms. Mullen conducted research into the depths of the historic wells in the area and the type of drilling that would have taken place during the time the wells were drilled. Ms. Mullen referenced and relied upon a 1929 DCNR publication of the geology of the Pittsburgh Quadrangle containing representations of well logs for conventional oil and gas wells.[14] Ms. Mullen testified that during

[14] There is not a clear explanation of why Ms. Mullen believed the wells in the vicinity of the Drakulic site were drilled around 1929. However, none of the parties challenged this timeframe and, therefore, nor do we.

that time period, the depth of wells was determined by economics and available technology. It is her belief that the available technology at the time the historic wells were drilled was cable rig and rotary drill, which would not have allowed drilling to the depth of the Marcellus Shale. Notably, Ms. Mullen researched the 52 abandoned wells that were referenced in Mr. Barone's expert report by using the DCNR Exploration and Development Well Information Network (EDWIN) database. She was able to determine the depth of all the wells referenced in Mr. Barone's report, but two. None of the wells were drilled deeper than 3,500 feet. Based on Ms. Mullen's research into the EDWIN database, we find her testimony credible that the historic conventional wells in the vicinity of the Drakulic site are drilled to a depth no deeper than 3,500 feet and not to a depth of 7,500 feet as believed by Mr. Barone.

While Ms. Mullen agreed with Mr. Barone that there are fracture networks in Westmoreland County, and that it would be possible for the proposed Drakulic wells to connect with such fracture networks, in her opinion it was unlikely that the Drakulic wells would connect with any fractures associated with the conventional wells. As noted, the conventional wells are drilled no deeper than 3,500 feet compared to the targeted depth of approximately 7,500 feet (true vertical depth) for the Drakulic wells. Therefore, there are approximately 3,000 feet of intervening rock layers between the historic wells and the Marcellus formation where the Drakulic wells will be drilled. Within those intervening rock layers lies the Tully Limestone, which both Ms. Mullen and Mr. Krehel identified as being a barrier to fracturing caused by hydraulic fracturing operations. However, both Mr. Krehel and Ms. Mullen conceded that the Tully Limestone was not completely impermeable. Mr. Krehel acknowledged that, while he believed the Tully Limestone is a barrier to vertical fracturing, it is not a barrier to fluid. (Tr. 1018.) When asked if there is pervasive fracturing in the Tully Limestone, Ms. Mullen stated that she did not know. (Tr. 1278.) Mr.

Barone appeared to agree that the Tully Limestone was not likely to experience large fractures; however, he felt that it was conceivable that smaller fractures could occur that would allow a small concentration of contaminants to travel from one point to another.

Nonetheless, both Ms. Mullen and Mr. Krehel believe that any potential movement of contaminants from the Drakulic wells to the conventional wells is unlikely. While Mr. Krehel conceded that vertical fractures are generated during the hydraulic fracturing process (i.e., perpendicular to the lateral wellbore rather than horizontally throughout the formation), neither he nor Ms. Mullen believe that the fractures would extend far enough vertically to intersect any fracture networks associated with the historic conventional wells or to the surface. According to Ms. Mullen, the technology currently available is not capable of creating a fracture large enough to vertically span all the intervening rock layers between the proposed Drakulic wells and the historic conventional wells.

In considering the preponderance of the evidence, Protect PT did not convince us that a communication event is likely to occur between the Drakulic wells and abandoned wells in the area. Mr. Barone's theory that a communication event could occur was based on his belief that the historic conventional wells were drilled to the same depth as the Drakulic wells. The evidence simply does not support that view. Based on Ms. Mullen's research, we are persuaded that the historic wells are located at least 3,000 feet shallower than the proposed Drakulic wells. While the testimony among the experts differed as to the extent to which the Tully Limestone may provide a barrier to the migration of contaminants, all seemed to agree that it was a barrier to large fractures. We are persuaded that a communication event between the laterals of the Drakulic wells and the abandoned wells is unlikely to occur due to the 3,000 feet of rock layers that will separate them.

We believe there is even less likelihood of a subsurface impact to groundwater aquifers used for water supplies due to the even greater distance and layers of strata between shallow groundwater and the Drakulic wells. Both Mr. Barone and Ms. Mullen testified that shallow groundwater is located no deeper than 200 feet, while Mr. Krehel believed it could go as deep as 400 feet. In either case, the distance between the shallow groundwater and the depth of the Drakulic wells at approximately 7,500 feet makes a communication event unlikely. We believe that the preponderance of the evidence suggests that the Drakulic wells are not likely to present a risk to groundwater and private water supplies.

Notably, Mr. Barone did not conclude that the Drakulic wells could not be constructed or operated in such a way that was protective of groundwater. Rather, he makes several recommendations as to ensuring protection of groundwater. According to Ms. Mullen, at least some of Mr. Barone's recommendations are addressed by the Area of Review requirements. For example, pursuant to 25 Pa. Code § 78a.52a, a well operator must submit a monitoring plan for orphaned, abandoned, and plugged and abandoned wells that penetrate within 1,500 feet measured vertically from the stimulation perforations or have an unknown true vertical depth. The monitoring plan requires visual monitoring during stimulation activities. After receiving the report, the Department may make a determination that additional measures are needed, on a case-by-case basis, to ensure protection of waters of the Commonwealth. While we have a high regard for Mr. Barone, we do not believe that the evidence demonstrates that the Drakulic wells are likely to cause groundwater contamination.

Protect PT asserts that it is not required to prove that it is more likely than not that groundwater contamination will occur, but only that there are potential environmental effects. In support of its argument, it cites to the Commonwealth Court's holding in *United Refining*,

discussed earlier in this adjudication. As we explained earlier, although the Court in *United Refining* stated that an appellant need not prove that the likelihood of a particular harm is greater than fifty percent, it nonetheless must prove, *by a preponderance of evidence*, that the issuance of the permit was arbitrary or an abuse of discretion. *Id.* Here, we do not find that the preponderance of evidence supports a conclusion that the Department acted arbitrarily or abused its discretion in issuing the permits on the basis of potential groundwater contamination.

Emergency Response Plan and PPC Plan

Protect PT argues that the Department failed to ensure that Permittee has the ability to respond in the event of an emergency. Specifically, it challenges Permittee's Preparedness, Prevention and Contingency Plan and its Emergency Response Plan. A Preparedness, Prevention and Contingency Plan (PPC Plan) contains information dealing with preparedness for and prevention of spills or releases of chemicals. (Tr. 92–93; Stipulated Ex. 13.) An Emergency Response Plan is utilized for emergencies such as a loss of well control or larger spills that cannot be immediately cleaned up. (Tr. 92; Stipulated Ex. 12.) There are two types of Emergency Response Plan: system-wide and site-specific. The system-wide plan is a blanket plan that applies to all of Permittee's sites operating in the state of Pennsylvania. (Tr. 793–94.) The site-specific plan acts like an appendix to the system-wide plan and provides specific information for the location at issue. (Tr. 794.) Permittee's site-specific plan consists of an addendum to its system-wide plan with specific information for the Drakulic location. Protect PT raises two arguments with respect to Permittee's Emergency Response Plans and PPC Plan. First, it argues that the plans are deficient and, second, that the plans should have been submitted with the permit application and made available for review and comment by the public prior to issuance of the permits.

Protect PT takes issue with the fact that safety data sheets are not part of Permittee's PPC Plan at the present time. In support of its argument, it presented the testimony of Mr. Silverio Caggiano, who was offered as an expert in emergency response as well as planning and preparedness control. Mr. Caggiano served as a fire fighter with the Youngstown, Ohio Fire Department for 39 years, retiring as battalion chief, and has been involved with HAZMAT response for 30 years. He has decades' worth of experience with emergency response plans and PPC plans. He was exceptionally well-versed in the areas of expertise for which he was offered.

Mr. Caggiano testified as to the importance of first responders having access to safety data sheets, describing them as the "keys to the kingdom." Safety data sheets provide comprehensive information regarding the chemical and physical properties of a substance, hazards associated with the substance and guidance on safe handling and storage. Of particular note, according to Mr. Caggiano, is a chemical's "CAS" or chemical abstract service number.[15] The CAS number provides important information regarding a chemical, such as its properties, what protective gear may be necessary, and information for keeping the public safe. Mr. Caggiano described a number of emergency situations and evacuation efforts in which he was involved and emphasized the importance of having safety data sheets and other sources in order to adequately address each of those situations.

Mr. Caggiano provided very helpful testimony on the importance of emergency planning and pollution preparedness. However, he was not asked and therefore did not testify about alleged deficiencies in Permittee's Emergency Response Plans and PPC Plan. He did testify as to the importance of first responders having access to safety data sheets, and, based on testimony presented at the hearing, safety data sheets will be available at the Drakulic site. Christopher Hess,

[15] The transcript incorrectly refers to the CAS number as "CAST" number.

General Counsel and Executive Vice President, testified that Permittee will have safety data sheets for every chemical that is brought onto the site and they will be located with the PPC Plan. Because the Drakulic site is not in operation nor has any construction begun, there are no chemicals being stored or used at the site and, therefore, there is no reason to have safety data sheets at the present time. Safety data sheets are provided with the various chemicals and other products when they are brought onto the site. Mr. Hess testified that, for the sake of safety and efficiency, the only safety data sheets that should be present at the site at any given time should be those that pertain to the actual products that are on-site. He explained:

> [Y]ou don't know what you're going to have on site until you're going to bring it there. So a supplier might change or you might discover that it's easier to use a particular product than another product. So you don't load this up and say, "Well, here's everything that's going to be on site," if it's not. But then also for ease of use, you wouldn't want this to be a historical document where you end up with 150 [safety data] sheets that somebody has to go through when really you've only got one chemical on site. So these will get swapped out on an ongoing basis depending on what the operation is doing.

(Tr. 805-06.)

We agree with Mr. Hess' assessment. Maintaining a collection of safety data sheets for possible chemicals that may be purchased and brought onto the site at some future date is likely to hinder efforts to quickly access information in the case of an actual emergency.

Protect PT's argument that the Emergency Response Plans and PPC Plan should have been available for public review and comment prior to issuance of the permit is based on its belief that these plans serve a different purpose than that for which they are intended. Members of Protect PT testified as to their concerns about the proposed operations at the Drakulic site and what they perceive as a lack of emergency response planning and failure to develop a plan for evacuation of nearby residents in the event of a well emergency. Dr. Larry Irr, a member of Protect PT who

lives approximately 0.45 miles from the Drakulic site testified, "I'm very concerned about my neighborhood. There's no emergency response plan to get us out." (Tr. 211) Protect PT Executive Director, Gillian Graber, who lives less than ½ mile from the site, testified that, beginning in 2015, she requested that Permittee put more detail into its emergency evacuation plan. According to Ms. Graber, earlier versions of the site-specific Emergency Response Plan failed to include a number of houses, a playground and a preschool. She testified as to her concerns about the current plan:

> It tells me nothing, you know, fire, medical, explosion, spill, it tells me nothing how residents – about how the public is supposed to get out in case of a fire or a blowout or explosion or an air event…if something is released at the site, how a resident is supposed to get out. How are residents supposed to – are we to shelter in place? Are we to leave our house? … And so not knowing is like the scariest part, that you just don't know. You don't know what to do and you don't know…what to tell your kids.

(Tr. 335-36.)

Understandably, area residents want to know what to do in the event of an emergency. These are valid concerns for anyone living in close proximity to an operation where emergency situations can and do occur. However, the purpose of a PPC Plan and Emergency Response Plans is not to establish the protocol for evacuating a neighborhood, should such action be required. Evacuations or other emergency measures taken in the surrounding community are under the control of local first responders, who are best equipped to deal with those situations, as explained in detail by Mr. Caggiano. In contrast, the purpose of a PPC Plan is to develop measures to prevent accidental discharges of polluting substances from occurring and to control such discharges when they do occur. Likewise, the purpose of an Emergency Response Plan is to provide measures for addressing emergencies that occur at the well site. 25 Pa. Code § 78.55a(i)(5). Should actions need to be taken at locations off the well site, such as evacuation of a portion of a community, such

measures would not be under the control of Permittee; rather, Permittee would be required to coordinate with first responders and ensure they are provided with all necessary information, such as the aforementioned safety data sheets.

Of particular concern to Dr. Irr and Ms. Graber was the possibility of an uncontrolled release of natural gas or fluids from a well, known as a "blowout." Mr. Hess detailed the procedure that would be followed by Permittee in the event of such an occurrence, including the fact that Permittee has a contract with a specialty first responder who would handle any such emergency at the wellhead. (Tr. 798, 943.) Additionally, the specialty first responder will hold training sessions for employees of Permittee and first responders. (Tr. 943-44.) Permittee has never experienced a blowout at any of its well sites, nor any other event that required an evacuation. (Tr. 801-02.) As part of the Consent Judgment, Permittee is also required to maintain a 24-hour emergency hotline for employees of Penn Township and volunteer fire companies. (Protect PT Ex. JJ/Apex Ex. 11, para. 9(g).)

Finally, the oil and gas regulations do not require an applicant to submit its PPC Plan or Emergency Response Plans with its application. Rather, these documents are developed after the permit approval but before operations begin. Given the purposes of these documents, described above, we agree that it makes sense from a logistical standpoint to allow for the development of these documents following the permitting process but prior to the beginning of operations. Moreover, even though these documents were not available for review by the public during the permitting process, they have been available for review by Protect PT and its members throughout this litigation, and Protect PT had the opportunity to articulate why it believes the plans are deficient by virtue of testimony presented at the hearing before the Board. We have heard Protect PT's criticisms of the plans and have given its concerns a great deal of consideration. However,

for the reasons explained herein, Protect PT has not provided evidence to support its claims with regard to the PPC Plan and Emergency Response Plans for the Drakulic site.

Public Health

Protect PT asserts that the Drakulic wells pose health risks to the community. In support of its argument, Protect PT presented the testimony of Ms. Makenzie White. Ms. White holds a Master of Public Health degree and has worked with communities impacted by oil and gas operations. She is on the staff of Protect PT as an environmental consultant and has worked on health impact assessments. Ms. White was accepted by the Board as an expert in public health.

Permittee presented the testimony of Ms. Julie Panko who holds a Bachelor of Science degree in industrial hygiene and is a certified industrial hygienist. In this role, she has evaluated gas well sites and the potential for air pollution. Ms. Panko was accepted by the Board as an expert in industrial hygiene, as well as occupational and environmental health risk assessment.

Ms. White testified regarding Hydraulic Fracturing Epidemiology Research Studies done by the University of Pittsburgh in conjunction with the Pennsylvania Department of Health (the Pitt studies). These studies were released in July and August 2023 and looked at the incidence of asthma, low birth weight and childhood cancer in connection with proximity to unconventional oil and gas development. The asthma study found that individuals living near an unconventional oil or gas well had a four to five times increased risk for asthma exacerbations, including asthma attacks leading to hospitalization. (Tr. 707.) The birth weight study found that babies born to a mother who lived near a well during pregnancy had a 20-40 grams (or approximately one ounce) lower birth weight. (Tr. 707.) The childhood cancer study found that a child living within ½ mile of a well had an increased risk for developing any type of cancer and a five to seven times higher risk of developing lymphoma. (Tr. 707.) Ms. White also testified regarding the health impacts of

volatile organic compounds (VOCs) and particulate matter 2.5 (PM2.5) which can be easily inhaled and may be associated with oil and gas operations. According to Ms. White, PM2.5 has been linked to respiratory and cardiovascular issues, as well as asthma exacerbations. Ms. White recommended increased setbacks to reduce health impacts but did not state what setbacks she felt were sufficiently protective of public health.

Ms. Panko discussed the limitations of the Pitt studies: First, the studies did not assess actual exposure; rather, they used proximity to a well site as a proxy for exposure. Second, the studies did not identify or control for alternate sources other than unconventional natural gas development. Third, the studies were based on where the subjects lived and did not take into account exposure that may have occurred in other locations such as at work. The studies themselves acknowledge these limitations. A further limitation is that the Pitt studies involved only health data from University of Pittsburgh Medical Center patients in the eight counties that were part of the study and did not include data for patients who may have used other health systems or with limited access to healthcare. (Tr. 716.) Additionally, Ms. Panko discussed three studies that applied a risk assessment paradigm that was not applied in the Pitt studies, and those studies concluded that there is low potential risk to the surrounding community from gas well sites. (Tr. 1148-51.)

While the Pitt studies suggest a correlation between proximity to unconventional gas well operations and certain health effects, they do not establish causation. This was acknowledged by the authors of the studies and by Ms. White. (Tr. 711.) Additionally, while the studies indicate that further review of setback distances may be warranted, there is nothing in the record to say what that measurement should be. The Oil and Gas Act provides for a setback distance of 500 feet for unconventional wells. 58 Pa. C.S. § 3215(a). Penn Township has expanded that setback

distance to 600 feet. (Tr. 740, 954) There was no testimony in the record regarding the nearest residence or building to the Drakulic well pad. Both Ms. Graber and Dr. Irr live well outside the 600-foot setback requirement of the Township – Ms. Graber lives approximately 2,400 to 2,500 feet from the site and Dr. Irr lives approximately .45 miles from the site, which is 2,376 feet. The evidence in the record does not establish that these are unsafe distances from the Drakulic site in terms of public health.

Disclosure of Chemicals

Protect PT asserts that the Department should have required a full disclosure of chemicals that will be used at the Drakulic site at the time Permittee submitted its permit applications. It argues that the failure to do so constitutes an abuse of discretion and violation of the Environmental Rights Amendment because it presents a risk to public safety and the environment and hampers the Department's ability to protect water supplies and air quality in the event of an emergency. (Protect PT Post-hearing Brief, p. 80-81.)

As we stated earlier in this adjudication, in determining whether the Department has fulfilled its duties under Article I, Section 27, we apply the following standard:

> We first must determine whether the Department has considered the environmental effects of its action and whether the Department correctly determined that its action will not result in the unreasonable degradation, diminution, depletion or deterioration of the environment. Next, we must determine whether the Department has satisfied its trustee duties by acting with prudence, loyalty and impartiality with respect to the beneficiaries of the natural resources impacted by the Department decision.

Delaware Riverkeeper, 2018 EHB at 493 (citing *Friends of Lackawanna*, 2017 EHB at 1163; *Center for Coalfield Justice*, 2017 EHB at 862). "[I]n order to satisfy its obligation to act in a prudent manner, a trustee with responsibility for environmental permitting, such as the

Department, should consider the environmental effects of its permitting action before proceeding to grant a permit." *Id.* at 493.

We find it noteworthy that neither the Oil and Gas Act nor the regulations require the disclosure of chemicals until *after* hydraulic fracturing is completed. Section 3222.1 of the Oil and Gas Act requires a service provider or vendor who supplies hydraulic fracturing additives to an operator to provide chemical information within 60 days after commencement of hydraulic fracturing. 58 Pa. C.S. § 3222.1(a). That section also requires a well operator to complete a chemical disclosure form and post it on the chemical disclosure registry within 60 days after conclusion of hydraulic fracturing. *Id*. at § 3222.1(b). Section 78a.122(b) of the regulations requires a well operator to submit a completion report containing a list of chemical additives in the stimulation fluid within 30 days after completion of the well.[16] 25 Pa. Code § 78a.122(b). While Protect PT does not limit its argument regarding disclosure of chemicals to those used in hydraulic fracturing, this appears to comprise one aspect of its argument.

The question that Protect PT raises is whether the Department can satisfy its trustee duties under Article I, Section 27 and make a determination that unreasonable degradation, diminution, depletion or deterioration of the environment will not occur when it does not know what chemicals will be used on the site until after the permit is issued or what constituents will be injected into the ground until after the injection occurs.

However, Protect PT simply has not provided us with enough information here to find that the Department failed to comply with its duties under Article I, Section 27. While Protect PT tells

[16] This was also noted by the Board in an earlier opinion in this matter when it considered deposition testimony by the Department's Environmental Program Manager, Thomas Donohue, who stated that the Department does not review the chemicals to be used prior to well completion; rather this information is contained in the completion report submitted after the hydrofracturing process occurs. *Protect PT v. DEP and Apex Energy (PA), LLC*, 2024 EHB 683, 705.

us that the chemicals that will be used at the Drakulic site present a risk of harm to the public and the environment, it has not told us how the chemicals will be used on-site (for example, will they be injected into the ground or simply used as a cleaning agent) or explained a pathway to exposure (for example, how will the chemicals reach people's wells or be emitted into the air). As we explained in the Groundwater discussion, Protect PT did not meet its burden of proving how groundwater contamination is likely to occur. As we discussed in that section, Mr. Barone's testimony did not credibly support Protect PT's claim that materials injected into the Marcellus Shale formation 7,500 feet below the surface are likely to make their way to shallow groundwater or be emitted at the surface. Additionally, as we discuss in the Air Section later in this adjudication, Protect PT did not demonstrate that chemicals used at the site are likely to degrade air quality. Nor has Protect PT demonstrated that Permittee's emergency planning is likely to be hampered by the failure to disclose chemicals at the permit application stage. Without further information about what chemicals will be used, how they will be used and how they present a risk of exposure to the public or harm to the environment, we cannot find that the Department failed to meet its duties under Article I, Section 27.

Public Resources and Private Water Supplies

Protect PT argues that the Department failed to fully consider public resources when it approved the Drakulic permits, in particular, public and private water supplies, schools and playgrounds and a nearby trail. Section 78a.15 of the oil and gas regulations sets forth the requirements of a permit application, including information pertaining to public resources.

Protect PT argues first that Permittee did not conduct a search of public resources when it applied for the Drakulic permits. Protect PT relies on testimony by Mr. Hess who, in response to questioning by counsel for Protect PT, stated that Permittee did not search for public resources

prior to submitting its applications for the Drakulic wells. (Tr. 68.) He further testified that, in selecting the Drakulic site, Permittee did not perform a population analysis or identify schools, hospitals, nursing homes or parks within two miles of the Drakulic site, nor did it research endangered species on the EPA website. (Tr. 63-65.) We find this testimony by Mr. Hess to be confusing since the applications for the Drakulic wells indicate that public resources were, in fact, considered. (Stipulated Ex. 1, Bates no. 0000708; Stipulated Ex. 2, 0000682.) This was later confirmed by Mr. Hess in response to questioning from Permittee's counsel. (Tr. 123.) Based on the record as a whole, we do not believe that Mr. Hess's testimony in response to questioning by counsel for Protect PT accurately reflects the actions taken by Permittee to identify public resources as required by 25 Pa. Code § 78a.15. We believe Mr. Hess's answer was either a misstatement or a misunderstanding of the question he was being asked. Rather, we credit Stipulated Exhibits 1 and 2 as being an accurate reflection of the actions taken by Permittee in considering public resources. We also note that the Department's permit reviewer, Andrea Mullen, testified that she researched and reviewed public resources as part of her review of the permit applications. (Tr. 1307.)

Similarly, Protect PT argues that Permittee failed to identify water supplies with the plats it submitted with the permit applications in accordance with 25 Pa. Code § 78a.15(b) which requires the submission of "a complete and accurate plat." Again, Protect PT points to testimony by Mr. Hess as evidence that Permittee failed to comply with this provision. Permittee submitted plats with its permit applications that identified 96 private water supplies. (Stipulated Ex. 1 and 2.) At the hearing, Mr. Hess explained that the identification of private water supplies involves sending out surveys to landowners to locate potential water supplies. Since it is possible that a landowner may not respond to the survey, Mr. Hess acknowledged, in response to questioning by

counsel for Protect PT, that he "couldn't say that there was a definitive capture of all private water supplies for those reasons." (Tr. 59-60.) Counsel for Protect PT asked, "So it is possible that there are additional private water supplies that are not identified in [the permit application," to which Mr. Hess responded, "I don't know. There could be…" (Tr. 59.) We do not read this as a failure on Permittee's part to identify private water supplies in the area of the proposed Drakulic wells but simply an attempt by Mr. Hess to be precise in his answer and to acknowledge that some water supplies may have been omitted if the landowner did not respond to the survey. Based on the evidence, we believe that Permittee made a good faith attempt to ensure that the plats submitted with its permit applications were complete and accurate.

In further support of its argument that Permittee has not supplied complete information, Protect PT points out that the plats submitted with the applications show hundreds of parcels of property yet only 96 water supplies. However, based on testimony at the hearing, it appears that a number of the properties in the area are serviced by public water. For example, both Ms. Graber and Dr. Irr testified that they are serviced by the municipal water system. Dr. Irr stated that he did not respond to Permittee's water supply survey since he is on public water. (Tr. 228.) There is nothing to indicate that private water supplies were omitted from the information provided by Permittee to the Department. There is also nothing to indicate that public water supplies were not considered.

Protect PT further argues that the Department violated Section 3215(c) of the Oil and Gas Act by failing to consider schools and playgrounds in its review of the permit applications. That section of the Oil and Gas Act requires the Department to consider the impact of the proposed well on "public resources" when making a determination on a well permit. The Department's Environmental Program Manager, Thomas Donohue, admitted that the Department's review of the

initial permit applications did not take into consideration schools or playgrounds because the Department did not consider them to be public resources prior to the decision of the Pennsylvania Supreme Court in *Marcellus Shale Coalition v. Department of Environmental Protection*, 292 A.3d 921, 923 (Pa. 2023). (Tr. 191-92; Stipulated Ex. 5.) This was confirmed by permit reviewer, Andrea Mullen. (Tr. 1298-99.) In the *Marcellus Shale* case, the Pennsylvania Supreme Court held that common areas of a school's property and playgrounds qualify as public resources under Article I, Section 27. *Id*. at 947.[17] Following this holding, the Department did begin to take these resources into consideration, and it did so in its review of Permittee's application to renew the permits. (Tr. 191-92, Stipulated Ex. 10.) Ms. Mullen testified, "After the court gave us the okay, then we started incorporating [schools and playgrounds] into our reviews." (Tr. 1298-99.)

Although the Department did not consider schools and playgrounds when it issued the permits, it did consider these resources when it decided to renew the permits. Based on the testimony presented at the hearing, there is nothing to indicate that the Department would *not* have issued the permits had schools and playgrounds been part of its initial review of the permit applications. Ms. Mullen testified that she verified setback distances for schools and playgrounds in her review of the renewal requests and found them to be in accordance with the Department's requirements.[18] When asked if her conclusions were the same for the renewal review as they were for the issuance review, even though the renewal review considered schools and playgrounds, Ms. Mullen confirmed that her conclusion was the same for both: the Drakulic wells could be developed without undue impact to the community. (Tr. 1283.) The lack of inclusion of schools and playgrounds in the initial review of the permits has no continuing relevance since they were

[17] In reaching this decision, the Court overturned the decision of the lower court invalidating the Department's regulations relating to schools and playgrounds as public resources.

[18] 25 Pa. Code § 78a.15(f)(1)(vi) addresses school properties and playgrounds.

considered in the decision to renew the permits. *Wetzel v. DEP*, 2017 EHB 548, 566-67. ("Simply identifying errors in the application process is not sufficient to sustain an appeal if the errors have been rendered immaterial or moot by subsequent events or even the passage of time"); *Kleissler v. DEP*, 2002 EHB 737, 751 (There is no basis for dwelling on the permit application review process where any alleged defects are immaterial in the final analysis); *O'Reilly v. DEP*, 2001 EHB 19, 51 ("A party who would challenge a permit must show us that errors committed during the application process have some continuing relevance.")[19]

Finally, Protect PT argues that, in its decision to issue the permits, the Department should have taken into consideration the Westmoreland Heritage Trail, which Ms. Graber testified is approximately 1/3 mile from the Drakulic site. In response to questioning by counsel for Protect PT, the Department's permit reviewer, Ms. Mullen, testified that the trail did not come up in her review of the permit applications because it was not within the 1,000-foot setback limit set forth in the regulations. No further testimony was provided regarding the trail and, therefore, there is no basis for us to conclude that the Department erred by not including it in the permit review.

Compliance History

Under Section 3211(e.1) of the Oil and Gas Act, the Department has the discretion to deny a permit based on compliance history. 58 Pa. C.S. § 3211(e.1). Protect PT argues that the Department abused its discretion in issuing and renewing the permits for the proposed Drakulic wells because, in Protect PT's opinion, Permittee is an "operator with an egregious compliance history." (Protect PT Post-hearing Brief, p. 81.) In response, the Department and Permittee assert

[19] We do not mean to imply that the Department committed an error by not considering schools and playgrounds in the review of the initial permit applications, only that the lack of inclusion of those resources in the initial review has no continuing relevance since they were included in the review of the permit renewals.

that the Department took Permittee's compliance history into consideration when reviewing the applications to issue and renew the permits and determined that Permittee was not in continuing violation of any final action of the Department at the time of review.

At the hearing, Protect PT presented testimony by its Executive Director, Gillian Graber, regarding violations that have occurred at various sites operated by Permittee. According to Ms. Graber, Protect PT regularly accesses information about the operations and compliance history of Permittee's sites by utilizing interactive reports on the Department's website. (Tr. 306, 369.) By using these Department interactive tools, an individual can input the name of the operator and the pertinent timespan, and the website will return a chart or spreadsheet that contains information about the various violations issued to the operator. (Tr. 306.) According to the report summary, the report accesses statewide compliance data as reported to the Department by the operator of the well. (Protect PT Ex. WW.) Ms. Graber testified that she is most concerned about environmental health and safety violations, rather than administrative violations.

Ms. Graber ran the interactive compliance report on the Department's website for Permittee from January 1, 2005 through August 20, 2024. The results of that search were introduced as Protect PT Exhibit WW over the objections of Permittee and the Department. The Board admitted Exhibit WW as "the results of a search performed by Ms. Graber regarding Apex's compliance history using a public facing interactive tool on the Department's website." (Tr. 1437-38.)[20]

[20] Protect PT first sought to introduce Ms. Graber's search as Exhibit EE. However, upon questioning by counsel for Permittee and the Department, it appeared that certain categories had been deleted in order to make the document more readable, printable and manageable. Protect PT provided the full printout of Ms. Graber's search as Exhibit WW. Permittee and the Department raised a number of challenges to Exhibit WW, including objections as to the reliability of the document and the fact that it was provided after Ms. Graber's testimony had concluded and after Protect PT had rested its case. As to the reliability objection, the search was conducted by utilizing an interactive tool on the Department's website that allows members of the public to search information regarding an operator's history of reported violations. While we recognize that this feature may not provide the same level of detail as the Department's internal records, it is nonetheless a tool provided by the Department which gives it some degree of reliability. As to the

Based on her search, Ms. Graber testified that if one were to add up all the individual violations set forth in the various notices of violation that have been issued to Permittee, it would amount to approximately 400 violations. As such, Protect PT believes that Permittee demonstrated a pattern of non-compliance which should have disqualified it from receiving a permit. Protect PT set forth its concerns regarding Permittee's compliance history in a letter to the Department at the time of the renewal of the permits.

Permittee and the Department raised objections as to Ms. Graber's ability to testify as to violations at sites operated by Permittee. We recognize that Ms. Graber is not a compliance specialist. Nonetheless, in her role as Executive Director of Protect PT, she routinely conducts searches of permittees' compliance, advises her membership of the results of her findings and educates her members about ongoing violations. She is able to provide testimony as to the results of her research into violations that occurred at various sites operated by Permittee. That being said, we also recognize that the evaluation of compliance history is a bit of an art; one cannot simply count the total number of violations but must look at the complete picture. For example, the cover sheet to Protect PT Exhibit WW states that an inspection report may cite multiple violations that are related to a single incident at a site, and the inspection type code may vary "as issues are being addressed and resolved to restore the site, facility, or sub-facility back to compliance." (Protect PT Ex. WW, Cover Sheet.)

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objection that Exhibit WW was introduced after the close of Protect PT's case, the parties advised the Board during the presentation of Protect PT's case that they were working on a resolution of how to address Exhibit WW's predecessor, Exhibit EE, and the Board was not advised until the next-to-last day of the hearing, at the conclusion of testimony for the day, that a resolution was not reached. Following that exchange, the Board intended to admit Exhibit EE; however, on the last day of the hearing, Protect PT provided Exhibit WW which included the categories that were missing from Exhibit EE, and Exhibit WW was admitted.

In her testimony, Ms. Graber highlighted violations[21] from three of Permittee's well sites—the Herminie, Quest, and Fatur sites. At the Herminie well site, Ms. Graber noted there were violations for failure to report a release and for failure to take the necessary measures to prevent substances from entering the waters of the Commonwealth. At the Quest well site, Ms. Graber noted that Permittee was issued a violation for having a chemical (mercaptan) on-site without notifying the Department. At the Fatur well site, Ms. Graber testified that Permittee incurred erosion and sedimentation violations for over four years before they were corrected, and a penalty was not imposed until years later due to outreach on behalf of Protect PT.

Christopher Hess, General Counsel and Executive Vice President, provided testimony on behalf of Permittee. He believes that Permittee has a good compliance history. In his opinion, "the standard is to maintain compliance and if you [are] out of compliance, to correct that noncompliance as soon as possible." (Tr. 860.) Mr. Hess provided additional information and context regarding the violations highlighted by Ms. Graber at the Herminie, Quest, and Fatur well sites. At the Herminie site, Permittee was issued a violation for a spill of drilling mud outside of its containment area. Mr. Hess stated that the bulk of the drilling mud was located within containment, but some of it went outside the area where it was supposed to be contained. He testified that the spill was immediately cleaned up. At the Quest well site, Permittee received a

[21] Much of the testimony simply referred to "violations" and it is unclear whether these are notices of violation or orders. The Department's Ms. Mullen testified, "Violations are a final action, but notices of violations are not." (Tr. 1247.) We are not convinced that notices of violation or a listing of violations in an inspection report should be considered for purposes of determining whether a permit should be withheld on the basis of compliance history. As the Board has pointed out many times, a notice of violation is not a final action of the Department and, therefore, cannot be challenged by the recipient. *Langeloth Metallurgical Co. v. DEP*, 2007 EHB 373, 375-76 (A notice of violation containing a listing of violations and the procedure necessary to achieve compliance is not an appealable action) (citing *Lower Providence Township v. DEP,* 1996 EHB 1139, 1140-41; *M.W. Farmer Co. v. DER*, 1995 EHB 29); *Beaver v. DEP*, 2002 EHB 666, 674. An order, on the other hand, can be appealed to the Board and can be overturned where there is insufficient evidence supporting it.

violation for a spill of mercaptan.[22] According to Mr. Hess, the Quest site is located near a Peoples Natural Gas utility pipeline. Because natural gas is odorless, Peoples requested that Permittee install an odorizer at the site with a reservoir of mercaptan in it. In December of 2015, the odorizer was disconnected during maintenance and approximately two ounces of mercaptan spilled onto the ground at the pad. According to Mr. Hess, Permittee did not notify the Department when the spill occurred because mercaptan is not toxic and, therefore, it did not believe there was a risk to any third party from the spill. However, Permittee was issued a violation for failure to notify the Department of the incident when it occurred, and the matter was eventually resolved via a consent order.

Finally, Mr. Hess testified about erosion and sedimentation violations at the Fatur site, which Ms. Graber said took years to resolve. According to Mr. Hess, the Fatur site sits below a hillside with a natural seep in it, and the site was designed to accommodate the seep. Sometime between the design and construction of the site, a pipeline company constructed a project through the same area, causing physical changes to the project area and higher volumes of water on the pad than what was expected, resulting in erosion and sedimentation issues. Over the years that followed, Permittee attempted to implement interim designs to address the issue, but none were successful. Eventually, Permittee entered into a consent order with the Department to modify the site plans, which were eventually deployed. According to Mr. Hess, since the site plan was corrected, there have been no further erosion and sedimentation issues at the Fatur site.

Additionally, at the hearing Protect PT highlighted a September 2024 violation issued to Permittee for failure to submit an inventory of chemicals in its completion reports for 37 wells.

[22] Mercaptan is a concentrated substance with a strong rotten egg smell and is added to natural gas via an odorizer so that if there were to be a leak or release of natural gas, it would no longer be odorless.

Pursuant to 25 Pa. Code § 78a.122(b), within 30 days following completion of a well, an operator must provide the Department with a list of chemicals used during the hydraulic fracturing of the well. According to Mr. Hess, Permittee did in fact submit its completion reports as required. However, within the report, Permittee designated certain chemicals simply as "trade secret" or "confidential" without providing the necessary supplemental information identifying them to the Department. Mr. Hess confirmed that Permittee subsequently supplemented the report with the necessary information, and the violation was resolved.

Under 58 Pa. C.S. § 3211(e.1), the Department has discretion to deny a permit for a number of reasons, including for a violation on the site for which the permit is requested or for a continuing violation of a Department final action. 58 Pa. C.S. § 3211(e.1)(1) and (5). Because the Drakulic well pad has not been constructed and there are no ongoing operations at the site, Protect PT does not contend there are violations at the site. However, Protect PT argues that violations at other Permittee sites provide a basis, and in fact a duty, for which the Department should have denied the permits for the Drakulic site. To address this argument, the Department presented testimony by Mr. Thomas Donohue, the Environmental Program Manager for subsurface permitting across Pennsylvania, and Ms. Andrea Mullen, the lead permit reviewer, whose first position with the Department was as a compliance specialist. Mr. Donohue and Ms. Mullen explained how the Department views compliance history in the context of a permit review. In conducting a review of compliance history, the permitting staff runs a report through an internal system to assess whether an operator has any open violations. From there, the permitting staff coordinates with other Department staff with subject matter expertise, such as water quality specialists, to assess compliance in those program areas, as well as compliance specialists within the Department's compliance program to determine whether Permittee had any final actions taken against it and

whether Permittee was complying with those final actions. Ms. Mullen follows the same procedure when reviewing both issuance applications and renewal applications, and the reviews for both types of applications take place just before the time of issuance of the permits or their renewals in order to capture any violations that may have occurred between the submission of the application and the issuance of the permit.

In reviewing Permittee's compliance history for the initial issuance of the permits, the Department determined that Permittee had one outstanding consent order and agreement, with which it was in compliance, and no other final actions outstanding. The Department's Record of Decision for the issuance of the permits provided that Permittee had 22 notices of violation, 126 resolved notices of violation, 12 open enforcements, and 17 closed enforcements at the time of review. (Tr. 157; Stipulated Ex. 5.)

The Record of Decision for the renewal of the permits, undertaken approximately one year after the issuance of the permits, showed that Permittee had 41 notices of violation, 127 resolved notices of violation, 11 open enforcements, and 20 closed enforcements at the time of review. (Tr. 160; Stipulated Ex.10.) When asked by counsel for Protect PT if only one notice of violation had been resolved in the one-year period between the two Records of Decision (126 resolved notices of violation in the issuance Record of Decision versus 127 resolved notices of violation in the renewal Record of Decision), Mr. Donohue testified that he was not sure how to interpret it. (Tr. 160-161.) He also could not speak to what the Department considers to be an "open enforcement." (Tr. 157.)

The Department also provided testimony by Andrea Mullen, the lead permit reviewer for the Drakulic permits and a former compliance specialist with the Department. Ms. Mullen was able to provide some clarity with regard to how the Department views compliance history in the

context of a permitting action. Although she was not asked about open enforcements or resolved notices of violation as was Mr. Donohue, she was asked about her understanding of the term "continuing violation," which is the term used in Section 3211(e.1). She testified that a continuing violation is one where "[t]he violation has not been corrected as of the date of the inspection, but there is room for it to be corrected in the future or for it to be in the process of being corrected." (Tr. 1248.)

As the Board has recently noted, "A third-party appellant who would have us overturn a permit based on the compliance history and status of the permittee has a heavy burden. This is an area where the Department has a considerable amount of discretion." *Liberty Township,* 2024 EHB at 128-29 (citing *Concerned Citizens of Yough, Inc. Department of Environmental Protection*, 639 A.2d 1265, 1271 (Pa. Cmwlth. 1994)). The Board went on to explain:

> The purpose of the compliance review is to ensure the applicant is likely to be responsible enough to be informed of what the law and regulations require and motivated to make an effort to comply with those regulations; an applicant's past is certainly an indicator of future behavior.

Id. (citing *Perano v. DEP*, 2011 EHB 453, 494-97; *Colbert v. DEP*, 2006 EHB 90, 109-10). Where the Board has remanded a permit for further consideration of compliance history, it has generally been because the Department did not conduct a thorough review. *Id.* (citing *Colbert, supra*). We do not believe that was the case here. The issuance and renewal Records of Decision indicate that the Department took into consideration Permittee's compliance history in deciding whether to grant and renew the permits. The evidence demonstrates that the Department conducted a thorough review that incorporated program staff's knowledge of Permittee's operations as well as an internal compliance database. The permit review staff coordinated with the Department's compliance program staff to ensure that there were no final actions that had not been resolved or

that were not in the process of being resolved. Protect PT did not bring forth evidence of any violation by Permittee that had not been corrected or that was not in the process of being corrected.

Moreover, we do not believe that the record demonstrates that Permittee lacks the ability or intention to comply with statutes, regulations, and orders of the Department. In assessing whether a party's conduct shows that it cannot be trusted with a permit, the Board considers factors such as the number, duration, and severity of the violations, harm to the environment caused by the violations, and the applicant's efforts to correct the violations. *Friends of Lackawanna v. DEP*, EHB Docket No. 2021-066-L, *slip op.* at 68 (Adjudication issued (Apr. 1, 2025)); *High,* 2024 EHB at 129. With respect to the violations at the Herminie and Quest sites, the record indicates that both spills were small in size and short in duration. No evidence was presented that environmental harm resulted, and the evidence demonstrates that Permittee responded swiftly to correct the violations. With regard to the violations at the Fatur site, while it is concerning that the violations persisted for a number of years, it appears as though Permittee was working with the Department to correct the violations and had considered a number of alternative design plans until finding one that was successful. Finally, with respect to the violation regarding chemical reporting, the issue was resolved soon after receiving notice of the error, and there is no evidence that the failure to disclose was intentional. Additionally, because the chemical reporting occurs after completion of a well and there is no testimony regarding any harms that may have stemmed from the reporting violation, we do not believe that any environmental harm resulted from the Department receiving the information at a later date in time. As we have stated, "perfect compliance is not the standard for deciding whether a permit should be blocked for noncompliance." *Liberty Township*, 2024 EHB at 131. While Permittee does not have perfect compliance, as evidenced by the violations

highlighted by Protect PT, the subsequent actions taken by Permittee to correct those violations demonstrates its intent to comply with the law.

In conclusion, we do not find that the Department abused its discretion in granting and renewing the permits based on Permittee's compliance history.

Air Emissions

Protect PT contends that the proposed Drakulic wells will generate harmful emissions, including radon and particulate matter, in violation of the Environmental Rights Amendment. In support of its arguments regarding potential emissions from the site, Protect PT offered the expert testimony of Mr. Marc Glass. Mr. Glass is a member of Downstream Strategies, an environmental consulting firm, and developed the firm's environmental monitoring and remediation division. He was formerly a radon testing technician and has completed the training to be a radon safety officer. He was admitted as an expert in environmental science, fate and transport analysis, air quality monitoring, and environmental remediation. Mr. Glass reviewed a number of air studies relating to unconventional oil and gas operations in preparation of his expert report. Per Mr. Glass, all the studies he reviewed documented an increase in background levels for various pollutants including: particulate matter, petroleum hydrocarbons, and various combinations of alcohols and ketones and aldehydes. He is also concerned about potential radon emissions from the site.

<u>Radon</u>

There is no dispute among the parties that at least some amount of radon is likely to be released at the Drakulic site. Radon is naturally occurring in the Marcellus Shale, the target formation for the proposed unconventional gas wells. Mr. Glass explained that radon is formed as a decay product from naturally occurring radioactive materials in the earth, such as uranium or

thorium.[23] Uranium-238 is a primordial, or existing since the beginning of the earth, radioactive material. Uranium undergoes multiple radioactive decays before it decays into radium-226, which decays directly into radon-222 (radon), otherwise known as radon gas. Radon then decays further into its decay progeny, which are radioactive particulates. Anytime radium-226 is present, it will constantly undergo radioactive decay, and radon will be released. Because radium-226 exists in the Marcellus Shale, rocks and gases from the Marcellus that are brought to the surface will generate radon.

With regard to oil and gas development, radon will be released at the well site, either through gas or in association with solids or fluids, as soon as contact is made with the Marcellus Shale. Per Mr. Glass, radon can travel in a number of ways: It moves by traveling through the air and it can also be physically moved if it is associated with soil or water. If radon is found in a gaseous form, it is released to the air and moves with the atmosphere. It is Mr. Glass's opinion that, as gaseous radon moves in the atmosphere, it can travel thousands of feet or even miles from the site.

To Mr. Glass's knowledge, there is no known "safe level" for radon. As it decays, the decay products release ionizing radiation, which poses a risk of health effects. Mr. Glass testified that there is no specific standard to stop radon emissions from gas well sites. One of his main concerns is that as radon is carried downwind, it continues to undergo radioactive decay, not just at the well site, but offsite. Because Mr. Glass is certain that radon emissions will occur at the Drakulic site as a result of gas well development, he believes that background levels should be

[23] In Pennsylvania, the average public indoor dose of radioactive radon gas is approximately twice that of the rest of the country due to Pennsylvania's geology, which has a higher percentage of uranium, thorium, and radium in the soil than other parts of the country. Mr. Bryan Werner, a Department expert in radiation protection and health physics, utilized a graphic, created by the Department's Radon Division, that details average indoor radon levels from 1986 to 2017. While EPA recommends an indoor radon level no higher than 4.0 picocuries per liter, the average level in Westmoreland County is 7.6 picocuries per liter.

measured before operations begin and ongoing monitoring should be conducted in order to determine how much radon is being emitted.

Mr. Glass acknowledged that organizations such as the U.S. Environmental Protection Agency (EPA) are primarily concerned with indoor levels of radon. He agreed that outdoor radon exposure is less of a concern because of dispersion and dilution with the rest of the atmosphere, but still felt that outdoor radon is of some concern. However, he could not offer an opinion that the emissions would exceed any health-based or risk-based standard because there have not been any measurements taken.

The Department offered the expert testimony of Mr. Bryan Werner, a Program Manager within the Department's Bureau of Radiation Protection. More specifically, Mr. Werner is considered to be a radiation health physicist—he studies radiation physics and radiation in relation to both people's health and the environment. Mr. Werner was accepted by the Board as an expert in radiation protection and health physics, including the field of evaluation of radon air emissions.

Mr. Werner testified that radon exposure is more a concern indoors than outdoors, as an enclosed environment allows the radon to concentrate, whereas it tends to dissipate "very, very quickly" in the outdoor environment. Based on his experience as a health physicist, for radon to present a measurable risk, the radon needs to concentrate to levels higher than one would normally see in the outdoors—it typically requires a basement, home, or other confined space. Additionally, the risk is greater for individuals who have had a long-term duration of exposure, such as someone who has lived in a house with indoor radon exposure for 30 years.

Mr. Werner agreed with Mr. Glass that "[a]ll radiation, in theory, has a risk." However, health physicists do not consider low levels of radiation to be a significant health concern, as there is no quantifiable risk at low levels, i.e. below 5,000 millirem. The U.S. EPA action level for

radon for indoor air is set at 4 picocuries per liter, which falls below the 5,000 millirem level. According to Mr. Werner, the primary health concern associated with radon exposure is the potential risk of lung cancer.

With regard to radon emissions resulting from the oil and gas industry, Mr. Werner testified regarding a study conducted by the Department's Radon Division which sampled the air in 53 state parks across the Commonwealth from 2017 to 2018. The purpose of the study was to assess the levels of radon that naturally and routinely exist in the air around us on any given day. The average sample for all parks across the state was 0.3 picocuries per liter. The Radon Division then compared the sample results for the entire state with the sample results taken from counties that were deemed to be those where the most unconventional oil and gas production had occurred. In the counties where unconventional oil and gas production was the greatest, the average sample results fell at 0.3 picocuries per liter or less—which was equivalent to the statewide results. In Mr. Werner's opinion, this suggests that there is no correlation between increased outdoor radon levels and counties with greater oil and gas development.

Mr. Werner agreed with Mr. Glass that there will likely be radon gas, as well as its progeny, generated from oil and gas operations such as the proposed Drakulic wells. However, as mentioned earlier, he testified that radon dissipates very quickly in the outside air. To demonstrate this point, he referenced a study conducted by a health physicist that assessed whether radon could reconcentrate inside homes once it had been vented out of the home and exposed to outdoor air. The results of the study showed that there was no re-concentration of indoor radon in the home once it has been exposed to outdoor air. This study further supports Mr. Werner's testimony that radon needs a confined space with walls or windows in order for it to reach high levels. According to Mr. Werner, as soon as radon reaches an environment where it can spread out, it will do so.

Therefore, he concluded that even if radon emissions are generated at a well site, the radon would quickly dissipate into the surrounding air, spread out, and become indistinguishable from the radon that exists naturally in someone's backyard.

Mr. Werner agreed with Mr. Glass's assessment of how radon could be generated at the site, i.e. from any naturally occurring radioactive material (NORM) or technically enhanced naturally occurring radioactive material (TENORM) that is brought to the surface during oil and gas operations. Because of growing concerns around TENORM and the growth of unconventional oil and gas exploration, the Department undertook a study to look into this issue. In 2015, the Department released a report entitled: Technologically Enhanced Naturally Occurring Radioactive Materials (TENORM) Study Report. (Tr. 1385, Protect PT Exhibit GG.) A revised version of the report was issued in May of 2016. The collective versions of this report are referred to herein as the TENORM Study. The TENORM Study was a multi-year study conducted with the intention of taking a comprehensive look at any TENORM impacts that could be associated with the oil and gas industry in Pennsylvania. It included consultation with health physics professionals and other oil and gas experts, was peer-reviewed, and is a "widely accepted study" in the health physics community. (Tr. 1386.)

The TENORM Study looked at both conventional and unconventional wells, and a large number of overall samples were collected to cover a wide range of impacts at the well site—both to the workers and the surrounding environment. Because the study aimed to collect samples at times where there would be high levels of TENORM on-site, the samples were collected during times of flowback, as that is when the Department has seen higher levels of radium-226 at well sites. Radon progeny were also included in the study because, according to Mr. Werner, the progeny present a greater risk to human health than radon alone.

According to Mr. Werner, the results of the TENORM Study demonstrated that radon levels in the outdoor air at well pad sites are essentially background levels. In Mr. Werner's opinion, there is no discernable difference between radon levels normally found in the atmosphere and radon levels at the edge of a well pad site. Because the TENORM Study showed that there is no increase in ambient radon levels at well sites, Mr. Werner does not expect to see an increase in ambient radon levels from operations at the proposed Drakulic site. Even in the hypothetical case of two unconventional gas wells existing next to one another, and 50 other conventional oil and gas wells in close proximity, Mr. Werner did not believe that there would be an increase in radon levels. Because the results of the radon sampling in the TENORM Study were sufficiently low, even when sampling was done at times when levels were expected to be the highest, Mr. Werner expected that any radon generated from such wells would dissipate and quickly become part of the background levels.

Mr. Werner's opinion regarding the lack of risk presented by radon at oil and gas well sites was further supported by data from the Department's Radon Database when comparing first-floor indoor radon levels in people's homes for years before and after hydraulic fracturing became widely utilized in Pennsylvania. The first time period covers the late 1980s through 2009, prior to widespread unconventional exploration in Pennsylvania, and the second time period covers 2011 to 2024, when unconventional development increased. The purpose in comparing the data for those two time periods was to see if there was any increase in radon levels in people's homes once there was an increase in unconventional well sites. In most counties with a high number of unconventional wells, the average and median radon levels stayed the same or decreased despite the increase in unconventional well development.

Mr. Werner believes the levels of radon that might be generated from the proposed Drakulic sites will not reach a level that constitutes any level of harm to the workers on-site or to the surrounding community. Therefore, it is his opinion there is no need for radon to be measured or monitored as a prerequisite to permitting.

In comparing Mr. Werner's testimony with that of Mr. Glass, we believe that there is much agreement between the two. Both Mr. Glass and Mr. Werner agree that radon is likely to be released by the operation of the proposed Drakulic site given the target formation of the Marcellus Shale. Both agree that there is no "safe" level of radon. Both also agree that indoor radon presents a much greater risk than outdoor levels of radon. While Mr. Glass did not believe there was zero risk associated with outdoor levels of radon, he did agree, as did Mr. Werner, that indoor radon presents a much greater risk. The only difference in opinion appears to be the speed at which outdoor radon dissipates. While Mr. Glass opined that any increase in the background levels of radon has the potential to cause harm and should thus be monitored, it was Mr. Werner's opinion that radon disperses and dissipates quickly and, therefore, is not a health concern to workers or the public.

While we found both Mr. Werner and Mr. Glass to be knowledgeable and their testimony helpful to the Board on this topic, we are persuaded that radiation from the Drakulic site will not be at a level that presents a health concern to workers at the site or the surrounding community. Based on the various studies cited by Mr. Werner assessing the relationship between radon emissions and the oil and gas industry, we do not believe that radon emissions will concentrate to a level of concern at this site nor present a risk to the surrounding community.

In particular, with regard to the study conducted by the Department's Radon Division in 2017 and 2018 throughout Pennsylvania's state parks, we find it significant that the state parks

located in counties with high rates of oil and gas development did not see increased rates of radon in the ambient air. Additionally, we find the data pulled from the Department's Radon Database with respect to radon levels on the first floor of homes both before and after the increase in unconventional gas well development to be relevant as well. For the average radon levels in homes in counties with high levels of oil and gas exploration to stay the same or decrease after the start of unconventional drilling indicates that an increase in oil and gas development does not necessarily equate to increased levels of radon emissions within people's homes. Finally, we also found the results of the TENORM Study to be compelling. Because the results of the study showed no increase in ambient radon levels even while sampling at wells during times in which radon and its progeny were expected to be found at the highest levels, we are convinced that any radon emissions from the proposed Drakulic wells will not increase ambient radon levels to a point of causing harm to the workers or the public. While we agree with Mr. Glass that radon sampling at the site can provide helpful information, we do not believe that the lack of such monitoring is a basis for overturning the permit.

Particulate Matter and Other Air Emissions

While Mr. Glass stated that he was primarily concerned with the monitoring of radiological airborne emissions (Tr. 666-67), discussed in the previous section, he is also concerned about ultra-fine particulates and particulate matter that he believes will be emitted from the site. EPA regulation of particulate matter is generally focused on particle sizes of 2.5 micrometers and smaller. According to Ms. Makenzie White, a public health expert for Protect PT, particulate matter presents health risks to individuals because it is small and can be easily breathed deeply into a person's lungs. She testified that exposure to particulate matter has been linked to respiratory

and cardiovascular health impacts, such as asthma exacerbations, increased variability in heart rates, and heart attacks.

As with radon, while Mr. Glass believes that particulate matter will be emitted from the Drakulic site, he could not offer an opinion that the emissions would exceed any applicable health-based or risk-based standard because there have not been any measurements taken. The site has not been constructed; the wells are not in operation. Once operations begin at the site, he believes particulate matter should be monitored. In Mr. Glass's opinion, if particulate matter were to be measured at the site, it "very well could exceed health-based standards," but also noted that it is possible that the risk to residents could be inconsequential.

In addition to particulate matter, Mr. Glass expressed concern regarding the potential release of site-specific chemicals that will be stored and used at the Drakulic well pad. He testified that anything that has been added to the wellbore and then returns to the surface in either liquid or gaseous form has the potential to be released as a contaminant to the environment. Some of the chemicals to be used on the site are not disclosed to the public because they are protected as trade secrets. Per Mr. Glass, "it is impossible to assess the risk from exposure to those chemicals" because it is unknown how they will be used, in what quantity they will be used or released, the fate and transport mechanisms that may be involved, the chemical affinities present, or the toxicology impacts.

Permittee offered the expert testimony of Mr. Tom Muscenti to address issues raised by Mr. Glass. Mr. Muscenti is the regional director of an environmental consulting firm that specializes in air quality consulting. Mr. Muscenti is a registered professional engineer and approximately 75% of his air quality consulting work is focused on the oil and gas industry, mostly in Pennsylvania. It is Mr. Muscenti's opinion that the proposed Drakulic wells will be a source of

minor significance with regard to air emissions and not expected to cause an exceedance of an air quality standard that is designed to be protective of human health. (Tr. 1066.) Mr. Muscenti bases this opinion on the nature of the operations at the Drakulic site and the fact that only dry gas will be produced.

None of the parties dispute that dry gas will be produced at the Drakulic well site. The Drakulic site is located in a "dry gas area" of the Marcellus Formation, and the gas analyses from Permittee's operations in Westmoreland County are generally consistent with dry gas. Because the proposed Drakulic wells will produce dry gas, VOC emissions are likely to be well below regulatory levels.

As to other potential emissions, including particulate matter, Mr. Muscenti discussed the "extensive monitor network" that exists in Pennsylvania that shows that gas operations do not cause an exceedance of air standards. Pursuant to the Federal Clean Air Act, EPA has established National Ambient Air Quality Standards (NAAQS) for various pollutants, including particulate matter. To monitor compliance with the NAAQS, the Department maintains a network of monitors throughout the Commonwealth that capture air quality concentrations. Within that network, monitors are designed to focus on specific industries, including oil and gas operations. While it was unclear from the testimony whether Westmoreland County is currently in attainment of the 2024 NAAQS standard of 9 micrograms per cubic meter for particulate matter, the "three-year average" for the county was 7.8 micrograms per cubic meter. Additionally, both Mr. Muscenti and Mr. Glass agreed that Westmoreland County was in attainment for the 2006 and 2012 standards. In addition to Westmoreland County, Mr. Muscenti also looked at monitors in Wyoming and Bradford counties, where dry gas is produced. The air monitoring for both of those counties showed they were in attainment with NAAQS. In Mr. Muscenti's opinion, this is

evidence that the regulatory structure in place allows unconventional natural gas operations to exist without causing an exceedance of the NAAQS.

Mr. Muscenti also discussed a 2012-2013 study conducted by the Department that assessed emissions from oil and gas operations. The study found that the concentrations did not exceed any NAAQS, were consistent with background levels, and would not cause a health concern. Since the time of that study, there have been "significant regulatory advancements in the control of emissions from oil and gas operations," according to Mr. Muscenti. (Tr. 1083-84.) Therefore, he would expect current-day emissions levels to be even lower than that which existed at the time the study took place.

EPA has also adopted more stringent regulations for oil and gas wells constructed or modified after December 2022 under the New Source Performance Standards (NSPS) at 40 CFR Part 60, Subpart OOOOb (NSPS OOOOb). The objective of those modifications was to lower particulate matter, methane, and VOC emissions to the atmosphere. The requirements under NSPS OOOOb include: capturing gas from completions operations; eliminating pneumatic controllers; being subject to audio, visual, and olfactory inspections; and complying with leak detection and repair, storage vessel, and liquid unloading requirements. The leak detection and repair requirements include inspections employing the use of an infrared camera to identify leaks that are not visible to the naked eye and ensuring gas remains in the pipes and is not released to the atmosphere. The elimination of the pneumatic controllers and use of other controllers, such as air or nitrogen, are intended to eliminate all emissions from controllers to the atmosphere.

Additionally, under NSPS OOOOb an annual report must be submitted to EPA and the Department that includes the reporting of hazardous air pollutants, particulate matter and VOCs, and how many pounds or tons of that pollutant were emitted. The proposed Drakulic wells will be

subject to NSPS OOOOb. Mr. Glass agreed that the aim of NSPS OOOOb is to "significantly lower particulate matter emissions over what they have been in the past." (Tr. 639-40.) However, he also stated that there are pieces of equipment present on oil and gas sites that are not regulated by those standards, meaning that some emissions are not captured within the set standard.

In addition to the federal standards, Pennsylvania imposes its own emissions standards, including emissions limitations specifically applicable to the oil and gas industry. In lieu of obtaining a general permit or individual plan approvals for air emissions, an operator is eligible for a conditional exemption if it meets certain qualifying conditions. The Drakulic wells are expected to operate under Department Air Quality Permit Exemption 38(c) (exemption 38(c)), which exempts unconventional gas well operators from air quality plan approval and permitting requirements if they are determined to be a "source of minor significance" for purposes of air emissions. This means that the operator's emissions for certain pollutants must be below a certain level. 25 Pa. Code § 127.14(a)(8).

To operate under exemption 38(c), a variety of criteria must be met. These include: leak detection and repair requirements, VOC limitations, methane limitations per source, internal combustion engine requirements, and requirements for non-road engines as well. (Apex Ex. 24.) Additionally, operators are required to comply with all other applicable state and federal requirements, such as the state requirements regulating visible emissions and malodors at 25 Pa. Code §§ 123.31 and 123.41. Compliance with exemption 38(c) is evaluated by the Department, which can do inspections of the facility as well as record requests. Additionally, Permittee will be required to calculate emissions on a rolling 12-month basis. However, based on Mr. Muscenti's testimony, actual emissions are not monitored. Rather, emissions are calculated by considering the specific equipment on the site, taking into consideration any site-specific conditions or parameters

that may apply in terms of operating the equipment, incorporating any control devices that further reduce emissions, and utilizing a published emissions factor from the EPA to quantify emissions on a 12-month rolling basis. If emissions reporting shows that an operator is failing to comply with the requirements of the exemption, the operator is deemed ineligible for the exemption and will be required to obtain an air permit from the Department.

While Mr. Muscenti conceded that federal NSPS OOOOb and Pennsylvania's exemption 38(c) only require air monitoring at the Drakulic site during the production phase (Tr. 1101-02), the Consent Judgment to which Permittee is a party also requires air monitoring at the Drakulic site during the drilling and completion phases. Pursuant to the Consent Judgment, testing is required to occur no less than once per week, and if any monitoring reveals exceedance of an OSHA emissions standard, Permittee is required to notify the Township. Notably, Protect PT's expert, Mr. Glass, acknowledged that, pursuant to the Consent Judgment, particulate matter, VOCs, and hazardous air pollutants such as benzene and formaldehyde will, in fact, be monitored. (Tr. 666-67.) Thus, the federal and state requirements and the Consent Judgment all appear to address Mr. Glass's concerns with regard to the need for air monitoring at the Drakulic site.

However, Protect PT also argues that a number of site-specific chemicals will be stored and used at the proposed Drakulic site in connection with the hydraulic fracturing of the wells and they, too, should be monitored. Mr. Muscenti disagreed and testified that the mere presence of a chemical at the site does not necessarily mean that it will generate air emissions. He stated that there must be some mechanism by which the chemical is emitted.

In support of its argument that the operations of an unconventional gas well have the potential to emit harmful pollutants, Protect PT highlights the case of *EQT Prod. Co. v. Borough of Jefferson Hills*. 208 A.3d 1010 (Pa. 2019). In that case, residents challenging a proposed natural

gas production complex to be constructed and operated by EQT sought to introduce testimony at the hearing before the Borough Council from residents of another neighborhood who alleged they had experienced smells and health-related issues due to an EQT well site in their own neighborhood. The trial court and Commonwealth Court found that the evidence from the neighboring residents was not admissible. The Pennsylvania Supreme Court overturned the decisions of the lower courts and held that the evidence was admissible because the two operations were of a similar nature. The Supreme Court did not, however, make any findings on the merits of the neighboring residents' claims, but simply found that their testimony should have been admitted.

Here, there is nothing to indicate that the conditions at the EQT site in *Jefferson Hills* are similar to what will be at the Drakulic site. Rather, the Department highlighted the differences between the EQT site and the Drakulic site in its post-hearing brief: The EQT site was constructed in 2007 and subject to different emission standards than gas wells constructed today; the EQT site had 12 wells while the Drakulic site will have only two; the EQT site had a storage impoundment for water whereas the Drakulic site will have no impoundments; and the EQT site utilized trucks to haul water to the site whereas the Drakulic site will obtain water from a municipal water supply. Given these differences, we cannot find that the operation at issue in *Jefferson Hills* is similar in nature to the Drakulic site, nor can we say that the testimony referenced in *Jefferson Hills* is probative here.

We believe that air quality monitoring during the drilling and hydraulic fracturing of the Drakulic wells, as detailed in paragraph 9(h) of the Stipulation adopted by the Consent Judgment, will ensure protection of air quality during those phases of the operation. [24] We further believe

[24] The air monitoring requirements of the Consent Judgment are discussed in more detail in the next section.

that state and federal requirements regulating emissions during the production phase will ensure continued protection of air quality while the wells are in production.

The Consent Judgment

As discussed in the previous section, the Consent Judgment requires the monitoring of air emissions and particulate matter during the drilling and hydraulic fracturing of the Drakulic wells. Both Permittee and the Department rely, in part, on the air monitoring provision of the Consent Judgment as support for their position that the operations authorized by the permits will not degrade air quality.

The Department also relies on several provisions in the Consent Judgment as support for its position that it has not permitted a nuisance in violation of Section 3259 of the Oil and Gas Act. That section makes it unlawful for an operator to conduct any activity related to drilling or production of gas "in any manner as to create a public nuisance or adversely affect public health, safety, welfare or the environment." 58 Pa. C.S. § 3259(2)(ii). A nuisance is defined as "an unreasonable interference with a right common to the general public." *Kwalwasser v. DER*, 1986 EHB 24, 43. The Consent Judgment contains provisions addressing, among other things, noise, light, dust and truck traffic by requiring sound walls and noise monitoring during construction, drilling and completion; light shields and other equipment to mitigate light sources at the site; and measures to minimize truck traffic, including coordination with the local school district to minimize traffic during school bus stop times. (Ex. Protect PT Ex. JJ/Apex Ex. 11 – Consent Judgment adopting para. 9(c), (d), (i) and (j) of Stipulation.)[25]

[25] This listing provides a succinct summary; the actual language of the Consent Judgment provides additional details on how these provisions are to be carried out.

Protect PT does not believe that the Consent Judgment goes far enough to address its concerns or to ensure compliance with Article I, Section 27. However, while Protect PT presented testimony by Ms. Graber regarding her concerns related to noise, light pollution and traffic safety, it did not demonstrate why the terms of the Consent Judgment do not sufficiently address those concerns. Further, while Protect PT presented testimony regarding air monitoring through its expert, Mr. Glass, it did not demonstrate that the air monitoring required by the Consent Judgment fails to address its concerns. In fact, Mr. Glass acknowledged that the Consent Judgment requires monitoring of particulate matter and air quality emissions during the construction, drilling and hydraulic fracturing stages of the wells.

However, Protect PT argues that, to the extent the Department relies on the Consent Judgment to fulfill the requirements of Article I, Section 27, it should have included those conditions in the permits:

> In order to have any credible argument that the public could rely on Permittee's obligations under the Consent Judgment to protect the environment and human health, the Department could have, and should have, incorporated the terms of the Consent Judgment as special conditions in the Permits to, like Penn Township, protect the health, safety, and welfare of Penn Township residents and to comply with the Environmental Rights Amendment.

(Protect PT Post-hearing Brief, p. 75.) By failing to incorporate the terms into the permits, Protect PT argues the Department has no mechanism for enforcing them since it is not a party to the Consent Judgment.[26] We believe that Protect PT raises a valid point.

[26] As noted earlier, the Consent Judgment adopted a Stipulation entered into among Permittee, Penn Township, the Penn Township Zoning Hearing Board and the Penn Township Board of Commissioners (Penn Township) in settlement of a lawsuit brought by Permittee against Penn Township in Federal District Court. The Department was not a party to that action, nor is it a party to the Consent Judgment.

The Department's lead permit reviewer, Andrea Mullen, testified that she considered the Consent Judgment in her review of the permit applications and determined that many of the objections the Department had received from Protect PT and other objectors were addressed by the Consent Judgment. (Tr. 1286, 1288.) She contacted Penn Township to make sure that Permittee was in compliance with the Consent Judgment and determined that it was. (Tr. 1289.)[27]

Ms. Mullen testified that she factored the Consent Judgment into her decision of whether to add special conditions to the permits. She stated that she did not include conditions in the permits dealing with air quality, noise, light and truck traffic because she felt those issues were addressed in the Consent Judgment and she did not see a need to duplicate them in the permits. She testified as follows:

> A. The consent judgment addressed many of the objector's concerns with regards to dust, noise, light, aesthetics and air quality.
>
> Q. Did you factor that into whether -- to your decision as to whether or not to meet your recommendations for additional permit conditions?
>
> A. Yes.
>
> Q. Why?
>
> A. Well, if Apex was already required to take these measures by another entity, there was no reason for us to put it in the permit.

(Tr. 1288-89.)

In its post-hearing brief, the Department addresses the decision not to include the terms of the Consent Judgment as conditions of the permits. The Department states:

[27] It is unclear how compliance with the Consent Judgment was demonstrated since the Drakulic site has not begun construction, nor did Ms. Mullen elaborate. However, corporate designee, Mr. Hess, testified that Permittee had provided an air modeling and hydrogeological study to Penn Township as required by paragraph 9(b) of the Stipulation adopted by the Consent Judgment. (Tr. 815.)

> Where the Department has determined special conditions are warranted or the parties have agreed to include them, the Department has inserted them into well permits. *See, Del. Riverkeeper Network v. Dept. of Env't Prot., et al*., 2018 EHB 447, 479-80, 496-97. Here, that was not necessary given the Department's coordination with Apex and Penn Township, and the existence of the Consent Judgment.

(DEP Post-hearing Brief, p. 62.)

Based on Ms. Mullen's testimony and the Department's explanation in its post-hearing brief, we understand that the Department could have included the terms of the Consent Judgment in the permits, but it elected not to do so – not because they were unnecessary, but because the Department felt they were addressed elsewhere. While we understand the Department's reasoning, we nevertheless believe it would be prudent for the Department to include the aforesaid conditions of the Consent Judgment in the permits in order to ensure compliance with them. While it was important for the Department to ensure compliance with the pre-construction requirements of the Consent Judgment prior to issuing the permits, its responsibility does not end with permit issuance. It must have a mechanism for ensuring that the mitigation measures are carried out as the project goes forward. As Protect PT points out, it is unclear how the Department would enforce these provisions since the Department is not a party to the Consent Judgment. As we understand it, if Permittee were to fail to comply with the provisions of the Consent Judgment, the Department must rely on Penn Township to enforce them. This would entail Penn Township going to federal court to obtain an order compelling action on the part of Permittee. While Penn Township has a vested interest in ensuring compliance with the Consent Judgment, it does not have the resources or the enforcement authority of the Department.

Furthermore, while the Stipulation between Penn Township and Permittee provides that Permittee's acceptance of the conditions of the Consent Judgment ensures that "*Apex* will be

considered to have satisfied all requirements to protect the health, safety, and welfare of Penn Township residents and Article I, Section 27," the Board's role is to determine if the *Department* has met the requirements of Article I, Section 27. In order to comply with its duties under Article I, Section 27, the Department must, at a minimum, ensure that Permittee's operation at the Drakulic site does not "create a public nuisance or adversely affect public health, safety, welfare or the environment." 58 Pa. C.S. § 3259(2)(ii). We believe that the mitigation measures discussed above ensure that this requirement is met, and, therefore, it is prudent for them to be contained within the permit.

Moreover, these are terms that Permittee has already agreed to and indicates it intends to comply with at the Drakulic site. Permittee is a signatory to the Stipulation that was adopted by the Consent Judgment. While Ms. Mullen testified that she did not see a need to duplicate the terms by including them in the permits, we see no downside to doing so. On the contrary, we see a compelling reason for including them. The Department has a duty to ensure compliance with the requirements of the permits it issues. By incorporating these terms into the permits, it adds an extra layer of assurance that the requirements will be met and will provide the Department with enforcement oversight without having to rely on involvement by Penn Township.

The Department and Permittee have presented no reason for *not* including the terms of the Consent Judgment in the permits, other than the risk of being repetitive. As stated above, we do not see this as a compelling reason, particularly where both the Department and Permittee relied on the Consent Judgment in their assurances to the Board that issues of air quality, truck traffic, noise and light pollution were fully addressed. While we have no reason to doubt that Permittee intends to comply with the terms of the Consent Judgment – and, indeed, according to Ms. Mullen and Mr. Hess, it has already implemented some of them – nevertheless, in order to ensure

continuing compliance by Permittee and enforcement oversight by the Department, we believe that the terms of the Consent Judgment addressing air quality, noise, light and truck traffic should be included as conditions of the permits.

Exercising our discretion, we amend the permits to incorporate paragraphs 9 (c), (d), (h), (i), and (j) of the Stipulation adopted by the Consent Judgment addressing air quality, noise, light and truck traffic. *Pequea Township v. Herr*, 716 A.2d 678, 686 (Pa. Cmwlth. 1998) (The Board may substitute its discretion for that of the Department and order the issuance of permits with different terms and conditions than those originally imposed by the Department) (citing *Warren Sand & Gravel Co., Inc. v. Department of Environmental Resources*, 341 A.2d 556 (Pa. Cmwlth. 1975)); *United Refining*, 163 A.3d at 1136 (The Board can properly substitute its own discretion for that of the Department and order the issuance of permits subject to certain special conditions); *Smedley*, 2001 EHB at 156. *See also Carey v. DEP*, 2019 EHB 722 (Board exercised its discretion to allow appellant additional time to comply with an order of the Department.) We find it unnecessary to remand the permits to incorporate these provisions since they are clearly spelled out in the Consent Judgment.

Conclusion

This was a hard-fought case, and we commend counsel for their efforts, particularly in light of the expedited schedule leading up to the hearing. We thank all counsel for the courtesy and professionalism they demonstrated to the Board throughout these proceedings. Strong arguments have been presented on all sides. However, as we recognized at the beginning of this adjudication, Pennsylvania has adopted a legislative scheme that allows oil and gas production, including that of unconventional well drilling. The Department of Environmental Protection, in its role as the regulatory authority, has a duty to ensure that gas well permits are issued in accordance with the

Oil and Gas Act and underlying regulations and in accordance with its constitutional duties under Article I, Section 27. Permittee has a right to pursue oil and gas activities in accordance with that legislative and regulatory framework. Oil and gas operations are an important part of Pennsylvania's economy. Likewise, the members of Protect PT and the residents of Penn Township and Trafford have a right to the safe enjoyment of their neighborhoods. Inevitably, those competing interests will at times conflict.

In conclusion, we uphold the permits issued to Permittee, with the inclusion of paragraphs 9 (c), (d), (h), (i), and (j) of the Stipulation adopted by the Consent Judgment as discussed herein. We find that Protect PT has not demonstrated by a preponderance of the evidence that the permits should be overturned.

CONCLUSIONS OF LAW

1. The Environmental Hearing Board has jurisdiction over this matter. 35 P.S. § 7514.

2. The Board reviews Department actions *de novo*, meaning we decide the case anew on the record developed before us. *Pa. Trout v. Department of Environmental. Protection*, 863 A.2d 93, 106 (Pa. Cmwlth. 2004); *Warren Sand & Gravel Co. v. Department of Environmental. Resources*, 341 A.2d 556 (Pa. Cmwlth. 1975); *Smedley, supra; New Hanover Township v. DEP*, 2020 EHB 124, 201.

3. "The Board's de novo review allows it to admit and consider evidence that was not before the Board when it made its initial decision, including evidence developed since the filing of the appeal." *United Refining*, 163 A.3d at 1136. *See also Gibraltor Rock, Inc. v. Department of Environmental Protection*, 316 A.3d 668, 677 (Pa. Cmwlth. 2024).

4. In third-party appeals, the appellant bears the burden of proof. 25 Pa. Code § 1021.122(c)(2); *Gerhart v. DEP*, 2019 EHB 534, 546-47; *Joshi v. DEP*, 2019 EHB 356, 364; *Jake v. DEP*, 2014 EHB 38, 47

5. The appellant must show by a preponderance of the evidence that the Department acted unreasonably or contrary to law, that its decision is not supported by the facts, or that the decision is inconsistent with the Department's obligations under the Pennsylvania Constitution. *Friends of Lackawanna*, EHB Docket No. 2021-066-L, *slip op*. at 70 (Adjudication issued April 1, 2025); *Friends of Lackawanna*, 2017 EHB at 1156.

6. The resolution of evidentiary conflict, witness credibility, and evidentiary weight are matters committed to the discretion of the Board. *New Hanover Township v. DEP*, 2020 EHB 124, 174; *EQT Production Co. v. Department of Environmental Protection*, 193 A.3d 1137, 1149 (Pa. Cmwlth. 2018); *Kiskadden v. Department of Environmental Protection,* 149 A.3d 380, 387 (Pa. Cmwlth. 2016).

7. The Department did not violate its duties and obligations under Article I, Section 27 of the Pennsylvania Constitution. *Delaware Riverkeeper*, 2018 EHB at 493.

8. The preponderance of the evidence does not demonstrate that the Department failed to consider public resources.

9. The preponderance of the evidence does not demonstrate that the Drakulic permits are likely to cause pollution to the waters of the Commonwealth.

10. The preponderance of the evidence does not demonstrate that Permittee's operations under the permits will cause harm to human health.

11. Protect PT has not established that additional air monitoring should be required beyond that which is required by state and federal law and the Consent Judgment.

12. Protect PT has not demonstrated that the Department erred by not requiring Permittee to submit its system-wide and site-specific emergency response plans with the permit applications and permit renewal applications

13. The Department properly evaluated Permittee's compliance history and exercised its discretion pursuant to 58 Pa. C.S. § 3211 (e.1). *Liberty Township v. DEP*, 2023 EHB 50, 54.

14. Where it believes it is prudent to do so, the Board may substitute its discretion for that of the Department and order the issuance of permits with additional conditions than those originally imposed by the Department. *Pequea Township v. Herr*, 716 A.2d 678, 686 (Pa. Cmwlth. 1998 (citing *Warren Sand & Gravel, supra.*

15. The Board exercises its discretion and amends the permits to add paragraphs 9 (c), (d), (h), (i), and (j) of the Stipulation adopted by the Consent Judgment addressing air quality, noise, light and truck traffic. *Pequea Township, supra.*

16. Protect PT has not met its burden of proof in demonstrating that the well permits and renewals for the Drakulic site should be overturned. 25 Pa. Code § 1021.122(c)(2).

COMMONWEALTH OF PENNSYLVANIA
ENVIRONMENTAL HEARING BOARD

PROTECT PT	:	
	:	
v.	:	**EHB Docket No. 2023-074-W**
	:	**(Consolidated with 2022-072-W)**
COMMONWEALTH OF PENNSYLVANIA, DEPARTMENT OF ENVIRONMENTAL PROTECTION and WCAA UPSTREAM, LLC, Permittee	:	

O R D E R

AND NOW, this 3rd day of June, 2025, it is hereby ordered as follows:

1) Paragraphs 9 (c), (d), (h), (i), and (j) of the 2016 Stipulation entered as a Consent Judgment by the District Court of the Western District of Pennsylvania in the matter of *Apex Energy (PA), LLC v. Penn Township*, Civil Action No. 16-759 (December 16, 2016), are incorporated into the permits for the Drakulic 1H and 7H wells.
2) The permits for the Drakulic 1H and 7H wells are upheld in all other respects
3) The appeal of Protect PT is **dismissed.**

ENVIRONMENTAL HEARING BOARD

s/ Steven C. Beckman
STEVEN C. BECKMAN
Chief Judge and Chairperson

s/ Bernard A. Labuskes, Jr.
BERNARD A. LABUSKES, JR.
Judge

s/ Sarah L. Clark
SARAH L. CLARK
Judge

s/ MaryAnne Wesdock
MARYANNE WESDOCK
Judge

s/ Paul J. Bruder, Jr,
PAUL J. BRUDER, JR.
Judge

DATED: June 3, 2025

c: **DEP, General Law Division:**
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