UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
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EPA Responsiveness Summary to Public Comments Received on the Proposed Administrative Order on Consent with Archer-Daniels-Midland Company for Safe Drinking Water Act Violations at their Class VI Injection Well, Docket Number SDWA-05-2025-0001

The Safe Drinking Water Act (SDWA) and its regulations prohibit all underground injections unless authorized by a permit or a rule. 42 U.S.C. § 300h(b)(1)(A); 40 C.F.R. § 144.11. Injections authorized by permit must comply with general permit conditions as well as those applicable to the type of injection well subject to the permit. 40 C.F.R. § 144.51. This includes Class VI wells, which are used to inject carbon dioxide (CO_2) underground for storage.

Archer-Daniels-Midland Company (ADM) holds Permit No. IL-115-6A-0001 (the "Permit") to construct and operate a Class VI injection well (commonly known as CCS#2) located in Decatur, Macon County, Illinois. In August 2024, EPA issued a Notice of Violation (NOV) to ADM regarding its Class VI injection well. EPA then negotiated a proposed Administrative Order on Consent (AOC) with ADM.

Administrative Orders on Consent pursuant to Section 1423 of the SDWA, 42 U.S.C. § 300h-2, are presented for public notice and comment before EPA makes a final agency decision. On September 21, 2024, EPA posted for public notice and comment a proposed AOC addressing violations of SDWA by ADM. The public comment period ran for 30 days and closed on October 21, 2024. EPA received 52 comments. The responsiveness summary which follows responds to these comments.A PDF containing the comments EPA received is available at EPA's online docket:

SDWA-05-2025-0001

EPA made some changes to the AOC between the proposal and final.The final order is a logical outgrowth of the proposed order.

The final AOC addresses EPA's allegations that ADM:constructed, operated, maintained, plugged, or conducted injection activity in a manner that allowed the movement of injection and formation fluids from a monitoring well into an unauthorized zone;and failed to monitor CCS#2 in accordance with the Permit

EPA wishes to thank all the commenters for their informative and thoughtful comments.

General and Out-of-Scope Comments

EPA sometimes receives comments that are considered outside the scope of this action.In the context of a UIC enforcement matter,a comment may be considered out-of-scope if it raises an issue that is unrelated to either EPA's enforcement authority under the SDWA or the draft AOC The legal effect of issuing the final AOC is limited in scope,and a comment is outside the scope of this action if it does not relate to the content and alleged violations addressed in the AOC

Some of the comments that EPA received during the public comment period for the AOC were directed at matters outside the scope of this enforcement action. EPA is not responding to the out-of-scope comments because the issues they raise are not comments on the draft AOC, meaning, they do not pertain to the draft AOC's terms or conditions or this enforcement decision. Some comments are also out-of-scope because the issues they raise are not within the purview of EPA's authority over this enforcement matter under the SDWA and the UIC regulations. To the extent these comments raised issues governed by other federal regulatory authorities, state law, and/or local law, EPA's enforcement action does not excuse ADM from their responsibilities and obligations, if any, under those law(s).

EPA received comments that state general support and opposition to the AOC or the well.[1] EPA notes and may consider these general statements but does not respond to them.

Response to Comments

Below EPA has provided responses to topics raised in the in-scope comments EPA received during the comment period. EPA has also provided some additional discussion of certain out-of-scope comments received.

1. **Comment: Several commentors voiced concern over CO_2 sequestration and potential risks to drinking water supplies, Lake Decatur, the Mahomet Aquifer, other Underground Sources of Drinking Water (USDWs), and diminished land fertility. One commenter stated that ADM should provide alternative water to impacted residents if the water supply has been impacted. A commenter also requested additional information regarding groundwater sampling.**

Response: Based on information currently available to EPA, the ADM monitoring well leak has not impacted any currently used sources of drinking water and also has not impacted any USDWs. As a precaution, EPA has notified the State of Illinois and local authorities of the NOV. EPA confirmed that the nearby public water systems (PWSs) will continue to monitor for all constituents regulated by the National Primary Drinking Water Regulations. The State is also recommending to relevant PWSs that they monitor for taste and/or odor complaints from consumers. The reported monitoring results at nearby PWSs do not indicate any contamination of local drinking water from the ADM Class VI well.

The fluid migration at the ADM monitoring wells VW#2 and VW#1 occurred approximately 5,000 feet below the surface. The deepest source of ground water used as drinking water in this area is approximately 300 feet below the surface and approximately 4,500 feet above the area of fluid migration. Additionally, the drinking water source is separated from the area containing migrated fluid by layers of rock, including two impermeable layers known as "confining layers." CO_2 is unable to travel through these rock formations without a hole or pathway. Since no USDW used for drinking water has been impacted, EPA is not requiring ADM to provide alternative water supplies.

[1] General statements of opposition consist of stand-alone statements that do not provide a basis for the position for example, "I oppose the wells" or "Do not issue the AOC."

ADM's submissions to EPA to date do not show the migrated fluid from VW#2 moving significantly closer to the surface. On May 31, 2025, ADM submitted the Groundwater Compliance Report prepared by the Illinois State Geological Survey with groundwater results that stated that ADM's purging efforts for VW#1 Zone 3 (the Ironton-Galesville formation) were effective in removing the migrated fluids, as constituent concentrations were close to baseline levels previously observed in that zone. Through the compliance obligations in the AOC and directives issued by the EPA, Region 5, Water Division, EPA has and will continue to collect, verify, and use case-specific information to support environmentally sound decisions.

ADM's permit requires shallow groundwater monitoring. In ADM's July 2024 semi-annual monitoring report, ADM stated:

> [I]nterpretations of all shallow groundwater data to date indicate that no trends or changes in shallow groundwater chemistry have occurred because of CO2 injection in Decatur. The variability observed in shallow groundwater quality data are attributed to factors including natural groundwater heterogeneity, seasonal groundwater variability, initial effects of well installation, and equipment performance. No changes in groundwater quality were observed that would indicate brine or injected CO2 were introduced into the shallow groundwater environment.

2. **Comment: Commenters raised that it is important to know the volume, composition and location of the leaked fluid. Commenters also raised questions regarding timeline of the leaks, whether the leaks are ongoing, and how volume can be calculated.**

Response: The AOC considers these factors by requiring ADM to create a Migration Assessment Report. The Migration Assessment Report evaluates the volume of migrated fluid, including brine and CO_2, and models the CO_2 and brine quantity, location and projected movement of the migrated fluid based on the volume of fluid and surrounding geology. This model is subject to EPA review and approval.

ADM has submitted information regarding the timeline of the VW#1 and VW#2 leaks to EPA. EPA will review the timeline of the VW#2 leak as part of its evaluation of the sufficiency of the Migration Assessment Report. The AOC also requires that ADM submit a status report on the leaks at both VW#1 and VW#2. ADM has already provided documentation that both leaks have ceased.

3. **Comment: Several commenters expressed that EPA's the Class VI program should be suspended, or there should be a moratorium or ban; that EPA should deny certain permits; that states should not be given primacy over the program; all CO2 capture and sequestration should halt; and no new Class VI permits should be issued. Commenters also stated that Class VI and oil and gas injection (Class II) permits should be revoked.**

Response: These comments are outside the scope of this action, which entails the issuance of an AOC for specific alleged violations related to ADM's Class VI injection facility. These comments raise broader programmatic critiques that cannot be addressed through an AOC with a specific company.

While these comments are out-of-scope, EPA provides the following information for context. The leak at the ADM monitoring well does not indicate that the underground injection of carbon dioxide for geologic sequestration is inherently risky. Instead, the leak highlights the importance of EPA's Underground

Injection Control (UIC) program, which evaluates and sets standards for using appropriate materials in the construction of wells at geologic sequestration (GS) sites and provides for proper operation and monitoring of these projects. As required by EPA, appropriately designed and operated Class VI wells should not endanger USDWs.

Like other federal environmental regulations, EPA's UIC Class VI regulations are designed to be performance-based, which allows permitting authorities to issue Class VI permit requirements that are tailored to the specific conditions of each site. Wells at Class VI sites must be designed to perform in the specific environment in which they will be operated. As a part of EPA's permitting requirements, the Agency evaluates well construction materials and testing and monitoring strategies for planned GS projects through the technical review of Class VI permit applications. This evaluation allows the Agency to verify that future GS projects will be constructed, operated, and monitored using the best available scientific information to ensure the protection of USDWs. EPA will continue to collect and use information to support environmentally sound permitting decisions. Additional information about EPA's nationwide Underground Injection Control program can be found at: https://www.epa.gov/uic

4. **Comment: Several commentors raised concerns about public transparency, including that ADM should increase public transparency and outreach through means such as informational pamphlets, social media or other online posting; that emergency plans, studies, parameters of functioning of any monitoring wells, monitoring conducted on groundwater or the well, including seismic data, should be made publicly available; that information on what leaked, how much, and where it went should be communicated clearly to landowners, residents, and other appropriate parties; and that EPA should host webinars to explain ADM reports or modeling results.**

Response:The general public may request copies of agency records by submitting a request pursuant to the Freedom of Information Act5 USC § 552 et seq For more information,please see www.foia.gov.

EPA does not communicate enforcement confidential information to outside parties. In this case, EPA issued a press release regarding the proposed AOC, and notified the relevant State and local authorities of the alleged violations against ADM, including notification of the issuance of the NOV.

The AOC has also been revised to require that ADM maintain a public website with compliance summaries of certain AOC submissions. ADM has already made some information available through their website (https://www.adm.com/en-us/standalone-pages/adm-and-carbon-capture-and-storage/). EPA does not endorse or review ADM's web content.

5. **Comment: Several commentors raised that ADM should be subject to fines/penalties, significant disincentives to cover up any leaks in the future, and/or the withholding or return of tax credits related to CO_2 sequestration.**

Response: The AOC identifies actions ADM will take to address the alleged violations. Issuing the AOC does not preclude EPA from seeking monetary penalties. As described in the proposed order, "EPA reserves all rights and remedies, legal and equitable, available to address any violation cited in this Order and any other violation of the SDWA or of this Order. Neither issuance of this Order by EPA nor compliance with its terms precludes further enforcement action pursuant to Section 1423 of the SDWA, 42 U.S.C. § 300h-2, for the violations cited in this Order, or for any other violations of the SDWA or of this

Order committed by Respondent." EPA does not administer the tax credits or have the authority to withhold or demand the return of tax credits.

6. **Comment: Several commentors stated that EPA should require ADM to cease injection. Commenters articulated criteria that should be met prior to resuming injection, such as developing new methods of monitoring or reconstructing the wells. One commenter stated that it should always be required that an injection operation cease injection immediately any time there is a leak detected, or monitoring equipment has failed.**

Response: General comments regarding appropriate permit provisions are outside the scope of this enforcement action. ADM's permit sets forth the circumstances under which injection must cease. ADM's Emergency and Remedial Response Plan also requires specific responses for scenarios such as injection well monitoring equipment failure, or fluid leakage to a USDW. This includes requirements for when injection must cease.

ADM notified EPA on September 27, 2024, that they had paused injection. In an October 7, 2024, letter from EPA to ADM, EPA stated, "In no case shall ADM resume injection without having addressed the loss of mechanical integrity of VW#1 to the satisfaction of the Director [of EPA Region 5 Water Division] and without providing notice to the Director of when ADM expects to resume injection." On July 18, 2025, ADM submitted a 14-day notice of its intent to resume injection. On July 22, 2025, ADM sent EPA a recompletion report discussing repairs completed and subsequent testing to demonstrate well integrity.

The Administrative Order on Consent requires ADM to repair the damage to the wells in consultation with the UIC Program Director, including implementing a monitoring plan as may be subsequently amended in consultation with the UIC Program Director. Additionally, the AOC requires ADM to update its Permit, including Attachment C: Testing and Monitoring Plan.

7. **Comment: Several commentors stated that ADM should be required to conduct monitoring through a third party, that all ADM submissions and leak estimations be reviewed by a third party, or that a third party conduct additional inspections at the ADM facility. A commenter stated that all CCS projects should have independent oversight and monitoring at every stage of development.**

Response: EPA is using internal expertise and contractor support to review proposed construction and remediation options, analyze submissions, monitoring, and modeling data from ADM. The submissions ADM is required to make under the Compliance Requirements portion of the AOC are subject to EPA review and approval. The reports, notifications, documents, and submissions that ADM submits pursuant to the AOC must be accompanied by the certification in paragraph 71 of the AOC. EPA also conducts routine inspections of the wells.

8. **Comment: One commenter urged EPA to require a full and complete failure analysis conducted by a highly qualified team of engineers representing the relevant disciplines from organizations that have never had any commercial relationship, direct or indirect, with ADM or its sequestration equipment vendors. This published report should identify the exact cause(s) of the failure(s): both equipment and personnel & procedures, not unlike those following Three Mile Island and commercial aircraft/ship disasters. Claims of proprietary/business confidentiality by ADM or its vendors should be rejected in light of the gravity of the investigation. Another commenter raised that EPA should require ADM to conduct a Failure Mode Effect Analysis (FMEA) for well design and**

structure. The commenter further noted that EPA should not allow C02 capture and sequestration to continue until these analyses are completed, should demand that ADM share the FMEA results with the EPA to ensure that the analyses provides evidence that the systems are designed for maximum safety and failure prevention, should demand that ADM's monitoring systems are designed to not only prevent a failure but to ensure that should a failure occur, health and safety of people and the environment are not significantly compromised, and should deny ADM permission to continue this project unless these demands are met.

Response: ADM has already submitted materials to EPA detailing the cause of the well failures, and the AOC requires that ADM submit a Status Report to identify the cause and extent of the well failures. EPA is using internal expertise to verify the findings and conclusions presented in the Status Report. The AOC also requires ADM to submit a Remedial Action Plan, to include an analysis of any potential adverse environmental impacts of the remedial action.

EPA regulations govern handling of information claimed by companies as confidential business information. *See* 40 C.F.R. Part 2, Subpart B. EPA handles any CBI claims in accordance with these regulations.

Please also see the response to comment #3.

9. **Comment: Several commenters requested additional studies be conducted on corrosion-proof materials and 13 Chrome, a construction material used in ADM's wells. Commenters also requested that ADM's wells be remediated, replaced or rebuilt before injection resumes or that additional research should be undertaken to identify suitable corrosion-proof well-construction materials. Another commenter stated that we should determine what steel will hold up to CO_2 exposure before any more Class VI injection wells are permitted.**

Response: EPA's permitting process addresses well construction materials to ensure that wells are designed and built to withstand the environment to which they will be exposed for the lifespan of the project. EPA's Office of Ground Water and Drinking Water notified all EPA regional offices regarding the construction material used in Class VI injection wells. The communication noted the need for corrosion resistant materials and stated that 13-Chrome is likely not appropriate under particular corrosive conditions that can occur where both water and CO_2 are present. However, 13-Chrome may be an appropriate well construction material for components not subjected to these conditions.

Factors impacting the corrosivity of an environment containing CO_2 are complex and include pressure, temperature, and chemical impurities that are frequently found to be present in injection and/or formation fluids. Selection of appropriate well construction materials is therefore project-specific and depends, among other things, on the composition of formation fluids and the CO_2 stream.

Using this guidance, industry standards, and peer-reviewed literature, EPA is evaluating the construction materials in use at ADM's Class VI wells in accordance with the Safe Drinking Water Act and UIC program regulations.

Additionally, the AOC requires ADM to identify and implement appropriate remedial actions to repair damage to the wells, in consultation with the UIC Program Director. This includes implementing an Updated Monitoring Plan that ADM has already proposed to EPA, as may be subsequently amended during the consultation process with EPA. ADM's Updated Monitoring Plan has proposed a four-phase

plan to allow CO2 injection while ensuring continuous monitoring. Ultimately, ADM plans to recomplete both VW#1 and VW#2, using VW#1 for monitoring the Mount Simon formation and VW#2 for monitoring above the confining zone. ADM also plans to construct two more monitoring wells – VW#3A for above confining zone monitoring and VW#3B for in-zone monitoring. By changing to single zone monitoring wells, the new wells will not have the same risk of fluid movement going forward. ADM completed recompletion of VW#2 in June 2025. This included sealing the Mt. Simon perforations, plugging to isolate the bottom of the well, setting a nickel coated packer with Cr-25 tubing in the well, sealing and reperforating the Ironton-Galesville, and hanging a pressure gauge in the well. At present, EPA is not aware of any damage requiring remedial action at ADM's CCS#1 and CCS#2 wells.

10. **Comment: Several commentors indicated that ADM should be required to make reports to the EPA more frequently, either monthly or quarterly, including reports on all parameters of functioning of any monitoring wells, that EPA should establish a direct link to all continuous monitoring at the ADM's site, or that the AOC should require two-month reporting intervals for all monitoring conducted by ADM.**

Response: The AOC requires that ADM submit a status report to EPA every other month for the duration of the AOC. The AOC imposes other reporting requirements, such as submission of a status report describing the extent of the failure, steps taken to limit fluid migration, and other parameters; and submission of appropriate permit applications, notifications, or modification requests, including amending Attachment C: Testing and Monitoring Plan. The current reporting requirements described in ADM's permit (Permit #IL-115-6A-0001) vary depending on the monitoring parameter.

11. **Comment: Several commentators expressed concern over potential environmental and health impacts of above-ground CO_2 releases. Commenters requested surface air monitoring and/or soil gas monitoring. Commenters further requested that ADM identify pathways for migrated fluid to be transported to the surface, including faults, fractures, and abandoned wells, and questioned whether this can be done without functioning monitoring wells.**

Response: The AOC addresses the subsurface leaks at ADM's Class VI facility and compliance with SDWA. Comments regarding generalized concerns over potential environmental and health impacts of above-ground CO_2 releases are not responsive to this AOC. The ADM facility injects CO_2 which would otherwise be released to the atmosphere.

At the ADM facility, fluid migrated through VW#1 and VW#2 at locations more than 4,000 feet below the surface. ADM's submissions to EPA to date do not show the migrated fluid moving significantly closer to the surface. On May 31, 2025, ADM submitted the Groundwater Compliance Report prepared by the Illinois State Geological Survey with groundwater results that stated that ADM's purging efforts for VW#1 Zone 3 (the Ironton-Galesville formation) were effective in removing the migrated fluids, as constituent concentrations were close to baseline levels previously observed in that zone.

The AOC requires that ADM prepare a Migration Assessment Report of the projected lateral and vertical migration of the migrated fluid plume for VW#2. This Migration Assessment Report must include consideration of faults, fractures, and artificial penetrations. The AOC also requires that ADM identify all penetrations, including active and abandoned wells and underground mines, in the Migration Assessment area of review for the migrated fluid that may penetrate area that contains migrated fluid. The AOC has also been updated to include a requirement that ADM submit a Remedial Action Plan

regarding the fluid that migrated through VW#2 for EPA review and approval and implement the EPA-approved remedial action. As part of this Remedial Action Plan, ADM must provide the testing and monitoring procedures Respondent will use to confirm the effectiveness of the remedial action alternative to address the Migrated Fluids and the accuracy of the Migration Assessment Report modeling pursuant to paragraphs 67(c) and (d).

12. **Comment: Commentors discussed the leak at VW#1, and one commentor expressed that the AOC should be expanded to include an additional leak at VW#1.**

Response: The AOC has been amended to include VW#1. The AOC requires that ADM describe the cause and extent of the failure and the corrective steps taken to limit fluid migration through VW#1. On May 31, 2025, ADM submitted the Groundwater Compliance Report prepared by the Illinois State Geological Survey with groundwater results that stated that ADM's purging efforts for VW#1 Zone 3 (the Ironton-Galesville formation) were effective in removing the migrated fluids, as constituent concentrations were close to baseline levels previously observed in that zone.

13. **Comment: Several commenters raised concerns about seismicity. One commentor expressed that the AOC should include requirements for ADM to conduct a seismicity review, include a listing of seismic events above M1.0 and a description of steps ADM took to verify that no damages occurred to the verification wells.**

Response: EPA does not have information suggesting that seismicity was a cause or contributing factor to the leaks at VW#1 and VW#2. The AOC requires ADM to submit a status report including describing the cause and extent of the failure of VW#2 and VW#1. Information submitted by ADM to date indicates that the cause of fluid migration in VW#1 and VW#2 was determined to be from malfunctions of sliding sleeves in multi-zone completions. A contributing cause of fluid migration in VW#2 was corrosion of the 13-Chrome tubing. ADM's permit requires continuous monitoring of seismic activity.

14. **Comment: One commentor express that the AOC should require that ADM identify how the Migration Assessment will improve on the original modeling conducted at the time the permit was issued and require an explanation why the original modeling failed to flag CO_2 migration as a potential issue.**

Response: The fluid migration at VW#2 and VW#1 was caused by unforeseen circumstances that would not have been incorporated into permit modeling. When the original permit was issued, modeling was conducted to show the expected movement of fluid in the Mount Simon injection zone. Fluid moved through ADM's monitoring wells out of the Mt. Simon injection zone and into the Ironton-Galesville formation. Because the Ironton-Galesville formation was not an approved injection zone, it was not included in the original modeling. The Migration Assessment required by the AOC will now include plume migration modeling of the fluid that migrated through VW#2 and is currently in the Ironton-Galesville formation. ADM reported that purging was effective to remove the fluid that migrated through VW#1.

15. **Comment: One commentor expressed that the AOC should require a long-term migration assessment period. The model should continue until (1) plume movement ceases, (2) pressure differentials are no longer present, and (3) the project ends. Any deviations from the original plume modeling should be accompanied by maps contrasting the forecast and actual plume**

movement and corresponding changes required to the area of review. New modeling should not be accepted without a clear demonstration that it is capable of looking back and predicting the exact behavior that was observed at the leaking monitoring well.

Response: The AOC requires ADM to analyze and submit a prediction of the projected lateral and vertical migration of the fluid that migrated through VW#2 in the Migration Assessment Report. The report must use existing site characterization, monitoring and operational data, and computational modeling of the projected lateral and vertical migration of the migrated fluid plume in the subsurface until the plume movement ceases, until pressure differentials sufficient to cause the movement of the migrated fluid into a USDW are no longer present, or until the end of a fixed period identified in the Migration Assessment Proposal. These criteria are modeled after EPA's regulatory requirements under 40 C.F.R. § 146.84(c) for area of review analysis. The Migration Assessment Report is also subject to EPA review and approval. EPA is using internal expertise and contractor support to analyze submissions and modeling data from ADM.

The AOC has also been updated to include a requirement that ADM submit a Remedial Action Plan regarding the fluid that migrated through VW#2 for EPA review and approval and implement the EPA-approved remedial action. As part of this Remedial Action Plan, ADM must provide the testing and monitoring procedures Respondent will use to confirm the effectiveness of the remedial action alternative to address the Migrated Fluids and the accuracy of the Migration Assessment Report modeling pursuant to paragraphs 67(c) and (d).

16. **Comment: One commentor expressed that the Migration Assessment Report should identify how many penetrations were omitted from the permit application and how many have changed status since the permit was originally approved. Another commentor requested that ADM identify how an updated Migration Assessment will improve on the original models.**

Response: This comparison would not address the violations alleged in the AOC. The AOC requires that ADM identify penetrations above the confining layer, into the Ironton-Galesville, where the fluid that migrated through VW#2 is located. The review conducted prior to permitting looked at penetrations below the confining layer, into the Mt. Simon injection zone, so the penetrations identified from the AOC requirement are not necessarily the same as those in the permit application. ADM's permit and UIC regulations require periodic reevaluation of the area of review for the Permit, including identification of any wells requiring corrective action in the reevaluated area of review and performance of such corrective action, see 40 C.F.R. 146.84(e).

17. **Comment: One commentor requested specific information about how people can check their water supply and how to protect their family.**

Response: Based on information currently available to EPA, the ADM monitoring well leak has not impacted any currently used sources of drinking water and also has not impacted any underground sources of drinking water (USDWs).

Resources on private well testing are available at:

https://www.epa.gov/privatewells/protect-your-homes-water

https://epa.illinois.gov/topics/drinking-water/private-well-users/well-water-testing.html

Please also refer to response to comment one.

18. **Comment: One commentor expressed that ADM should inject calcium carbonate into the formation.**

Response: Calcium carbonate is not a permit-approved injection fluid for ADM's wells. The AOC requires ADM to identify and implement appropriate remedial actions to address the migrated fluids, including submission of a Remedial Action Plan for the fluids that migrated through VW#2. EPA will evaluate the sufficiency of this Remedial Action Plan.

19. **Comment: Commenters expressed that EPA should have acted sooner to address violations at ADM and inquired about when EPA was notified of the leaks at ADM's wells.**

Response: This comment is out-of-scope as it is a generalized comment that does not substantively discuss the AOC. ADM notified EPA about the leak at VW#2 in July of 2024 and about the leak at VW#1 in September of 2024. EPA has acted expeditiously to respond to the alleged violations at ADM's facility. These actions include issuing a Notice of Violation in August of 2024, issuing three Directives to ADM regarding this matter, and negotiating and finalizing an AOC to secure appropriate compliance obligations in response to the alleged violations. EPA continues to prioritize responding to these alleged violations.

20. **Comment: One commentor asked whether or not CO_2 is dehydrated prior to injection and what material grade is used for casing and tubing. Another commenter asked for a detailed wellbore diagram of VW2.**

Response: These comments are out-of-scope requests for information. The following information is provided for convenience. Additionally, the general public may request copies of agency records by submitting a request pursuant to the Freedom of Information Act, 5 U.S.C. § 552 et seq. For more information, please see www.foia.gov.

Corn fermentation and ethanol production create CO_2 as a byproduct. In 2013, ADM began geological sequestration; injecting CO_2 into underground injection control (UIC) wells. To achieve this, CO_2 is captured from the fermentation tanks and then compressed and dehydrated to remove water. The dehydration unit utilizes Triethylene Glycol (TEG) to extract water from the gas stream. Water collected during this process is collected and sent to an onsite wastewater treatment plant. The CO_2 then undergoes further compression and is pumped to the injection well. At the point of injection, the CO_2 is supercritical (it is in liquid form). CO_2 is transported from the plant to the injection well via pipeline.

21. **Comment: Commenters stated that the AOC should identify the quantity of leaked fluid and ensure that CO_2 is no longer leaking from any ADM carbon capture infrastructure. ADM should also be required to identify if CO_2 escaped in addition to brine, and, if so, in what quantities. One commenter noted that we still don't have a report of the 2022 failures.**

Response: The AOC requires an identification of the extent of fluid migration through VW#2 in the Migration Assessment Report. ADM has submitted information to EPA regarding the quantity and composition of fluid that moved through VW#1 and VW#2. According to ADM's submissions, the migrated fluid for VW#2 included CO_2. Under the AOC, ADM must also submit a status report to EPA detailing whether fluid continues to migrate from the injection zone to the Ironton-Galesville formation through VW#2, VW#1, or any other known perforation, and the basis for this conclusion. Furthermore,

the AOC requires ADM to identify and implement appropriate remedial actions to repair damage to the wells.

22. Comment: Commenters expressed that there should be a permanence criterion for carbon sequestration. One commenter raised that U.S. EPA should be required to identify and stipulate a permanence criterion as a prerequisite for ADM, should its project continue, as well as for all other Class VI permit applications anywhere in the country.

Response: This comment is outside the scope of this action. The storage capacity of the injection zone and suitability of a confining zone are evaluated during EPA's permit process. The movement of fluid into an unauthorized zone is a violation of the permit.

23. Comment: One commentor expressed that the EPA, in addition to the Class VI permit holder, should be required to notify the public, agencies, landowners, communities, etc. when a leak or well malfunction occurs.

Response: This comment is outside the scope of this action. SDWA sets forth EPA's authority and obligations regarding protection of underground sources of drinking water. EPA regulations and the Permit establish reporting obligations for permittees.

In this case, EPA issued a press release regarding the proposed AOC, and notified the relevant State and local authorities of the alleged violations against ADM, including notification of the issuance of the NOV.

24. Comment: One commentor requested that EPA ascertain the sufficiency of relying on a single verification well.

Response: Monitoring well parameters are established through EPA's UIC permitting program. ADM is conducting monitoring in multiple ways. Paragraph 62 of the AOC sets forth the current monitoring ADM is able to conduct. The AOC also requires ADM to identify and implement necessary actions to repair damage to the wells. This includes implementing an Updated Monitoring Plan that ADM has already proposed to EPA, as may be subsequently amended during the consultation process with EPA. ADM's Updated Monitoring Plan has proposed a four-phase plan to allow CO2 injection while ensuring continuous monitoring. Ultimately, ADM plans to recomplete both VW#1 and VW#2, using VW#1 for monitoring the Mount Simon formation and VW#2 for monitoring above the confining zone. ADM also plans to construct two more monitoring wells – VW#3A for above confining zone monitoring and VW#3B for in-zone monitoring. By changing to single zone monitoring wells, the new wells will not have the same risk of fluid movement going forward. ADM completed recompletion of VW#2 in June 2025. This included sealing the Mt. Simon perforations, plugging to isolate the bottom of the well, setting a nickel coated packer with Cr-25 tubing in the well, sealing and reperforating the Ironton-Galesville, and hanging a pressure gauge in the well.

Additionally, the AOC requires that ADM submit any permit applications, notifications, or modification requests necessary to (i) address the alleged violations articulated in this AOC; (ii) incorporate any Response Actions to the extent necessary to address the migrated fluid; and (iii) fulfill any of the Compliance Requirements articulated in this AOC, including, but not limited to, amending Attachment C: Testing and Monitoring Plan.

Regarding the fluid that migrated through VW#2, the AOC requires ADM to submit a Remedial Action Plan that provides a description of the testing and monitoring procedures Respondent will use to confirm the effectiveness of the remedial action alternative to address the migrated fluid and the accuracy of the Migration Assessment Report.

25. **Comment: One commentor requested that, if fluids move beyond the expected modeling results, or if other risk limits identified by modeling are exceeded, ADM should be required to take remedial actions in accordance with a predetermined plan.**

Response: The AOC requires ADM to submit a Remedial Action Plan regarding the fluids that migrated through VW#2. In this Remedial Action Plan, ADM must evaluate remedial action alternatives, including providing a description of the long-term effectiveness and the testing and monitoring procedures Respondent will use to confirm the effectiveness of the remedial action alternative to address the migrated fluid and the accuracy of the Migration Assessment Report.

The AOC also requires ADM to submit any permit applications, notifications, or modification requests necessary to (i) address the alleged violations articulated in this AOC; (ii) incorporate any Response Actions to the extent necessary to address the migrated fluid; and (iii) fulfill any of the Compliance Requirements articulated in this AOC, including, but not limited to, amending Attachment C: Testing and Monitoring Plan.

26. **Comment: One commenter requested a 3D seismic study should be done of as much area as it takes to determine the limits of the leakage plume and spread, as well as to evaluate the geology for fractures, faults, or other risks of the escape migrating further, and stated all data gathered and actions taken should be documented, and data and documentation should be publicly available.**

Response: EPA has not required a seismic study in this AOC. The AOC requires evaluation of the limits of the leakage plume and spread, as well as evaluation of the fractures, faults or other risks through alternative means. Specifically, the AOC requires ADM to submit a Migration Assessment Report describing the extent of fluid migration. The report will evaluate geological characteristics such as porosity and permeability and must consider potential migration through faults, fractures, and artificial penetrations. The AOC has also been updated to include a requirement that ADM submit a Remedial Action Plan regarding the fluid that migrated through VW#2 for EPA review and approval and implement the EPA-approved remedial action. As part of this Remedial Action Plan, ADM must provide the testing and monitoring procedures Respondent will use to confirm the effectiveness of the remedial action alternative to address the Migrated Fluids and the accuracy of the Migration Assessment Report modeling pursuant to paragraphs 67(c) and (d). ADM has already submitted information related to these requirements.

Please also see the response to comment 4.

27. **Comment: Several commenters stated that ADM should have its Class VI permit revoked; EPA should deny ADM's permit applications, including ADM's Maroa Class VI well permit; ongoing or future CO2 sequestration should be denied; and no new CO2 sequestration wells should be approved.**

Response: These comments are outside the scope of this AOC, which addresses alleged violations of ADM's existing Class VI permit. EPA's regulations at 40 C.F.R. Part 124 set forth specific procedures for

issuing, modifying, revoking and reissuing, or terminating underground injection control permits. Permitting actions[2] are subject to public notice and comment and constitute final agency actions that certain person, including those who commented on the permitting action, can challenge to the Environmental Appeals Board.

28. Comment: EPA should require all CCS projects/Class VI well operators to have robust emergency plans and to be fully transparent with the public about their operations, their emergency plans as well as immediate notification of any anomalies or emergencies.

Response: This comment is outside the scope of this action. EPA regulations require site-specific emergency and remedial response plans that describe actions the owner or operator must take to address movement of the injection or formation fluids that may cause an endangerment to a USDW during construction, operation, and post-injection site care periods. Regarding ADM, ADM's permit includes specific requirements in its Emergency and Remedial Response Plan, including notification requirements. These plans are required to be updated on a periodic basis.

29. Comment: One commenter raised concerns that ADM may be unable or unwilling to appropriately respond to the demands of the Administrative Order on Consent.

Response: In the AOC, ADM consents to the terms of the AOC, including the performance of the compliance requirements specified in the AOC. ADM also waives its rights to request a hearing and appeal rights in the AOC. EPA has enforcement options if ADM fails to comply. ADM's submission pursuant to the compliance requirements section of the AOC are subject to EPA review and approval. This allows EPA to ensure it agrees with the sufficiency of the submission. ADM's submission of reports, notifications, documentation, and submissions under the AOC must also contain specific certification language by ADM. In addition to agreeing to the terms of this AOC, ADM has already made submissions to EPA and taken actions consistent with its obligations under the AOC.

30. Comment: Commenters raised concerns about further injection into the Mount Simon Sandstone, including whether it will be stressed beyond its capabilities, and emphasizing that EPA should evaluate potential risks for future injection in Illinois such as whether there are underground conditions in Illinois, such as issues with the intensity of the brine, in the Mt. Simon sequestration.

Response: This is outside the scope of this enforcement matter. EPA's permitting process includes evaluating the suitability of the geography for each proposed Class VI well, including evaluation of whether the geology is suitable for the specific volume of injectate proposed for the project.

Summary of Out-of-Scope Comments

Below is a summary of the categories of comments EPA received that are out-of-scope and do not require a response:

- Questions regarding the efficacy of EPA's Underground Injection Control program's well construction standards for purposes of the tax credit for carbon dioxide sequestration.
- Concerns over potential environmental and health impacts of above-ground CO_2 releases and safety of CO_2 pipelines.

[2] Certain permitting actions, like a minor modification, are not subject to the requirements of 40 C.F.R. Part 124.

- The corrective action plan should be expanded to include compensation for property owners where CO_2 and brine move under their land.
- EPA should establish a permanence criterion for the storage of CO_2.
- Approval to resume injection should be subject to public comment and consent or stakeholder referendum.
- The EPA, in addition to the Class VI permit holder, should be required to notify the public, agencies, landowners, communities, etc. when a leak or well malfunction occurs.
- Concern that two verification wells were insufficient to monitor ADM's sequestration well.
- Requests for information including whether CO_2 is dehydrated prior to injection, what material grade is used for casing and tubing, and a detailed wellbore diagram of VW2.
- Comments regarding entities not included in this AOC, and actions related to these entities, such as Congress, the State of Illinois, the Illinois legislature, and the Decatur City government.
- Concerns regarding further carbon sequestration projects, including in the Mahomet Aquifer, under Lake Decatur, and in Illinois generally.
- Comments seeking changes to Class VI regulations or the Class VI permitting program or articulating requirements that should be included in all Class VI permits.
- Comments seeking studies and research regarding carbon sequestration that are not specific to the ADM facility and alleged violations in the AOC.
- Comments expressing that EPA's Class VI program should be suspended, or there should be a moratorium or ban; that EPA should deny certain permits; that states should not be given primacy over the program; all CO2 capture and sequestration should halt; and no new Class VI permits should be issued. Commenters also stated that Class VI and oil and gas injection (Class II) permits should be revoked.
- Comments that EPA should revoke ADM's Class VI permit; EPA should deny ADM's permit applications, including ADM's Maroa Class VI well permit; ongoing or future CO2 sequestration should be denied; and no new CO2 sequestration wells should be approved.

EPA also received general statements of opposition to ADM's well and the AOC individually that do not require response but were reviewed in making the decision to issue the final permit.

Appeal

Pursuant to 42 U.S.C. § 300h-2(c)(6), any person who commented on a proposed order may file an appeal of such order with the United States District Court for the District of Columbia or the district in which the violation is alleged to have occurred. Such an appeal may only be filed within the 30-day period beginning on the date the order is issued. Any person filing an appeal must simultaneously send a copy of the appeal by certified mail to the Administrator of the Environmental Protection Agency and to the United States Attorney General.

Please contact James Adamiec at adamiec.james@epa.gov or 312-886-0815 if you have any questions about this matter.

CAROLYN PERSOON Digitally signed by CAROLYN PERSOON Date: 2025.08.11 16:18:34 -05'00'

_____ Date_____

Carolyn Persoon
Acting Division Director
Enforcement and Compliance Assurance Division
U.S. Environmental Protection Agency, Region 5