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ENVIR. APPEALS BOARD

February 2, 2017

Clerk of the Board  
U.S. Environmental Protection Agency  
Environmental Appeals Board  
1200 Pennsylvania Avenue, NW  
Mail Code 1103M  
Washington, D.C. 20460-0001

Dear Clerk of the Board,

Enclosed, please find a Petition for Review of the U.S. Environmental Protection Agency modified permit (Permit Number IL-115-6A-0001) for the Archer Daniels Midland Company CCS#2 well in Decatur, Illinois, along with two copies of that document. I, Jeffrey Sprague, am the Petitioner submitting this Petition for Review.

Respectfully,



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

IN THE MATTER OF: )  
ARCHER DANIELS MIDLAND CO. )  
DECATUR, ILLINOIS )  
UIC CLASS VI WELL CCS#2 )

UIC PERMIT NUMBER: IL-115-6A-0001

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ENVIR. APPEALS BOARD

PETITION FOR REVIEW

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## INTRODUCTION

Pursuant to 42 U.S.C. 7607(b)(1) and 40 C.F.R. § 124.19(a), Jeffrey Sprague (“Petitioner”) petitions for review of Underground Injection Control (UIC) Class VI approval set forth in Final Modified Permit IL-115-6A-0001, which the U.S. Environmental Protection Agency (“USEPA”) issued to Archer Daniels Midland Company (“ADM”) on January 19, 2017. The Permit authorizes the injection by ADM of carbon dioxide (CO<sub>2</sub>) into the well identified as CCS#2 for the purpose of geologic sequestration.

Petitioner contends that USEPA’s refusal to extend the public comment period was an arbitrary and capricious act, and an abuse of discretion. Petitioner also contends that USEPA’s failure to enter into consultation with the U.S. Fish and Wildlife Service (“USFWS”) on the potential impacts of this project on threatened and endangered species was clearly erroneous as a matter of law in violation of the Endangered Species Act of 1973, as amended (“ESA”). Further, petitioner contends that pore space (geologic formation porosity) ownership as it relates to Illinois Real Property Law, and the reasonable access to proprietary modeling software in order to assure and safeguard full public participation in the permit evaluation process, are important policy and/or potential legal considerations that the Board should review.

## THRESHOLD PROCEDURAL REQUIREMENTS

Petitioner satisfies the threshold requirements for filing a petition for review under 40 C.F.R. Part 124. Petitioner has standing to petition for review of the permit decision because of participating in the public comment period by submitting written comments (December 6, 2016; December 13, 2016) on the draft amended permit. 40 C.F.R. § 124.19(a)(2). The issues raised by Petitioner were raised with USEPA during the public comment period (See Response to Comments for Draft Modified Class VI Permit Issued to Archer Daniels Midland (ADM)). Consequently, the Environmental Appeals Board (EAB) has jurisdiction to consider Petitioner’s request for review.



## ISSUES PRESENTED FOR REVIEW

Petitioner respectfully requests Board review of the following issues:

1. Whether USEPA's denial of Petitioner's request for an extension of the public comment period was an arbitrary and capricious act, thus warranting consideration by the Board for review and reversal.
2. Whether USEPA's failure to enter into consultation with USFWS in accordance with Section 7 of the Endangered Species Act is a clear violation of law.
3. Whether USEPA's failure to address pore space ownership concerns through permit conditions constitutes a clearly erroneous conclusion of law or an important policy consideration that the Board should review and reverse.
4. Whether USEPA's failure to provide reasonable access to proprietary modeling software from which key decisions regarding permit issuance were made constitutes an important policy consideration that the Board should review and reverse.

## STATEMENT OF FACTS

USEPA notified the public of the opportunity to comment on the draft modified Underground Injection Control Class VI permit for the CCS#2 well (Permit number IL-115-6A-0001) on November 10, 2016. On December 6, 2016 and December 13, 2016, Petitioner submitted comments to USEPA. The public comment period ended on December 14, 2016. Petitioner's comments included issues raised on this appeal, as well as issues that the Petitioner has decided not to appeal. In correspondence from USEPA to Petitioner dated January 19, 2017, notification was given of final issuance of the UIC Class VI permit. This correspondence also provided relevant information regarding petitioning the EAB for review of the permit modification decision and a copy of the Response to Comments for Draft Modified Class VI Permit Issued to Archer Daniels Midland (ADM) (hereinafter, Response to Comments for Modified Permit). USEPA made no changes to the Permit concerning any of the issues raised in this appeal.

## ARGUMENTS

### **1. The EAB Must Remand the Permit with an Order for Extension of the Public Comment Period to Redress USEPA's Arbitrary and Capricious Denial of Public Accommodation in Evaluating the Administrative Record**

Petitioner has presented in written comment (*see comments #1, #2 in Response to Comments for Modified Permit*) the constraints and hardships associated with viewing and evaluating the full Administrative Record at USEPA Region V offices (Chicago). Issues of access to the proprietary modeling software used by ADM, access to the alternative software used by USEPA, and obtaining the data and time to conduct simulations to corroborate or dispute USEPA's findings regarding the extent of the Area of Review (AoR) are not insignificant concerns and constraints. USEPA has not provided an extension of the comment period that would facilitate a thorough public audit of the modeling procedures and results and a full scrutiny of the administrative record. The magnitude of this undertaking is not trivial, and would require months to accomplish. However, it is not a feasibility issue; it simply requires USEPA to be willing to work with the public. USEPA's response to Petitioner's comments is both an implicit and explicit acknowledgement of volume and format challenges associated with viewing the Administrative Record, though offered as an attempt to justify not providing the full record locally (Decatur Public Library, Decatur, Illinois). The relevant content of USEPA's response is as follows:

"There are 446 documents (totaling thousands of printed pages) identified in the Administrative Record Index for this permit modification. Given the complexity of the computational modeling (for delineation of the Area of Review) and the volume of associated data, certain files are stored on a dedicated electronic file system and require specific software to open in a readable form".

Despite the on-line availability of some of the Administrative Record, the preceding comment highlights the fact that travel to Chicago (entailing multiple trips with lengthy stays) to view and evaluate the full Administrative Record would be unavoidable in the absence of USEPA providing it locally (Decatur Public Library or an alternative venue). A Freedom of Information Act request would have offered no realistic relief from this hardship because of inherent content and



format considerations and the highly uncertain delivery of requested material within the 30-day comment period.

Some insight as to the basis for the extension denial is provided in USEPA's response to Petitioner's Comment #2:

"EPA's decision on the length of the public comment period is commensurate with the scope of changes made since the permit was issued in 2014 and the level of public interest in the initial permits for this project".

USEPA's detailed table of all permit modifications contained in the amended permit is impressive, spanning 51 pages, and identifying formatting, administrative, and technical changes. It is inconceivable that the scope of these changes could be construed so narrowly as to warrant not granting a request for a public comment period extension. Furthermore, USEPA seems to have chosen to ignore the extensive comments (May 6, 2014 and May 30, 2014 – See Response to Comments for Draft Class VI Permit Issued to Archer Daniels Midland (ADM)) (*hereinafter*, Response to Comments for 2014 Draft Permit) that Petitioner provided in response to the initial draft permit issued in 2014 to construct the CCS#2 carbon dioxide injection well. These comments were the basis for a follow-up petition for review by the EAB that was later withdrawn. There can be no question that Petitioner was deeply interested in the permitting activity for this project. It seems clear that USEPA was intent on meeting a self-imposed schedule and was unwilling to be inconvenienced by a legitimate request for an extension of the comment period. This is totally inappropriate given the voluminous and complicated nature of the Administrative Record and the associated travel hardships faced by Petitioner. This is effectively an abuse of regulatory discretion.

## **2. The EAB Must Remand the Permit Because USEPA Violated the ESA by Failing to Consult with FWS**

In accordance with the requirements of Section 7 of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. § 1531 *et. seq.*, and 50 CFR § 402.01 *et. seq.*), the United States Environmental Protection Agency (USEPA) must consult with the U.S. Fish & Wildlife Service (FWS) on "any action authorized, funded, or carried out" that falls within the embrace of the ESA. The full text of the relevant portion of the statute (Section 7.(a)(2)) reads as follows:



“Each federal agency shall, in consultation with and with the assistance of the Secretary, insure that any action authorized, funded, or carried out by such agency (hereinafter in this section referred to as an “agency action”) is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined by the Secretary, after consultation as appropriate with affected states, to be critical, unless such agency has been granted an exemption for such action by the Committee pursuant to Subsection (h) of this section. In fulfilling the requirement of this paragraph each agency shall use the best scientific and commercial data available.”<sup>1</sup>

<sup>1</sup>(<http://www.nmfs.noaa.gov/pr/laws/esa/text.htm#section7>)

USEPA failed to consult with USFWS prior to issuance of the modified Underground Injection Control (UIC) permit (and, for that matter, with the previous 2014 UIC permit) to address any potential acute or chronic adverse effects to any of the threatened and endangered species or their respective critical habitats. Adverse effects would continue to be possible from ongoing permitted activities including “any planned workover, stimulation, or other well test” (see Modified Permit, page 16), “any surface gas monitoring and/or soil gas monitoring” (see Modified Permit, page 14), any potential emergency or remedial response, and anticipated plugging of the well at the end of the injection period. These activities may have associated physical disturbances of the ground surface, elevated noise and vibration levels, and air pollutant emissions associated with the operation of equipment (e.g. diesel generators) and vehicles.

Contrary to USEPA’s response to Petitioner’s Comment #5 in the Modified Permit, USEPA is not at liberty to forego consultation with FWS. In the September 27, 2006 EAB order denying review in part and remanding in part the Indeck-Elwood, LLC permit appeal (*In re* Indeck-Elwood, LLC, 13 E.A.D. 126, 196 n.134 (EAB 2006)), the Board provides a particularly relevant footnote (Pages 112 and 113, Footnote 154) regarding the issue of consultation:

“In *Ash Grove*, as in this case, the relevant Region did not consult with FWS regarding ESA impacts or receive written concurrence of no adverse effect to endangered or threatened species or critical habitat until after the permit (RCRA) was issued, and there, as here, we found consultation during the pendency

of the appeal sufficient for ESA purposes. In the course of so ruling, however, we stated in dicta, “it appears that the [r]egion *failed to satisfy the regulatory requirements* for endangered species consultation prior to issuance of the permit.” *Id.* (emphasis added).”

### **3. The EAB Must Remand the Permit Because USEPA has Failed to Include Provisions Consistent with Illinois Real Property Law that Compensate Owners of Pore Space Impacted by the CO<sub>2</sub> Plume**

Illinois case law follows the American Jurisprudence treatise (63C Am. Jur. 2d Property) regarding ownership of the pore space of the geologic formation receiving the injected CO<sub>2</sub> and to pore space for which the injected fluid subsequently migrates. Quoting in pertinent part from Section 12 (regarding land):

“The word ‘land’ includes not only the soil, but everything attached to it . . .” It goes on to say that “the title to land extends downward from the surface to the center of the earth and upward indefinitely to the heavens, so that whatever is in a direct line between the surface of any land and the center of the earth, whether it is rock, soil, or water, belongs to the owner of the surface, who may use it for his or her own purpose.”

The modified geographic extent of the subsurface CO<sub>2</sub> plume and pressure front (see USEPA’s Fact Sheet) indicates that over time the plume will extend to areas for which ADM does not have surface land ownership rights. Petitioner stated in Comment #4 of the Response to Comments for Modified Permit the following:

“USEPA has not addressed in the draft amended permit the fundamental legal question of whether ADM has the mineral rights (“pore rights”) that would allow them to conduct subsurface injection when the CO<sub>2</sub> plume and pressure front extends to areas directly below the ground surface where ADM doesn’t have surface land ownership. In the absence of these mineral rights, a permit cannot be issued.”



USEPA cannot absolve itself of responsibility in this matter, despite statements made to that effect (see page 2 of the Modified Permit). To accept USEPA's claim that this permit "does not convey property rights", would necessitate an enforceable permit condition restricting the extent of the subsurface plume. Such a condition does not currently exist in the permit. USEPA could impose a condition limiting injection volumes at specified stratigraphic intervals and thereby prevent plume migration to areas where ADM does not have "pore rights". The total CO<sub>2</sub> injection volumes currently permitted and anticipated by ADM could be accommodated by allowing for additional perforation and completion of shallower intervals within the Mt. Simon Formation.

The current situation, in which there is an absence of conditions in the UIC permit that would require notification to potentially impacted landowners, negotiated fair compensation to these landowners prior to CO<sub>2</sub> injection, and recordkeeping that documents these transactions (and which is readily available for public viewing), is an "exercise of discretion or an important policy consideration that the Environmental Appeals Board should, in its discretion, review" (40 CFR Ch. I §124.19 (a)(4)(i)(B)).

#### **4. The EAB Must Remand the Permit Because USEPA has not Provided the General Public with Reasonable Access to Proprietary Software in Order to Independently Verify and Provide Comment Upon Modeling Results**

Regrettably, USEPA has failed in its obligation to provide members of the public with reasonable opportunity to provide comment on all aspects of the administrative record and decision-making elements that have resulted in permit issuance. Most notably, USEPA has asked the public to accept on faith their modeling conclusions, the result of changes to the reservoir model inputs (the result of updated petrophysical information obtained from drilling and testing the well), as well as those of the applicant, without providing reasonable accommodation for access to the proprietary software that forms the basis for these conclusions and for an opportunity to independently audit the modeling methodology and results. This stands in stark contrast to the publicly available (and highly complex) photochemical modeling systems software (CMAQ, CAMx, and supporting meteorological and emissions models) recognized for use by USEPA (Region 5, Air and Radiation Division) for evaluating ozone, fine particulate



matter (PM2.5), and regional haze in Prevention of Significant Deterioration (PSD) air quality reviews and State Implementation Plan (SIP) development. Though the UIC reservoir models and air quality photochemical models were developed for different media applications, they are both being used as regulatory tools, and therefore need to be readily available to the public.

The Petitioner, with a Bachelor of Science degree in Geology (Western Washington University, 1979) and graduate level training in Hydrogeology (University of Illinois), along with years of oil and gas industry experience in making well completion recommendations, and over 28 years of computer modeling experience, has acquired skill sets that are uniquely applicable to evaluating USEPA's modeling procedures and results.

The UIC Branch of USEPA's Water Division has chosen not to make the modeling software available by claiming that it is not statutorily required, that it is inherently complex, and that there are potential computer platform and other operational limitations. None of these claims are sufficient to deny the public access to the software and the opportunity to evaluate the modeling process. The ECLIPSE 300 (v2011.2) reservoir simulator model with CO2STORE module is proprietary software (Schlumberger) that was used by ADM for supporting the UIC permit. USEPA's AoR delineation modeling relied upon alternative software (STOMP, with STOMP-CO2 and STOMP-CO2e simulators) developed by the Pacific Northwest National Laboratory. These software tools are only available to the public at considerable cost. It is unreasonable to expect the general public to incur such cost in order to evaluate model assumptions, model implementation, and modeling results. Furthermore, it is disingenuous by USEPA to claim that they are providing opportunity for public comment, while rejecting a request for making temporarily available to the public the software (ECLIPSE 300 and STOMP) on which critical components of the permit decision-making were based. USEPA should make available a temporary license for the software, as well as all model input files, in order to provide opportunity for conducting model simulations for evaluating reservoir behavior and plume development.

## **CONCLUSION**

Petitioner has raised in this appeal erroneous conclusions of law by USEPA and/or important policy considerations that the Environmental Appeals Board should review and reverse regarding the final modified Underground Injection Control permit (Permit Number IL-115-6A-0001) for the Archer Daniels Midland Company CCS#2 Well in Macon County, Illinois. The Petitioner respectfully requests that this Permit be remanded to USEPA for change consistent with the arguments presented in this petition.

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ARCHER DANIELS MIDLAND CO. )  
DECATUR, ILLINOIS )  
UIC CLASS VI WELL CCS#2 )

PROOF OF SERVICE

I, Jeffrey Sprague, do hereby certify that I have served the Petition for Review on the USEPA Regional Administrator and on Archer Daniels Midland Company (permit applicant) through First Class U.S. Mail as of February 2, 2017 to the individuals and addresses indicated below:

Robert A. Kaplan, Acting Regional Administrator  
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