BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In re:			
FutureGen Industrial Alliance, Inc.		UIC Appeal No(s):	14-68, 14-69, 14-70 & 14-71
UIC Permit Nos.:	IL-137-6A-001		
	IL-137-6A-002		
	IL-137-6A-003		
	IL-137-6A-004		

PERMITEE FUTUREGEN INDUSTRIAL ALLIANCE, INC.'S CONSOLIDATED RESPONSE TO PETITIONS FOR REVIEW

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INTRODUCTION

On August 29, 2014, the U.S. Environmental Protection Agency ("EPA") Region 5 ("Region") issued Underground Injection Control ("UIC") permits to the FutureGen Industrial Alliance, Inc. (the "Alliance") for four Class VI injection wells ("Permits"). This matter involves a consolidated petition for review of the Alliance's Permits, consisting of Petition Nos. 14-68, 14-69, 14-70, and 14-71 (collectively, "Petition"), filed by the Leinberger family and the Critchelow family (collectively, "Petitioners").

The Alliance is a non-profit membership organization created to benefit the public interest through scientific research, development, and demonstration of near-zero emissions coal technology. In its partnership with the U.S. Department of Energy ("DOE"), the Alliance will develop, construct, own, and operate the FutureGen 2.0 Project ("Project"), the world's first large-scale, near-zero emissions power plant using carbon capture and storage ("CCS") and oxy-combustion technologies. The Alliance files this consolidated response ("Response") to the petitions for review, challenging each of these Petitions on the grounds of failure to demonstrate that Board review is warranted.

STATUTORY AND REGULATORY FRAMEWORK

Section 124.19 of Title 40 of the Code of Federal Regulations ("C.F.R.") governs review of UIC permits. In determining whether to review a petition filed under 40 C.F.R. § 124.19(a), the Board has to meet certain threshold requirements. The Board will not review a permit unless the permit decision either is based on a clearly erroneous finding of fact or conclusion of law, or involves a matter of public policy or exercise of discretion that warrants review. 40 C.F.R. § 124.19(a);[1] Consolidated Permit Regulations: RCRA Hazardous Waste; SDWA Underground

[1] 40 C.F.R. § 124.19(a)(4) (2014) provides in pertinent part:

Injections Control; CWA National Pollutant Discharge Elimination Sys.; CWA Section 404 Dredge or Fill Programs; and CAA Prevention of Significant Deterioration, 45 Fed. Reg. 33,290, 33412 (May 19, 1980). To warrant the Board's consideration on the merits, Petitioners' substantive claims "must contain certain fundamental information." *In re Beckman Prod. Servs.*, 5 E.A.D. 10, 18 (EAB 1994); *accord In re Envotech, L.P.*, 6 E.A.D. 260, 267 (EAB 1996). First, Petitioners must identify specific permit conditions that they assert require review; and second, they must provide substantive evidence from the administrative record of the Region's permit proceedings that the conditions at issue warrant review. *In re Envotech*, 6 E.A.D. at 268 . Merely restating grievances that were fully reviewed by the Region and addressed in timely responses to comments does not meet the standards set forth in 40 C.F.R. § 124.19(a)(4), particularly where petitioners fail to offer valid reasons why the Region's responses were clearly erroneous or otherwise warrant review.

The Board also has announced previously that it will not rule on matters that are outside the permit process. *See, e.g.*, *In re Federated Oil & Gas of Traverse City*, 6 E.A.D. 722, 725-26 (EAB 1997). The Board has held that "a permit appeal proceeding is not the appropriate forum in which to challenge either the validity of Agency regulations or the policy judgments that

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> (4) *Petition Contents.* (i) In addition to meeting the requirements in paragraph (d), a petition for review must identify the contested permit condition or other specific challenge to the permit decision and clearly set forth, with legal and factual support, petitioner's contentions for why the permit decision should be reviewed. The petition must demonstrate that each challenge to the permit decision is based on: (A) A finding of fact or conclusion of law that is clearly erroneous, or (B) An exercise of discretion or an important public policy consideration that the Environmental Appeals Board should, in its discretion, review.
>
> (ii) Petitioners must demonstrate, by providing specific citation to the administrative record, including the document name and page number, that each issue being raised in the petition was raised during the public comment period (including any public hearing) to the extent required by §124.13. . . . Additionally, if the petition raises an issue that the Regional Administrator addressed in the response to comments document issued pursuant to § 124.17, then petitioner must provide a citation to the relevant comment and response and explain why the Regional Administrator's response to the comment was clearly erroneous or otherwise warrants review.

underlie them." *In re City of Port St. Joe and Florida Coast Paper Co.*, 7 E.A.D. 275, 286 (EAB 1997); *see also In re Tondu Energy Co.*, 9 E.A.D. 710, 716 n.10 (2001). Rather, as the Board has stated, the Safe Drinking Water Act and UIC regulations establish "the *only* criteria that EPA may use in deciding whether to grant or deny an application for a UIC permit." *In re Envotech*, 6 E.A.D. at 264. In this instance, the Petitioners must demonstrate that the conditions of the Permits issued by the Region are insufficient to comply with applicable federal regulations governing Class VI UIC injection wells.

Congress enacted the Safe Drinking Water Act, as amended ("SDWA"), 42 U.S.C §§ 300f, *et seq.* (2012), to protect the nation's drinking water sources from contamination. 42 U.S.C. § 300h.[2] Part C of the SDWA establishes a regulatory program "to prevent underground injection which endangers drinking water sources." 42 U.S.C. § 300h(b)(1). The SDWA directs EPA to promulgate minimum requirements for state UIC programs and requires states seeking UIC program authority to meet those minimum requirements. 42 U.S.C. § 300h-1. In states without an approved UIC program, EPA implements the federal UIC program. Announcement of Federal Underground Injection Control (UIC) Class VI Program for Carbon Dioxide (CO_2) Geologic Sequestration (GS) Wells, 76 Fed. Reg. 56982, 56983 (Sept. 15, 2011). On September 7, 2011, EPA's regulations governing Class VI UIC wells became effective. *Id*. EPA has not authorized the State of Illinois ("Illinois") to administer the Class VI UIC program. *Id.*; *see also* 40 C.F.R. § 147.700. As such, Class VI wells in Illinois are regulated by the Region.

The Region implements the UIC program in accordance with 40 C.F.R. parts 144-148. Part 144 establishes the general regulatory framework, including permit requirements, for EPA-

[2] The SDWA and its implementing regulations prohibit any unauthorized underground injection. SDWA § 1421(b) (codified at 42 U.S.C. § 300h(b)); *see also* 40 C.F.R. § 144.11. Except where a well is authorized by rule (which is not the case here), a new underground injection well may not be constructed unless a permit is obtained. 40 C.F.R. § 144.11

administered UIC programs. 40 C.F.R. §§ 144.1, *et seq*. Subpart H of part 146 provides the criteria and standards applicable to UIC Class VI wells. 40 C.F.R. §§ 146.81 to 146.95. These regulations specifically apply to any underground injection well used to inject carbon dioxide (CO_2) in supercritical form into the deep subsurface for geologic sequestration. 40 C.F.R. § 146.81(b). To obtain a UIC Class VI well permit, an applicant must satisfy permitting requirements contained in these regulations.

STANDARD OF REVIEW

This Board must decline review of the Petition unless it finds that the Petition demonstrates that a permit condition was based upon a finding of fact or conclusion of law that is clearly erroneous, or represents an important matter of public policy that warrants the Board's discretionary review. 40 C.F.R. § 124.19(a)(4). The Board's discretion to grant review is guided by the preamble to the Part 124 rules, which states that the Board's power of review "should only be sparingly exercised" and that "most permit conditions should be finally determined at the Regional level." Consolidated Permit Regulations, 45 Fed. Reg. at 33,412; *accord, In re Envtl. Disposal Sys., Inc.*, 12 E.A.D. 254, 263-64 (EAB 2005); *In re NE Hub Partners, L.P.*, 7 E.A.D. 561, 567 (EAB 1998) (citing *In re Federated Oil & Gas of Traverse City*, 6 E.A.D. at 725).

In each instance, the evidentiary burden rests with the petitioner to demonstrate that Board review is warranted. *In re Envtl. Disposal Sys.*, 12 E.A.D. at 264. To meet its burden, a petitioner must challenge the legality of each permit condition with specificity and provide sufficient evidence that the permit issuer's basis for each such condition is clearly erroneous or otherwise warrants review by the Board. 40 C.F.R. § 124.19(a)(4); *see also In re Envtl. Disposal Sys.*, 12 E.A.D. at 264; *In re NE Hub Partners*, 7 E.A.D. at 567. On appeal, a petitioner may not simply repeat objections it raised during the public comment period; rather, it must "demonstrate

why the permit issuer's response to those objections is clearly erroneous." *In re Dominion Energy Brayton Point, LLC*, 12 E.A.D. 490, 509 (EAB 2006), *appeal dismissed*, 443 F.3d 12 (1st Cir. 2006) (emphasis added).

The clearly erroneous standard sets a high bar for review. In addressing this standard in another context, the U.S. Supreme Court articulated that:

> This standard plainly does not entitle a reviewing court to reverse the finding of the trier of fact simply because it is convinced that it would have decided the case differently. . . . If the district court's account of the evidence is plausible in light of the record viewed in its entirety, the court of appeals may not reverse it even though convinced that had it been sitting as the trier of fact, it would have weighed the evidence differently. Where there are two permissible views of the evidence, the factfinder's choice between them cannot be clearly erroneous.

Anderson v. City of Bessemer, N.C., 470 U.S. 564, 573-74 (1985) (emphasis added); *see also In re Peabody Western Coal Co.*, Appeal Nos. 10-15 & 10-16, slip op. at 7-8 (EAB Aug. 31, 2011 (citing *In re City of Pittsfield*, NPDES Appeal No. 08-19 (EAB Mar. 4, 2009) (Order Denying Review), *aff'd*, 614 F.3d 7, 11-13 (1st Cir. 2010) (noting that the clearly erroneous standard requires a magnified degree of deference, particularly when an agency interprets its own regulations). In its review of permit appeals, the Board has emphasized the specificity required to meet this high standard. The Board has stated, for example, that "mere allegations of error are not sufficient to support review of a permit condition." *In re City of Attleboro, MA Dep't of Wastewater*, 14 E.A.D. 398, 421-22 (EAB 2009) (citing *In re Moscow*, 10 E.A.D. 135, 172 (EAB 2001) (additional citations omitted)).

Moreover, the Board has stated that a petitioner's burden is even more difficult to meet when a petition challenges a permit condition's technical foundation. To be clear, the Board has stated, "when issues raised on appeal challenge a Region's technical judgments, clear error or a reviewable exercise of discretion is not established simply because petitioners document a difference of opinion or an alternative theory regarding a technical matter." *In re NE Hub*

Partners, 7 E.A.D. at 567-68; *accord In re Envotech*, 6 E.A.D. at 284 ("absent compelling circumstances, the Board will defer to a Region's determination of issues that depend heavily upon the Region's technical expertise and experience").

FACTUAL AND PROCEDURAL BACKGROUND

On March 15, 2013, the Alliance submitted four applications to the Region to construct, own, and operate four Class VI UIC wells to allow the Alliance to inject captured excess carbon dioxide (CO_2) emitted by the Project underground for permanent storage using CCS technology. The permit applications were accompanied by detailed supporting documentation applicable to all four of the proposed Class VI UIC wells. The Permits are the first Class VI injection well permits issued by any EPA region under EPA's UIC Program, as authorized by Part C of the SDWA, 42 U.S.C. §§ 300f, *et seq*. The permitted UIC wells will be located in Morgan County, Illinois, approximately 11 miles northeast of the City of Jacksonville.

In its applications for Permits, which include substantial supporting documentation,[3] the Alliance proposed to inject approximately 22 million metric tons of CO_2 produced by the Project into the Mt. Simon Sandstone formation over a period of 20 years. Revised Underground Injection Control Permit Applications for FutureGen 2.0 at p. iii, Attach. 1, (AR # 2). As part of its technical site selection process for the four UIC wells, the Alliance, in consultation with the Region program director, determined that the lowermost designated underground source of drinking water ("USDWs") was no more than 2,000 feet below ground surface ("fbgs"). *Id*. at p. v, Fig. S.2. Based on a detailed survey of all permitted water wells within a 25 square mile

[3] The Alliance submitted, with its applications for Permits forms, detailed supporting documentation, which is found in the record. *See* Revised Underground Injection Control Permit Applications for FutureGen 2.0, Attach. 1 (AR # 2) (in the interest of efficiency, the Alliance has only included relevant portions of the applications for Permits and supporting documents as attachments hereto). For purposes of this Response, the Alliance refers to this supporting documentation, as well as the application forms themselves, as the "applications" for Permits, even though the actual application forms are merely form documents with little detailed information.

region encompassing the injection site, most current water wells are completed in the shallow surficial aquifer and do not extend more than approximately 100 fbgs. *Id*. at pp. vii-viii. Whereas, the Alliance's applications for Permits demonstrates that the injection zone for the CO_2, which determines the depth of the four injection wells, is between 3,700 and 4,500 fbgs, approximately 1,700 to 2,500 feet below the lowermost designated USDW. *Id*. at p. v, Fig. S.2.

After submission of the applications for Permits, the Region conducted a technical and completeness review of the applications for Permits and directed the Alliance to provide additional information in conformance with EPA's Class VI UIC well regulations. *See, e.g.*, Requests for Additional Information and Informal Informational Requests #1-5 (AR #'s 67, 68, 105, 106, 108), Attach. 5, 6, 8, 9, and 10,. On March 31, 2014, the Region published draft Permits for review and established a 45-day public comment period. *See* Public Notice and Public Comment Period of FutureGen Industrial Alliance, Inc. Class VI [UIC] Draft Permits in Morgan County, Illinois, Attach. 31 (AR # 543). On May 7, 2014, the Region held a public hearing and accepted additional public comment on the draft Permits. Revised Final Transcripts – Public Hearing of May 7, 2014, Attach. 28 (AR # 506). On August 29, 2014, having completed review and additional technical assessments based upon public comments, the Region issued final Permits to the Alliance. U.S. EPA, [UIC] Permits, Class VI, Attach. 34 (AR # 594). On October 3, 2014, the Petitioners filed their Petition challenging the Permits.

RESPONSE TO PETITION FOR REVIEW

Petitioners identify specific conditions of the Permits (each of the four Alliance UIC Permits contain identical conditions) they claim warrant further review. But Petitioners fail to demonstrate with factual and legal support that any condition or issue being raised on appeal warrants review by the Board, including an explanation as to why the Region's response to

comments on the issues raised by Petitioners regarding the Permits, was clearly erroneous or otherwise warrants review. *See* 40 C.F.R. § 124.19(a)(4).

Contrary to Petitioners' allegations, the contested conditions of the Permits and the Region's findings in support of those conditions satisfy the requirements of federal Class VI well regulations. The administrative record in this matter supports the Region's decision to issue the Permits and demonstrates fulfillment of its obligation to consider carefully and respond appropriately to prior comments raised by the Petitioners during the public comment period. Because Petitioners allege deficiencies in the Region's technical evaluation of the applications for Permits and supporting data, the Region's technical review and conclusions merit the appropriate deference from the Board and, therefore, the Board should deny the Petition absent a clear showing that such decisions lack sufficient legal and technical foundation.

I. Petitioners fail to meet their burden to demonstrate the Region's decisions on the Permits are clearly erroneous.

The clearly erroneous standard carries a high burden and Petitioners must meet that burden to warrant review. *Anderson v. City of Bessemer*, 470 U.S. at 573-74. As long as an agency decision is plausible in light of the evidence in the agency's record, an appellate body may not overturn that decision, even if it would have decided the issues differently. *Id*. Particularly when technical matters are at issue, as they are in this case, the Board has indicated it will give due deference to the agency's decisions. *In re NE Hub Partners*, 7 E.A.D. at 567-68 ("clear error or a reviewable exercise of discretion is not established simply because petitioners document a difference of opinion or an alternative theory regarding a technical matter."); *accord In re Envotech*, 6 E.A.D. at 284 ("absent compelling circumstances, the Board will defer to a Region's determination of the issues that depend heavily upon the Region's technical expertise and experience.")

A. Petitioners failed to show conditions G and M of the Permits are technically or legally deficient and warrant further review.

The Petitioners challenge Conditions G and M of the Permits on the grounds that the Alliance's technical model delineating the Area of Review[4] ("AoR") and plume dimensions was "inadequate and inaccurate" in many respects. Petition at p. 10. As support, Petitioners rely on an expert report entitled, "Supplemental Expert Report of Gregory Schnaar," dated September 29, 2014 ("Supplemental Report"). As further described below, the Supplemental Report is not properly before the Board because it is not part of the administrative record, Petitioners have not submitted a motion with the Board to supplement the administrative record or put forth any compelling circumstances justifying consideration of the Supplemental Report. The Board and court precedent disfavor entry of extra-record documents absent compelling circumstances. *See, e.g.*, *In re Gen. Motors Corp., Inland Fisher Guide Division*, 5 E.A.D. 400, 405 (EAB 1994); *In re Chevron Chem. Co.*, 4 E.A.D. 18, 20-21 (EAB 1992); *Walter O. Boswell Mem'l Hosp. v. Heckler*, 749 F.2d 788, 792 (D.C. Cir. 1984) ("To review more than the information before the [agency] at the time [of the] decision risks . . . requiring administrators to be prescient or allowing them to take advantage of post hoc rationalizations."); *accord Am. Petroleum Inst. v. Costle*, 609 F.2d 20, 23 (D.C. Cir. 1979).

Notwithstanding Petitioners' failure to include the Supplemental Report in the formal administrative record, the Supplemental Report contains significant factual errors and deficiencies, and its probative value in this proceeding is questionable at best. For example, the Supplemental Report suggests that the sensitivity analysis the Region conducted on the Alliance model was too limited and did not consider 100% of the injected supercritical CO_2 mass in calculating the full potential extent of the CO_2 plume. Petition at p. 11. Further, the

[4] EPA's UIC regulations define the Area of Review as "the region surrounding the geologic sequestration project where USDWs may be endangered by the injection activity." 40 C.F.R. § 146.84(a).

Supplemental Report is largely identical to comments already in the record and considered by the Region, further emphasizing its lack of probative value in this proceeding. Petitioners' Comments on FutureGen's UIC Draft Permits at Ex. 2, Attach. 27 (AR # 497).

Petitioners also challenge the sufficiency of the Region's technical review of the Alliance plume model and allege the Region accepted the model without a thorough and independent review. Petition at p. 12. These arguments fail to satisfy the clearly erroneous standard for a number of reasons. First, the Region required that AoR-related conditions of the Permits exceed minimum Class VI well regulations. Federal Class VI well regulations compel a prospective well owner or operator to "prepare, maintain, and comply with a plan to delineate the area of review for a proposed geologic sequestration project, periodically reevaluate the delineation, and perform corrective action." 40 C.F.R. § 146.84(b). In assessing the probable AoR, the applicant must "[p]redict, using existing site characterization, monitoring and operational data, and computational modeling, the projected lateral and vertical migration of the carbon dioxide plume and formation fluids in the subsurface." *Id.* § 146.84(c)(1). The regulations specify that the technical model must be based on relevant geological data; must characterize the injection, confining, and additional zones; must include consideration of injection pressures, rates, and total volumes; and must consider potential migration pathways. *Id.* § 146.84(c)(1)(i)-(iii).

The Region's Response to Comments demonstrates that the agency conducted the appropriate analyses to satisfy themselves that the Alliance had met these requirements. *See* Response to Comments at p. 29, Attach. 29 (AR # 511) ("FutureGen submitted—and [the Region] reviewed—all of the information required in the Class VI rule to demonstrate that the site meets the geologic siting, AoR, construction, and financial responsibility requirements for injection of CO_2 that does not endanger USDWs.") Contrary to Petitioners' allegations, the

Class VI well regulations do not require the Region to perform a sensitivity analysis on the AoR model, nor do the regulations require that the simulated CO_2 plume presented in the applications for Permits include 100% of the supercritical CO_2 mass. The regulations do require the AoR model to demonstrate and ensure USDWs are protected from injection activity. 40 C.F.R. § 146.84(a). The Alliance model satisfies this standard. *See* Attach. 1 § 3.0 (AR # 2). Petitioners provide no legal or regulatory basis to support their claim that the AoR model must consider 100% of the supercritical CO_2 mass and undergo a sensitivity analysis because such requirements do not exist.

The Region, however, did perform an independent sensitivity analysis of the Alliance AoR model to better "understand the effects of certain parameters" on the model. In doing so, the Region used conservative input values for the irreducible water saturation parameter to evaluate maximum risk scenarios for that particular parameter. Attach. 29 at p. 66 (AR # 511) ("[The Region], in its evaluation of the AoR modeling submitted for these [P]ermits, considered the impact of residual aqueous saturation values on the predicted plume and pressure front developments."). As the Region's comments reflect, the sensitivity analysis of the Alliance model was to ensure the model's accuracy by varying the input parameters and assessing the resulting data. *Id*. Contrary to Petitioners' and their expert's view, the Region did not intend its limited sensitivity analysis to ensure a conservative model at this phase in the Project permitting process. Rather, the Region intended to test the reasonableness of the Alliance's technical assumptions, verify that parameter values were input to the model correctly, and assess the reproducibility of the modeling results. The administrative record shows the Region carefully considered the technical sufficiency of the Alliance AoR model and concluded the model addressed the projected extent of the CO_2 mass, and, therefore met applicable requirements. *See*,

e.g., Request for Additional Information Regarding FutureGen 2.0 Wells, Attach. 6 (AR # 68) (requesting additional information on residual aqueous saturation values used in the Alliance's AoR model); FutureGen Response to Second Request for Additional Information at p. 4, Attach. 7 (AR # 90) (responding to request for additional information regarding aqueous saturation values in the AoR model); Memo to File, Attach. 32 (AR # 565) (documenting a phone conversation with the Alliance's technical team that confirmed "all of the CO_2 was modeled," including the supercritical CO_2 and dissolved phase CO_2).

Again relying upon the extra-record Supplemental Report, Petitioners allege the CO_2 plume size in the Alliance AoR model is materially understated. Petition at pp. 11-12. Notwithstanding the Petitioners' reliance on this extra-record report, their technical arguments ignore certain material facts. By way of example, the 0.4 residual water saturation value the Supplemental Report characterizes as the appropriately "conservative input parameter," is taken from scientific literature that suggests *a range* of appropriate values from 0.2 to 0.4 for *all rocks* in the area of the Project, but does not accurately reflect the appropriate values in the scientific literature for the Mount Simon Sandstone more specifically. *See* Attach. 7 at p. 4 (AR # 90). Instead, the Alliance's technical team reviewed this range of values with regard to Mt. Simon Sandstone and it was determined that values greater than 0.3 were not supported by the literature cited. *See id.* ("It was already mentioned that the source of the . . . values used by Zhou et al. (2010) was not provided."). The Alliance, therefore, determined reasonably conservative values for use in its AoR model and considered such values the best available data at the time the applications were submitted. The Alliance believes this approach produced a more reliable model than a model based upon values found in the literature considered by Petitioners' expert

report. *See id.* ("An additional reason for using this approach is the considerable uncertainty in [residual water saturation] values for Mt. Simon rock in the literature.").

To the extent the Board allows the extra-record Supplemental Report to be included in the administrative record, the Alliance notes that its technical team previously questioned the relevance and reliability of the scientific reports cited by Petitioners' expert, including the Zhou and Bandilla reports cited in the Supplemental Report. Petition Supplemental Report at p. 6; *see also* Attach. 7 (AR # 90). In response to an inquiry from the Region, the Alliance stated that the studies in the Zhou and Bandilla reports lacked scientific foundation. Attach. 7 at p. 4 (AR # 90) ("It was already mentioned that the source of the . . . values used by Zhou et al. (2010) was not provided. Bandilla et al. (2012) states that a value of 0.3 was assumed 'lacking detailed data' (Page 45)."). It is this literature that Petitioners and their expert now rely upon in an effort to support an enlarged plume area based on 0.2 to 0.4 residual water saturation values.

Petitioners use of a report that is not of record, and generated after the Region prepared its response to comments and issued the Permits, to support its arguments that input parameters used in the Alliance model were improper and produced an inaccurate plume size, are insufficient to overturn the Region's final determination that the AoR model meets applicable requirements. However, until the Alliance updates its AoR model using site-specific data collected from the actual injection location for the Class VI wells, any sensitivity analysis is based on unknown assumptions. As a result, although the Alliance AoR model is affected by an arbitrary change of inputs by Petitioners, the values used by the Alliance were reasonably conservative and based on the most relevant data available at the time the applications for Permits were submitted. The Region's acceptance of the Alliance's AoR model, and the

conditions of the Permits based on this model, are adequately and definitively supported by the administrative record.

In fact, Conditions G and M of the Permits, as issued, are more stringent than applicable minimum requirements for Class VI wells, and reflect the conservative approach the Alliance has followed in seeking permits for the Project. For example, the Class VI well regulations require the AoR to be reviewed not less than once every five years. 40 C.F.R. § 146.84(e). The Alliance proposed, and the Permits require, review and update of the AoR plume every year for the first five years after injection commences. Attach. 34 Permits Condition G (referencing Attachment B: Area of Review and Corrective Action Plan at pp. B43-45) (AR # 594). Similarly, the Permits require that, under certain circumstances, the AoR must be reviewed and updated. *Id*. at Condition G.2; *see also* E-mail re: Addition of AoR "Triggers" and Pressure Monitoring Well, Attach. 17 (AR # 213) (noting circumstances under which AoR would be reviewed and updated, as well as the Alliance's strategy of using an "adaptive" approach to monitoring in the AoR). This would likely occur when actual data collected is different than the data relied upon in the AoR model, assuring that changes to the plume size assumptions will be collected on a rolling basis and updated in the AoR model. *Id*. In imposing Conditions G and M on the Permits, the Region has ensured the reliability and overall accuracy of the AoR model. Petitioners' efforts to show otherwise fall short of their burden to demonstrate the Region's decision to issue conditions on the Permits, based upon the Alliance AoR model, was clearly erroneous.

B. Petitioners have not met their burden to demonstrate conditions in the Permits regarding the number and placement of monitoring wells were based on clearly erroneous findings of fact or conclusions of law.

Petitioners have no evidence to controvert the Alliance's justification and placement of monitoring wells, as established in the record. Petitioners challenge Condition M of the Permits contending monitoring well number, type, and proposed locations do not satisfy EPA

regulations. Petition at pp. 4, 14. Petitioners assert the Region provided no discussion or justification on the record for monitoring well locations or for the number and placement of these wells. *Id*. at pp. 14-15.

As does its AoR model, the Alliance testing and monitoring network exceeds the minimum Class VI well regulations. Applicable regulations require:

> Periodic monitoring of the ground water quality and geochemical changes above the confining zone(s) . . . including:
>
> > (1) The location and number of monitoring wells based on specific information about the geologic sequestration project, including injection rate and volume, geology, the presence of artificial penetrations, and other factors; and
> >
> > (2) The monitoring frequency and spatial distribution of monitoring wells based on baseline geochemical data that has been collected under §146.82(a)(6) and on any modeling results in the area of review evaluation required by § 146.84(c).

40 C.F.R. § 146.90(d) (emphasis added). To ensure Alliance compliance with these regulations, the Region considered detailed data submitted by the Alliance in the supporting documentation for its applications for Permits and "evaluat[ed] the spatial distribution and frequency of sampling at the monitoring wells." Attach. 29 (AR # 511); *see also* Attach. 1 § 5.0 (AR # 2). Based on its review of the technical data, the Region concluded "[t]he proposed system of monitoring wells complies with 40 C.F.R. § 146.90(d)." Attach. 29 at p. 170 (AR # 511).

The monitoring network, as proposed, also conforms to guidance cited by Petitioners. Petitioners point to EPA guidance that suggests monitoring wells should be sited based on modeling results, projected plume migration, dip direction, and presence of potential leakage pathways. Petition at p. 14 (citing *UIC Program Class VI Well Testing and Monitoring Guidance* at p. 56, Attach. 26 (AR # 441)). Documents in the record indicate that the Alliance's monitoring well network is based on careful consideration of these factors. *See, e.g.*, FutureGen

Response to Informal Request # 3 at App. B, p. 8, Attach. 2 (AR # 7) (describing the types and locations of monitoring wells based on the mass of CO_2 and detection of potential leakage pathways); FutureGen Testing and Monitoring Table, Attach. 3 (AR # 10) (containing an Excel spreadsheet with the Alliance's testing and monitoring strategy); Informal Request # 3, Attach. 8 (AR # 105) (requesting additional information on monitoring wells); FutureGen's Response to Informal Request # 3, Attach. 12 (AR # 113) (providing responses to the Region's request for additional information on monitoring wells); Testing and Monitoring Plan, Attach. 18 (AR # 216) (containing the final version of the testing and monitoring plan before final approval by the Region).

Additionally, the Alliance's supporting documentation submitted with its applications for Permits notes that,

> The conceptual monitoring network design . . . is based on the Alliance's current understanding of the site conceptual model and predictive simulations of injected CO_2 fate and transport. . . . The selected monitoring network layout and well designs have been informed by site-specific characterization data collected from the stratigraphic well at the Morgan County CO_2 storage site, and consider structural dip, expected ambient flow conditions, and the potential for heterogeneities or horizontal/vertical anisotropy within the injection zone and overburden materials.

See Attach. 1 § 5.1 (AR # 2) (emphasis added). As these administrative record documents evidence, the Alliance's model considered the key factors suggested by EPA's guidance in establishing the proposed number, type, and location of the wells in the monitoring network.

Furthermore, this same guidance acknowledges that EPA Regions have substantial discretion in determining the scope, placement, and extent of the monitoring well network. *See* Attach. 26 at p. 56 (AR # 441) ("The objective of these recommended guidelines is to inform the development of a monitoring network with a sufficient yet minimal number of monitoring wells that are strategically located to provide site monitoring that meets the requirements at 40 C.F.R.

§ 146.90(d)(1) and (2)") (emphasis added). The extent of the monitoring well network is also dependent upon the delineation of the AoR. *Id*. As noted above, the Alliance's modeled AoR was appropriately determined using the most representative, available data. At this stage in the process, based upon all the technical information available, the Region concluded the proposed monitoring network was sufficient to ensure protection of USDWs. The Region has indicated that once the Alliance's experts can input site-specific data into the AoR model, the AoR model will inform final configuration of the monitoring well network. Attach. 34, Permits Condition G.2 (referencing the AoR Plan at pp. B43-45) (AR # 594).

As part of an ongoing "early-detection" strategy to protect USDWs, the Alliance proposed an adaptive monitoring approach that includes an additional monitoring well to be constructed outside the projected CO_2 plume boundaries. *See* Attach. 34, Permits Condition M.1 (referencing Attachment C: Testing and Monitoring Plan at p. C2) (AR # 594). The purpose of the additional well is to "provide an intermediate-field pressure monitoring capability that would benefit leak detection capabilities." *Id*. at pp. C2-3. Further, as part of its appropriately conservative monitoring strategy, the Alliance has committed to monitor the plume extent through both direct and indirect pressure front monitoring and tracking, which includes monitoring over a much larger area than just the AoR. *See* E-mail re: Question About Pressure Front Tracking, Attach. 4 (AR # 14); Attach. 34, Permits Condition M.8 and Attachment C at pp. C28-C30 (AR # 594).

The Alliance's base monitoring network, coupled with the adaptive monitoring approach and additional monitoring well, exceeds the minimum required by EPA's regulations. The Region's acceptance of the Alliance's monitoring network plan is appropriate under federal

regulations and guidance governing these matters. Therefore, Petitioners' assertions otherwise are without legal or regulatory merit and the Board should reject them.

C. Petitioners cannot show that conditions of the Permits based on the adequacy of area well identification were clearly erroneous.

i. The Alliance's well identification process fully complies with EPA's Class VI well regulations.

The Petitioners have failed to demonstrate any legal or regulatory deficiencies in the Alliance's well identification process. Petitioners argue that Condition G of the Permits was based on inaccurate public well records. Petition at p. 4. Specifically, the Petition alleges that Illinois' records for private wells are inaccurate and, therefore, unreliable. As such, Petitioners argue that the well search conducted by the Alliance and Region should include more than a review of state electronic databases. *Id*. at p. 16. Petitioners also claim that the Alliance's sole reliance on a state records search does not comply with EPA guidance. *Id*. Petitioners point to private water wells located on their respective properties that are not reflected in the Illinois' databases. *Id*. at pp. 17-21. Whether permits were ever issued for these wells is unclear, but, as is explained more fully below, their existence is not evidence that the Alliance and the Region failed to identify adequately each and every well within the AoR. The Petition further states that the Region failed to investigate alleged impacts to a private well on Petitioner Critchelow's property, which Petitioners claim was impacted by drilling activities conducted by the Alliance. *Id*. at pp. 19-21. Neither of these allegations serves as a basis for further review.

The Region's decision to accept the Alliance's well identification process and review of state records accords with EPA regulations. Petitioners suggest, however, that regulations require identification of *all* wells, regardless of depth or location. Petition at pp. 15-17. Instead, the regulations require identification of all wells "that require corrective action." This includes "all penetrations, including active and abandoned wells and underground mines, in the [AoR]

that may penetrate the confining zone(s)." 40 C.F.R. § 146.84(c)(2) (emphasis added). The regulations afford the Region and the permit applicant significant discretion to use any "method[] approved by the [Regional] Director" (*id.*) and to rely on state databases and public records when completing the review of wells within the AoR. *Id.* § 146.82(a)(2) ("Only information of public record is required to be included on this map[.]").

The Region's decision to allow reliance on state well databases to identify wells "that may penetrate the confining zone" was within its discretion and consistent with applicable federal regulations. Petitioners do not allege that wells on their properties are deep enough to penetrate the confining zone. As noted by the Alliance in its applications for Permits, the primary confining zone is at least 3,400 fbgs and the secondary confining zone is at least 3,000 fbgs. Attach. 1 at p. vi, Fig. S.3 (AR # 2). Even assuming the Illinois databases do not contain 100% of private and unpermitted wells, as Petitioners claim, these databases are very likely to identify those deep wells that the Alliance must account for in project development.

Another category of wells that may not appear in the state databases include oil, gas, or mineral exploration sites. However, these activities are unlikely to reach the confining zone because the oil and gas reserves in this area are much shallower than the lowermost federal USDW, which is more than 1,700 fbgs. Attach. 1 at pp. 2.49–2.50 (AR # 2). Based upon a detailed review of the geology at the Project site, the Region properly concluded "abandoned oil-gas wells, even with no evaluation of well construction and well cement, are unlikely to serve as conduits for fluid movement to the surface because they do not intersect the injection zone, CO_2 plume, or confining zone for the project." Attach. 29 at p. 175 (AR # 511); *see also* E-mail re: Last Transmittal of AoR Information and Request, Attach. 19 (AR # 241) and E-mail re: Last Transmittal of AoR Information, Attach. 20 (AR # 244) (providing the Region with detailed

information on the information required by EPA's regulations to be identified in the AoR). As such, Petitioners' claim that the Region gave inadequate consideration to methods used by the Alliance in well identification is neither supported by the record, nor does it raise legal or regulatory issues regarding Condition G of the Permits, and the well identification process underlying it, to warrant further Region or Board review.

ii. Petitioners provide no technical evidence that the Alliance drilling activities impacted the Critchelow well.

The Petitioners' claim that the Alliance's drilling activities impacted the Critchelow's private water well is not supported by any technical or other reliable evidence. More important, Petitioner Critchelow neglected to report the alleged well impacts to the Alliance or any public agency during the time the drilling occurred, even though such impacts are alleged to have been visible during drilling. *See, e.g.*, Memo to File, Attach. 33 (AR # 591); Attach. 29 at p. 29 (AR # 511) ("[US]EPA contacted the IDNR and found that there were no complaints of well contamination registered in Morgan County during the drilling of the stratigraphic well."). Without contemporaneous notice and an opportunity to investigate such allegations, the Alliance has no means to determine whether the alleged impacts to the Critchelow well were in any way related to the test drilling.

Further, the Alliance contends the Critchelow allegations lack technical credibility given the noncontiguous nature of the shallow aquifer in the area and the assumption that the Critchelow well construction is similar to other local landowner wells in the vicinity of the Project site. After review of the alleged impacts, the Region doubted any direct relationship between the drilling event and the alleged conditions the Critchelow's claimed to have observed in their well. *See* Attach. 1 § 2.6 (AR # 2) (containing an extensive discussion of the aquifers in the area and noting the shallowness and disparate layers of the various area aquifers); *see also*

Attach. 29 at p. 29 (AR # 511) ("The information provided by the commenter is not detailed enough to provide any direct correlation between drilling and construction of the stratigraphic test well and the issues with the Critchelow well. [US]EPA has no reason to expect that the well would have been hydraulically connected to the [Alliance's] well."). The Alliance, through the Illinois State Geologic Survey, which is a state agency tasked with providing earth science research to citizens, conducted sampling and monitoring of ten surrounding private water wells and one Project-installed surficial aquifer monitoring well during the test drilling, all of which were closer in proximity to the drilling activity than Petitioner Critchelow's well. None of these wells exhibited any impact from the test drilling. Attach. 1 at pp. 2.41, 2.42 (AR # 2). Notably, the Critchelow well may not be permitted as the well is not listed in state databases. As with other unregistered well owners in the area, the Alliance was unable to provide prior notice of the drilling event to Petitioner Critchelow or otherwise provide them an opportunity to participate in the private well monitoring program. Had they participated, the Alliance would have had the opportunity to investigate any potential impacts to the Critchelow well at the time the alleged impacts are said to have occurred.

Finally, as evidence that the well impacts were directly related to the Alliance drilling event, the Petitioners offer a single affidavit (and no other technical or relevant evidence) stating with certainty that the Alliance's test drilling was the cause of impacts to the Critchelow well. *See* Petition at pp. 19-21, citing Attach. 27, Ex. 5 (Decl. of William Critchelow) (AR # 497). The claim is untimely and technically insufficient to require further Permits review and, as the Region has previously noted, test drilling was conducted under an Illinois Department of Natural Resources ("IDNR") permit, outside the jurisdiction of either the Region or the Board. Attach. 29 at p. 29 (AR # 511) ("Drilling and construction of the stratigraphic test well occurred under a

permit issued by the [IDNR]. Such drilling and construction is not under [US]EPA's jurisdiction."). In light of the unsupported nature of any Critchelow well impacts, it was reasonable and proper for the Region to proceed with issuance of the Permits without further investigation.

D. Petitioners failed to show financial assurance requirements in the Permits were inadequate based on clearly erroneous findings of fact or conclusions of law.

Petitioners also make a number of arguments regarding financial assurances required by the Region in the Permits. Petitioners generally allege that: (i) the trust fund mechanism established by the Alliance is improper for addressing emergency and remedial response ("ERR") requirements; (ii) the amount and type of financial assurance is insufficient; (iii) the Permits do not provide detailed cost estimates for establishing financial assurance; (iv) the Permits fail to require maintenance of financial assurance for the duration of the Project; and (v) the trust fund has an improper pay-in period. Petition at pp. 22-29.

The Region has the discretion to negotiate financial assurance mechanisms to address both emergency response events and long-term corrective action and closure responsibility for Class VI UIC wells. EPA promulgated specific regulations that govern the financial responsibility demonstration that must be made by a permit applicant in order to obtain a Class VI UIC well permit. *See* 40 C.F.R. § 146.85. These regulations allow an applicant to demonstrate financial responsibility through the use of any number of financial mechanisms, including an irrevocable trust, insurance, or a combination of such mechanisms. *See id*. § 146.85(a)(1). The applicant will meet its financial assurance obligation so long as all financial assurance established is sufficient to cover third-party costs of corrective action, injection well plugging, post injection site care, ERR, and remedying any potential endangerment of USDWs. *Id*. §§ 146.85(a)(2)-(3). The financial mechanism(s) chosen by an applicant must contain certain

minimum protective conditions, including minimum cancellation, renewal, and continuation provisions. *Id*. § 146.85(a)(4).

The Region has the authority to enforce financial assurance requirements, regardless of whether such requirements are set forth in permit conditions, and financial assurance obligations are not satisfied until the Regional Director approves a post-injection site closure plan and approves site closure. *Id*. at 146.85(b). In order for the Region to determine the appropriate amount of financial assurance for a particular Class VI UIC operation, the regulations require the facility owner or operator to have "a detailed written estimate, in current dollars," of the costs associated with financial assurance requirements. *Id*. § 146.85(c). The Permits anticipate the Alliance funding an irrevocable trust as the primary financial assurance mechanism for the Project, which the Region accepted in issuing the Permits.

i. A trust fund is a proper method for meeting the Alliance's financial assurance requirements.

As noted above, the regulations expressly provide that an adequately funded trust is a valid mechanism to meet an applicant's financial assurance obligations. Insurance and other mechanisms may be equally appropriate to meet these obligations. However, the existence of other mechanisms is not justification for Petitioners' claim that the Board should force the Region to require the Alliance to use insurance instead of a trust fund. In fact, the Alliance initially investigated the feasibility of insurance policies to cover financial assurance obligations. *See* Draft Minutes and Meeting Follow-Up, Attach. 11 (AR # 111) (stating the Alliance's original intent to rely on an insurance policy to cover ERR costs). The Region later determined, however, that the terms of the insurance policy proposed by the Alliance were not likely to meet regulatory requirements. *See* Attach. 29 at pp. 125-130 (AR # 511) (finding deficiencies with the insurance policy proposed by the Alliance and concluding that, although an insurance policy may

be preferable, the terms available from insurance providers did not meet the minimum regulatory requirements and, therefore, the trust fund was a better alternative); *see also* E-mail re: Insurance Issues, Attach. 21 (AR # 271) (noting the Region's concerns with the insurance policy proposed by the Alliance); E-mail re: Revised Trust Agreement, Attach. 23 (AR # 316) ("[There] are a number of problems with the insurance policy as it currently stands."); E-mail re: Revised Trust Agreement, Attach. 22 (AR # 305) ("If you decide to go with the insurance, we'd like to find out some more about how much of the $100M policy covers EPA requirements in the ERR [program] and how much [is] for other things.").

Furthermore, the Region will not dictate the type of financial assurance provided by any permit applicant because its only duty is to ensure that the type and amount of financial assurance meets the minimum regulatory standards and includes sufficient financial resources to cover all of the types of costs identified in EPA's regulations. *See* 40 C.F.R. § 146.85(c). At the Region's suggestion, the Alliance pursued a trust fund to demonstrate compliance with EPA's regulations. Attach. 23 (AR # 316). Based on evidence in the record that the Region thoroughly reviewed and rejected the Alliance's initial insurance proposal and, following that review, determined a trust fund would better meet applicable regulatory requirements, the Region's determination was reasoned and appropriate. Petitioners' assertions otherwise are without merit and do not warrant further review.

ii. The amount of financial assurance provided by the Alliance meets regulatory requirements.

The amount of financial assurance provided by the Alliance is sufficient to protect USDWs and meet other regulatory obligations, although Petitioners allege that the trust amount should be much larger. Petition at p. 25. In the applications for Permits, the Alliance could provide only cost estimates for both planned activities (such as site closure) and a contingency

for any necessary ERR activities. *See* Attach. 1 § 9.2, Table 9.3 (AR # 2). The Region evaluated these estimates against its own range of values and came up with what the agency believed to be a reasonable estimate near mid-range of possible ERR values. *See* Summary of Financial Responsibility Estimates for FutureGen Based on Cost Tool Outputs (March 2014), Attach. 24 (AR # 320); *see also* E-mail re: Trust Fund Language Corrections, Attach. 16 (AR # 185) (noting the trust fund language was being considered by both the Region and an expert from EPA's headquarters). In the process, the Region required the Alliance to increase funding for ERR in light of the Region's independent evaluation of the projected costs. Attach. 24 at p. 9, n.5 (AR # 320); *see also* Attach. 22 (AR # 305) (noting that the ERR amount was increased to $26.7M based on the Region's own financial modeling results). Additionally, the trust proposed by the Alliance actually provides more money for ERR than likely would have been available for such purposes under an insurance policy similar to the policy originally proposed by the Alliance. Attach. 22 (AR # 305).

It is also important to recognize that the Region's Cost Tool contains conservative assumptions at the outset, such that the ERR value produced by its tool will be appropriately conservative within the range of potential values. In particular, the Region stated that, "although only a small fraction of [geologic sequestration] sites are expected to require ERR, all sites need to be financially capable of facing an emergency. As such, the Cost Tool will <u>overestimate the actual ERR costs incurred by most sites</u>, but does not overestimate the funds required for ERR financial responsibility." Attach. 24, App. A, p. A-2 (AR # 320) (emphasis added). The Region's decision to use a higher value for ERR than the Alliance value, which was well within the range of values produced by the Region's own cost tool, demonstrates the Region's considered analysis of financial assurance funding needed for the Project. Additionally, the

Region noted that the range of values produced by its Cost Tool, which Petitioners point to the uppermost value of that range as the appropriate ERR value, is not determinative and, instead, is merely for purposes of "discussion." *Id*. at p. A-1 ("[The] costs estimated by the tool can serve as a point of discussion between the UIC Program Director and the owner or operator in the financial responsibility demonstration review process.") (emphasis added); s*ee also* E-mail re: Cost Tool for ERR Activities, Attach. 30 (AR # 529) (noting the reasoning behind the Region's decision to increase ERR estimates). Financial assurance can be reviewed by the agency from time to time, as deemed necessary, to ensure the adequacy of such assurance. Petitioners' challenge to the Region's decision regarding the amount of financial assurance required for the Project is without justification in the record and does not merit further review.

iii. The Permits themselves need not contain detailed cost estimates.

EPA's regulations do not require that a permit contain detailed cost estimates, as Petitioners suggest. Instead, the regulations merely require that a permit applicant provide "a detailed written estimate, in current dollars, of the cost of performing corrective action on wells in the area of review, plugging the injection well(s), post-injection site care and site closure, and [ERR]." 40 C.F.R. § 146.85(c). The Alliance satisfied this obligation. *See* Attach. 1 § 9.0 (AR # 2). Nothing in EPA's Class VI well regulations or in the regulatory language cited in the Petition requires that cost estimates must be stated in the Permits.

Petitioners challenge the accuracy of cost estimates prepared by the Alliance's consultant, Patrick Engineering, which were included in the applications for Permits, on the grounds that the Region "rejected the Patrick Engineering cost estimate because it was too low." Petition at p. 26. It is true that the Region independently evaluated the costs proposed by the Alliance and revised them to be *more* protective of USDWs. *E.g.*, Attach. 24 (AR # 320) (evaluating the Patrick Engineering cost estimates provided by the Alliance and deciding to increase certain the cost

estimates based upon the Region's Cost Tool, but not rejecting the estimates, as Petitioners suggest). However, this only undermines Petitioners' claim.

Petitioners also allege that the Region failed to provide the actual cost information used in its cost estimation tool, even though the Region provided detailed estimates in the record for each input making up the low, medium, and high ranges of values produced by its tool. *See* Attach. 24 at App. B and C (AR # 320). It is evident that Petitioners' arguments on this issue lack factual, legal and regulatory substance and should be disregarded.

iv. Financial assurance will be maintained throughout the life of the Project.

The Permits and EPA's regulations require that the Alliance maintain financial assurance throughout the duration of the Project. The Petitioners allege that, because the trust fund agreement contains a provision providing for termination by mutual agreement amongst the Alliance, Trustee, and the Region, the Alliance may terminate the trust fund prior to completion of the Project and, therefore, are actually not required to maintain financial assurance throughout the duration of the Project. Petition at p. 27; *see also* Attach. 34, Attachment H, § 17 (AR # 594). However, the Petitioners fail to acknowledge that such termination under EPA regulations may not occur until the Regional Director has approved final site closure. 40 C.F.R. § 146.85(b)(ii). The termination provision in the Permits makes it possible for the Alliance to substitute one form of financial mechanism for another without subjecting the Alliance to a claim that it violated its Permits. *See* Attach. 29 at p. 111 (AR # 511) ("For example, [the Alliance] may seek to substitute one form of financial mechanism for another. If [US]EPA approves such a substitution, termination of the superseded instrument would also be appropriate.").

The trust fund agreement proposed by the Alliance is essentially identical to the form trust agreement in EPA guidance on the subject. The guidance form contains the same

termination provision about which Petitioners complain. *See UIC Program Class VI Financial Responsibility Guidance* at Appendix B, p. B-7, Attach. 25 (AR # 438); *see also* E-mail re: Draft Trust Agreement, Attach. 15 (AR # 169) (containing a near-final draft of the Trust Agreement, noting changes to the form document in red text, and indicating that no changes whatsoever were made to the cancellation provisions of the form document). As such, the issue is not an appropriate matter to be resolved through the Board appeal process.

v. The Region's pay-in period is appropriate under EPA's regulations and guidance because it ensures the trust will be sufficiently funded when financial risk will be incurred.

Contrary to Petitioners' arguments, the pay-in period for the Permits is proper pursuant to EPA's regulations and relevant guidance materials. EPA's regulations state, "The Director must approve the use and length of pay-in-periods for trust funds or escrow accounts." 40 C.F.R. § 146.85(f). As further explained in the Region's Response to Comments, the Region concluded the pay-in period proposed by the Alliance was sufficient to protect USDWs. Attach. 29 at p. 111 (AR # 511). The Region approved the phase-in approach because "[t]he phase-in approach is based on an evaluation of when financial risk will be incurred over the life of the project." *Id*. The Region concluded that the initial $8.823 million deposit "is sufficient to cover risks associated with the potential need to address well plugging and/or [ERR] during the construction phase of the project." *Id*. The record also supports the Region's conclusion and indicates that the Region carefully considered the appropriate pay-in schedule. *E.g.*, E-mail re: 2/4/14 Phone Call, Attach. 14 (AR # 143) (discussing potential pay-in provision requirements); E-mail re: Pay-in Period Options, Attach. 13 (AR # 129).

Moreover, the pay-in schedule established by the Region exceeds the minimum suggested by EPA's own guidance. EPA's guidance document states, "EPA recommends that payments into the trust funds be made annually by the owner or operator over a three-year period or over a

period determined by the UIC Program Director." Attach. 25 at p. 26 (AR # 438). In this case, the Permits require the Alliance to complete the pay-in period within two years of final Permits issuance. Attach. 34, Attachment H (AR # 594). As such, Petitioners' claim is without any merit and warrants no further review.

E. None of Petitioners arguments alternatively present an important policy decision or exercise of discretion that warrants Board review.

As noted above, in the event Petitioners fail to establish that a condition of the Permits was based upon clearly erroneous findings of fact or conclusions of law, they must alternatively demonstrate that the issues presented represent an important matter of policy or discretion that warrants the Board's discretionary review. *See* 40 C.F.R. § 124.19(a)(4). While permitting and development of the Alliance's Project clearly have important energy policy and regulatory implications, as announced by DOE in its partnering with the Alliance, such policy implications do not lie within the Board's jurisdiction when reviewing adequacy or correctness of particular permit conditions. In any case, Petitioners have failed to set forth a well-defined matter of policy that would make it appropriate for the Board to review Region decisions in the context of this appeal.

Petitioners broadly suggest that, because these are the first Class VI well permits, important policy considerations require the Board to take a second look at all of the Region's decisions on the issues presented in the Petition. Petition at pp. 5-7, 16. Apparently, Petitioners believe that the Alliance's Permits must meet a higher standard than the one contained in EPA's Class VI well regulations, although, as demonstrated above, the Alliance has clearly satisfied its required regulatory burden and, as noted above, has exceeded those requirements in certain cases. The Petitioners also claim these considerations deserve oral argument before the Board. Petition at pp. 16, 19, 26, 30-31. This broad policy appeal should not be allowed to circumvent

the federal agency permit process, and in this case, the Region's decision to issue the Permits. Although the Petitioners are unhappy with several of the technical decisions made by the Region, without a clear demonstration that such decisions were arbitrary and without substantial support in the administrative record, Petitioners are not entitled to further review by this Board, let alone oral argument, on the Permits or policy matters for which Petitioners have failed to establish a basis for Board review.[5]

2. The Petitioners have failed to demonstrate that the Region's response to their comments, which were previously raised, was insufficient.

At most, the Petition is little more than a resuscitation of arguments Petitioners previously made to the Region in the public comment process, which the Board has stated is not sufficient to warrant its discretionary review. *See In re Dominion Energy Brayton Point*, 12 E.A.D. at 509. In its May 15, 2014 comments, the Petitioners submitted the following comments on the draft Permits: (i) the plume size is materially understated and incorrectly configured; (ii) well identification and information is inaccurate; (iii) the draft Permits provide for insufficient monitoring; and (iv) the financial responsibility provided for in the draft Permits is deficient. *See* Attach. 27 at pp. 7-17 (AR # 497). These are basically the same issues now presented in the Petition before the Board.

[5] The policy issues presented in the Petition are of the type more appropriately addressed by Congress or EPA through notice and comment rulemaking. Specifically, all of Petitioners' arguments raise policy questions based upon EPA's Class VI well regulations. These regulations were based on several years of work by EPA that included several opportunities for public comment. *See* Federal Requirements Under the [UIC] Program for Carbon Dioxide (CO_2) Geologic Sequestration (GS) Wells; Final Rule, 75 Fed. Reg. 77,230, 77,237-40 (Dec. 10, 2010) (containing a substantial discussion of the history of the regulations). The Petitioners apparently believe that Class VI UIC permit applicants should be required to meet a higher burden for obtaining a Class VI permit than established by current regulations. However, "[a] permit appeal proceeding is not the appropriate forum in which to challenge either the validity of Agency regulations or the policy judgments that underlie them." *In re City of Port St. Joe & Flor. Coast Paper Co.*, 7 E.A.D. 275, 286 (EAB 1997).

Although the Region responded, in detail, to all of Petitioners' concerns, apparently the Petitioners are dissatisfied with the responses they received. *See* Attach. 29 at pp. 29-31, 42-44, 58-66, 76-87, 93-100, 109-114, 117-124, 127-132, 170-176 (AR # 511). As just one example, the Region responded as follows to the Petitioners' AoR concern:

> [The Region], in its independent evaluation, ensured that the data used in the model for delineating AoR were consistent with the site characterization of the data, and conservatively selected and based on measurements conducted at or near the site; and the model assumptions were reasonable. Sensitivity analyses were conducted by both the [Alliance] and [the Region] to understand the effects of certain parameters. [The Region] used conservative input parameters in its sensitivity analyses creating maximum risk scenarios.

Id. at p. 75. The Region has an obligation to respond to comments and document in the record that all significant comments were considered, even if the Region ultimately disagrees with the substance of the comments. *See In re NE Hub Partners*, 7 E.A.D. at 583. Further, EPA's regulations merely require the Region to "[b]riefly describe and respond to all significant comments on the draft permit or the permit application raised . . during the public comment period, or during any hearing." 40 C.F.R. § 124.17(a)(2). As demonstrated by the example above, the Region met this requirement to consider and respond to each substantive comment received during the public comment process.

Tellingly, Petitioners do not claim the Region ignored or failed to assess their comments. Rather, Petitioners are simply displeased with the Region's response to their comments. When dealing with technical issues such as the ones presented by Petitioners, the Board has stated that, "[t]he fact that the Region adopted none of Petitioners' comments on these permits is not in itself indicative of error, especially when the comments were primarily technical in nature and raised issues subject to genuine disagreement by experts." *In re NE Hub Partners*, 7 E.A.D. at 583.

Where, as here, a petitioner attempts to re-assert technical comments on appeal, particularly regarding technical and scientific issues, the Board should defer to the agency's technical expertise and discretion, which the Region clearly exercised in issuing the Permits.

3. The Region's decisions on the technical issues presented in the Petition merit deference.

As noted above, the Petitioners' burden for demonstrating that their Petition warrants review by the Board is even higher than the clearly erroneous standard where technical issues are involved, such as the ones presented in the Petition. *In re NE Hub Partners*, 7 E.A.D. at 567-68 ("When issues raised on appeal challenge a Region's technical judgments, clear error or a reviewable exercise of discretion is not established simply because petitioners document a difference of opinion or an alternative theory regarding a technical matter.") (emphasis added). It is not the Board's role to second guess the permitting agency on matters that are highly technical and, as long as the agency's decisions were well-supported by the record, those decisions merit great deference. *In re Envotech*, 6 E.A.D. at 284 ("absent compelling circumstances, the Board will defer to a Region's determination of issues that depend heavily upon the Region's technical expertise and experience") (emphasis added). As demonstrated above, because Petitioners have failed to meet even their basic burden under the Board's regulations, Petitioners, therefore, cannot meet the heightened burden required for challenges to technical issues.

4. The Petition improperly relies upon documents not in the record.

The EPA's regulations governing appeals to the Board also specify the required content to be included in a petition submitted before the Board. *See* 40 C.F.R. §§ 124.19(a)(4), 124.19(d). The regulations, however, do not expressly dictate whether a document that is not already in the official administrative record may be relied upon or considered by the Board in a

permit appeal. *See* 40 C.F.R. Part 124. On several occasions, the Board has rejected attempts to supplement the administrative record after the issuance of a final permit. *See, e.g.*, *In re Gen. Motors Corp.*, 5 E.A.D. at 405; *In re Chevron Chem. Co.*, 4 E.A.D. 18, 20-21 (EAB 1992). Court decisions also reflect that post-decisional documents should not be considered as part of an administrative record regarding an agency determination. *Walter O. Boswell Mem'l Hosp. v. Heckler*, 749 F.2d 788, 792 (D.C. Cir. 1984) ("To review more than the information before the [agency] at the time [of the] decision risks . . . requiring administrators to be prescient or allowing them to take advantage of post hoc rationalizations . . . ."); *accord Am. Petroleum Inst. v. Costle*, 609 F.2d 20, 23 (D.C. Cir. 1979).

The Petitioners rely heavily on the Supplemental Report, which was prepared, and now introduced, after the issuance of final Permits. The Supplemental Report should not, therefore, be considered part of the administrative record developed in the Region's permit proceedings. Moreover, Petitioners have made no motion requesting the Board to allow Petitioners to supplement the record. As such, the Board should reject Petitioners' reliance upon the Supplemental Report for evidentiary purposes in this appeal. To the extent the Board allows the Supplemental Report, the Alliance asserts that it has not had an appropriate opportunity to challenge the report's findings in an appropriate forum.[6]

RESPONSE TO REQUEST FOR ORAL ARGUMENT

The Alliance sees no need for oral argument or further consideration of the issues presented in the Petition. Rather, the Region's decisions in issuing the Permits were based upon advanced technical review, as demonstrated by the substantial administrative record. The record

[6] The Alliance's technical team previously called into question the validity of using the numbers cited in the Supplemental Report. *See* Attach. 7 (AR # 90). However, as noted above, the Supplemental Report continues to rely upon inaccurate assumptions and the Alliance notes that the Supplemental Report contains significant inaccuracies and misrepresentations.

also shows that the Alliance's Permits comply with the applicable standards imposed under Class VI well regulations. Petitioners' assertion that these Permits establish important precedent for future Class VI well permit applications is inconsequential in this context, as any significant policy issues involving the development of Class VI UIC wells is more properly a matter for challenge in an EPA rulemaking, not an appeal of a permit based upon and in compliance with rules that are already in effect. In particular, Petitioners raise policy issues that would have been more effectively considered in the promulgation phase of the Class VI well regulations and, as such, are not the type of policy issues for which the Board should exercise its discretion to review. And, given that the Region has proceeded to issue the Permits in compliance with Class VI well regulations, Petitioners have failed to show that related policy matters are appropriate for review. In sum, oral argument would further delay the finality of the Permits and waste the Board's limited time and resources.

CONCLUSION

For the forgoing reasons, the Petition does not warrant Board review. Specifically, the Petition does not demonstrate that any conditions of the Permits rely upon a finding of fact or conclusion of law that is clearly erroneous, nor does the Petition identify an exercise of discretion or important policy consideration that merits the Board exercising its limited, discretionary review. Instead, the Petition merely reasserts arguments already adequately considered by the Region. Further, the Petition fails to demonstrate why the Region's decision on these highly technical matters should not be afforded deference by the Board. Therefore, the Alliance respectfully requests that the Board summarily and expeditiously deny the Petition without further qualification or consideration.

Respectfully submitted,

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Counsel for FutureGen Industrial Alliance, Inc.

Date: October 31, 2014

Enclosures

STATEMENT OF COMPLIANCE WITH WORD LIMITATION

The Alliance affirms that this Response to Petition for Review contains 11,269 words, which does not exceed the 14,000 word limit established in EPA's regulations at 40 C.F.R. § 124.19(d)(3) (2014).

STATEMENT REGARDING EXCERPTS OF RECORD DOCUMENTS

In the interest of efficiency, the Alliance has included, as attachments, only excerpts of certain large documents from the administrative record, including only those portions cited in its Response. The Alliance hereby certifies that these excerpts are true and accurate portions of the full documents contained in the administrative record.

BEFORE THE ENVIRONMENTAL APPEALS BOARD
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C.

In re:			
FutureGen Industrial Alliance, Inc.		UIC Appeal No(s).:	14-68, 14-69, 14-70 & 14-71
UIC Permit Nos.:	IL-137-6A-001 IL-137-6A-002 IL-137-6A-003 IL-137-6A-004		

NOTICE OF APPEARANCE

Pursuant to 40 C.F.R. § 124.19(b)(3), permittee FutureGen Industrial Alliance, Inc. (the "Alliance") hereby files it notice of appearance for the purpose of participating in the above-captioned appeal as a party, including filing the accompanying response to the petition for review.

DATED: October 31, 2014

Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that I filed the original and attachments electronically with the Environmental Appeals Board ("Board"). In addition, I filed one identical copy of the Petition for Review and the attached exhibits by Next Day UPS with the Clerk of the Board at:

Ms. Eurika Durr
U.S. Environmental Protection Agency
Clerk of the Board
Environmental Appeals Board
1201 Constitution Avenue, NW
WJC East, Room 3332
Washington, DC 20004

I also certify that I delivered a copy of the foregoing Response to Petition for Review (excluding associated attachments) on the date specified below, by electronic mail and certified mail, return receipt requested to:

Jennifer T. Nijman
Nijman Franzetti, LLP
10 S. LaSalle Street, Suite 3600
Chicago, Illinois 60602
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Ms. Susan Hedman
Regional Administrator
Environmental Protection Agency
Region 5
77 West Jackson Boulevard
Chicago, Illinois 60604
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Pursuant to 40 C.F.R. § 124.19(i)(3), I further certify that each of the above parties has consented to electronic service of the attachments to the foregoing Response to Petition for Review, which was accomplished via the Board's eFiling system and electronic mail.

/s/ John J. Buchovecky Date: October 31, 2014

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