The D.C. Circuit's decision in *Gerber v. Norton*, 294 F.3d 173 (D.C. Cir. 2002), provides a salient example of the harmless error doctrine as applied in the administrative context. There, the appellate court held that the district court erred in ruling as harmless error the U.S. Fish and Wildlife Service's failure to make available for public comment a map of the proposed mitigation site for an endangered squirrel as required by the Endangered Species Act, because the petitioners could not "meaningfully comment on the mitigation value of the off-site parcel without knowing its location." 294 F.3d at 179. In contrast to *Gerber*, in this case, the information on which the Region based its permitting decision was publicly available for the Petitioners to view throughout the public comment period. While the information did not meet the specific requirements of the UIC regulations, Petitioners have not identified any specific comments they would have provided had the information been provided as specified in the regulations.

The Board emphasizes that, while it found the Region's decision in this instance to constitute harmless error, the Board strongly advises the Region to ensure that the administrative records in future UIC permit cases comply with the letter of the applicable UIC regulations. The Board denies review of this issue.

B. *Confining Layer*

Several petitioners express concerns that the proposed injection well does not comply with the requirement that Class II wells be sited so that "they inject into a formation which is separated from any USDW by a confining zone that is free of known open faults or fractures within the area of review." *See* 40 C.F.R. § 146.22(a). The confining zone is defined as "a geological formation, group of formations, or part of a formation that is capable of limiting fluid movement above an injection zone." *Id.* § 146.3. Petitioners raise the following issues: (1) the original Statement of Basis accompanying the draft permit erroneously stated that the confining zone is approximately 50 feet thick; (2) the fracturing of existing wells near the area of review could have compromised the confining zone; and (3) old coal mines within the area of review could

serve as conduits for injected fluids.[23] As discussed below, the Region addressed each of these issues in responding to comments on the draft permit. Because Petitioners failed to adequately confront the Region's responses to these issues, the Board denies review.

Federal circuit courts of appeal have consistently upheld the Board's threshold requirement that a petitioner must substantively confront the permit issuer's response to the petitioner's previous objections. *See, e.g.*, *Native Vill. of Kivalina IRA Council v. EPA*, 687 F.3d 1216, 1219-20 (9th Cir. 2012), *aff'g In re Teck Alaska, Inc.*, NPDES Appeal No. 10-04 (EAB Nov. 18, 2010) (Order Denying Review); *City of Pittsfield v. EPA*, 614 F.3d 7, 11-13 (1st Cir. 2010), *aff'g In re City of Pittsfield*, NPDES Appeal No. 08-19 (EAB Mar. 4, 2009) (Order Denying Review); *Mich. Dep't of Envtl. Quality v. EPA*, 318 F.3d 705, 708 (6th Cir. 2003) ("[Petitioner] simply repackag[ing] its comments and the EPA's response as unmediated appendices to its Petition to the Board * * * does not satisfy the burden of showing entitlement to review."), *aff'g In re Wastewater Treatment Facility of Union Twp.*, NPDES Appeal Nos. 00-26 & 00-28 (EAB Jan. 23, 2001) (Order Denying Petitions for Review); *LeBlanc v. EPA*, 310 F. App'x 770, 775 (6th Cir. 2009) (concluding that the Board correctly found petitioners to have procedurally defaulted where petitioners merely restated "grievances" without offering reasons why the permit issuer's responses were clearly erroneous or otherwise warranted review), *aff'g In re Core Energy, LLC*, UIC Appeal No. 07-02 (EAB Dec. 19, 2007) (Order Denying Review); *see also* 78 Fed. Reg. at 5,282. The petitions do not satisfy this requirement.

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[23] The following petitions raise some or all of these issues: Appeal Nos. 14-73 (Travis P. Smith); 14-74 (Daniel J. & Cindy J. Cryster); 14-80 (Brady Township); 14-81 (Sandy Township Board of Supervisors); 14-82 (Valerie J. Powers); 14-83 (Randall T. Powers); 14-86 (Leslie Swope); 14-87 (Barb Emmer); 14-88 (Laurie Wayne); 14-90 (Robert Green); 14-91 (Rev. James and Sherry Green); 14-92 (Ethel Marshall); 14-93 (Robert Marshall); 14-94 (Vivian Marshall); 14-96 (Dawn Smith); 14-107 (Terry & Carole Lawson); 14-108 (Loretta Slattery); 14-174 (Darlene Marshall); 14-175 (Duane Marshall); 14-176 (Nancy Moore); 14-178 (Randall R. Baird); 14-179 (City of DuBois, PA); 14-187 (Marianne Atkinson); and 14-188 (Richard Atkinson).

First, while Petitioners correctly point out that the Statement of Basis erroneously stated that the confining layer immediately above the injection zone (the Onondaga Formation) is 50 feet thick, the Region acknowledged this error in its Response to Comments and clarified that, consistent with the geologic information provided in the permit application, the formation is actually 14-18 feet thick. RTC at 12-13. The Region's response stated further that a series of low-permeability shale and limestone formations are located above the receiving formation and separate that formation from the lowermost USDWs. *Id.* at 13; *see also id.* at 16 ("[A]pproximately six thousand feet of rock containing numerous confining zones exist between the injection zone and the formations that supply drinking water to shallow wells."). Finally, the Region stated that no conduits were identified within the area of review that would allow migration of fluids into USDWs. *Id.* at 16. The petitions fail to confront the Region's responses to comments or adequately explain why the responses are clearly erroneous or warrant Board review.

Second, Petitioners argue that the fracturing of nearby gas wells (outside the one-quarter mile area of review) could have caused fractures extending horizontally into the area of review and compromised the confining zone. In its response to comments, the Region stated that any fractures caused by extraction activities in the existing vertical gas wells near the area of review would not have extended into the area of review and endangered USDWs. *See* RTC at 13. The Region explained that while horizontally drilled wells, such as Marcellus shale wells, could result in horizontal fracturing, these are not the type of wells at issue here. In particular, the Region stated:

> The fracturing of the Huntersville Chert/Oriskany gas production well is not the same as the hydraulic fracturing of unconventional gas production wells in the Marcellus and Utica Shales that occurs today. Unconventional gas wells include horizontal drilling and hydraulic fracturing through numerous stages in the wellbore. The Huntersville Chert/Oriskany gas production wells are vertical wells that had only a few

> stages within the wellbore hydraulically fractured. These fractures, in the case of vertical wells, do not extend outward for extensive distances like the Marcellus and Utica gas wells.

RTC at 13.[24] The Region stated further that the permit contains a maximum injection pressure to prevent both the development of new fractures and the propagation of any existing fractures in the injection zone itself. *Id.*; *see also* Permit pt. III.A.1 (requiring injection only into formations separated from USDWs by a confining zone free of known open faults of fractures within area of review), pt. III.B.4 (prohibiting injection pressure at levels which initiate new fractures or propagate existing fractures). The petitions fail to explain why the Region's response on this issue is clearly erroneous or otherwise warrants Board review.

Finally, Petitioners express concern that coal mines located in the area of review could allow injection fluids to reach USDWs. As the Region explained in its response to comments, however, coal mines in the area of review are several thousand feet above the injection zone and "there are no other wells located within the area of review that penetrate the injection zone that could potentially allow fluid to migrate upwards into these mine locations." RTC at 18. As previously stated, the regulations require that well operators identify all known wells that penetrate the proposed well's injection zone, and where appropriate, submit a corrective action plan to address any improperly sealed,

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[24] Several petitions reference two studies by the Department of Energy, one in 1981 and the other in 2014, in support of the assertion that fractures from older vertical wells outside the area of review could compromise the injection zone. Because neither of these studies were raised or presented prior to issuance of the permit, they are not part of the administrative record in this matter. *See In re Dominion Energy Brayton Point, LLC*, 12 E.A.D. 490, 518 (EAB 2006) (documents submitted after permit issuance are not part of the administrative record). Moreover, the 2014 study, excerpted in several of the petitions (*see, e.g.*, Appeal No. 90-188 (Richard Atkinson)), addresses fracturing of Marcellus shale wells. Because the wells near the area of review are not Marcellus shale wells, however, the 2014 study is not applicable in the present case. Thus, the Board did not consider either of these studies.

completed, or abandoned wells in the area of review that might otherwise allow fluid to migrate into USDWs. *See* 40 C.F.R. §§ 144.55(a), 146.24. In the present case, the Region discovered no wells within the area of review that could serve as conduits for injection fluid into USDWs. *See* RTC at 16. Petitioners fail to explain how the Region's response to comments on this issue was erroneous or otherwise warrants Board review.

The Board finds that the Region considered and provided reasoned responses to Petitioners' concerns on the above issues. Although Petitioners clearly disagree with the Region's responses and reiterate their objections, the petitions fail to substantively confront the Region's responses or adequately explain why the responses were clearly erroneous or otherwise warrant Board review. The Region appropriately recognized Petitioners' concerns with respect to the safety of their drinking water and explained in detail its conclusion that the permit will protect USDWs in accordance with the requirements of the federal UIC regulations. This satisfies the Region's obligations under the law. Simply disagreeing with the Region and repeating concerns in a petition for review before the Board that previously have been presented to and answered by the permit issuer does not satisfy the regulatory requirement that petitioners confront the permit issuer's responses and explain why the responses were clearly erroneous or otherwise warrant Board review. *See* 40 C.F.R. § 124.19(a)(4)(ii); *In re Pa. Gen. Energy Co.*, UIC Appeal Nos. 14-63 through 14-65, slip op. at 7 (EAB Aug. 21, 2014), 16 E.A.D. ___.

Moreover, the Board finds that the Permit sets forth detailed construction and operating requirements, as provided in the applicable regulations, designed to achieve the overarching purpose of the SDWA and UIC regulations: to protect underground sources of drinking water from contamination. For example, as required by 40 C.F.R. §146.22, the Permit allows injection "only into formations which are separated from any USDWs by a confining zone that is free of known open faults or fractures within the Area of Review." Permit pt. III.A.1. The well must be cased and cemented to prevent the movement of fluids into or between USDWs for the life of the well. Permit pt. III.A.2. The Permit

prohibits injection until the permittee demonstrates the well's mechanical integrity. *Id.* pt. III.A.4. Further, as noted above, the Permit requires continuous monitoring of injection pressure, annular pressure, flow rate, and cumulative volume, and an automatic shut-off device in the event of mechanical integrity failure. *Id.* pt. II.C.2. Finally, the Permit contains detailed monitoring and reporting requirements for any noncompliance. *Id.* pts. II.C-D.

For all issues Petitioners raise with respect to the confining layer, the Board finds that Petitioners fail to adequately explain why the Region's response to comments was clearly erroneous. Accordingly, the Board denies review on these issues.[25]

C. *Seismicity*

Several Petitioners raise concerns regarding seismicity in the area of the proposed injection well, stating that "[r]esidents in areas with no seismic activity have experienced seismic activity due to injection wells," and asserting that the area around the proposed well is "known for large amounts of brine coming off old deep gas wells." *See, e.g.*, UIC Appeal No. 14-73, at 5-6 (Travis P. Smith).[26] Petitioners also express

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[25] One petitioner asserted that the injection fluid is highly acidic and could dissolve rock and open fractures in the confining zone. *See* Appeal No. 14-178 (Randall R. Baird). In response, the Region stated that "[t]he produced fluid being injected is very similar to the brine fluid that is already in the Huntersville Chert/Oriskany formation" and that "samples of fluids to be injected had a pH range from 6-8, which is a neutral range, and will not react readily with the limestone." RTC at 13. Although the petition disputes the accuracy of this statement, sampling data provided with the Permit application demonstrates that the injection fluid has a pH in the neutral range. *See* Windfall Appl. App. B (Laboratory and Analytical Data) at 38-46. Because the record supports the Region's determination, review is denied on this issue.

[26] The following petitions raise some or all of these issues: Appeal Nos. 14-73, at 3, 4-5, 6 (Travis P. Smith); 14-74, at 2 (Daniel J. & Cindy J. Crytser); 14-80, at 5 (Brady Township Supervisors); 14-86, at 2 (Leslie Swope); 14-87, at 3, 5-6 (Barb Emmer); 14-88, at 3, 4 (Laurie Wayne); 14-107, at 3, 5 (Terry & Carole Lawson); 14-108, at 3, 5 (Loretta Slattery); 14-174, at 6, 8, 11 (Darlene Marshall); 14-175, at 4, 6, 7, 13 (Duane Marshall); 14-177, at 2 (Randall R. Baird); and 14-186, at 2-3 (Wilson

(continued...)

concern regarding the Region's explanation that in some cases earthquakes occurred at locations with no known faults. *See, e.g., id.* at 6. Several Petitioners also state that the Region is "unable to compare other areas with our geology for seismic activities," yet it can "compare our area for the permit to all other injection wells that seem to have never contaminated water wells." *See, e.g.*, UIC Appeal No. 14-74, at 2 (Daniel J. & Cindy J. Crytser).

The Region thoroughly responded to comments submitted during the respective public comment periods and at the public hearing on seismicity, discussing at length the following: background information on induced seismic activity; known faults near the proposed well; factors affecting fluid transmission and pore pressure; comparisons of the geology and factors influencing induced seismic events in other parts of the country due to injection activities; the general suitability of the depleted oil and gas formations for underground injection; and the potential for seismic events to contribute to groundwater contamination. RTC at 6-12. Although the Region recognized that there is strong evidence that underground injection likely triggered the recent seismic events that have occurred in Ohio, Texas, Oklahoma, West Virginia, and Arkansas, *see id.* at 10, it also noted that out of the approximately 30,000 operating Class II wells across the country, only a few of those wells have triggered earthquakes of any significance, and to the Region's knowledge, none of those earthquakes have caused injected fluids to migrate to USDWs. *Id.* at 6.

The Board concludes that the Petitioners have not explained why the Region's responses to their comments constitute clear error. *See* 40 C.F.R. § 124.19(a)(4)(ii). As with Petitioners' arguments regarding the confining layer, Petitioners raise generalized concerns without confronting the Region's thorough explanation of why the proposed well does not pose a risk for seismic activity. *See, e.g., In re Beeland Group, LLC*, 14 E.A.D. 189, 200 (EAB 2008) ("General statements, rather than specific arguments as to why the Region's responses are erroneous or an

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[26](...continued)
Fisher, Jr.).

abuse of discretion, do not meet the prerequisites for [Board] review."). For example, the Region explained that earthquakes are "extremely rare" in the area, and that, although they have been recorded and also experienced by residents, those seismic events originated in other parts of the state or outside the state. RTC at 8 (noting that what has been felt in Clearfield County are seismic waves that were transmitted through bedrock from a seismic event that originated somewhere else).

The Region also clearly addressed Petitioners' concern that in some cases induced seismic activity occurred in areas where there were no known faults. The Region explained that the relevant factors behind these events, such as geologic setting and operational history of the operating well, "differ significantly from the proposed Windfall injection operation." *Id.* at 10. The Region elaborated that scientific evidence indicates that induced seismic activity is known to be associated with (1) a fault being in a near-failure state of stress; (2) fluid having a path of communication to the fault; and (3) high volume and rate of injection over a long period of time. RTC at 10 (citing Nat'l Research Council, *Induced Seismicity Potential in Energy Technologies* 10-11 (2013)). As before, Petitioners fail to confront the Region's substantive explanation in the record, and instead offer general statements that "this proposed cite has all the potential for all the unknowns mentioned that could cause earthquakes." UIC Appeal No. 14-73, at 6 (Travis P. Smith).

The Region also thoroughly addressed commenters' concerns about induced seismicity due to the proposed well's proximity to geologic faults. The Region explained that neither the U.S. Geological Survey nor Pennsylvania's Bureau of Topographic and Geologic Survey have recorded "any seismic activity that has originated in Clearfield County." RTC at 8. In addition, the Region addressed Petitioners' concerns regarding brine intrusion and explained that, contrary to Petitioners' belief that the receiving formation is full of brine, a significant amount of gas and brine already has been removed from the proposed injection reservoir, making it a receptive formation for the disposal of fluid. *Id.* at 9-10, 15 (noting that the removal of natural gas and brine from the natural pore space lowers the reservoir pressure, creating "excellent disposal zones" that are good candidates for the

disposal of brine). The Region also detailed the various Permit terms designed to prevent overpressurization of the receiving formation that could otherwise lead to seismic activity. *See id.* at 9. For example, the Permit sets maximum surface and bottom-hole injection pressures to "ensure that, during operation, the injection will not propagate existing fractures or create new fractures in the formation," thus preventing fractures that could lead to fluid reaching known or unknown faults. *Id.* Finally, the Region meticulously distinguished various seismic events that Petitioners raised in their comments and explained how the conditions present during recent seismic events in Ohio, Texas, West Virginia, Oklahoma, and Arkansas "differ significantly from the proposed Windfall injection operation." *Id.* at 10.

Petitioners cannot demonstrate that review of the Region's technical determinations regarding induced seismic activity is warranted without providing more than general statements of disagreement with the Region's conclusions. *See Beeland Group*, 14 E.A.D. at 200. Thus, the Board denies review of the seismicity issue.

D. *Comprehensive Monitoring*

Several Petitioners argue that the Permit does not provide a robust monitoring program for the proposed well. *See, e.g.*, UIC Appeal No. 14-74, at 3 (Daniel J. & Cindy J. Crytser).[27] In addition, Petitioners assert that the "Windfall injection well should have monitoring wells" to protect "freshwater aquifers." UIC Appeal No. 14-187, at 7 (Marianne Atkinson); *see also* UIC Appeal No. 14-74, at 3 (Daniel J. & Cindy J. Crytser) (requesting "monitoring of other gas

[27] The following petitions also raise this issue: 14-73, at 3-4, 9 (Travis P. Smith); 14-80, at 3, 5 (Brady Township Supervisors); 14-86, at 2 (Leslie Swope); 14-87, at 3, 9 (Barb Emmer); 14-88, at 3, 7 (Laurie Wayne); 14-89, at 2-3 (Ralph E. Hamby); 14-92, at 2 (Ethel Marshall); 14-93, at 2 (Robert Marshall); 14-94, at 3 (Vivian Marshall); 14-107, at 5 (Terry & Carole Lawson); 14-108, at 6 (Loretta Slattery); 14-174, at 3, 4 (Darlene Marshall); 14-175, at 4, 10 (Duane Marshall); 14-176, at 5 (Nancy Moore); 14-178, at 3 (Randall R. Baird); 14-179, at 2 (City of DuBois); 14-180, at 2 (Diane Bernardo); 14-187, at 7-8 (Marianne Atkinson); and 14-189, at 1-2 (Rep. Matt Gabler).

wells" and suggesting an existing gas well that is not plugged could be used). For the reasons set forth below, the Board denies review of this issue.

The UIC regulations set forth the monitoring requirements for Class II injection wells. 40 C.F.R. § 146.23(b). The regulations require, at a minimum, monitoring of injected fluid at regular intervals; weekly monitoring of injection pressure, flow rate, and cumulative volume; and mechanical integrity testing once every five years. *Id.*

The Permit sets forth monitoring requirements for the proposed well that demonstrate the Region included more stringent monitoring requirements than the UIC regulations require. *See* Permit at 7-8, pt. II.C. For example, the Permit requires injection pressure, flow rate, and cumulative volume in the well to be monitored continuously, compared to the regulations which only require weekly monitoring. *Compare id.* at 7, pt. II.C.2, *with* 40 C.F.R. § 146.23(b); *cf.* 40 C.F.R. § 146.13(b)(2) (requiring continuous monitoring of injection pressure, flow rate, and volume for Class I wells). Although it is not a regulatory requirement for Class II wells, the Permit also requires continuous monitoring of the annular pressure in the well. Permit at 7, pt. II.C.2; *cf.* 40 C.F.R. § 146.13(b)(2) (requiring continuous monitoring of annular pressure for Class I wells). In addition, the Permit requires mechanical integrity testing every two years, whereas the regulations require such testing every five years. *Compare* Permit at 8, pt. II.C.6, *with* 40 C.F.R. § 146.23(b)(3). Further, the Permit requires the injected fluid to be sampled at the initiation of injection operations and annually thereafter, with sampling required from the initial loads received from each disposal customer and from each site. Permit at 7, pt. II.C.3-.4. In contrast, the regulations require only that "monthly records of injected fluids, and any major changes in characteristics or sources of injected fluid," be included in an annual report to the Region. *See* 40 C.F.R. § 146.23(c)(1).

In addition to the monitoring requirements set forth in 40 C.F.R. § 146.23, the Region also included in the Permit an annual pressure fall-off test "to better characterize the injection reservoir." Permit at 7, pt. II.C.7. This annual test is not required by the regulations applicable

to Class II wells; it only is required in the regulations for Class I injection wells. *See* 40 C.F.R. § 146.13(d)(1). The Region stated that it included the pressure fall-off test to allow it to determine and monitor injection reservoir pressure and flow conditions in the reservoir during operation. RTC at 9 (noting that analyzing flow conditions can help to determine whether a "preferential flow pattern" exists and "whether that flow could be moving toward or coming into contact with the nearby faults").

Several Petitioners also point to a recent permit the Region issued to Seneca Resources Corporation, wherein the area of review contains no drinking water sources, but the permit requires monitoring wells. *See, e.g.*, UIC Appeal No. 14-178, at 3 (Randall R. Baird); *see also In re Seneca Resources Corp.*, UIC Appeal Nos. 14-01 through 14-03, slip op. at 6 (EAB May 29, 2014), 16 E.A.D. ___. Using this as a backdrop, these Petitioners challenge the Region's decision not to require monitoring wells for the proposed Windfall well given that there are 17 sources of drinking water located within the area of review.

In its Response to Comments, the Region explained that the UIC regulations do not require monitoring wells for Class II wells and clarified that, contrary to Petitioners' belief, monitoring wells do not monitor groundwater quality. *See* RTC at 17; Region's Response at 41. The Region stated that its decision to utilize monitoring wells in a UIC permit is based on whether the permittee operates other existing wells within or near the area of review that can be used to monitor changes in reservoir pressure. Region's Response at 41; *see also* RTC at 17. Unlike Seneca Resources Corporation, Windfall does not have access to another existing well within or near the area of review that penetrates the injection zone and could be used for monitoring. *See* RTC at 17; Region's Response at 41. A monitoring well only can measure an increase in reservoir pressure once the pressure has extended radially far enough from the wellbore to reach the monitoring well. In contrast, the Windfall Permit's required pressure fall-off test will detect changes in reservoir pressure at the wellbore, ostensibly providing more protection against reservoir pressure increases than a monitoring well can. Region's Response at 41; RTC at 17.

Petitioners have not confronted the Region's response to their comments on this issue, nor explained how the Region clearly erred or abused its discretion. In light of this, as well as the other protective measures the Region included in the Permit that exceed what is required by the UIC regulations, Petitioners have failed to demonstrate that the Region clearly erred when it established the monitoring terms in the Permit or decided not to require a monitoring well. Petitioners have not stated why the Permit's monitoring requirements are inadequate, and instead simply state that comprehensive monitoring must be required. *See, e.g.*, UIC Appeal No. 14-74, at 3 (Daniel J. & Cindy J. Crytser). Here, the Region went beyond the regulatory monitoring requirements for a Class II injection well. Accordingly, the Board finds that Petitioners' claims that the Permit's monitoring provisions are insufficient and fail as a matter of law and of fact.

E. *Financial Assurance for Well Plugging/Abandonment*

The UIC regulations impose financial requirements for plugging and abandonment of Class II wells. Applicants are required to submit a plan and "demonstrate and maintain financial responsibility and resources to close, plug, and abandon the underground injection operation in a manner prescribed by the [Region]." 40 C.F.R. § 144.52(a)(7) (financial responsibility); *See also id.* § 144.31(e)(10) (requiring that applicants for class II wells provide a plugging and abandonment plan); *id.* § 146.10 (containing requirements for plugging and abandoning Class I, II, III, IV, and V wells). The Windfall Permit specifies that the permittee "shall maintain financial responsibility and resources to close, plug, and abandon the underground injection well in accordance with 40 C.F.R. § 144.52(a)(7) in the amount of at least $30,000." Permit pt. III.D. The Permit states further that the Region "may require the permittee to submit a revised demonstration of Financial Responsibility if the [Region] has reason to believe that the original demonstration is no longer adequate to cover the costs of plugging and abandonment." *Id.*

Several Petitioners assert that $30,000 is insufficient to plug and abandon the injection well. Further, these Petitioners argue that the

Permit's financial assurance is insufficient because it does not include the cost of potential damages such as replacement of water supplies in the event of contamination.[28] *See, e.g.*, Appeal No. 14-74 (Daniel J. & Cindy J. Cryster) (calling for a "$1 million+ bond."). The Region responded to these concerns in its response to public comments. In particular, the Region stated, in part:

> Windfall submitted an estimate from an independent plugging contractor on the costs of plugging the well, as well as a $30,000 letter of credit with a standby trust agreement for the plugging and abandonment of the injection well. [The Region] reviewed and approved this submission. The estimated plugging costs for the Windfall injection well falls within the range of estimated costs for plugging other class II-D disposal wells in Pennsylvania. Those plugging estimates range from $10,000 to $75,000, with an average of approximately $32,000. The permit incorporates the requirement that Windfall maintain financial assurance in the amount of the estimate through a letter of credit. (*See* [Permit] Part III.D.). EPA can require the permittee to adjust the cost estimate and the financial assurance instrument as necessary. *See* 40 C.F.R. § 144.52.

RTC at 21. In an effort to demonstrate that the Region had underestimated the costs of plugging the proposed well, several commenters provided documentation relating to the costs of plugging Marcellus shale wells as well as Class I wells and Class II wells in Texas and California. *See* RTC at 21. In response, the Region stated "it is difficult to compare the plugging requirements of different types of wells

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[28] The following petitions raise one or both of these concerns: Appeal Nos. 14-73 (Travis P. Smith); 14-74 (Daniel J. & Cindy J. Cryster); 14-80 (Brady Township); 14-82 (Valerie J. Powers); 14-83 (Randall T. Powers); 14-86 (Leslie Swope);14-87 (Barb Emmer); 14-88 (Laurie Wayne); 14-94 (Vivian Marshall); 14-96 (Dawn Smith); 14-174 (Darlene Marshall); 14-175 (Duane Marshall); 14-176 (Nancy Moore); 14-186 (Wilson Fisher, Jr.).

in different types of geological settings." *Id.* The Region stated further that

> Marcellus shale wells typically have horizontal well bores that can exceed 5000 feet or more from the vertical section of the wellbore, making plugging of those wells significantly different than singular vertical wells. Hazardous waste Class I wells often require specialized cementing which is not necessary in Class II wells. Similarly, the geology, labor and material costs, the depth of the wells and regulatory requirements for plugging wells in Texas and California may not be comparable to those found in Pennsylvania.

Id. Regarding Petitioners' assertion that the Permit should require the applicant to commit additional funds for replacement of water supplies in the event that contamination results from the injection, the Region pointed out that the regulations do not require that the permit applicant provide a bond or monetary assurance to cover the costs of ground water remediation. *Id.* The Region stated, however, that "EPA does have emergency authority under the [SDWA] if endangerment to USDWs should result from injection activities. Section 1431 under the SDWA [42 U.S.C. § 300i] allows EPA to take action against a responsible party if the potential for endangerment exists. This action can include a requirement that the responsible party provide alternative drinking water to citizens affected by the endangerment." *Id.*

While several of the petitions express disagreement with the Region's responses, they fail to substantively confront these responses or adequately explain why the Region's determination was clearly erroneous or otherwise warrants Board review, nor have they demonstrated that the Region made a clear error of law or fact or abused its discretion in issuing this Permit. The Board therefore denies review on this issue. *See, e.g.*, *In re Pa. Gen. Energy Co.*, UIC Appeal Nos. 14-63 through 14-65, slip op. at 7 (EAB Aug. 21, 2014), 16 E.A.D. ___; *In re Seneca Resources Corp.*, UIC Appeal Nos. 14-01 through 14-03, slip op. at 7 (EAB May 29, 2014), 16 E.A.D. ___.

F. *Public Participation*

Several Petitioners argue that the opportunities for public participation, particularly at the public hearing, were not sufficient for interested parties to effectively participate in the Permit proceeding. These Petitioners state that residents attended the public hearing ready to submit "vital testimony" but, when the hearing ran late, "they had to leave before their turn was called." UIC Appeal No. 14-87, at 8 (Barb Emmer) (noting that older individuals "didn't feel they had the skill to write either").[29] Several Petitioners state that the procedures "aren't easy" and that "EAB procedures are discouraging to the general citizens."[30] *Id.* Finally, many Petitioners "request that further consideration be given to residents' concerns, especially since so many residents took the time to attend the public hearing." *Id.*; *see also* UIC Appeal No. 14-73, at 8 (Travis P. Smith).

Under EPA's regulations, the Region *must* hold a public hearing on a draft UIC permit if the Region finds there is a "significant degree of public interest" and, in its discretion, *may* also decide to hold a public hearing "if such a hearing might clarify one or more issues involved in the permit decision." 40 C.F.R. § 124.12(a). Thus, the regulations provide both a mandatory duty to hold a hearing in certain circumstances, and a discretionary option to hold a hearing should the permitting authority deem one appropriate. *In re Sierra Pac. Indus.*, PSD Appeal Nos. 13-01 through 13-04, slip op. at 18 (EAB July 18, 2013), 16 E.A.D. ___.

The Region held a public hearing on the proposed permit on December 12, 2012, which over 250 people attended, with twenty-nine people delivering oral comments. RTC at 23. The Region stated that,

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[29] The following petitions also raise this concern: Appeal Nos. 14-73, at 8 (Travis P. Smith); 14-88, at 7 (Laurie Wayne); 14-174, at 9 (Darlene Marshall); and 14-175, at 10 (Duane Marshall).

[30] One Petitioner stated that "[t]he filing deadline for this EAB appeal isn't considerate of the concerned residents." UIC Appeal No. 14-174, at 9 (Darlene Marshall).