

**IN RE PENNECO ENVIRONMENTAL SOLUTIONS, LLC**

UIC Appeal No. 18-02

***ORDER DENYING REVIEW***

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Decided September 13, 2018

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## Syllabus

The Borough of Plum (“Borough”), located in Allegheny County, Pennsylvania, timely filed a petition for review of an Underground Injection Control (“UIC”) permit that the U.S. Environmental Protection Agency Region 3 (“Region”) issued to Penneco Environmental Solutions, LLC (“Penneco”), on March 7, 2018. The permit authorizes Penneco to operate a Class II UIC well to dispose of brine produced during oil and natural gas production operations. The well, referred to as the Sedat #3A well, is located in the Borough.

The Borough’s petition contends that disposal of brine in the well will increase seismic activity, and that seismic activity will threaten underground sources of drinking water, and therefore the Environmental Appeals Board (“Board”) should remand for the Region to perform a more thorough evaluation of potential seismic activity. In the alternative, the Borough requests that the Board remand for the Region to include in the permit a requirement that Penneco install seismometers at the well.

Held: The Board denies the petition for review. The Borough fails to confront the Region’s response to comments and does not otherwise demonstrate clear error by the Region on the issue of induced seismic activity at the Sedat #3A well. With respect to the Borough’s argument that the permit should require Penneco to install seismometers at the well site, the Borough fails to establish that this issue has been preserved for review by the Board. The Board does note, however, that the Region has identified several permit provisions that are designed to protect underground sources of drinking water in the event of seismic activity.

***Before Environmental Appeals Judges Aaron P. Avila, Mary Kay Lynch, and Mary Beth Ward.***

***Opinion of the Board by Judge Avila:***

## I. STATEMENT OF THE CASE

The U.S. Environmental Protection Agency (“EPA”) Region 3 (“Region”) issued an Underground Injection Control (“UIC”) permit to Penneco Environmental Solutions, LLC (“Penneco”), that authorizes the company to operate a Class II commercial brine disposal well located in Plum Borough, Allegheny County, Pennsylvania. *See* EPA Region 3, *Underground Injection Control Permit Number PAS2D701BALL Authorization to Operate Class II-D Injection Well* (Mar. 7, 2018) (Administrative Record (“A.R.”) 31) (“Final Permit”). The well, referred to as the Sedat #3A well, would be used to dispose of brine produced during oil and natural gas production operations. *Id.*

The Borough of Plum (“Borough”) timely filed with the Environmental Appeals Board (“Board”) a petition for review of the Region’s permit decision. The Borough’s petition contends that disposal of brine in the well will increase seismic activity, and that seismic activity will threaten underground sources of drinking water, and therefore the Board should remand for the Region to perform a more thorough evaluation of potential seismic activity. In the alternative, the Borough requests that the Board remand for the Region to include in the permit a requirement that Penneco install seismometers at the well.

The Borough, however, fails to confront the Region’s response to comments and does not otherwise demonstrate clear error by the Region on the issue of induced seismic activity at the Sedat #3A well. With respect to the Borough’s argument that the permit should require Penneco to install seismometers at the well site, the Borough fails to establish that this issue has been preserved for review by the Board. Accordingly, the Board denies the petition for review.

## II. LEGAL AND FACTUAL BACKGROUND

### A. *The Underground Injection Control Program*

The Safe Drinking Water Act (“SDWA”) requires the EPA Administrator to promulgate regulations for state underground injection control programs to protect underground sources of drinking water (“USDWs”). SDWA § 1421, 42 U.S.C. § 300h. EPA has promulgated such regulations, including minimum requirements for UIC permits. *See* 40 C.F.R. parts 144 through 148. EPA

administers the UIC program in states like Pennsylvania that are not authorized to administer their own programs. *See* 40 C.F.R. §§ 144.1(e), 147.1951.<sup>1</sup>

The UIC program focuses on the protection of underground water that “supplies or can reasonably be expected to supply any public water system” from “any contaminant” that may be present as a result of underground injection. SDWA § 1421(d)(2), 42 U.S.C. § 300h(d)(2); *see also* 40 C.F.R. § 144.12(a). The purpose of the UIC regulations is to prevent the movement of fluids containing contaminants into USDWs if the presence of those contaminants may cause a violation of a primary drinking water regulation or otherwise adversely affect human health. *See* 40 C.F.R. § 144.12(a). “[A]ll injection activities including construction of an injection well are prohibited until the owner or operator is authorized by permit.” *Id.* § 144.31(a). Injection wells fall into six classes. *Id.* § 144.6. Class II wells are used to inject fluids for three different purposes – enhanced recovery of oil or natural gas; storage of hydrocarbons; or, like the Sedat #3A well at issue here, disposal of fluids (primarily salt water, commonly referred to as brine) brought to the surface during conventional oil or natural gas production. *Id.* § 144.6(b)(1)-(3); *see also* <https://www.epa.gov/uic/class-ii-oil-and-gas-related-injection-wells> (defining brine) (last visited September 5, 2018).

#### B. *The Sedat #3A Well and UIC Permitting Process*

In 1989, Penneco drilled and constructed the Sedat #3A well to be a natural gas production well. The well was drilled to a depth of 4,320 feet and produced natural gas until 2015, when Penneco plugged the well due to low production. EPA Region 3, *Statement of Basis for U.S. EPA Underground Injection Control (UIC) Program Draft Class IID Permit Number PAS2D701BALL for Penneco Environmental Solutions, LLC*, at 1 (June 22, 2017) (A.R. 9) (“Statement of Basis”); *see also* Letter from D. Marc Jacobs, Jr., Senior Vice President, Penneco Environmental Solutions, LLC, to Grant Scavello, EPA Region 3, *Re: Sedat #3A UIC Permit – Request for Clarification and Additional Information* Att. L (Mar. 22, 2017) (A.R. 5) (“March 2017 Supplement”). Penneco plugged the Sedat #3A to a depth of 1,940 feet in accordance with Pennsylvania Department of Environmental Protection regulations. *Statement of Basis* at 1; *see also* March 2017 Supplement Att. L.

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<sup>1</sup> The UIC regulations use the term “Director” to describe the permitting authority. 40 C.F.R. § 146.3 (defining “Director”). Here, however, because this matter involves an EPA-administered program, the Board will refer to the “permit issuer” or the Region, as appropriate, in places where the regulations use the term “Director.”

In March 2016, Penneco submitted to the Region a UIC permit application to operate the Sedat #3A well to dispose of brine from oil and natural gas production elsewhere. *See* Statement of Basis at 1. The Region sent Penneco a Notice of Deficiency in July 2016 requesting additional information, and Penneco supplemented the original permit application with an initial response in September 2016 and a further response in March 2017. *Id.*; *see also* Final Permit at 2, Pt. I.C.

On June 22, 2017, the Region issued a draft permit and a public notice requesting comment through July 26, 2017. *See* EPA Region 3, *Public Notice of Draft Permit for Sedat #3A Injection Well* (June 22, 2017) (A.R. 10). After receiving requests for a public hearing, the Region held one on July 26, 2017. *See* Public Hearing Transcript at 1 (July 26, 2017) (A.R. 30). The Region extended the public comment period through August 9, 2017 at the public hearing. *Id.* at 113. On March 7, 2018, the Region issued the final UIC Class II permit for the Sedat #3A well. Final Permit at 1. The Region also issued its response to approximately 400 written and oral comments received during the public comment period and at the public hearing. *See generally* EPA Region 3, *Response to Comments for the Issuance of an Underground Injection Control (UIC) Permit for Penneco Environmental Solutions, LLC*, at 1 (A.R. 32) (“Response to Comments”); Public Hearing Transcript (July 26, 2017) (A.R. 30); *see also* Petition for Review of UIC Permit for Penneco Environmental Solutions Issued by Region 3, at 3 (Apr. 2, 2018) (“Petition”).

The UIC regulations require a permit issuer to determine the “area of review” for a proposed injection well either by calculating the “zone of endangering influence” or by using a “fixed radius” of not less than one-quarter mile. *See* 40 C.F.R. § 146.6. Here, the Region used a one-quarter mile fixed radius for the area of review. Response to Comments at 5; *see also* Statement of Basis at 2. With respect to underground sources of drinking water within the area of review, the lowermost one is at a depth of approximately 450 feet below the surface. Statement of Basis at 2; *see also* Letter from D. Marc Jacobs, Jr., Senior Vice President, Penneco Environmental Solutions, LLC, to Mark Nelson, EPA Region 3, *Re: Notice of Deficiency; Penneco Environmental Solutions, LLC UIC Program Class IID Injection Well Permit Application Sedat #3A* Att. E (Sept. 10, 2016) (A.R. 4) (“September 2016 Supplement”) (stating “water quality is extremely poor beyond 500 feet in depth”).

The permit authorizes Penneco to convert the Sedat #3A well from a natural gas production well into a commercial disposal well designed to inject brine into a portion of what is referred to as the Murrysville Sand Formation. Final Permit at 15; Response to Comments at 11. The Murrysville Sand Formation is 128 feet

thick and lies between 1,822 to 1,950 feet below the surface within the area of review. Statement of Basis at 3; March 2017 Supplement Att. G. The Murrysville Sand Formation is composed of sandstone that is highly permeable and porous. Statement of Basis at 3; March 2017 Supplement Att. G. The permit limits the depth at which Penneco can inject brine to a forty-foot section of the Murrysville Sand Formation, from 1,896 to 1,936 feet below the surface (just above where the production well was plugged at 1,940 feet). Final Permit at 15, Pt. III.B.1; *see also* Statement of Basis at 1, 3; March 2017 Supplement Att. G. The Region concluded that the Murrysville Sand is “favorable for brine injection due to its highly permeable, porous structure,” which allows fluid to accumulate in that structure and remain confined. Statement of Basis at 3.

Under 40 C.F.R. § 146.22(a), a new Class II well must be sited to inject into a formation (here, the Murrysville Sand Formation) that is separated from any USDW by a “confining zone,” defined as all or part of a geological formation or group of formations that is “capable of limiting fluid movement above an injection zone.” 40 C.F.R. § 146.3. Here, the upper confining zone consists of low permeability Riddlesburg Shale located immediately above the injection zone that is approximately eighty to ninety feet thick within the area of review. Statement of Basis at 3; March 2017 Supplement Att. G. There is also a lower confining zone that consists of Riceville-Oswayo Shale that is located directly beneath the Murrysville Sand and is approximately thirty feet thick within the area of review that surrounds the Sedat #3A well. Statement of Basis at 3; March 2017 Supplement Att. G.

### III. PRINCIPLES GOVERNING BOARD REVIEW

Section 124.19 of Title 40 of the Code of Federal Regulations (“C.F.R.”) governs Board review of a UIC permit. EPA’s intent in promulgating these regulations was that this review should be only sparingly exercised. Consolidated Permit Regulations, 45 Fed. Reg. 33,290, 33,412 (May 19, 1980); *see also In re Beeland Grp., LLC*, 14 E.A.D. 189, 195-96 (EAB 2008).

In considering any petition filed under 40 C.F.R. § 124.19(a), the Board first evaluates whether the petitioner has met threshold procedural requirements such as timeliness, standing, issue preservation, and specificity. 40 C.F.R. § 124.19(a)(2)-(4); *see also In re Seneca Res. Corp.*, 16 E.A.D. 411, 412 (EAB 2014). If the Board concludes that a petitioner satisfies these threshold pleading obligations, then the Board evaluates the merits of the petition for review. *See Seneca Res.*, 16 E.A.D. at 412. If a petitioner fails to meet a threshold

requirement, the Board typically denies or dismisses the petition for review. *See, e.g., id.* at 413-16.

In any appeal from a permit decision issued under part 124, the petitioner bears the burden of demonstrating that review is warranted. *See* 40 C.F.R. § 124.19(a)(4). Under 40 C.F.R. § 124.19, the Board has discretion to grant or deny review of a permit decision. *See In re Archer Daniels Midland Co.*, 17 E.A.D. 380, 383 (EAB 2017). The Board ordinarily denies review of a permit decision (and thus does not remand it) unless the petitioner demonstrates that the permit decision is based on a clearly erroneous finding of fact or conclusion of law, or involves a matter of policy or exercise of discretion that warrants review. 40 C.F.R. § 124.19(a)(4)(i)(A)-(B); *see, e.g., In re La Paloma Energy Ctr., LLC*, 16 E.A.D. 267, 269 (EAB 2014). To meet that standard, it is not enough for a petitioner to rely on previous statements of its objections during the administrative process leading up to the issuance of the permit, such as comments on a draft permit. A petitioner must demonstrate why the permit issuer's response to those objections (the permit issuer's basis for its decision) is clearly erroneous or otherwise warrants review. *See Beeland*, 14 E.A.D. at 196.

When evaluating a challenged permit decision for clear error, the Board examines the administrative record that serves as the basis for the permit to determine whether the permit issuer exercised his or her "considered judgment." *E.g., In re Ash Grove Cement Co.*, 7 E.A.D. 387, 417-18 (EAB 1997); *In re GSX Servs. of S.C., Inc.*, 4 E.A.D. 451, 453-54 (EAB 1992). The permit issuer must articulate with reasonable clarity the reasons supporting its conclusion and the significance of the crucial facts it relied upon when reaching its conclusion. *E.g., In re Shell Offshore, Inc.*, 13 E.A.D. 357, 386 (EAB 2007). As a whole, the record must demonstrate that the permit issuer "duly considered the issues raised in the comments" and ultimately adopted an approach that "is rational in light of all information in the record." *In re Gov't of D.C. Mun. Separate Storm Sewer Sys.*, 10 E.A.D. 323, 342 (EAB 2002); *accord In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 567-68 (EAB 1998), *review denied sub nom. Penn Fuel Gas, Inc. v. EPA*, 185 F.3d 862 (3d Cir. 1999).

#### IV. ANALYSIS

The Borough argues that the permit allows "the injection of materials that cause an increase in seismic activity" and that seismic activity will threaten USDWs, and therefore the Board should remand for the Region to perform a more thorough evaluation of potential seismic activity. Petition at 2, 7. The Borough also raises an argument that it fails to show anyone made in comments on the draft

permit – that the permit should have required Penneco to install seismometers at the injection site, post a bond for the maintenance of the seismometers, and keep the seismometers in good working order. *Id.* at 7. In support of its arguments, the Borough attached four documents to its petition.<sup>2</sup>

In response, the Region contends that the Borough references only “general studies concerning seismic activity and injection wells” and does not demonstrate that the Region’s evaluation of the potential for induced seismic activity at the Sedat #3A well is clearly erroneous or otherwise warrants Board review.<sup>3</sup> Region 3’s Response to Petition for Review at 14-15 (May 21, 2018) (“Region Response”). The Region also argues that the permit’s conditions control the risk

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<sup>2</sup> The four documents the Borough attached to its petition for review are:

- (1) Abrahm Lustgarten, *Injection Wells: The Poison Beneath Us*, ProPublica (June 21, 2012) (“ProPublica article”);
- (2) John Quigley, *Managing Induced Seismicity from Wastewater Injection Wells in Pennsylvania*, Kleinman Center for Energy Policy (Dec. 5, 2016) (“Quigley article”);
- (3) Peter Folger & Mary Tiemann, *Human-Induced Earthquakes from Deep-Well Injection: A Brief Overview*, Congressional Research Service (Jan. 8, 2015) (“CRS article”); and
- (4) Jeffrey G. Pain, Alan R. Dutton, and Martina U. Blum, *Using Airborne Geophysics to Identify Salinization in West Texas*, Bureau of Economic Geology at the University of Texas at Austin (1999) (“Airborne Geophysics article”).

At oral argument, all parties agreed that of those four articles, only the first one – the ProPublica article – is part of the administrative record for this permit proceeding. *See* Oral Argument Transcript at 10, 33-34, 56 (“Tr.”) (July 26, 2018); ProPublica article (A.R. 40). The remaining three articles (the Quigley, CRS, and Airborne Geophysics articles), were raised for the first time in the Borough’s petition for review and are not a part of the administrative record.

<sup>3</sup> “Induced” seismic events are those that result from human activity. *See* EPA UIC Technical Workgroup, *Minimizing and Managing Potential Impacts of Injection-Induced Seismicity from Class II Disposal Wells: Practical Approaches* 1 n.7 (Feb. 6, 2015) (A.R. 17) (“National Technical Workgroup Report”).

of induced seismic activity and that additional permit terms are not required. *Id.* at 22-23. Penneco makes arguments similar to those made by the Region, and urges the Board to deny review of the petition because the Borough “fails to rebut any of EPA’s site-specific findings” regarding the Sedat #3A well and the potential for induced seismic activity. *See* Penneco Environmental Solutions, LLC’s Response to Petition for Review at 10 (May 18, 2018) (“Penneco Response”).

For the following reasons, the Board denies the petition for review.

A. *The Borough Fails to Confront the Region’s Response to Comments or Otherwise Demonstrate Clear Error by the Region on the Issue of Induced Seismic Activity at the Sedat #3A Well*

According to the Borough, the Region’s analysis of the potential for induced seismic activity at the Sedat #3A well and conclusion that there are no known fault lines or fractures near the proposed wellsite are “inherently suspect.” Petition at 5-6. The Borough contends that the ability to predict human-caused earthquakes is limited for a number of reasons, including “rudimentary knowledge” of how injected fluids move underground, “poor knowledge” of how faults could potentially slip and cause earthquakes, and limited networks of seismometers. *Id.* The Borough maintains that “[i]t cannot be disputed” that induced seismic activity has the potential to impact drinking water by “damaging the integrity of wells” and “creating new fractures that allow injected fluids to reach groundwater.” *Id.* at 6. Finally, the Borough argues that examples of injected materials moving into USDWs are “numerous,” reciting different locations where such fluid migration has occurred and arguing that “structural failures inside injection wells are routine.” *Id.* at 4-5.<sup>4</sup>

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<sup>4</sup> Penneco argues that the Borough has waived (or failed to preserve) its induced seismic activity arguments because the Borough’s petition relies, in part, on three of the documents discussed *supra* note 2, that existed at the time of the public comment period and could have been brought to the Region’s attention, but instead were referenced for the first time on appeal. Penneco Response at 7-8. The Board disagrees. Numerous commenters raised concerns about induced seismic activity at the Sedat #3A well during the public comment period and the public hearing on the draft permit. Thus, the issue of induced seismic activity was preserved for review. *See also* Tr. at 35 (Region stating that the Borough is not precluded from raising the issue of risk posed by seismic activity, only from relying on articles not in the administrative record); *id.* at 56 (Penneco stating “to the extent that [the Borough’s] arguments rely upon those articles [not in the administrative record], they should be ignored”).



The Borough must demonstrate, with factual and legal support, why a permit condition or other challenge warrants Board review, including an explanation as to why the Region's response to comments on the issue raised, if any, is clearly erroneous or otherwise warrants review. *See* 40 C.F.R. § 124.19(a)(4)(i); *see, e.g., In re Seneca Res. Corp.*, 16 E.A.D. 411, 414 (EAB 2014). While the Board takes seriously the concerns raised by the Borough regarding injection wells and the potential for induced seismic activity, the Borough's petition for review fails to confront the Region's response to comments and does not otherwise demonstrate any clear error by the Region regarding the issue of induced seismic activity at the Sedat #3A well.

In analyzing the issue of induced seismic activity at the Sedat #3A well, the Region utilized a previously developed framework for evaluating seismic potential associated with UIC Class II permits based on its previous experiences evaluating applications for Class II disposal wells. *See* EPA Region 3, *Region 3 framework for evaluating seismic potential associated with UIC Class II permits* (Sept. 26, 2013) (A.R. 12) ("Region 3 Framework").<sup>5</sup> The Region 3 Framework identifies three conditions that likely must *all* be present for operation of a Class II well to induce seismic activity:

- (1) there is a fault in a near-failure state of stress;
- (2) the fluid injected has a path of communication to the fault; and
- (3) the pressure exerted by the fluid is high enough and lasts long enough to cause movement along the fault line.

*Id.* at 1.

In applying the Region 3 Framework, the Region verified geological information submitted by Penneco indicating the absence of faults in the injection and confining zones in the vicinity of the Sedat #3A well, the first factor in the Region 3 Framework. Response to Comments at 8; Statement of Basis at 4. The Region also reviewed information from the United States Geological Survey ("USGS") and the Pennsylvania Department of Conservation and Natural Resources ("PA DCNR") and confirmed that neither the USGS nor the PA DCNR have recorded any seismic activity that originated in Allegheny County, Pennsylvania, where the Sedat #3A well is located. *See* Response to Comments

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<sup>5</sup> The Region also notes that in the course of its analysis it referred to a 2015 EPA report that addresses injection-induced seismic activity. *See* Response to Comments at 6-7; *see generally* National Technical Workgroup Report.

at 8 (noting that the PA DCNR website contains, among other things, a catalog of all recorded seismic events in or near Pennsylvania from 1724 to present).<sup>6</sup>

In addition to the absence of known faults, the Region explained that certain characteristics of the Murrysville Sand Formation will allow the proposed injection zone for the Sedat #3A well to “more readily store injected fluid.” Response to Comments at 9. For example, the Region noted that the Murrysville Sand Formation is a sedimentary rock layer that has higher natural porosity and greater interconnection in the pore space throughout the formation compared to less permeable crystalline bedrock. *Id.* In addition, the permeability of the Murrysville Sand Formation will “allow a more uniform flow to occur throughout the formation” such that pressure from injected fluids will disperse more evenly. *Id.* Penneco’s permit application also identified significant oil and gas production in the Murrysville Sand Formation in the vicinity of the Sedat #3A well. *See* Response to Comments at 8; Penneco Environmental Solutions, LLC, *Underground Injection Control Permit Application* Att. B (Mar. 9, 2016) (A.R. 1) (Sedat #3A injection well inventory). That is relevant because, as the Region explained, oil and gas production in a reservoir “can assist in preventing future impacts from seismicity due to injection because of the reduction in reservoir pore pressure during the years of gas production.” Response to Comments at 8; Statement of Basis at 4; *see also* Region 3 Framework at 2 (explaining that oil and gas production activities result in “the removal of large amounts of fluid from the formation,” and that in turn, there has been a corresponding decrease in pore pressure in the formation such that “there is little total change in formation pressure as the injection fluid replaces the volume of oil and gas extracted”).

In addition, even where the evidence indicates the absence of faults, the Region 3 Framework contemplates that “to minimize conduits for fluid to potentially contaminate [USDWs], operating conditions in an injection well permit can expressly limit the injection pressure to prevent fracturing \* \* \* of the injection zone.” Region 3 Framework at 2. The Region 3 Framework notes that “[l]imiting injection pressure provides the secondary benefit of preventing fractures that also could act as conduits through which fluid could flow and act upon an existing fault” if there were a fault present. *Id.* And, “to induce seismicity, pressure from the fluid injection first would have to be great enough to create or reopen fractures that would act as conduits for the fluid to reach the fault and second would have to exert enough pressure and flow to overcome the frictional forces in, and thereby

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<sup>6</sup> At oral argument, counsel for the Borough acknowledged that there is nothing in the record to contradict the Region’s conclusion on this point. Tr. at 31.

destabilize, the fault.” *Id.* The Region therefore established permit limits to prevent over-pressurization of the Murrysville Sand Formation and to control the rate of injection. *See* Final Permit at 16, Pts. III.B.3-4; Response to Comments at 9.

Specifically, during operation, surface injection pressure and bottom-hole injection pressure (i.e., the injection pressure within the Murrysville Sand Formation) are limited “to ensure that the injection pressure will not propagate existing fractures or create new fractures in the formation.” Response to Comments at 9; *see also* Final Permit at 16, Pt. III.B.4; Response to Comments at 7 (controlling the volume and rate of fluid injected reduces pore pressure in the formation, which decreases the probability of an induced seismic event); Region 3 Framework at 1. The permit limits the injection volume to 54,000 barrels per month and limits the surface injection pressure to 1,421 pounds per square inch (“psi”) and bottom-hole injection pressure to 2,332 psi. Statement of Basis at 3; Response to Comments at 9; Final Permit at 16, Pt. III.B.3-4. The Region further explained that the pressure limitation will meet the requirements of 40 C.F.R. § 146.23(a). Statement of Basis at 4. That regulation provides, among other things, that

[i]njection pressure at the wellhead shall not exceed a maximum which shall be calculated so as to assure that the pressure during injection does not initiate new fractures or propagate existing fractures in the confining zone adjacent to the USDWs. In no case shall injection pressure cause the movement of injection or formation fluids into an underground source of drinking water.

40 C.F.R. § 146.23(a)(1).

The Region also noted that, while the UIC regulations for Class II injection wells limit injection pressure to prevent the fracturing of the confining zone adjacent to USDWs, the Region took a more protective approach by establishing injection pressure limits to prevent fracturing of the injection formation itself. Response to Comments at 11; *see also id.* at 9 (“Limiting the pressure not only prevents the propagation of fractures that could become potential channels for fluid movement into USDWs but that could also serve as conduits for fluids to travel from the injection zone to unknown faults.”).

Lastly, the Region explained that the likely relevant factors behind the examples of induced seismic activity offered in the public comments, specifically geologic setting or operational history of those other injection wells, differ significantly from the Sedat #3A well. *See* Response to Comments at 8 (indicating seismic activity in Youngstown, Ohio, Class II disposal well “was likely due to

injected fluid coming into contact with a fault system located in deep Precambrian basement crystalline bedrock” located 7,000 feet below the Murrysville Sand Formation); *id.* at 9 (noting that an induced seismic event in Texas “was likely triggered by the significant volume of fluid that was injected in a relatively short period of time”); *id.* at 10 (stating that despite inconclusive evidence about the cause of seismic activity at an injection well in West Virginia, the well was drilled into Marcellus Shale, which has low permeability, and when the injection rate and volume at the well were reduced, seismic activity in the area ceased).

The Borough does not substantively confront the Region’s responses to comments about the potential for induced seismic activity that could, in turn, endanger USDWs. In its petition, the Borough argues that “[a]s per comment ten (10) and eleven (11) in EPA’s [Response to Comments], injection wells may cause an increase in seismic activity, and the effect of such increased seismic activity can impact underground sources of drinking water (USDWs).” Petition at 3; *see also* Response to Comments at 6-10 (containing responses to comments 10 and 11). However, nowhere in the Borough’s petition does the Borough explain why the Region’s conclusions about induced seismic activity and the potential to impact USDWs at this site are clearly erroneous. Rather, the Borough references four articles, *see supra* note 2, to make general assertions about the potential for injection wells to induce seismic activity without addressing the Region’s site-specific analysis of this particular well in the response to comments.<sup>7</sup> *See* Tr.

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<sup>7</sup> At oral argument, counsel for the Borough invoked this Board’s decision in *In re Stonehaven Energy Mgmt., LLC*, 15 E.A.D. 817, 832 n.11 (EAB 2013), as a basis for the Board to consider the Quigley, CRS, and Airborne Geophysics articles that are not in the administrative record. Tr. at 11. The Board disagrees.

First, unlike *Stonehaven*, the Borough has not demonstrated that the Quigley, CRS, and Airborne Geophysics articles are properly submitted in response to new materials that the Region added to the record as part of its response to comments. *Stonehaven*, 15 E.A.D. at 832. Second, *Stonehaven*’s alternative conclusion that the Board could take official notice in that case does not help the Borough either. In *Stonehaven*, the Board alternatively concluded that it could take official notice of news articles “to show what information is in the public realm.” *Id.* at 832 n.11. Here, the Borough does not submit the Quigley, CRS, and Airborne Geophysics articles to establish that information was in the public realm. Instead, the Borough seeks to use the contents of those articles to bolster its affirmative case before the Board, and for that proposition, *Stonehaven*’s alternative conclusion offers no support. In any event, the Borough fails to demonstrate why the three articles establish that the Region’s analysis of the proposed injection well is clearly erroneous or otherwise warrants review.

at 20 (counsel for the Borough stating that the ProPublica article was “simply included [in the administrative record] as preamble to show instances of Class II injection wells failing and causing contamination”).

The Borough fails to demonstrate whether, or how, the general concerns raised in its petition regarding the movement of fluids into USDWs and the potential for injection wells to cause an increase in seismic activity that may also harm public drinking water sources generally apply to, or are not addressed by, the permit, the Region’s response to comments, and the administrative record. *See In re Windfall Oil & Gas, Inc.*, 16 E.A.D. 769, 797-98 (EAB 2015) (denying review where petitioners failed to substantively confront permit issuer’s responses to comments or adequately explain why permit issuer’s responses were clearly erroneous or otherwise warranted review); *Beeland*, 14 E.A.D. at 200 (“General statements, rather than specific arguments as to why the [permit issuer’s] responses are erroneous or an abuse of discretion, do not meet the prerequisites for review.”); *see also In re Genesee Power Station*, 4 E.A.D. 832, 867 (EAB 1993) (holding that petition providing only list of general objections to permit lacks specificity necessary to support Board review under 40 C.F.R. § 124.19). The Borough has not demonstrated why the Region’s analysis of the potential for induced seismic activity is clearly erroneous or otherwise warrants review. *See, e.g., In re Archer Daniels Midland Co.*, 17 E.A.D. 380, 382 (EAB 2017) (citing cases) (petitioner must “explain why the permit issuer’s previous response” is clearly erroneous or otherwise warrants review); *id.* at 391 (same). The Borough’s argument about induced seismic activity is so general that, when combined with the level of certainty that the Borough appears to expect from a permitting authority in order to conclude that there are no known fault lines or fractures, the Borough’s argument seems to be that no permit could ever issue, which would seemingly render the Class II UIC permitting program a regulatory nullity. *Cf. In re USGen New England, Inc.*, 11 E.A.D. 525, 555 (EAB 2004) (“Significantly, the regulations governing the Board’s review of permits authorize[] the Board to review *conditions* of the permit decision, not statutes or regulations which are the predicates for such conditions.”).

Because the Borough’s petition fails to confront the Region’s response to comments, demonstrate that the Region has clearly erred, or establish that review is otherwise warranted, the Board denies review on this issue.

B. *The Borough's Argument that the Permit Should Require Penneco to Install Seismometers at the Well Site Is Not Preserved for Review*

The Borough also argues that the Region erred by not including requirements in the permit that Penneco: install seismometers at the well site, post a bond for the maintenance of the seismometers, keep the seismometers in good working order, and submit quarterly reports. Petition at 7-8. The Board will refer to those collectively as “seismometer installation requirements.” As set forth below, the Board denies the Borough’s petition for review on this issue because the Borough fails to demonstrate that this issue is preserved for review.

A petitioner before the Board must demonstrate in its petition, among other things, “that each issue being raised in the petition was raised during the public comment period (including any public hearing).” 40 C.F.R. § 124.19(a)(4)(ii); *see, e.g., Seneca Res.*, 16 E.A.D. at 415. As the Board has previously explained, that regulation “is not an arbitrary hurdle, placed in the path of potential petitioners simply to make the process of review more difficult.” *In re BP Cherry Point*, 12 E.A.D. 209, 219 (EAB 2005). Instead, “it serves an important function related to the efficiency and integrity of the overall administrative scheme.” *Id.*; *see also In re Encogen Cogeneration Facility*, 8 E.A.D. 244, 249-50 (EAB 1999). The regulation’s intent is to ensure that the permitting authority has the first opportunity to address any objections to a draft permit and provide some finality to the permitting process. *BP Cherry Point*, 12 E.A.D. at 219; *Encogen*, 8 E.A.D. at 249-50. “The effective, efficient and predictable administration of the permitting process demands that the permit issuer be given the opportunity to address potential problems with draft permits before they become final.” *Encogen*, 8 E.A.D. at 250.

Where an issue was not raised during the public comment period, however, the permitting authority is not given the opportunity to address the issue prior to permit issuance. If, in such a situation, the Board were then to exercise its authority, the Board would become the first-level decisionmaker as to the newly-raised issue, contrary to the expectation that “most permit conditions should be finally determined at the [permitting authority] level.” Consolidated Permit Regulations, 45 Fed. Reg. 33,290, 33,412 (May 19, 1980), *quoted in In re Knauf Fiber Glass, GmbH*, 8 E.A.D. 121, 127 (EAB 1999); *see also BP Cherry Point*, 12 E.A.D. at 219. Alternatively, the Board might remand the newly-raised issue back to the permitting authority for an initial determination. Aside from being inconsistent with the regulations governing Board review, this would potentially result “in an unnecessarily protracted permitting process, where each time a final permit is issued and a new issue is raised on review, the permit must be sent back to the permit issuer for further consideration. Such an approach would undermine the

efficiency, predictability, and finality of the permitting process.” *BP Cherry Point*, 12 E.A.D. at 220.

Here, the Borough’s petition fails to identify anywhere during the public comment period where anyone commented that the Region should include in the permit the seismometer installation requirements that the Borough now faults the Region for failing to include. The Board has not otherwise been able to locate where this issue was raised during the public comment period. And, at oral argument, the Borough and the Region acknowledged that no one asserted that seismometer installation requirements should be included in the final permit during the public comment process on the draft permit. *See* Tr. at 19, 40.<sup>8</sup>

Because the Borough fails to demonstrate that its proffered seismometer installation requirements were raised during the public comment process, that issue has not been preserved for review. The Borough’s petition on that issue is therefore denied.<sup>9</sup>

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<sup>8</sup> While a petitioner may demonstrate that an issue was not reasonably ascertainable during the public comment period, the Borough has not argued, and there is no basis to conclude, that the issue of including the seismometer installation requirements in the permit was not reasonably ascertainable during the public comment period. *See, e.g., Encogen*, 8 E.A.D. at 250 n.8.

<sup>9</sup> The Board notes that the Region has identified several permit provisions that are designed to protect USDWs in the event of seismic activity. *See* Region Response at 22-23; *see also* Tr. 40-41. For example, the permit requires that the well be equipped with an automatic shut-off device that would cease injection at the well if a seismic event, or any other disturbance, caused the well’s mechanical integrity to fail. Final Permit at 9, Pt. II.C.8; *see also* Response to Comments at 10. The permit also requires that the well be mechanically tested before operations can begin and, while operating, Penneco must continuously monitor the well to ensure that mechanical integrity is maintained. Final Permit at 9, 15, Pts. II.C.7, III.A.4 (requiring permittee to conduct a mechanical integrity test that demonstrates the well’s integrity prior to commencing injection operations at the well, and to conduct subsequent mechanical integrity tests at least once every two years after the initial mechanical integrity test); *id.* at 8, Pt. II.C.2 (requiring continuous monitoring of surface injection pressure, annular pressure, flow rate, and cumulative volume the entire time the Sedat #3A well operates). In addition, the injection well is constructed with multiple strings of steel casing cemented in place and designed to withstand significant internal and external pressure. *See* Response to Comments at 10.

V. *CONCLUSION*

For the foregoing reasons, the Board denies the Borough's petition for review.

So ordered.