EARTHJUSTICE

October 11, 2022

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Via Electronic Mail and U.S. Certified Mail

Re: Petition to Determine by Rule that Ohio's Class II Injection Well Permitting Program No Longer Represents an Effective Program to Prevent Underground Injection that Endangers Drinking Water Sources and Fails to Comply with the Requirements of the Safe Drinking Water Act

Dear Administrator Regan and Regional Administrator Shore,

Enclosed is a Petition and Executive Summary submitted on behalf of Buckeye Environmental Network, Sierra Club, Between the Waters, Ohio Brine Task Force, Ohio Poor Peoples Campaign, Sustainable Medina County, Coshocton Environmental and Community Awareness, Athens County's Future Action Network, Radioactive Waste Alert, UU Justice Ohio, FaCT Ohio, NEOGAP, Concerned Ohio River Residents, Ohio Community Rights Network, FracTracker, Fresh Water Accountability Project, Columbus Community Bill of Rights, Ohio Ecological Food and Farm Association, Citizens Pollution Watch, Ashtabula County Water Watch, Ashtabula County Farmers Union, Ashtabula County Lighthouse & Restoration Society, Green Sanctuary Committee, Kent State Future Environmental Professionals Club, Trumbull County NAACP, Ashtabula County NAACP, and Ohio NAACP (collectively "Petitioners").

Petitioners request that EPA initiate procedures to revoke Ohio's Class II injection well program and initiate a rulemaking to implement a program that protects the people of Ohio and the environment and addresses the systematic public participation and environmental justice issues raised by this Petition.

Given the longstanding nature and seriousness of the deficiencies in Ohio's program, including the harms to the environment and frontline communities, Petitioners request that EPA expedite the process of revoking Ohio's authority over the Class II injection well program. We look forward to your response.

Respectfully,

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BEFORE THE ADMINISTRATOR OF THE
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

PETITION TO DETERMINE BY RULE THAT OHIO'S CLASS II INJECTION WELL PERMITTING PROGRAM NO LONGER REPRESENTS AN EFFECTIVE PROGRAM TO PREVENT UNDERGROUND INJECTION THAT ENDANGERS DRINKING WATER SOURCES AND FAILS TO COMPLY WITH THE REQUIREMENTS OF THE SAFE DRINKING WATER ACT

Executive Summary

Petitioners seek U.S Environmental Protection Agency's ("EPA") intervention to remedy systemic and longstanding failures by the Ohio Department of Natural Resources ("ODNR") to comply with the requirements of Section 1425 of the Safe Drinking Water Act and its environmental justice obligations under federal law. Petitioners include frontline community groups from Appalachian Ohio who are disproportionately harmed by the failures in ODNR's Class II program, and statewide organizations that advocate for environmental justice and public health. Until EPA requires Ohio to correct the deficiencies identified in the Petition, Ohio will continue to manage its Class II program in a manner that endangers underground sources of drinking water, disproportionately impacts low-income Appalachian Ohioans, and deprives those most impacted by Class II disposal wells of the opportunity to participate in major decisions.

The Petition identifies the following failures in Ohio's Class II program that violate the requirements for primacy under Section 1425 of the Safe Drinking Water Act and federal environmental justice requirements. First, Ohio fails to carry out an effective enforcement program because ODNR (a) lacks unilateral penalty authority, (b) consistently refuses to enforce violations, (c) cannot permanently suspend operations even in the case of egregious violations due to other state law provisions, and (d) does not allow for public participation in enforcement actions. Second, Ohio's permitting process lacks the regulatory requirements to prevent endangerment of drinking water and comply with Sections 1425 and 1421 of the Safe Drinking Water Act because the program fails to (a) apply an area of review sufficient to address overpressurization and capture potential migration pathways, (b) characterize injected wastes, (c) identify extents of underground sources of drinking water ("USDWs") and appropriately

characterize local geology (d) prohibit injection into formations known to be unsuitable for waste disposal, and (e) require adequate mechanical integrity testing. Third, Ohio's program disproportionately burdens low-income Appalachian communities by almost exclusively locating Class II disposal wells in Appalachian Ohio, and fails to address these burdens and provide meaningful public participation in siting, operating, and enforcement decisions.

EPA's intervention is needed to ensure that the Class II program in Ohio complies with the Safe Drinking Water Act. ODNR's management of its program has already endangered underground sources of drinking water, enabling multiple out of zone migrations and surface expressions in recent years, and establishing a culture of permissiveness, where operators can repeatedly violate permit terms without fear of enforcement action.

To protect Ohio's underground sources of drinking water and the communities who depend upon them, Petitioners request that EPA begin proceedings to withdraw Ohio's primacy over its Class II program under the Safe Drinking Water Act.

I. Deficiencies Raised in the Petition

1. Ohio Has Failed to Carry Out an Effective Enforcement Program and Lacks the Enforcement Tools Necessary to Do So

The 1983 agreement establishing Ohio's primacy over its Class II program requires that Ohio take timely and appropriate enforcement action for violations of the program, permit terms, federal policies, and the Safe Drinking Water Act. Instead, Ohio almost never takes timely and appropriate enforcement action, emboldening repeat offenders to continue to operate unlawfully, and allowing serious well integrity and out of zone migration risks to persist undetected.

The Petition details four ways that Ohio fails to carry out an effective enforcement program.

i. ODNR Lacks Unilateral Penalty Authority

ODNR lacks the authority to issue unilateral penalty orders. Should ODNR wish to issue penalties, it must seek them through the Attorney General's office—a cumbersome process that cannot timely address most violations at Class II wells, and

one that ODNR has used to address problems at Class II disposal wells fewer than six times in the program's 39-year history. Without unilateral penalty authority, ODNR has no expedient mechanism to address ongoing reporting violations or to timely respond to violations of operating conditions, and no way to escalate enforcement against repeat offenders before referring matters to the Attorney General. EPA has recognized that unilateral penalty authority is an effective tool for bringing operators into compliance.

ii. Ohio Consistently Refuses to Prioritize Enforcement

Ohio systematically fails to take enforcement action against companies that violate reporting requirements of operating conditions regarding minimum annulus pressure and that fail to timely submit reports or report violations. Ohio also refuses to escalate enforcement for repeat offenders. EPA noted these failures during its 2015 review of Ohio's program, identifying them as "Areas for State Improvement," meaning they were significant problems that ODNR needs to address.

The Petition, including the review prepared by Dr. Rossi and Dr. DiGiulio, demonstrates that Ohio continues to fail to take timely and appropriate enforcement action, endangering underground sources of drinking water and human health and the environment.[1]

iii. Ohio Cannot Permanently Suspend Operations Even in the Case of Egregious Violations

ODNR only has authority to *temporarily* suspend operations, and cannot permanently suspend operations at a Class II well, even when dangerous conditions are ongoing. As a result, operators can and do resume injection activities even when known risks to the environment and human health remain present. ODNR's inability to efficiently and permanently stop unauthorized activity endangers underground sources of drinking water and human health.

[1] Robert Rossi & Dominic DiGiulio, *Review of Selected Class II Disposal Wells in Ohio* (2022), attached as Exhibit 1.

iv. Ohio Does Not Allow Public Participation in Enforcement Actions

Ohio provides no way for the public to participate in Ohio's enforcement program. There is no public notice or comment period on enforcement actions, no citizen suit provision, and no formal complaint process. As a result, the people most impacted by Class II operations—who often learn first of problems at a given well due to proximity—have no means to contribute to the enforcement process or even have their knowledge meaningfully considered. Locking impacted communities out of the enforcement process has allowed Ohio's program to become largely captured by the interests and desires of Class II operators.

2. Ohio's Permitting Program Fails to Meet the Requirements of Section 1425 and Section 1421(b)(1)(B) Because the Program Endangers USDWs and Fails to Require Applicants to Demonstrate That Their Projects Will Not Endanger USDWs

The petition highlights several ways that Ohio's permitting program endangers underground sources of drinking water, and thus fails to meet the requirements of Section 1425 and Section 1421 of the Safe Drinking Water Act.

i. Ohio's Area of Review Process Fails to Address Overpressurization and Identify Migration Pathways, Both of Which Have Become Serious Issues in the State

The Petition details how Ohio's flawed area of review process fails to address formation overpressurization and identify fluid migration pathways. In the past five years, Ohio has experienced multiple events where injected waste migrated to the surface, adversely impacting surface waters and threatening USDWs. Overpressurization of injection formations and the failure to detect potential migration pathways played a role in these out of zone migrations. Despite these known problems in Ohio, ODNR continues to apply a fixed radius area of review during its permitting process that is unable to evaluate these risks.

ii. Ohio Allows Injection into Formations Unsuitable for Waste Disposal, Enabling Out of Zone Migration

Injection into low-permeability shale formations has resulted in out-of-zone migration events in Ohio, with waste surfacing as far as five miles from the site of injection. EPA recognizes that fluid migration from a formation not meant to be used

for storage of wastewater is one of the six main pathways that Class II wells can contaminate drinking water.[2] Yet Ohio's rules continue to allow for injection into Devonian shale formations that are clearly unsuitable for waste disposal. This practice endangers underground sources of drinking water in violation of Safe Drinking Water Act requirements.

iii. Ohio Does Not Require the Identification of Underground Sources of Drinking Water

Knowing the location of USDWs is vital to determining whether underground injection activities could endanger USDWs, yet ODNR does not require applicants to identify the extents of USDWs. Ohio's program classifies USDWs in large swaths of the state as "unmappable," when in fact, operators are fully capable of identifying the extents of USDWs for a given location.

Over 40 percent of Ohioans rely on groundwater for their drinking water. Ohio's practice of permitting Class II disposal wells without even identifying the extents of USDWs endangers USDWs and jeopardizes public health.

iv. Ohio Does Not Require Geologic Characterization Sufficient to Prevent Out of Zone Migration

The Petition, including a review completed by Dr. Rossi and Dr. DiGiulio, describes Class II permit applications missing basic information necessary to assess suitability of the formation for waste disposal, namely critical information regarding geologic characterization—including identification and descriptions of the injection formation and confining layer.

Ohio's failure to require a reasonably detailed geologic characterization in permitting materials has contributed to the permitting of wells that resulted in surface expressions due to out of zone migration and formation overpressurization, endangering USDWs.

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[2] *See* U.S. Gov't Accountability Off., GAO-14-555, *Drinking Water: EPA Program to Protect Underground Sources from Injection of Fluids Associated with Oil and Gas Production Needs Improvement* 1, 21-32 (2014), attached as Exhibit 2.

v. Ohio Does Not Require the Characterization of Waste

Ohio's program does not require that operators ever characterize the waste that is to be injected. Thus, Ohio's rules never ensure that the composition of waste is compatible with the injection formation or appropriate for Class II disposal. Given the unknown makeup of fluids, communities are rightfully concerned about ODNR's ability to appropriately prevent and respond to out of zone migration and fluid releases.

3. Ohio's Program Fails to Provide Meaningful Public Participation in Major Decisions

The degree to which a state's Class II program assures the public an opportunity to participate in major regulatory decisions is a critical factor in determining whether the program is effective to prevent underground injection that endangers drinking water sources.[3] Ohio's program obstructs public participation by using a two-permit process that lacks (1) adequate public notice; (2) a draft permit process; and (3) an accessible route to administrative or judicial review. In addition to this overarching failure, Ohio's program lacks the majority of elements that EPA considers when determining whether a program assures the public an opportunity to participate in major regulatory decisions.[4] Specifically, Ohio's Class II Program lacks the elements related to (1) public notice because its method of giving notice of permit applications is inadequate to bring the matter to the attention of interested parties, including impacted communities; (2) public hearings because ODNR denies public hearings even when there is a significant public interest, and (3) response to public comments because Ohio's rules do not require ODNR to respond to public comments on permit applications.

The Petition also includes citizen testimony detailing the ways ODNR has and continues to systematically ignore, belittle, and mistreat community members impacted by Class II wells.

[3] U.S. Env't Prot. Agency, *Guidance for State Submissions Under Section 1425 Of the Safe Drinking Water Act, Ground Water Program Guidance #19* 18-19, attached as Exhibit 3.
[4] *See id*.

4. ODNR Does Not Ensure the Fair Treatment or Meaningful Involvement of Environmental Justice Communities

Low-income communities in Appalachian Ohio are disproportionately harmed by Class II disposal wells. Environmental justice advocates have asked ODNR to evaluate environmental justice impacts prior to agency rulemakings for Class II disposal wells and before issuing individual permits for Class II wells. ODNR consistently ignores these requests and ODNR has failed to ensure the fair treatment or meaningful involvement of environmental justice communities in regulatory decisions for the Class II program. EPA's involvement is necessary to correct ODNR's systematic refusal to follow the environmental justice mandates under federal law and federal Executive Orders.

II. Requested Remedies

Petitioners request that EPA begin the rulemaking process to revoke Ohio's primacy over its Class II program due to the longstanding and systemic failures described in the Petition.

PETITION TO DETERMINE BY RULE THAT OHIO'S CLASS II INJECTION WELL PERMITTING PROGRAM NO LONGER REPRESENTS AN EFFECTIVE PROGRAM TO PREVENT UNDERGROUND INJECTION THAT ENDANGERS DRINKING WATER SOURCES AND FAILS TO COMPLY WITH THE REQUIREMENTS OF THE SAFE DRINKING WATER ACT.

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BEFORE THE ADMINISTRATOR OF THE
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

PETITION TO DETERMINE BY RULE THAT OHIO'S CLASS II INJECTION WELL PERMITTING PROGRAM NO LONGER REPRESENTS AN EFFECTIVE PROGRAM TO PREVENT UNDERGROUND INJECTION THAT ENDANGERS DRINKING WATER SOURCES AND FAILS TO COMPLY WITH THE REQUIREMENTS OF THE SAFE DRINKING WATER ACT

The Sierra Club, Buckeye Environmental Network, and other undersigned organizations hereby petition the U.S. Environmental Protection Agency ("EPA") pursuant to the Administrative Procedure Act, 5 U.S.C. § 553(e), to determine by rule that Ohio's program fails to comply with the requirements of Safe Drinking Water Act ("SDWA") Sections 1425 and 1421(b)(1)(A)-(D),[5] Executive Orders 12898, 14008, and 13390, and Title VI of Civil Rights Act, and no longer represents an effective program to prevent underground injection that endangers drinking water sources. Ohio's program fails to comply with the minimum technical requirements of Section 1421(b)(A)-(D); the administration of the program endangers underground sources of drinking water; the state is failing to enforce its program in compliance with the SDWA; and the program fails to ensure the fair treatment of environmental justice communities or allow for adequate public participation procedures.

Since the arrival of high-volume hydraulic fracturing in the Appalachian Basin, the oil and gas industry has targeted low-income communities in Appalachian Ohio for the disposal of its liquid waste. As a result, Appalachian Ohio disproportionately bears the burden of hosting the region's Class II disposal wells.[6] The vast majority of the

[5] The SDWA is codified at Subchapter XII of Chapter 42 of the U.S. Code, 42. U.S.C. §§ 300f-30j, *et seq*. Section 1425 is codified at 42 U.S.C. § 300h-4. Section 1421 is codified at 42 U.S.C. § 300h.

[6] Out of state waste has accounted for approximately 43%-48% of the waste disposed of in Class II injection wells in Ohio. Ted Auch, *Ohio & Fracking Waste: The Case for Better Waste Management* 2 (June 3, 2021), https://www.fractracker.org/2021/06/ohio-fracking-waste-the-case-for-better-waste-management/. The amount of waste disposed of in Ohio has continued to increase, with the volume of wastewater disposed of in injection wells increasing from 690 million gallons in 2013 to 12.7 billion gallons in 2020, according to FracTracker Alliance. Dusty Horwitt, Barbara Gottlieb, and Gary Allision, *Fracking with "Forever Chemicals" in Ohio* 10 (2022), attached as Exhibit 4.

waste disposed of in these wells originates in unconventional wells producing from the region's Marcellus and Utica shales. Wastewater from these shales has a uniquely hazardous profile, making effective management vital to protecting human health and the environment.[7]

Ohio has increasingly experienced events caused by Class II injection wells that endanger underground sources of drinking water, human health, and the environment. Ohio's Class II program has failed to address the issues causing or contributing to these endangerments. EPA must require corrective action or withdraw Ohio's primacy and implement an effective program in order to comply with the SDWA and protect underground sources of drinking water.

I. Regulatory Background

Congress enacted the Safe Drinking Water Act in 1974 to establish a regulatory mechanism to ensure the quality of public drinking water.[8] A key component of the SDWA is the Underground Injection Control ("UIC") program.[9] This program is designed to prevent underground injection of fluids or waste from contaminating underground sources of drinking water ("USDWs").[10] The SDWA defines USDWs broadly to include any aquifer or its portion that either currently supplies water for human consumption or contains fewer than 10,000 mg/l of total dissolved solids.[11] EPA can delegate regulatory and enforcement responsibility to states that submit a proposed UIC program to EPA that satisfies the minimum regulatory

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[7] Wastewater from the Marcellus and Utica shales has higher salinities and radioactivity content than waste originating elsewhere, with salt content typically greater than 100,000 mg/L and radioactivity levels found to be 3,600 times above EPA's safe drinking water limit. Rossi & DiGiulio, *supra*, at 27 (Ex. 1 at 27); Concerned Health Professionals of NY *et al*., *Compendium of Scientific, Medical, and Media Findings Demonstrating Risks and Harms of Fracking and Associated Oil and Gas Infrastructure* 62 (8th ed. 2022), https://psr.org/wp-content/uploads/2022/04/compendium-8.pdf. Additional constituents that are harmful to human health and the environment include metals, PFAS, arsenic, barium, and volatile compounds such as hydrogen sulfide and benzene. Justin Nobel, *America's Radioactive Secret*, Rolling Stone (Jan. 21, 2020), https://www.rollingstone.com/politics/politics-features/oil-gas-fracking-radioactive-investigation-937389/.

[8] *Sierra Club v. Chesapeake Operating, LLC*, 248 F. Supp. 3d 1194, 1199–200 (W.D. Okla. 2017).

[9] 42 U.S.C. § 300h *et seq*.

[10] *Miami-Dade Cty. v. U.S. E.P.A.*, 529 F.3d 1049, 1052 (11th Cir. 2008).

[11] 40 C.F.R. § 144.3.

requirements set forth in EPA's regulations.[12] EPA may withdraw state primacy over a UIC program if the EPA Administrator determines, after a public hearing, that the state is not administering or enforcing its program in compliance with SDWA requirements.[13]

The UIC program recognizes six classes of wells.[14] Class II wells inject fluids that are brought to the surface due to activities associated with gas storage operations or oil and gas production.[15] The SDWA provides two statutory methods to approve a state's UIC program for Class II wells.[16] Under Section 1422(b), a state must show that its UIC program satisfies applicable minimum federal regulations promulgated by EPA under 42 U.S.C. § 300h and set forth in 40 C.F.R. Parts 142-146.[17] In 1980, Congress amended the SDWA and enacted Section 1425 to offer an alternative to the detailed requirements at 40 C.F.R. Parts 122-146. Section 1425 requires a state to demonstrate that its UIC program meets the requirements of SDWA Sections 1421(b)(1)(A)-(D) and represents an effective program to prevent underground injection that endangers drinking water sources.[18]

While the specifics of the standards under Section 1425 and Sections 1421(b)(A)-(D) are less detailed than the program standards set forth in 40 C.F.R. Parts 122-146, the statutory sections and EPA's interpretive guidance outline criteria for permitting, enforcement, and public participation for a Section 1425 program. Section 1425 itself requires that a state meet five conditions for approval. The state program must: 1) prohibit underground injection that is not authorized by permit or rule pursuant to section 1421(b)(1)(A); 2) require the applicant for a permit satisfy the state that the underground injection will not endanger drinking water sources and that no rule is promulgated which authorizes any underground injection that endangers drinking water sources pursuant to Section 1421(b)(1)(B); 3) include inspection, monitoring,

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[12] *See* 42 U.S.C. § 300h.

[13] 40 C.F.R. 145.34(b)(1).

[14] *See* 40 C.F.R. § 144.6; Underground Injection Control Well Classes, Env't Prot. Agency, https://www.epa.gov/uic/underground-injection-control-well-classes (last updated Apr. 26, 2022).

[15] 40 C.F.R. § 144.6(b).

[16] *See* 42 U.S.C. §§ 300h–1(b); 42 U.S.C. § 300h–4(a).

[17] Where there are references to requirements under Section 1422(b) in this Petition, they are being used to illustrate an example of a requirement that more appropriately protects underground sources of drinking water.

[18] U.S. Env't Prot. Agency, *Guidance for State Submissions*, *supra*, at 1 (Ex. 3 at 1).

recordkeeping and reporting requirements pursuant to Section 1421(b)(1)(C); 4) apply to underground injection by Federal agencies and any other person pursuant to Section 1421(b)(1)(D); and 5) be effective to prevent underground injection which endangers drinking water sources pursuant to Section 1425(a).[19]

In addition, Section 1421(b)(1)(B) mandates that an approvable state program shall require that: 1) the applicant for a permit must satisfy the State that the underground injection will not endanger drinking water sources; and 2) that no rule may be promulgated which authorizes any underground injection which endangers drinking water sources.[20] To determine whether a state program adequately requires the applicant to demonstrate that the proposed injection will not endanger drinking water sources under Section 1421(b)(1)(B), the EPA focuses on two key elements: "(1) whether the state program places on the applicant the burden of making the requisite showing; and (2) the extent of the information the applicant is required to provide as a basis for the state agency's decision."[21] EPA's guidance states that the applicant should not escape ultimate responsibility for assuring that the information about the operation is accurate and available.[22]

EPA determines whether a state program meets Section 1421(b)(1)(C)'s mandate for an inspection, monitoring, recordkeeping, and reporting program by assessing: 1) whether the program has adequate field inspectors to inspect the facilities in the state and qualified inspectors to witness mechanical integrity tests, corrective actions, and plugging procedures; 2) whether the program has authority to sample injected fluids at any time; 3) effective monitoring of injection pressure and injection rate; and 4) prompt notice of mechanical failure or downhole problems.[23]

II. Class II Injection Well Activity in Ohio

EPA granted Ohio primacy over the regulation of the UIC program for Class II injection wells in 1983 under Section 1425.[24] At that time, hydraulic fracturing did not

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[19] *Id*. at 9-10.

[20] 42 U.S.C. § 300h(b)(1)(B).

[21] U.S. Env't Prot. Agency, *Guidance for State Submissions*, *supra*, at 10 (Ex. 3 at 10).

[22] *Id*.

[23] *Id*. at 11-12.

[24] Ohio Department of Natural Resources Underground Injection Control; Program Approval, 48 Fed. Reg. 38238-39 (Aug 23, 1983).

exist, and gas production occurred at a fraction of the rate it is today. Now, as a result of the exponential increase in production over the last 15 years, operators produce billions of tons of waste annually in the United States. In Ohio, Pennsylvania, and West Virginia, gas production increased from 1.4 billion cubic feet per day in 2008 to nearly 24 billion cubic feet per day in 2017.[25] Much of the resulting waste is injected into Class II wells.

Oil and gas waste from the Appalachian Basin is typically highly toxic and radioactive. The salt levels in waste associated with shale gas extraction, particularly in the Appalachian Basin, are unsafe for organisms in freshwater, and the waste commonly contains toxic levels of various organic and inorganic pollutants and metals.[26] In addition, when geologic formation fluids and flowback are brought back to the surface during the production process, it carries with it radionuclides, including radium, thorium, uranium, and potassium-40, from the geologic formations.[27] Moreover, oil and gas waste containing toxic per- and polyfluoroalkyl substances ("PFAS") used in the hydraulic fracturing process has been and is likely continuing to be disposed of in Ohio.[28]

Since the fracking "boom" started in the Appalachian Basin, Ohio has been a standout, permitting hundreds of additional injection wells in the state. For comparison, Ohio has 45 times the number of active Class II wells of New York, [29] 15 times that of Pennsylvania,[30] and 3.5 times that of West Virginia.[31] As of May 2020, the state had 226 active injection wells, 57 additional wells permitted, and 8 wells being drilled.[32] Ohio

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[25] U.S. Energy Info. Admin, *Natural Gas Production in Pennsylvania, Ohio, West Virginia Growing Faster than Demand* (Jan. 26, 2018), https://www.eia.gov/todayinenergy/detail.php?id=34692.
[26] *See Unconventional Oil and Gas Development*, https://www.epa.gov/uog (last updated Aug. 1, 2022).
[27] *TENORM: Oil and Gas Production Wastes*, https://www.epa.gov/radiation/tenorm-oil-and-gas-production-wastes (last updated Feb. 7, 2022).
[28] Horwitt, Gottlieb, & Allison, *supra*, at i, 13 (Ex. 4 at i, 13).
[29] N.Y. State Dep't Env't Conservation, *Oil, Gas, and Other Regulated Wells*, https://www.dec.ny.gov/fs/data/wellDOS.zip (last visited Oct. 6, 2022).
[30] Pa. Dep't Env't Prot., *Oil & Gas Locations—Conventional Unconventional*, https://www.pasda.psu.edu/uci/DataSummary.aspx?dataset=1088 (last visited Oct. 6, 2022).
[31] W. Va. Dep't Env't Prot., *Office of Oil and Gas UIC Well Search*, https://apps.dep.wv.gov/oog/UICWellSearch/UICWellSearch.cfm (last visited Oct. 6, 2022).
[32] Ohio Dep't Nat. Res., *Class II Brine Injection Wells of Ohio Map* (May 5, 2020), https://ohiodnr.gov/static/documents/oil-gas/map/Class+II+Brine+Injection+Wells+of+Ohio+05042020.pdf.

receives much of its waste from out of state, primarily Pennsylvania and West Virginia. Based on operators' records, approximately 43-48% of the waste disposed of in Ohio comes from out-of-state oil and gas production.[33] EPA should be particularly concerned with waste handling and disposal in the state of Ohio because the state is responsible for the majority of liquid oil and gas waste disposal in the region.

Ohio's program does not adequately regulate or account for the high volume and dangerously high toxicity of waste received by Ohio's injection wells. Injection wells pose some risk of fluid migration, spills, or leakage wherever they are located.[34] Spill and migration events seem to make the news every few months in Ohio, and tend to cause environmental issues and fish and organism kills where they occur.[35]

In recent years, Ohio has experienced several alarming incidents of wastewater migrating out of injection zones and surfacing. In 2019, oil and gas waste injected into the Redbird #4 disposal well in Washington County surfaced through conventional oil and gas wells located 5 miles away from the injection site.[36] In a separate incident, in August of 2021, fluid identified as likely oil and gas waste spewed from an abandoned oil and gas well near the shore of Veto Lake in Washington County.[37] The abandoned well is located approximately 1 mile from the Redbird #2, #4, and #5 wells reviewed by Dr. Rossi and Dr. DiGiulio, and in between the Redbird #5 well and the Redbird wells #2 and #4.[38] In January 2021, oil and gas waste surfaced through an idle production well owned by Genesis Resources in Noble County (the "Genesis Wells incident"). The source of the waste was two injection wells located approximately 2.5 miles from the idle well and owned by Deeprock Disposal Solutions, Travis Unit SWIW #7 (API #

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[33] Auch, *supra*.
[34] *See* Julie Grant, *Why Frack Wastewater Injected Underground Doesn't Always Stay There*, Allegheny Front (March 19, 2021), https://www.alleghenyfront.org/why-frack-wastewater-injected-underground-doesnt-always-stay-there/.
[35] *See id*.
[36] Roland Blauer & Naing Aye, *Washington County Produced Water Investigation* 2, App'x A (Aug. 25, 2020), https://ohiodnr.gov/static/documents/geology/WashingtonProducedWaterInvestigation_ODNR_2020.pdf
[37] Beth Harvilla, *Ohio Investigating After Crude Oil Found in Veto Lake Near Marietta*, The Columbus Dispatch (Aug 23, 2021), https://www.dispatch.com/story/news/environment/2021/08/23/ohio-investigating-after-crude-oil-release-noticed-near-veto-lake/8203369002/.
[38] Rossi & DiGiulio, *supra*, at 8 (Ex. 1 at 8).

34121240860000) and the Warren Drilling Co SWIW #6 (API # 34121239950000).[39] For four days, the idle production well spewed over 40,000 barrels of waste across the ground and into a nearby stream, killing approximately 500 fish and aquatic species.[40] These incidents all could have seriously impacted Ohioans' drinking water. They are the consequences of a flawed regulatory program that every day endangers USDWs and the environment.

Over the past 15 years, seismic activity associated primarily with the increase in disposal of wastewater through Class II injection wells has increased dramatically in Ohio, but Ohio's program fails to address this problem.[41] A recent industry study notes a record trend in serious seismic events in areas with high injection well disposal.[42] The study highlights that the trend relates not only to greater frequency in earthquakes, but also larger earthquake events.[43] One Class II disposal well alone in Mahoning County was responsible for approximately 12 earthquakes between 2011 and 2012, with one measuring as a 4.0 magnitude earthquake.[44] Prior to this event, there had been no seismic activity recorded in Mahoning County.[45] Ohio's rules have failed to prevent injection wells from causing earthquake activity, and where injection wells have been linked to seismic activity, the state has been unable or unwilling to require those injections to permanently cease.

ODNR has not increased its staffing or budget to keep up with the scale of new Class II injection wells even as ODNR has the responsibility to monitor and respond to

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[39] Beth Harvilla, *Thousands of Gallons of Fracking Waste Spilled from Noble County Well for Four Days*, The Columbus Dispatch (Feb. 4, 2021), https://www.dispatch.com/story/news/2021/02/04/thousands-gallons-flthousands-of-gallouid-spilled-oil-and-gas-well-noble-co-damage-and-cause-unclear/4397912001/.

[40] Rossi & DiGiulio, *supra*, at 27 (Ex. 1 at 27).

[41] Michael R. Brudzinski & Marla Kozłowska, *Seismicity Induced by Hydraulic Fracturing and Wastewater Disposal in the Appalachian Basin, USA: A Review*, 67 Acta Geophysica 351, 351 (2019), attached as Exhibit 5.

[42] *Treating the US Oil Industry's Dark Water: As Earthquakes Increase, Billions Needed to Switch Course*, Am. J. Transp. (June 10, 2021), https://ajot.com/news/treating-the-us-oil-industrys-dark-water-as-earthquakes-increase-billions-needed-to-switch-course.

[43] *Id*.

[44] Justin Dennis, *A Quake-Causing Injection Well in Youngstown Remains Unsealed 2 Years After Its Deadline. Here's Why*, Mahoning Matters (Apr. 1, 2021), https://www.mahoningmatters.com/local-news/a-quake-causing-injection-well-in-youngstown-remains-unsealed-2-years-after-its-deadline-heres-why-3595487.

[45] U.S. Env't Prot. Agency, *Minimizing and Managing Potential Impacts of Injection-Induced Seismicity from Class II Disposal Wells: Practical Approaches* 22-23 (2014), attached as Exhibit 6.

seismic events, accidents, spills, and other violations at the hundreds of Class II well sites it has permitted. As of 2013, the ODNR's Division of Oil & Gas Resources ("the Division") had approximately 50 inspectors across its oil and gas program, which includes oversight of more than 64,000 active oil and gas wells; it is unclear how many inspectors the Division has assigned to Class II injection wells.[46] Ohio citizens and communities have complained for years about the lack of inspectors and response to complaints at injection well sites without avail.[47]

In January of 2022, in response to the increased size and volume of Class II disposal well facilities in the State and changing industry practices, ODNR formally adopted new rules for its Class II injection program. While the new rules expanded setback requirements and the fixed radius area of review, and some added required information at the permitting stage, the rules fail to address 1) lack of enforcement mechanisms and the failure of agency enforcement in practice, 2) overpressurization of injection formations and out of zone migration of waste; 3) failure to meet minimum technical standards to comply with Section 1425 approval under the SDWA, and 4) egregiously inadequate public participation process and lack of any environmental justice review. During the rulemaking process, Petitioners and other groups urged ODNR to adopt rules that address the deficiencies described herein.[48] ODNR ignored these concerns, and Ohio's program continues to fail to meet the requirements of Section 1425 delegation.

III. Standards for Withdrawal of Ohio's Program Under Section 1425 of the SDWA

A state must meet a number of technical requirements to maintain primacy over its Class II program. EPA guidance assists with interpreting the broad requirements of Section 1425.[49] EPA guidance recognizes that Section 1425 requires a State to demonstrate that a program (1) represents an effective program to prevent injection that endangers drinking water sources and (2) meets the requirements of Section

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[46] *ODNR Considers Need for More Oil and Gas Well Inspectors*, Ohio Pub. Radio (Nov. 18, 2013), https://www.wcbe.org/post/odnr-considers-need-more-oil-and-gas-well-inspectors.

[47] *See e.g.,* Austyn Gaffney, *Ohio Communities Are Becoming a Dumping Ground for the Fracking Industry*, Nat. Res. Def. Council (Dec. 3, 2018), https://www.nrdc.org/stories/ohio-communities-are-becoming-dumping-ground-fracking-industry.

[48] Buckeye Env't Network *et al*., *Comment on ODNR'S Proposed Rules on Class II Disposal Well and Surface Facilities* (Nov. 29, 2021), attached as Exhibit 7.

[49] *See* U.S. EPA, *Guidance for State Submissions*, *supra* (Ex. 3).

1421(b)(1)(A) through (D).[50] Procedures under the Section 1422 program also govern withdrawal proceedings for the Section 1425 program.[51] The SDWA vests EPA with the authority to determine, by rule, that Ohio's program no longer complies with the requirements of SDWA Section 1421(b)(1)(A)-(D), and no longer represents an effective program to prevent underground injection that endangers drinking water sources.[52] If EPA makes such a determination, then EPA has the authority to prescribe a program applicable to the state that meets the requirements of the SDWA.[53]

Procedurally, when EPA has cause to believe that a state is not administering a Class II injection well program in compliance with the SDWA, EPA informs the state of the specific areas of noncompliance, and the state then has 30 days to demonstrate that its program is in compliance.[54] If the state fails to demonstrate compliance, EPA schedules a public hearing to discuss withdrawal of the state program.[55] If EPA finds that the state is not in compliance after the public hearing, EPA notifies the state of the specific deficiencies in the Class II program and necessary remedial actions.[56] If the state fails to carry out the remedial actions within 90 days, EPA must withdraw the program and implement its own federal program.[57]

For the reasons described in this Petition and the supporting report from Dr. Rossi and Dr. DiGiulio, Ohio's program fails to comply with Section 1425 and Section 1421(b)(1)(A)-(D) of the SDWA because: 1) ODNR's enforcement program is inadequate to deter violations at Class II wells; 2) the program does not meet regulatory standards provided in EPA guidance and does not require an applicant to demonstrate that its injection will not endanger USDWs prior to permitting; and 3) ODNR does not provide meaningful public participation procedures. In addition, Ohio's program fails to comply with Environmental Justice Executive Orders 12898, 14008, and 13390 ("EJ

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[50] *Id*. at 1.

[51] *See* State of Alabama; Underground Injection Control (UIC) Program Revision; Withdrawal of Alabama's Class II UIC Program, 64 Fed. Reg. 27744, 27745 (1999) (stating that "in lieu of different express regulatory provisions for the withdrawal of Section 1425 Programs ... EPA is following the procedures at 40 CFR 145.34(b) in proposing to withdraw Alabama's Section 1425 Program.")

[52] *See* 42 U.S.C. § 300h-4(c)(2)

[53] *See id*.; *id*. § 300h-1(c).

[54] 40 CFR § 145.34(b)(1)

[55] *Id*. § 145.34(b)(2).

[56] *Id*. § 145.34(b)(3).

[57] *Id*.

Orders"), and Title VI of Civil Rights Act because 1) ODNR does not ensure the fair treatment or meaningful involvement of environmental justice communities; and 2) ODNR fails to provide language access services to people with limited English proficiency ("LEP"). Petitioners therefore request that EPA proceed with a rulemaking to revoke Ohio's program and implement a program that protects Ohio communities and complies the SDWA, EJ Orders, and Title VI of the Civil Rights Act.

IV. Petitioners

Buckeye Environmental Network is a non-profit organization headquartered in Athens, Ohio with a mission of protecting communities and Ohio's environment from economic and environmental exploitation. BEN has members located throughout Ohio, including in the areas of Appalachian Ohio most impacted by oil and gas waste disposal.

The Sierra Club is a national nonprofit organization with over 750,000 members nationwide dedicated to exploring, enjoying, and protecting the wild places of the earth; to practicing and promoting the responsible use of the earth's ecosystems and resources; to educating and enlisting humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives. The Ohio Chapter of the Sierra Club has a little over 23,000 members, including members who live in the areas of Appalachian Ohio most impacted by Class II disposal wells.

The following front-line organizations and community groups have also signed on to this petition: Between the Waters, Ohio Brine Task Force, Ohio Poor Peoples Campaign, Sustainable Medina County, Coshocton Environmental and Community Awareness, Athens County's Future Action Network, Radioactive Waste Alert, UU Justice Ohio, FaCT Ohio, NEOGAP, Concerned Ohio River Residents, Ohio Community Rights Network, FracTracker, Fresh Water Accountability Project, Columbus Community Bill of Rights, Ohio Ecological Food and Farm Association, Citizens Pollution Watch, Ashtabula County Water Watch, Ashtabula County Farmers Union, Ashtabula County Lighthouse & Restoration Society, Green Sanctuary Committee, Kent State Future Environmental Professionals Club, Trumbull County NAACP, Ashtabula County NAACP, and Ohio NAACP. Each of these organizations have members in Ohio who are or may be impacted by Class II disposal wells.

V. Supporting Comments of Dr. Rossi and Dr. DiGiulio

Petitioners engaged Rob Rossi and Dominic DiGiulio at the expert firm of Physicians, Scientists, and Engineers for Healthy Energy ("PSE Healthy Energy" or "PSE") to evaluate Ohio's regulatory program and to review the records for a number of Class II disposal wells in Ohio. PSE Healthy Energy is a multidisciplinary non-profit science and policy research institute focused on energy production and use, and the impact to public health and the environment.[58]

Both Dr. Rossi and Dr. DiGiulio have expertise in well construction, subsurface migration, and oil and gas waste characterization. Dr. Rossi obtained a Ph.D. in environmental science at the University of Pittsburgh and a B.S. in civil engineering at Penn State University. Prior to joining PSE Healthy Energy, Dr. Rossi gained experience on projects related to surface and groundwater hydrology. Dr. Rossi's current work is on the impact of oil and gas wastewater on groundwater systems. Dr. DiGiulio obtained a Ph.D. in soil, water, and environmental science at the University of Arizona, a B.S. in environmental engineering at Temple University, and an M.S. in environmental science at Temple University. Dr. DiGiulio worked at the EPA for 31 years, where he conducted research on numerous environmental issues and helped develop EPA's Class VI injection well program.

To evaluate the wells reviewed, Dr. Rossi and Dr. DiGiulio developed a checklist based on Ohio regulations and federal requirements. They then used the checklist to look for systematic deficiencies across the Class II disposal wells they reviewed.[59] Dr. Rossi and Dr. DiGiulio comprehensively reviewed the state of Ohio's files on six Class II disposal wells. The wells presented two separate issues surrounding Class II wells in the state: 1) overpressurization of injection formations; and 2) out of zone migration from disposal into formations unsuitable for injection.[60] Dr. Rossi and Dr. DiGiulio's review found that deficiencies in Ohio's regulations have caused or contributed to both of these problems. The report detailing their review is attached and incorporated herein as Exhibit 1.

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[58] Rossi & DiGiulio, *supra*, at 2 (Ex. 1 at 2).
[59] *Id*. at 4.
[60] *Id*. at 3.

Dr. Rossi and Dr. DiGiulio found that Ohio's regulations fail to identify potential conduits of injected fluid migration.[61] In particular, they found that Ohio's area of review procedures fail to locate possible conduits for injected fluid migration and fail to account for overpressurization of injection formations—both of which have led to injected waste making its way to the surface.[62] In addition, Dr. Rossi and Dr. DiGiulio found that Ohio's continued allowance of injection into Ohio Shale formations facilitates out of zone migration and has caused surface expressions of waste more than five miles from a disposal well.[63] Based on their review, Dr. Rossi and Dr. DiGiulio recommend a comprehensive audit by EPA in order to address and constrain these risks.[64]

Dr. Rossi and Dr. DiGiulio's review also found a systematic lack of enforcement of Ohio's regulations and Class II permit standards. Specifically, they found that ODNR consistently failed to address violations of constructional and operational conditions.[65] Dr. Rossi and Dr. DiGiulio expressed particular concern that the lack of enforcement of minimum annulus pressures was endangering USDWs.[66]

Dr. Rossi and Dr. DiGiulio found numerous other deficiencies in Ohio's permitting, including incomplete descriptions of USDWs and a failure to require an adequate description of the injection zone.[67] In addition, they noted a lack of important testing required by the federal program in order to ensure well integrity and protect USDWs.[68]

VI. Ohio's Enforcement Program is Inadequate to Deter Violations at Class II Wells

As a result of EPA's delegated authority through Section 1425, ODNR has primary enforcement responsibility for the control of underground injection related to

[61] *Id*. at 47.
[62] *Id*.
[63] *See id*.
[64] *Id*. at 47-48.
[65] *Id.* at 45.
[66] *Id*.
[67] *Id*. at 45-46.
[68] *Id*. at 46.

Ohio's Class II wells.[69] ODNR "is responsible for taking timely and appropriate enforcement action" against operators "in violation of program requirements, compliance schedules, technical requirements, permit conditions, and other UIC program requirements."[70] EPA guidance states that "[a] State's enforcement of its program is a crucial consideration in determining whether the State program is effective."[71] In assessing a State's enforcement program, EPA looks to "whether the State's program, taken as a whole, represents an effective enforcement effort."[72] "In addition, EPA will look at whether the State has exercised its enforcement authorities adequately in the past."[73]

Taken as a whole, Ohio's program fails to constitute an effective enforcement effort because (A) ODNR lacks authority to issue unilateral administrative penalty orders, undercutting its ability to enforce against violators; (B) ODNR has not prioritized enforcement, enabling repeated offenders; (C) Ohio's rules are inadequate for ODNR to suspend operations or revoke permits when necessary to protect USDWs; and (D) the program does not allow for public participation in the enforcement process.

When EPA last reviewed Ohio's Program in 2015, following the submission of a citizen's audit that highlighted problems regarding ODNR's enforcement of its Class II program, EPA expressed serious concerns regarding Ohio's enforcement effort, stating that Ohio should improve its program by: (1) "[i]dentifying operator reporting gaps or inaccuracies and *taking enforcement actions for reporting violations*," and (2) "[e]scalating enforcement for recalcitrant and repeat violators."[74] Rather than act on EPA's

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[69] Underground Injection Control Program Memorandum of Agreement Between the State of Ohio and the United States Environmental Protection Agency Region V 1 (1984) (hereinafter "Memorandum of Agreement"), attached as Exhibit 8.

[70] *Id.* at 4.

[71] U.S. Env't Prot. Agency, *Guidance for State Submissions*, *supra,* at 18 (Ex. 3 at 18).

[72] *Id.*

[73] *Id.*

[74] U.S. Env't Prot. Agency, *Safe Drinking Water Act Underground Injection Control Program Periodic Program Review, Ohio Class II* 4-5 (2015), https://bloximages.chicago2.vip.townnews.com/athensmessenger.com/content/tncms/assets/v3/editorial/9/08/908ffa38-17a9-5663-9670-fe13555183ba/55fc7edacc549.pdf.pdf (emphasis added).

instruction,[75] Ohio continues to operate an enforcement program that has emboldened operators to routinely violate regulations, endangering Ohio's drinking water sources.

A. The Rules Lack the Authority to Issue Unilateral Administrative Penalty Orders, Rendering ODNR Largely Unable to Enforce Against Violators

The statute governing ODNR's penalty authority only authorizes the prosecuting attorney of the county in which the violation was committed or the attorney general to seek fines or civil penalties for violations.[76] ODNR has never attempted to give itself civil or administrative penalty authority through the rulemaking process. By contrast, the regulations under Section 1422 mandate as a minimum standard that the agency be able to assess and recover civil penalties for any Class II program violation in the amount of at least $1,000 per day per violation.[77] ODNR's lack of authority to issue administrative penalty orders fatally undermines its ability to act as the primary enforcer of Ohio's Class II program. Penalties are an essential tool for regulators to incentivize compliance.[78] EPA's 2015 review of Ohio's Class II program "found incidences where operators repeated violations or where the same operating violations were noted in successive inspection reports at a well site, without documentation of ODNR compliance or enforcement action."[79] EPA acknowledged that "penalties encourage timely return to compliance and deter future noncompliance."[80]

Without administrative penalty authority, ODNR cannot run an effective enforcement program. For instance, ODNR's inability to levy fines for noncompliance makes its notices of violation ineffective because operators have no reason to fear any financial impact as a result of their noncompliance. Indeed, ODNR has issued a notice of violation for an operator's failure to meet reporting requirements in many instances, but these notices overwhelmingly have been inadequate to deter future reporting

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[75] The recent ODNR rulemaking does not improve reporting requirements or address this issue in any way. *See* Ohio Admin. Code 1501:9-3 *et seq*. (2022).
[76] *See* Ohio Rev. Code Ann. § 1509.99(E) (West 2022).
[77] 40 C.F.R. § 145.13(a)(3)(i).
[78] U.S. Env't Prot. Agency, *Safe Drinking Water Act Underground Injection Control Program Periodic Program Review*, *supra*, at 4-5.
[79] *Id*. at 4.
[80] *Id*. at 5.

violations.[81] While ODNR can refer cases to the state's Attorney General's office to pursue civil penalties, the sheer number of violations that occur at Class II wells makes it unrealistic for ODNR to refer most violations to the Attorney General's office for prosecution.[82] This leaves the vast majority of violations without any means of effective enforcement to deter continued violations.

B. ODNR Has Not Prioritized Enforcement, Enabling Repeat Offenders

In addition to lacking penalty authority necessary for effective enforcement action, ODNR has failed to prioritize enforcement, rarely, if ever, referring violations at Class II wells to the Attorney General's Office or the local prosecutor for enforcement. Although EPA previously stated that ONDR referred approximately three cases to the Attorney General's office in recent years, in response to a request for the referrals related to EPA's statement, ODNR admitted that after a "comprehensive search" they were unable to locate any of these referral files.[83]

ODNR's failure to use its referral authority is not due to a lack of violations at Class II wells, but the result of ODNR's failure to prioritize enforcement. ODNR has refused to use its referral authority even for the most egregious violators. Overall, ODNR has continued to defy EPA's instruction that ODNR (1) take enforcement action for reporting violations and (2) escalate enforcement for repeat offenders.

1. ODNR continues to ignore reporting violations

EPA has acknowledged that "Ohio's Class II program relies in part on operator reporting to demonstrate that an operator is maintaining mechanical integrity, making it a vital part of the primacy program."[84] Thus, reporting violations—including late submissions of required reports on injection pressure and injection rates, and reports missing required monitoring parameters—are significant violations of Ohio's Class II program. Late submissions and missing parameters allow noncompliance to continue

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[81] *See* Rossi & DiGiulio, *supra*, at 45 (Ex. 1 at 45) (noting ongoing reporting violations at the Travis, Warren, and Redbird wells).

[82] *See* Section VI.B., *infra*.

[83] Letter from Sandra H. Ramos, Legal Counsel, Ohio Dep't Nat. Res., on Public Records Request #5121 Follow-Up, to Lea Harper 2 (May 28, 2021), attached as Exhibit 8.

[84] U.S. Env't Prot. Agency, *Safe Drinking Water Act Underground Injection Control Program Periodic Program Review*, *supra*, at 29.

for extensive periods of time before ODNR ever becomes aware of it. This delays ODNR's ability to respond to non-compliance, and can enable conditions like overpressurization and out of zone migration, which endanger USDWs.[85]

ODNR has continuously failed to take enforcement action for reporting violations at Class II disposal wells. EPA listed ODNR's failure to take enforcement action for reporting violations as an "Area for State Improvement" during its 2015 review of the program, meaning the issue is "a significant problem that the agency should address," and wrote, "EPA will work with the State and monitor these areas for improvement."[86] However, Dr. Rossi and Dr. DiGiulio's review found the problem persists, with operators repeatedly violating reporting requirements without ODNR taking enforcement action.

For each of the wells reviewed, Dr. Rossi and Dr. DiGiulio found numerous repeated reporting violations where ODNR took no enforcement action. In the case of the Travis Unit SWIW #7 (API# 34121240860000), date stamps indicate that annual monitoring reports were late in four of the ten years reviewed, and in one case the report was submitted more than a year past the reporting deadline.[87] ODNR issued no fines as a result of these late filings, and only one compliance notice. Dr. Rossi and Dr. DiGiulo explained the importance of timely report submissions, stating:

> In addition to being a violation of the state regulations, the late submission of monitoring reports is concerning from the standpoint of possible endangerment to USDWs, as late submissions could potentially obscure the well operating at conditions outside of those established by ODNR permits. For example, if the well were operating at injection pressures exceeding the [Maximum Allowable Surface Injection Pressure ("MASIP")], and a monitoring report were submitted past the reporting deadline, this could delay the ODNR reacting to this inadequacy (e.g., ordering injection to

[85] *See* Rossi & DiGiulio, *supra*, at 35-36 (Ex. 1 at 35-36).
[86] U.S. Env't Prot. Agency, *Safe Drinking Water Act Underground Injection Control Program Periodic Program Review*, *supra*, at 16, 29.
[87] *See* Rossi & DiGiulio, *supra*, at 35 (Ex. 1 at 35).

cease for a period to allow pressures to dissipate) and possibly lead to an overpressurization of the injection formation.[88]

The operator of the Travis Unit continued to submit late reports after the single compliance notice without ODNR escalating enforcement.[89] In the case of Warren Drilling Co SWIW #6 well, the operator filed reports late in five of the twelve years reviewed. Moreover, reports failed to include maximum and minimum injection pressures during two months of 2013 and all of 2010.[90] Again, ODNR issued no fines, nor did they issue a single compliance notice.[91] In the case of Redbird #4, annulus pressures were not monitored in all of February 2019, due to a recorder malfunction, and ODNR took no enforcement action.[92]

These wells exemplify ODNR's continuous failure to take enforcement action for reporting violations, directly conflicting with the instruction EPA provided to ODNR following the agency's 2015 review.[93]

2. ODNR continues its failure to initiate enforcement actions against repeat violators

Despite EPA's demand that ODNR improve its enforcement program by escalating enforcement against repeat violators, ODNR continues to allow operators to repeat the same violations without consequence. A review of ODNR's inspection failure data taken from the Division's Risk Based Data Management System shows thousands of violations, many of which are repeated and occurring at the same wells.[94]

ODNR's failure to initiate enforcement against repeat violators renders Ohio's program unable to prevent the endangerment of underground sources of drinking water. Examples of ODNR's failures include (1) ODNR's continuous refusal to enforce violations of annulus pressure requirements, including when those requirements

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[88] *Id*. at 35-36.
[89] *Id.* at 35.
[90] *See id*. at 41-42.
[91] *See id*. at 38.
[92] *Id*. at 20.
[93] *See* U.S. Env't Prot. Agency, *Safe Drinking Water Act Underground Injection Control Program Periodic Program Review*, *supra*, at 40 (stating "EPA recommends ODNR take enforcement action when reports are incomplete or late.").
[94] *See* Ohio Dep't Nat Res., *Saltwater Injection Well Inspection Failures* (Nov. 5, 2021), attached as Exhibit 10.

indicate problems with mechanical integrity, (2) ODNR's failure to issue cease operation orders at the Travis and Warren wells when significant evidence suggested imminent endangerment of USDWs, (3) ODNR's failure to enforce ongoing violations at the Redbird Wells, some of which have been implicated in surface expression events, and (4) ODNR's repeated refusal to enforce plugging requirements.

a. ODNR fails to enforce against operators with wells that repeatedly violate annulus pressure minimum requirements

ODNR consistently ignores problems with annulus pressure at injection wells, despite repeated violations of permitting conditions related to annulus pressure. Failure to maintain injection pressure-limits likely indicates integrity issues with the annulus, which can allow fluids to migrate from the well and into USDWs.[95] Accordingly, EPA guidance states that maintaining a satisfactory annulus pressure is a key strategy to maintaining the integrity of injection well casing.[96]

Dr. Rossi and Dr. DiGulio's review found "a systematic lack of enforcement by ODNR concerning violations to the minimum annulus pressure operating conditions."[97] Four of the six wells reviewed had periods where the measured annulus pressures were less than the 200-psi threshold required by their permit conditions during active injection.[98] In the case of the Travis Unit SWIW #7 well, ODNR noted in 50 inspections that the well was actively injecting and the annulus pressure was below the 200 psi permit limit.[99] In the case of the Red Bird 2 SWIW #18, the annulus pressure dropped below 200 psi every day of two months of 2019 when the well was in operation, and ODNR also noted annulus pressure as under 200 psi during 12 inspections.[100] ODNR also found annulus pressure below 200 psi during 14 inspections of the Warren Drilling

[95] *See* Rossi & DiGiulio, *supra*, at 11-13 (Ex. 1 at 11-13).
[96] Final Report from Vincent P. Amy *et al*., Geraghty & Miller, Inc., on Mechanical Integrity Testing of Injection Wells, to Jentai Yang & Thomas F. Sullivan, U.S. Env't Prot. Agency, 7-9 (Apr. 30, 1980), https://nepis.epa.gov/Exe/ZyPURL.cgi?Dockey=9100EYTR.TXT.
[97] Rossi & DiGiulio, *supra*, at 45 (Ex. 1 at 45).
[98] *Id*. at 47.
[99] *Id*. at 34.
[100] *Id*. at 11-12.

Co SWIW #6 well and two inspections of the Redbird #4 well, while these wells were actively injecting.[101]

A Citizen's Audit conducted in 2014, which reviewed documents associated with 43 wells permitted between 2009 and 2014, also found ODNR repeatedly ignored violations of minimum annulus pressure requirements.[102] Specifically, of the 1,877 inspection reports reviewed, annulus pressure was recorded at less than 200 psi—the minimum required pressure—at least 416 times, and in some cases pressure dropped all the way to zero.[103] With the exception of a single instance, ODNR did not even issue violation notices in response to these concerning violations of permit terms.[104] This same Citizen Audit found that:

> Instances of injection and annulus injection pressures indicating a probable mechanical failure according to U.S. EPA guidance occurred in 42 instances, with very few of the probable mechanical failures being investigated by inspectors.[105]

Maintaining a minimum pressure is vital to protecting USDWs. When annulus pressure drops, the highly saline and corrosive injection fluids can come into contact with the well casing, degrading the integrity of the casing and putting USDWs at risk.[106]

The frequency of annulus pressure dropping below the 200 psi required in permit terms—and in some cases dropping to zero, without any enforcement from ODNR—is "a systematic issue, and enforcing these violations is crucial to maintaining mechanical integrity and ensuring the isolation of USDWs from injected fluids," Rossi and DiGiulio conclude.[107] ODNR's past and current actions show the agency continuously failing to enforce violations of annulus pressure requirements, and failing

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[101] *Id*. at 20, 42.
[102] *See* Nathan Rutz & Melissa English, *Filling the Void: A Citizen's Audit of Ohio Oil and Gas Waste Disposal Wells* 7-8, 16 (2014), attached as Exhibit 11.
[103] *Id*. at 7.
[104] *Id.* at 7-8.
[105] *Id* at 9.
[106] Rossi & DiGiulio, *supra*, at 45 (Ex. 1 at 45).
[107] *Id*. at 44.

to investigate changes in annulus pressure that clearly indicate issues with mechanical integrity, demonstrating a clear failure to run an effective enforcement program.[108]

b. ODNR's failure to escalate enforcement after repeated violations at the Travis Well endangered USDWs

ODNR's failure to enforce violations at Travis Unit SWIW #7 well—despite the well's ongoing significant compliance issues—is yet another example of the agency's systemic failure to take enforcement action. The Travis Well appeared to be "plagued with packer issues," with three packers installed, and integrity issues associated with each installation.[109] Multiple mechanical integrity tests indicated "chronic issues maintaining mechanical integrity within this well."[110] ODNR inspectors issued "several streaks of warnings … for not maintaining a positive pressure on the annulus" at the Travis Well, including during three consecutive inspections in 2012.[111] ODNR issued no violations, "[d]espite the multitudes of warnings, and obvious failure of the operator to act upon them."[112]

ODNR's egregious failure to enforce against ongoing problems at the Travis Well culminated during the Genesis Wells incident, where at least 40,000 barrels of oil and gas waste surfaced through a production well known as the Genesis Well. On January 24, 2021, after concern that oil and gas waste surfacing may be originating from the Travis Well's operations, an ODNR inspector requested that the Travis Well voluntarily cease operations. The Director of ODNR's UIC program followed up with his own request that the Travis Well voluntarily cease operations. However, the Travis Well resumed operations 3.5 hours prior to the next inspection, where an inspector again asked that operations cease, at which point the Travis Well again voluntarily ceased operations.

From the records obtained by Petitioners, it appears that at no point during the Genesis Well Release did ODNR issue an order for the Travis Well to cease injection or suspend operations. Instead, the agency relied solely on the operator's voluntary

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[108] *See id*. at 45.
[109] *Id*. at 31.
[110] *Id*.
[111] *Id*. at 34.
[112] *Id*. at 35.

compliance with verbal requests made during inspections. ODNR continued to rely on the operator's voluntary response, even after the Travis Well had resumed operations in direct contradiction to ODNR's cease operation request.

USDWs in the area surrounding the Travis Well are located in shallow sediments, less than 100 feet below the land surface. According to Dr. DiGiulio and Dr. Rossi's review, "the sheer volume of produced water emitted" during the Genesis Well Release "makes it exceedingly likely some of these fluids entered local aquifers." The failure to enforce violations of permit requirements and the resumption of injection operations at the Travis Well "represent[s] a blatant disregard for local water quality and directly further endangered nearby USDWs."[113] ODNR's failure to issue an order ceasing injection and suspending operations is a "clear example of disregarding the endangerment of surficial USDWs in the area."[114]

c. ODNR's repeated failure to take enforcement action at the Redbird Wells may have contributed to the migration of injected fluids endangering USDWs

ODNR failed to take enforcement action on numerous violations of permit terms and Ohio regulations at the Redbird Wells. ODNR's history of inaction regarding the Redbird wells is particularly alarming given that Redbird #4 was determined to be responsible for a significant surface release of oil and gas wastewater in late 2019, and the Redbird Wells are suspected to be related to another significant surface expression at Veto Lake in August of 2021.[115]

The violations of permit terms and Ohio regulations at the Redbird Wells include that the operator: (1) violated permitting requirements by failing to supply detailed geologic information regarding the injection formation; (2) violated permit conditions and Ohio Admin. Code 1501:9-3-05(A)(3) for approximately six months by not having a valve installed for ODNR inspectors to measure injection pressures; (3) violated permit conditions and Ohio Admin. Code 1501:9-3-07 by allowing annulus pressure to

[113] *Id*. at 44.

[114] *Id*. at 44.

[115] *Id*. at 6. ODNR has yet to release a report on the Veto Lake release investigation. However, the abandoned well that was the conduit for the release "is located on the bank of Plum Run, a tributary to Veto Lake which flows between the Redbird #5 well and the rest of the Redbird facility," and appears to be located approximately one mile from the Redbird #2, #4, and #5 wells. *Id.*

repeatedly drop below 200 psi during multiple periods of operation; and (4) violated Ohio regulations and statutes and federal law by allowing fluids to move outside the injection formation and to the surface.[116]

Redbird's failure to install legally required valves to facilitate ODNR's monitoring forced the ODNR inspector to use a gauge provided by the operator. As Dr. Rossi and Dr. DiGiulio suggest, differences in calibration procedures observed by ODNR could result in inaccurate measurements, potentially obscuring operational issues, such as "insufficient annulus pressures which could indicate a loss of mechanical integrity and thus possible fluid migration."[117] ODNR never took any enforcement action regarding these violations, despite the fact that the operator still had not installed the required valve after receiving warnings in May, August, and October 2021. Thus, at the time of the Veto Lake surface expression, the operator had still not installed the legally required valve and ODNR had taken no enforcement action to force them to do so.

Similarly, ODNR took no enforcement action when the Redbird wells repeatedly violated its permit conditions by operating with an annulus pressure below 200 psi. This deficiency indicates potential integrity issues between the injection tubing and annulus of the well, which can allow injected fluids to interact with casing and bypass safeguards against corrosion.[118] Appalachian produced waters typically have high salinities, and thus, not enforcing this operational requirement can cause integrity failures of the production casing, enabling contamination of USDWs with injected oil and gas waste.[119]

Perhaps most egregiously, as far as Petitioners are aware, ODNR has taken no enforcement action against the operator of Redbird #4, despite determining that Redbird #4 caused the oil and gas waste surface expressions in Washington County. Instead, ODNR continues to rely on purely voluntarily compliance to prevent any future problems with Redbird operations.

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[116] *See id*. at 26-27.
[117] *Id*. at 26.
[118] *Id*. at 27; Yang & Sullivan, *supra*, at 7-9.
[119] Rossi & DiGiulio, *supra*, at 27 (Ex. 1 at 27).

d. ODNR regularly fails to enforce plugging requirements

ODNR also fails to prioritize plugging requirements for abandoned and idle wells. EPA's guidance clarifies that "all Class II wells are required, upon abandonment, to be plugged in a manner which will not allow the movement of fluids into or between USDWs."[120] As one example, inspection reports from the Alexander #1 Well in Delaware County documents the Division's failure to enforce the ordered plugging of a well and other onsite violations.[121] On August 5, 2015, ODNR issued a compliance notice requiring the operator to plug the Alexander Well and noting the compromised brine storage tank on site. Six years later, the operator still has not plugged the well, and ODNR has not taken any enforcement action to ensure compliance. Instead of forcing the operator to come into compliance and remediate the site, as required by ODNR's past and current regulations, ODNR recently issued a permit modification to allow the operator to replace the storage equipment on site.[122] ODNR's action prolongs activity at a site with a Class II well that is no longer capable of injection and sends a clear message to the operator that it need not bother with following ODNR's plugging requirements.

As another example, the H. Perry Well in Ashtabula County has been inactive and in need of remediation for at least seven years. The inoperable well sits, unidentifiable, among overgrown vegetation. Over the last seven years, ODNR inspections note the "rusty orange appearance" of water in secondary containment, an "oil sheen" on surface water, "corroded and rusty" equipment, and water with high chloride levels running towards a road ditch.[123] Despite the longstanding serious violations at the H. Perry Well, ODNR has not taken any enforcement action to make the operator plug the well and remediate the site.

ODNR's refusal to enforce plugging requirements is pervasive. As of May 2020, ODNR lists only two of Ohio's injection wells as plugged, despite many wells either

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[120] U.S. Env't Prot. Agency, *Guidance for State Submissions*, *supra*, at 15 (Ex. 3 at 15).
[121] *See* Ohio Dep't Nat. Res., Alexander Well Inspection Summaries (Nov. 4, 2021), attached as Exhibit 12.
[122] *See id*. at 1, 11-12, citing Ohio Admin. Code 1501:9-3-07(P)(1) (requiring plugging of wells if no injection has occurred for five consecutive years); Ohio Div. Oil & Gas Res. Mgmt., Order No. 2021-146 2-3 (Sep. 16, 2021), attached as Exhibit 13.
[123] Ohio Dep't Nat. Res., *Inspection Notes for Ashtabula H. Perry Well, No. 340072167300* 1-3, 5, 7-8 (Aug. 31, 2022), attached as Exhibit 24.

having plugging orders in place or having been inactive for over five years.[124] ODNR's failure to enforce its program's plugging requirements, including failing to escalate enforcement when operators do not respond to compliance notices, is both ineffective and dangerous. It leaves compromised wells unaddressed, allowing them to become conduits for fluid migration, potentially endangering USDWs.

C. Ohio's Rules Are Inadequate to Ensure Suspension of Operations or Revocation of Permits When Necessary to Protect USDWs

While Ohio Rev. Code Ann. § 1509.04 gives ODNR the authority to suspend or revoke injection well permits, the agency's implementing regulations limit the agency to ordering only *temporary* suspension of operations.[125] Operators can resume injection after submitting a corrective action plan approved by ODNR—even before the operator takes that corrective action and while serious risks remain. Furthermore, ODNR's attempts to use even temporary suspension orders to address public health and safety issues at Class II wells have been ineffective in part because Ohio's courts have found that reasonable suspension orders may constitute the taking of an operator's property.[126]

ODNR's order temporarily suspending operations at AWMS Water Solution's ("AWMS") "well #2" in Weathersfield Township, Trumbull County, Ohio provides one example of ODNR's inability to effectively use Ohio Rev. Code Ann. § 1509.04 to suspend operations when they threaten drinking water sources and public health and safety. In 2014, ODNR issued a rare order suspending operations at AWMS's well #2, stating that operation of the well was related to two nearby earthquakes.[127] Fourteen days after receiving the suspension order, AWMS submitted a written correction plan that ODNR found to be "generic and inadequate."[128] Multiple lawsuits then followed, culminating in the Ohio Supreme Court determining that it was an issue of material fact whether ODNR had completed either a partial or total taking of AWMS's property as a

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[124] *See* Ohio Dep't Nat. Res. Div. Oil & Gas Res. Mgmt., *Ohio Oil & Gas Wells*, https://gis.ohiodnr.gov/mapviewer/?config=oilgaswells (last visited Oct. 11, 2022).
[125] *See* Ohio Admin. Code 1501:9-3-07(N).
[126] *State ex rel. AWMS Water Sols., L.L.C. v. Mertz*, 2020-Ohio-5482, 162 Ohio St. 3d 400, 165 N.E.3d 1167, at ¶ 88.
[127] *Id*. at ¶ 11.
[128] *Id.* at ¶ 12.

result of the suspension order.[129] The court found that "AWMS was justified in pursuing compensation through a takings action rather than submitting a third restart plan."[130]

Following the Ohio Supreme Court's decision, ODNR terminated the suspension order in May 2021, authorizing AWMS to resume injection at well #2 with modified conditions for operation ("Restart Order").[131] Concerningly, ONDR's Restart Order allows the well to cause some amount of seismic activity, setting a precedent that seismic activity is an acceptable consequence of Class II injection in Ohio. Overall, ODNR's inability to use basic enforcement mechanisms without facing takings litigation significantly curtails the efficacy of Ohio's enforcement program.

Other provisions within Ohio's rules improperly give the Division discretion to allow Class II wells to endanger underground water sources or impact public health. Specifically, the rules provide that if the chief determines a Class II disposal well may be "impacting wells or impacting public health, safety, or the environment … the chief *may* modify a permit order and require a new area of review to be conducted. . . ."[132] According to the language of the rule, even if the Chief does in fact determine a well is impacting public health, safety, or the environment, the Chief may choose not to modify the permit to correct the violations. In contrast, the federal standards require that if a well is found to indicate movement of any contaminant into an underground source of drinking water, the permitting authority "shall prescribe" corrective actions "as are necessary to prevent such movement."[133]

The SDWA prohibits all activities from Class II wells that may impact drinking water. Specifically, it requires state underground injection programs to contain minimum requirements to prevent underground injection that may endanger drinking

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[129] *See id.* at ¶¶ 18-19, 88.
[130] *Id* at ¶ 128.
[131] AWMS appealed the Restart Order to the Oil and Gas Commission, challenging two terms of the Restart Order and requesting to be permitted to cause even more powerful earthquakes. The terms challenged (1) require that AWMS suspend operations if a 2.1 or greater seismic event occurs within three miles of the AWMS facility, and (2) forbid AWMS from restarting operations after an automatic suspension without approval by ODNR. *See* Eric Heisig, *Northeast Ohio Injection Well Operator Asks State Board to Allow More Powerful Earthquakes Before Required Shutdown,* Cleveland.com (Feb. 8, 2022), https://www.cleveland.com/open/2022/02/northeast-ohio-injection-well-operator-asks-state-board-to-allow-more-powerful-earthquakes-before-required-shutdown.html?outputType=amp.
[132] Ohio Admin. Code 1501:9-07(D)(5) (emphasis added).
[133] 40 C.F.R. § 144.12(b).

water sources.[134] Given the range and expected levels of pollutants in oil and gas waste, virtually any escape into an underground water source may result in water not complying with national primary drinking water standards. For example, the national drinking water standard for combined radium 226/228 is a maximum contaminant level ("MCL") of 5 picocuries per liter (pCi/L).[135] These radioactive elements are common in high levels in shale oil and gas waste, and combined radium 226/228 was found more than 500 times this level in oil and gas waste in Ohio.[136] The lowest amount measured was 168 pCi/L, still more than 33 times the MCL set forth in SDWA regulations.[137] Thus, any escape of Class II waste in Ohio that could migrate into water sources would endanger drinking water.

While it could be argued that Ohio's rules give them discretionary authority to prescribe corrective actions, as discussed above, ODNR has shown an inability or unwillingness to exercise that authority to protect USDWs. EPA should therefore adopt or require the mandatory language in the federal standard in order to ensure that there can be no discretion in protecting USDWs.

D. Ohio's Program Does Not Allow for Public Participation in the Enforcement Process

EPA guidance makes clear that the effectiveness of a state program depends in large part on the degree to which it assures the public an opportunity to participate in regulatory decisions.[138] Enforcement actions are important regulatory decisions, yet Ohio's program provides no mechanism for public involvement in enforcement actions. In contrast, federal regulations applicable to programs approved under Section 1422 of the SDWA specify that any state program shall provide for public participation in the State enforcement process by providing either (1) authority for intervention as of right in any civil or administrative action by anyone having an interest or that may be adversely affected, or (2) assurance it will not oppose any citizen's permissive

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[134] 42 U.S.C. § 300h(b)(1)(A).

[135] National Primary Drinking Water Regulations; Radionuclides; Final Rule, 65 Fed. Reg. 76708, 76710 (Dec. 7, 2000).

[136] Memorandum from Paul Carder *et al*., ODNR, on Preliminary Brine Study Results to Eric Vandel, Senior Legal Counsel, ODNR 1 (July 2, 2018), attached as Exhibit 14.

[137] *Id*.

[138] *See* U.S. Env't Prot. Agency, *Guidance for State Submissions*, *supra*, at 18 (Ex. 3 at 18).

intervention, publish a 30-day notice and comment on any proposed settlement of an enforcement action, and provide procedures for citizen complaints and written response to those complaints.[139] Ohio's program also has no formal complaint process, and ODNR consistently fails to respond when citizens submit complaints. The inability for the directly impacted public to participate in enforcement actions severely limits Ohio's enforcement program.

E. EPA Must Act to Ensure Adequate Enforcement Actions Are Taken

Petitioners request that EPA initiate the rulemaking process to revoke Ohio's primacy over its Class II well program because ODNR's systematic lack of enforcement does not represent an effective program to prevent underground injection that endangers drinking water sources.[140] As outlined in this section, ODNR's lack of enforcement authority and its failure to prioritize enforcement has resulted in serious environmental harms and endangerment to USDWs and surrounding communities. EPA should use its authority to prescribe a program applicable to the state that ensures timely and effective enforcement and meets the requirements of the SDWA.[141]

VII. Ohio's Permitting Program Fails to Meet the Requirements of Section 1425 and Section 1421(b)(1)(B) of the SDWA by Failing to Address Risks That Have Endangered Underground Sources of Drinking Water

The SDWA requires state UIC regulatory programs to be effective to prevent underground injection which endangers drinking water sources and prohibits states from promulgating rules authorizing underground injection that endangers drinking water. EPA determines whether a program prevents or allows endangerment based on a number of factors including "the text of the rules themselves, and the manner in which the State has administered such rules."[142]

Ohio's program fails to comply with Sections 1425 and 1421(b)(1)(B) because it 1) applies an area of review that fails to address formation overpressurization, enables out-of-zone waste migration, and excludes items necessary to protect USDWs; 2) allows the injection of waste into shale formations not suited for the storage of wastewater; 3)

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[139] 40 C.F.R. § 145.13(d).

[140] *See* 42 U.S.C. § 300h-4(c)(2).

[141] *See id*. §§ 300h-1(c), 300h-4(c)(2)

[142] *See* U.S. Env't Prot. Agency, *Guidance for State Submissions*, *supra*, at 11 (Ex. 3 at 11).

fails to require applicants to determine vital geologic information; 4) fails to require waste characterization; and 5) fails to require appropriate mechanical integrity testing required by the SDWA.

A. Ohio's Method of Establishing the Area of Review Endangers Underground Sources of Drinking Water and the Environment

In order to evaluate whether a proposed Class II well has the potential to contaminate USDWs through wells, faults or other pathways, the agency must first determine the area of review. EPA defines the area of review as:

> that area surrounding an injection well or injection well pattern in which the pressure change in the injection zone, resulting from high pressure injection, is great enough to make possible the migration of fluids out of the injection zone and into the underground source of drinking water.[143]

The agency can determine the area of review for a proposed well based on either the (1) zone of influence[144] or (2) fixed radius. Ultimately, though, an adequate area of review must protect USDWs.[145] Ohio's method of establishing the area of review fails to account for scenarios that foreseeably result in fluid migration such as overpressurization and drilling adjacent to producing and abandoned wells. Consequently, Ohio's program endangers USDWs.

1. The failure to account for overpressurization in the Area of Review determination endangers USDWs

Ohio exclusively applies the "fixed radius" method to determine the area of review even though this method does not ensure against risks of overpressurization of

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[143] Eng'g Enter., Inc., *Guidance Document for the Area of Review Requirement* I-1 (May 1985), https://www.epa.gov/sites/default/files/2020-02/documents/1985_guidance_document_on_aor_requirement.pdf.

[144] A "zone of influence" or "zone of endangering influence" is a calculation using geologic properties and information on the injection properties in order to more accurately define the area around a well for which the pressures in the injection intervals may cause vertical migration of injection fluid outside of the injection zone. *See* 40 C.F.R. § 146.6(a).

[145] Eng'g Enter., Inc., *Guidance Document*, *supra*, at 11.

injection formations.[146] Overpressurization occurs when waste injected into a formation increases the pressure to a point where fluids flow back up a well or other conduit to the surface.[147] The risks from overpressurization increase as injections increase.[148] EPA long ago identified overpressurization as an issue in suggesting that the fixed radius area of review may be outdated for states with large volumes of injection wells. In 2004 EPA's UIC National Technical Workshop identified the fixed area of review's inability to address overpressurization. In 2014 the Government Accountability Office ("GAO") conducted a review of EPA's program to protect USDWs from injection of fluids from Class II wells and identified overpressurization of injection formations as a serious issue causing surface outbreaks of injected fluids.[149] GAO identified a number of risks, and noted that if these risks are not addressed, USDWs are not fully protected.[150] EPA Region 6 officials found that overpressurization could arise by a formation receiving injected fluids for a long period of time or from increases in injection pressures.[151] These concerns have influenced subsequent UIC program development to use a zone of influence (also known as an area of endangerment) to calculate the area of review which accounts for overpressurization.[152]

Despite this updated knowledge, Ohio continues to exclusively apply the "fixed radius" method to determine the area of review.[153] While conceptually this method might be acceptable in certain contexts, Ohio's program fails to capture the information necessary to determine risks from geological conditions and potential migration pathways, endangering USDWs.

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[146] *See* Memorandum from Thor Cutler & Kurt Hildebrandt, Working Group Co-Chairs, U.S. Env't Prot. Agency, on Final Work Product from the National UIC Technical Workgroup, to Steven F. Heare, Director, Drinking Water Prot. Div., U.S. Env't Prot. Agency 1-2 (Nov. 5, 2004), attached as Exhibit 15; *see also* U.S. Gov't Accountability Off., *supra*, at 74 (Ex. 2 at 74).

[147] U.S. Gov't Accountability Off., *supra*, at 36 (Ex. 2 at 36).

[148] *Id*.

[149] *See id*.

[150] *See id*. at 3.

[151] *Id*. at 36.

[152] *See* Memorandum on Final Work Product from the National UIC Technical Workgroup, *supra*, at 1, (Ex. 15 at 1).

[153] Ohio Admin. Code 1501:9-3-01(E), 1501:9-3-05(A).

2. Ohio's fixed radius Area of Review fails to account for cumulative injection pressures

Ohio's fixed radius approach has led to absurd results. Ohio's area of review distance is fixed at a maximum of 2 miles for wells that dispose of more than 1,000 gallons per day, and the fixed radius can be as little one half mile for wells injecting up to 200 barrels per day.[154] By limiting the distance only to disposal volume and fixing the radius to a maximum distance of 2 miles, Ohio's approach ignores the serious migration risks that cumulative injection formation overpressurization creates, which is particularly troubling given Ohio's history of overpressurization and out of zone migration events.

Ohio's rules ignore the fact that migration risk from injection depend on the *cumulative* pressure of all of the injection wells impacting the formation. Currently, a well proposed to inject up to 200 barrels per day/per year has an area of review of one half mile from the center of the wellbore; a proposed well that would inject 200 to 1,000 barrels per day/per year has an area of review of one mile; and one that proposes to inject more than 1,000 barrels per day/per year has a two mile the area of review.[155] As a result, two adjacent wells, each injecting 800 barrels per day, would have a smaller area of review, by half, than a single well injecting 1000 barrels per day, even though the former situation would put the formation under more pressure than the latter situation. This raises serious problems in Ohio. where multiple injection wells are frequently located in relatively close proximity to each other throughout the eastern portion of the state.[156] The arbitrary fixed radius approach fails to require applicants to demonstrate that their projects will not endanger USDWs and fails to capture the potential zone of endangering influence.

Other states have taken regulatory action to address cumulative overpressurization. California, another state that permits relatively large numbers of Class II injection wells, has recognized the importance of accounting for all nearby injection by requiring consideration of all other wells in an area surrounding an injection well project.[157] Colorado's recent Class II well rulemaking addresses this issue

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[154] *Id*. 1501:9-3-05(A).
[155] *Id*. 1501:9-3-05(A)(1).
[156] Rossi & DiGiulio, *supra*, at 47 (Ex. 1 at 47).
[157] Cal. Code Regs. tit. 14, §§ 1724.7(a)(3)(B) and (D) (2022).

by ensuring that the injection zone radius for any disposal well does not interfere with another disposal well's injection zone radius.[158] This reduces the risk that the formation will become over-pressurized. Given the increase and intensity of overpressurization incidents that occur in Ohio related to Class II wells, as described by Dr. Rossi and Dr. DiGiulio in their report, and the high volume of existing injection wells, any Ohio program must reflect cumulative disposal in its area of review calculation to comply with the SDWA.[159]

3. A zone of endangering influence method is necessary to protect USDWs in Ohio

A zone of endangering influence area of review, calculated from injection pressures and reservoir properties, likely could have prevented recent surface expressions and out-of-zone migrations of wastewater. Dr. Rossi and Dr. DiGiulio's review of data related to the Genesis Well incident found that the injection wells in the area added a substantial amount of pressure to the formation, resulting in waste and fluids migrating up and through a nonproducing gas well, flowing for approximately two weeks and impairing nearby ecosystems.[160] Specifically, Rossi and DiGiulio performed a calculation combining the pressure effects from multiple wells in the area, to conclude that the surface expression likely occurred from overpressurization of the injection formations.[161] Importantly, had ODNR used the zone of influence calculation to determine the area of review for two nearby wells, the Travis and Warren injection wells, the area of review for those wells would have accounted for the Genesis Well. Specifically, the Genesis Well was a nonproducing well and if ODNR had included the well in the area of review, proper corrective action of plugging the well would have been required, likely preventing the migration of fluid to the surface through the Genesis Well.[162] Dr. Rossi and Dr. DiGiulio noted that a well that was properly plugged located halfway between the Genesis Well and the injection wells did not have an incident of surface expression, supporting their position that corrective action could

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[158] Colo. Oil & Gas Conservation Comm'n, Rule 800 Series, at 803(c) (2021), https://cogcc.state.co.us/documents/reg/Rules/LATEST/800%20Series%20-%20Underground%20Injection%20for%20Disposal%20and%20Enhanced%20Recovery%20Projects.pdf.

[159] Rossi & DiGiulio, *supra*, at 47 (Ex. 1 at 47).

[160] *Id*. at 44.

[161] *Id*.

[162] *Id*.

have been performed on the Genesis Well to prevent the surface expression event and the resulting environmental impacts.[163]

Dr. Rossi and Dr. DiGiulio found that there is a risk of incidents like this occurring in the future, highlighting the need for the area of review to be based on a radius of endangerment calculation rather than a fixed radius.[164] Specifically, the fact that Ohio has over 150,000 abandoned wells and the events that occurred at the Genesis Well incident highlights the threat to USDWs created by overpressurization.[165] Ultimately Rossi and DiGiulio concluded that:

> [A]s long as the ODNR continues to permit injection wells disposing of large volumes of produced water in the same injection formation in relatively close proximity, and does not require the modified Theis equation (or similar) to be used to estimate the radius of endangerment nearby USDWs may continue to be endangered.[166]

EPA officials have stated that they will address overpressurization on a case-by-case basis where states are experiencing issues.[167] Given the problems that have occurred in Ohio related to, among other factors, overpressurization of injection formations and nearby producing and abandoned wells, EPA should find that a fixed radius approach is inappropriate for Ohio and a comprehensive zone of influence area of review is necessary to protect USDWs.

4. Ohio's program allowing disposal in an Area of Review that contains producing or abandoned wells fails to protect USDWs

Producing wells and unplugged abandoned wells can serve as a conduit for injected fluid to migrate out of the injection zone, threatening drinking water sources.[168] Yet, Ohio's rules allow an injection well siting near a known producing well within the area of review, so long as at least one of two conditions is met: 1) the average disposal

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[163] *Id*.
[164] *Id*. at 47.
[165] *Id*.
[166] *Id*. at 44.
[167] *See id*. at 47; U.S. Gov't Accountability Off., *supra*, at 37 (Ex. 2 at 37).
[168] Rossi & DiGiulio, *supra,* at 47 (Ex. 1 at 47).

volume does not exceed 200 barrels per day/per year; or 2) the Class II disposal well owner also owns each producing well in the area.[169] Rather than address the migration risk, Ohio's rules place arbitrary limits on the volume of waste disposed, without explaining how these limits would avoid migration. Moreover, when the Class II well's owner and producing wells' owner are the same, the rules allow disposal without limit, never explaining how mere ownership would avoid migration. This rule seems tailored to prevent lawsuits by oil and gas producers impacted by nearby Class II disposal rather than to protect USDWs. Allowing a producing well in the vicinity of an injection well is a known risk that must be eliminated to ensure protection of USDWs.

To compound matters, Ohio's program does not contain any type of corrective action authority that would address the threat of a producing well in an area of review.[170] Section 1425 requires a state program to include the authority to require the operator to take corrective actions on wells within the area of review to eliminate the threat of the potential conduit.[171] However, the corrective actions recommended by EPA, such as plugging of the well or reconditioning, are inapplicable to producing wells until those wells are abandoned.[172] EPA should therefore find that the failure to prohibit the siting of an injection well where a producing well falls within the area of review is an endangerment to USDWs and the environment.

5. Ohio's program fails to protect USDWs by failing to include water wells in the Area of Review

ODNR rules do not require the operator to include water wells in the area of review maps. Water wells can represent the depth of USDWs around an injection well and are a source of drinking water in many regions of Ohio. ODNR must protect and consider water wells in the area of review in order to protect USDWs.[173] Fracture networks, legacy oil and gas infrastructure, and underground mines all can facilitate subsurface migration of injected fluids in unexpected ways and have the potential to contaminate water wells or migrate to other boreholes.[174] Federal regulations define

[169] Ohio Admin. Code 1501:9-3-05(B)(2).
[170] S*ee* Ohio Admin. Code 1501:9-3-01(N), 1501:9-3-05(A)(2).
[171] U.S. EPA, *Guidance for State Submissions*, *supra*, at 15-16 (Ex. 3 at 15-16).
[172] *See id*.
[173] *See* Rossi & DiGiulio, *supra*, at 4, 6 (Ex. 1 at 4, 6).
[174] *Id*. at 47.

"well" to include any borehole, and thus "well" encompasses oil and gas wells and other types, such as water wells.[175] Accordingly, the federal regulations require dry holes and water wells to be included in the area of review map. Yet, Ohio explicitly limits "wells" to those purposing oil, gas, and minerals. Water wells thus are not included in its area of review maps. Ohio's failure to include water wells in the area of review maps is out of step with the federal regulatory definition, and potentially endangers USDWs in Ohio. Other states that have primary authority to regulate Class II injection wells do include water wells in their area of review consistent with the federal definition.[176]

6. Ohio's Area of Review fails to require the location of all abandoned wells

EPA has long recognized that locating and plugging abandoned wells is necessary to prevent oil and gas wastewater from migrating to the surface through abandoned wells.[177] In fact, EPA regulations require that area of review maps include all abandoned wells. ODNR's area of review evaluation requirements lack a field survey to identify nearby abandoned wells. Ohio contains tens of thousands of abandoned wells that are unplugged and unaccounted for in areas where injection wells are sited.[178] As described above, Ohio has already experienced multiple events where oil and gas wastewater migrated to the surface through abandoned wells.[179] EPA must address this risk in Ohio by requiring a field survey for abandoned wells within an adequate area of review to fully evaluate migration risks prior to permitting any new injection well.

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[175] 40 C.F.R. § 144.3.

[176] *See* U.S. G.A.O., *supra*, at 75-76 (Ex. 2 at 75-76) (Colorado, Kentucky, North Dakota, and Pennsylvania require water wells to be included in the area of review).

[177] US EPA, Plugging and Abandoning Injection Wells, Regional Guidance #4 4 (1994), https://www.epa.gov/sites/production/files/2015-09/documents/r5-deepwell-guidance4-plugging-abandoning-injection-wells-19941222.pdf.

[178] Austyn Gaffney, *Ohio Gains Ground on a Hidden Hazard: More Than a Century's Worth of Abandoned Oil and Gas Wells*, NRDC (Mar. 26, 2019), https://www.nrdc.org/stories/ohio-gains-ground-hidden-hazard-more-centurys-worth-abandoned-oil-and-gas-wells.

[179] *See* Blauer & Aye, *supra*, at 2.

B. Ohio's Allowance of Injection into Shale Formations Endangers Underground Drinking Water in Violation of Sections 1425(a) and 1421(b)(1)(B) of the SDWA

Ohio's program endangers USDWs by allowing disposal into shale formations, which are not suitable for wastewater storage. Fluid movement from a formation that is inappropriate for underground injection of wastewater is one of the six main pathways that Class II wells can contaminate drinking water.[180] A formation is not appropriate where there are permeable or fractured areas in the confining layer which allows fluids to migrate out of the injection formation and potentially into USDWs.[181] The Ohio shale formations where ODNR has allowed disposal are just such permeable and fractured formations, and this has led to the endangerment of USDWs.

Ohio's rules allow Class II well drilling into a Devonian shale formation so long as the average disposal volume does not exceed an injection flow rate of 200 barrels per day/per year.[182] However, the issues involved with disposal into shale formations are not solved by these volume limits because the issue is the permeability of the formation itself, rather than the pressure rate and volume. The Devonian shale's permeability comes from a fracture network that can facilitate the migration of injected fluids over long distances.[183] The Redbird Well incident is one example of this phenomenon, where in late 2019 it became clear that a Class II injection well in Washington County, Ohio had caused oil and gas waste to travel outside of the permitted injection zone and into several production wells drilled into the Berea sandstone formation.[184] ODNR found that the shale formation allowed brine to travel through existing natural fractures upwards and into upper formations, surfacing through production wells located approximately five miles from the injection well.[185] Following the Washington County

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[180] U.S. G.A.O., *supra*, at 22-24 (Ex. 2 at 22-24).
[181] *Id*. at 24.
[182] Ohio Admin. Code 1501:9-3-05(B)(3).
[183] Rossi & DiGiulio, *supra*, at 47 (Ex. 1 at 47).
[184] Blauer & Aye, *supra*, at 1.
[185] *Id.* at 2; Beth Berger, *State Investigating Whether Injection Well Waste Affecting Drinking Water*, Coshocton Trib. (Sept. 9, 2020), https://www.coshoctontribune.com/story/news/2020/09/09/state-investigates-whether-injection-well-waste-affects-drinking-water/5756709002/.

surface expression, Ohio prohibited injections into shale formations. However, ODNR's recently adopted rules again allow injection into these formations.[186]

The Washington County surface expressions are indicative of a more pervasive problem in Ohio. Dr. Rossi and Dr. DiGiulio identified at least two additional wells currently injecting into the Devonian Shale for disposal but suggested there could be more.[187] If waste from these wells migrates to conduits such as the many existing and abandoned oil and gas wells in Ohio, it may migrate into and endanger USDWs.[188] Thus, given the distance waste has traveled through shale formations, and the extent of potential conduits in Ohio, allowing injection into any shale formation *de facto* endangers drinking water. Dr. Rossi and Dr. DiGiulio summed up the issue as follows:

> [S]ubsurface fracture trends, or legacy infrastructure may influence out of zone migration in unexpected ways and possibly present conduits for fluid migration into USDWs. Given that the new regulations do not outright prohibit this practice, and the possibility for substantial out of zone migration (e.g., >5 miles laterally, and 1,000's of feet vertically) by fluids injected into these formations, a comprehensive audit of this practice by USEPA Region 5 seems warranted to fully constrain potential risks.[189]

In order to ensure compliance with the SDWA and prevent endangerment of USDWs, EPA must prohibit injection into Ohio shale formations under all circumstances.

C. Ohio's Program Fails to Require the Operator to Determine the Extent of USDWs Before Issuing a Permit

To determine whether a state meets the section 1421(b)(1)(B) requirement that an applicant demonstrate that the proposed injection will not endanger drinking water the agency considers: (1) whether the state program places the burden on the applicant; and

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[186] Rossi & DiGiulio, *supra*, at 47 (Ex. 1 at 47); Ohio Admin. Code 1501:9-3-05(B)(3).
[187] Rossi & DiGiulio, *supra*, at 47 (Ex. 1 at 47).
[188] *See* U.S. Env't Prot. Agency, *Plugging and Abandoning Injection Wells*, *supra*, at 4.
[189] Rossi & DiGiulio, *supra*, at 47-48 (Ex. 1 at 47-48).

(2) the extent of information required by the applicant in the application process.[190] EPA has clarified that the information required in the application process should include, among other things, the geologic name and the depth to the bottom of all USDWs that could be affected by the proposed injection.[191] Moreover, when evaluating whether the state has a permitting process that effectively prevents endangerment of drinking water under Section 1425, EPA requires the State to design its siting process to assure that disposal zones are hydraulically isolated from underground sources of drinking water.[192] States can make this showing through either information supplied by the applicant or through data on file with the state.[193]

Ohio's program fails to require an accurate geological description of underground sources of drinking water ("USDWs") for every permit application. While Ohio's rules require an application to contain some geologic information, they fail to require information that would show the geologic name and final depth of all USDWs that the proposed injection could affect.[194] Knowing the location of USDWs is vital to determining if underground injection activities could endanger USDWs and is particularly important for Ohio, where approximately 42% of Ohioans rely on groundwater.[195] Given that the population of Ohio has increased by approximately 2.3% between 2010 and 2020, it is possible that the number of Ohio residents relying on groundwater has also risen.[196]

Dr. Rossi and Dr. DiGiulio noted in reviewing well data that there was "[n]o discussion, or maps of the location of USDWs within the permit materials."[197] In reviewing the Travis and Warren wells the experts stated they "were unable to find any clear description of USDWs in the vicinity of these wells."[198] While a regional map was

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[190] U.S. Env't Prot. Agency, *Guidance for State Submissions*, *supra*, at 10 (Ex. 3 at 10).
[191] *Id*. at 11.
[192] *Id*. at 14.
[193] *Id*.
[194] *See* Ohio Admin. Code 1501:9-3-05(C).
[195] *Groundwater Resources*, Ohio Dep't Nat. Res., https://ohiodnr.gov/discover-and-learn/safety-conservation/about-odnr/geologic-survey/groundwater-resources (last visited Oct. 7, 2022).
[196] U.S. Census Bureau, *OHIO: 2020 Census* (Aug. 25, 2021), https://www.census.gov/library/stories/state-by-state/ohio-population-change-between-census-decade.html.
[197] Rossi & DiGiulio, *supra*, at 30 (Ex. 1 at 30).
[198] *Id*. at 43.

included, it was of poor special resolution and as a statewide map, it could not be relied upon to determine any USDWs in the area where the wells were permitted.[199]

The information on USDWs is possible to obtain and available to operators. Dr. Rossi and Dr. DiGiulio noted that data from multiple boreholes can map the vertical extents of USDWs in the area surrounding Class II injection wells.[200] Moreover, although this information should be obtained in the application phase of each project, operators are not obtaining information on USDWs in Ohio at any stage. Each well operator must submit a completion report when the well is drilled and constructed, but Dr. Rossi and Dr. DiGiulio found that "none of the examined well completion reports contain any recording of the depths of freshwater strata, despite this being a line item on the well completion form."[201]

Dr. Rossi and Dr. DiGiulio found that failing to require locations of USDWs "introduces the potential for injection operations to impair unmapped USDWs which may be utilized (or utilized in the future)."[202] In consideration of this potential risk, if operators are unsure of the extent of USDWs, and unwilling to obtain the required information, the state should not allow injection operations.[203] As it stands Ohio's program is endangering drinking water and is inconsistent with Section 1421(b)(1)(B) and Section 1425 of the Safe Drinking Water Act.

D. Ohio's Program Fails to Require the Applicant to Provide Appropriate Geological Data on the Injection Zone

The information required by Section 1421(b)(1)(B) should include the "[a]ppropriate geological data on the injection zone, including lithologic description, geological name, thickness, and depth," according to the EPA.[204] A lithologic description details the rock formation that makes up the injection formation. This information is important to allow the agency to determine if the formation is

[199] *Id*.
[200] *Id*. at 46.
[201] *Id*. at 45.
[202] *Id*. at 46.
[203] *Id*.
[204] U.S. Env't Prot. Agency, *Guidance for State Submissions*, *supra*, at 11 (Ex. 3 at 11).

appropriate for injection, and/or whether to include pressure and volume limitations in the permit. A State program must ensure that obtaining this information is the responsibility of the applicant for a permit.[205] Ohio's regulations require vague descriptions of the geological zones or formations into which injection is proposed, and in practice these descriptions are so scant that the required information, including the lithologic description, geological name, thickness, and depth, are not part of the application process.[206]

Dr. Rossi and Dr. DiGiulio's review of the well files confirms that Ohio's rules and program do not require geological information on the injection zones. They noted that for the Redbird #2 well there was no description of approximately 16 feet of the injection interval, and in "a more egregious example, there is zero description of the injection zone of the Redbird # 4 well."[207] Given the out of zone migration that occurred at the Redbird #4 well, and given that the well was utilizing a formation with little permeability, this lack of information may have prevented ODNR from protecting USDWs and the environment.[208] Had the operator provided the appropriate information to ODNR, it should have been apparent that the target formation would provide direct flow paths and facilitate the migration of injected fluids over relatively long distances—the very event that ultimately occurred in the Redbird #4 surface expression.[209] Thus, ODNR's failure to require information on the injection zone prior to issuing a permit for the Redbird #4 well contributed to or caused endangerment to nearby USDWs.

Likewise, Dr. Rossi and Dr. DiGiulio came to the following conclusion after reviewing the data related to the Warren and Travis wells:

> [V]ery little geologic description of the injection formation appears to have been conducted. Crucial injection formation properties (e.g., permeability, hydraulic conductivity, native formation pressure) that establish the pre-injection conditions of the injection formation do not appear to have been measured (or if they were, are not present in the permit materials). Thus,

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[205] *Id*. at 10-11.
[206] *See* Ohio Admin. Code 1501:9-3-05(C)(2).
[207] Rossi & DiGiulio, *supra*, at 26 (Ex. 1 at 26).
[208] *Id*. at 26-27.
[209] *Id.* at 26.

this omission precludes simulating possible threats to nearby USDWs (i.e., calculating realistic radii of endangerment).[210]

Ohio's Class II program fails to require appropriate descriptions of injection formation property resulting in an endangerment to USDWs. The Redbird Well incident illustrates a direct endangerment to USDWs and the environment from the failure to require this information, and Ohio's program will continue to violate Section 1425 and 1421(b)(1)(B) of the SDWA until such a requirement is in place.

E. Ohio's Program Fails to Require Characterization of the Waste Being Injected

Section 1425 of the SDWA specifically mandates that a state program include monitoring, recordkeeping, and reporting requirements.[211] In addition, in making the requisite showing that proposed injection will not endanger drinking water sources under Section 1425, EPA must evaluate the extent of information the permit application is required to provide as a basis for the state agency's decision.[212] EPA's guidance interpreting Section 1425 requirements states that information required includes the source and appropriate analysis of the injection fluid, and its compatibility with the receiving formation.[213] Further, the federal regulations directly dictate that a state program must specify that waste characterized as hazardous cannot be disposed of in a Class II well.[214] EPA's guidance implements this by requiring state rules to include testing or monitoring to characterize the waste at the disposal site prior to disposal.[215] Monitoring the waste to characterize its constituents is important to ensure that only Class II regulated wastes are being disposed of, to allow the agency and the public to determine the source of leaks and contamination, and to determine radioactivity levels and whether it can be handled and disposed of safely. Ohio's rules do not require characterization of the waste prior to injection and thus fail these basic requirements.

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[210] *Id*. at 43.
[211] 42 U.S.C. §§ 300h(b), 300h-4(a).
[212] U.S. Gov't Accountability Off., *supra*, at 10 (Ex. 2 at 10).
[213] *See id*. at 11.
[214] *See* 40 C.F.R. § 144.6(b)(1).
[215] U.S. Env't Prot. Agency, *Guidance for State Submissions*, *supra*, at 11 (Ex. 3 at 11).

1. Ohio rules fail to ensure only Class II waste is being injected

Under the federal regulations, Class II wells are limited to accepting wastes "[w]hich are brought to the surface in connection with . . . conventional oil or natural gas production . . . unless those waters are classified as a hazardous waste at the time of injection."[216] Ohio's rules are less stringent and implicitly allow disposal of brine and waste substances that are hazardous at the time of injection, stating "[o]nly brine and other waste substances may be injected into a Class II disposal well for which a permit is issued under Chapter 1501:9-3 of the Administrative Code."[217] Ohio's rule is unclear as to whether wastes that become "hazardous" at the time of injection can be disposed of in a Class II well. Congress amended the Resource Conservation and Recovery Act to exempt oil and gas production waste associated with exploration, development, and production from the definition of "hazardous waste."[218] However, EPA has clarified that solid and liquid wastes not brought to the surface in connection with production do not fall under the exemption and may be hazardous waste, and may therefore be required to be disposed of in Class I wells.[219] Ohio's rule thus fails to explicitly clarify that wastes classified as hazardous cannot be injected at a Class II injection well in order to comply with Federal law. The federal rules require additional permitting measures for wells that inject hazardous waste.[220] Waste characterized as hazardous is regulated under the Class I injection well program, which contains more stringent standards for construction, monitoring, and reporting.[221]

Ohio's program also fails to require any periodic monitoring, characterization, and reporting of the waste being injected in Class II wells by the operator to determine

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[216] 40 C.F.R. § 144.6(b)(1).
[217] Ohio Admin. Code 1501:9-3-07(B).
[218] 42 U.S.C. § 6921(b)(2)(A); *see also* 40 C.F.R. § 261.4(b). At the time of the RCRA exemption, and since, EPA acknowledged that certain oil and gas wastes would meet the hazardous waste definition were it not for the exemption. *See* Regulatory Determination for Oil and Gas and Geothermal Exploration, Development, and Production Wastes, 53 Fed. Reg. 25447, 25455 (Jul. 6, 1988).
[219] *See* U.S. Env't Prot. Agency, *Exemption of Oil and Gas Exploration and Production Wastes From Federal Hazardous Waste Regulations* 11 (2002), https://archive.epa.gov/epawaste/nonhaz/industrial/special/web/pdf/oil-gas.pdf.
[220] *See* 40 C.F.R. § 144.14.
[221] *Id*. § 144.6(a); *see id.* §§ 146.11-16.

the nature of the waste and ensure that the waste is appropriate for disposal in a Class II well. An example of more proper characterization can be found in the EPA's own Federal Class II well program. The program requires "monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including when appropriate, continuous monitoring."[222] Appropriate monitoring requirements, at a minimum, include monitoring "of the nature of injected fluids at time intervals sufficiently frequent to yield data representative of their characteristics."[223] Thus, if EPA were to administer the program, monitoring of the nature of injected fluids would be required.[224] By excluding monitoring to characterize the waste altogether, Ohio is failing to properly analyze and determine the source of the injection fluid. Other shale gas producing states do require characterization of the waste as part of their program. West Virginia, for example, requires that records be created "concerning the nature and composition of injected fluids" and that those records be kept for at least three years after the well is plugged.[225] Ohio's rules fail to require periodic monitoring and characterization of the waste to ensure only appropriate Class II wastes are being disposed of and thus fail to meet the obligations under the Safe Drinking Water Act.

2. Waste characterization is necessary to determine safety issues with handling and disposing of waste and to respond to releases

Monitoring and characterization are essential in assessing the risks from potential releases, tracing contamination events, and creating response plans. As described throughout this Petition, releases have occurred at numerous injection wells in Ohio just in the last few years.[226] The waste from these releases into the environment commonly has been found toxic, resulting in fish kills and other environmental degradation issues.[227] Oil and gas waste has long been known to contain a range of

[222] *Id*. § 144.54(b).
[223] *Id*. § 146.23(b)(1).
[224] *Id*.. § 144.52(a)(5).
[225] W. Va. Code § 47-13-14.6.b. (2022).
[226] *See* Julie Grant, *Unused Gas Well Spews What's Suspected to be Frack Waste, Killing Fish*, The Allegheny Front (Feb. 4., 2021), at: https://www.alleghenyfront.org/unused-gas-well-spews-whats-suspected-to-be-frack-waste-killing-fish/.
[227] *See id*.

pollutants often at toxic and harmful levels, including various organic and inorganic chemicals, metals, and radioactive materials.[228] Other states, such as California and Colorado, characterize both the waste and the native brine prior to disposal activities so that regulatory authorities can better determine when leaks occur, where the contamination came from, and how to respond.[229] Similarly, Ohio's program must require monitoring and characterization of Class II waste in order to properly regulate it.

Importantly, characterization is necessary to determine the radioactivity levels of the waste and risks from exposure. Radioactive materials have been found at consistently high levels in the shale gas regions where Ohio accepts wastes for Class II disposal.[230] The Division itself has tested oil and gas waste within the state UIC program and found extremely high levels of radioactivity.[231] Allowing Class II injection well operators and their employees and contractors to move, store, and dispose of highly radioactive waste with no knowledge of its level of radioactivity is extremely dangerous and not in conformance with ODNR's duty to protect the environment and the health of persons. Accordingly, EPA must require regular testing of waste being handled and disposed of for radioactivity, and, by rule, should set limits on what can be handled at Class II injection well sites in Ohio based on radioactivity levels and public health and safety.

It has recently come to light that per- and polyfluoroalkyl substances ("PFAS") have been used in the hydraulic fracturing process in oil and gas wells in Ohio, and as a result oil and gas waste in Ohio could contain PFAS chemicals.[232] Researchers with Physicians for Social Responsibility identified PFAS injected in oil and gas wells between 2013 and 2022 in eight of Ohio's most prolific counties for oil and gas development.[233] In addition, the report notes that, due to the lack of required disclosure of chemicals used in oil and gas operations, it is likely that PFAS have been used more extensively than the records indicate.[234] The class of PFAS used by the oil and gas

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[228] *Unconventional Oil and Gas Development*, *supra*.
[229] *See* Cal. Code Regs. tit. 14, § 1724.7.2; 2 Colo. Code Regs. § 404-1:806 (2022).
[230] Nobel, *supra*.
[231] *See* Memorandum on Preliminary Brine Study Results, *supra*, at 1.
[232] Horwitt, Gottlieb, & Allison, Fracking with "Forever Chemicals" in Ohio, *supra*, at 1 (Ex. 4 at 1).
[233] *Id*. at 1.
[234] *Id*. at 5.

industry in Ohio are known as polytetrafluoroethylene ("PTFE"), friction reducers intended to help with the hydraulic fracturing process.[235] This class of PFAS is toxic to people and wildlife and persists in the environment.[236] Due to the increased understanding of the dangers caused by PFAS contamination, EPA has been taking steps to more strictly monitor and regulate toxic PFAS, including beginning the process of classifying PFAS as a hazardous waste under the Resource Conservation and Recovery Act ("RCRA").[237]

Physicians for Social Responsibility's researchers noted that PFAS pollution in Ohio is possible "wherever oil and gas wastewater containing PFAS has been disposed of."[238] The report describes how wastewater in Class II wells could migrate to the many unaccounted for abandoned oil and gas wells in Ohio, and noted that the migration events in Washington and Noble Counties described in this petition endanger groundwater with PFAS contamination.[239] Considering these risks, EPA must require waste disposed of at Class II wells to be tested for PFAS in order to determine the appropriate response to a migration or contamination event.

F. Ohio's Rules for Mechanical Integrity Testing are Inadequate and Do Not Comply with the SDWA and US EPA's Class II Program Because They Fail to Require Periodic Part 2 Testing

Among the factors EPA considers in determining if a state has an "effective program to prevent underground injection which endangers drinking water sources" is whether the state applies certain minimal technical requirements by permit or rule.[240] One of those technical requirements is that all wells are required to demonstrate mechanical integrity.[241] Mechanical integrity testing ensures the well has no significant

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[235] *See id*. at 4.
[236] *Id*. at 5.
[237] *See* U.S. Env't Prot. Agency, EPA Actions to Address PFAS, https://www.epa.gov/pfas/epa-actions-address-pfas (last updated Aug. 26, 2022). Should EPA proceed with the rulemaking and classify PFAS as hazardous, oil and gas waste containing PFAS may be prohibited from Class II disposal altogether. This is an additional reason it is important to test the waste before it is disposed of in a Class II well.
[238] Horwitt, Gottlieb, & Allison, *Fracking with "Forever Chemicals" in Ohio*, *supra*, at ii (Ex. 4 at ii).
[239] *See id*. at 11-12.
[240] U.S. Env't Prot. Agency, *Guidance for State Submissions*, *supra*, at 1 (Ex. 3 at 1).
[241] *Id.* at 14.

leaks and that there is no significant movement of wastes from the well into an underground source of drinking water through vertical channels adjacent to the wellbore.[242] should require the operator to demonstrate mechanical integrity of a new injection well before operation, and for all injections wells at least once every five years after operation commences.[243] Ohio's rules provide for mechanical integrity testing to be in two parts, called Part 1 and Part 2. A Part 1 test ensures that the well has no significant leaks in the casing or tubing. Part 2 ensures that there is no significant movement of brine or waste substances from the well through vertical channels adjacent to the wellbore using a number of different methods, including casing inspections, tracer surveys, temperature surveys, and noise logs.[244] A Part 2 test is essential for establishing integrity.

Ohio's regulations require well owners to conduct both Part 1 and Part 2 testing prior to commencing operations.[245] However, only Part 1 tests are required to demonstrate integrity every five years thereafter. An operator is only required to complete another Part 2 test if the chief requires it "for good cause".[246] In order to comply with the SDWA to ensure prevention of migration of fluids into underground water sources, the rules must have some periodic Part 2 testing to ensure there is no significant movement of wastes through vertical channels adjacent to the wellbore.

ODNR cannot justify excluding periodic testing for Part 2 tests and the "good cause" standard is vague. EPA should require periodic Part 2 testing to be conducted no less than every five years. Dr. Rossi and Dr. DiGiulio noted this deficiency in their review, explaining that a Part 1 test alone cannot determine the risk of external migration of injected fluids into USDWs.[247] Part 1 testing alone does not determine whether there is movement of brine or waste substances from the well through vertical channels adjacent to the wellbore. In their review of the well data, Dr. Rossi and Dr. DiGiulio confirmed that Part 2 testing was indeed only conducted one time for each well.[248]

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[242] Ohio Admin. Code 1501:9-3-01(U).
[243] U.S. Env't Prot. Agency, *Guidance for State Submissions*, *supra*, at 16-17 (Ex. 3 at 16-17).
[244] Ohio Admin. Code 1501:9-3-01(V), 1501:9-3-01(W).
[245] *Id*. 1501:9-3-06(E).
[246] *Id.* at 1501:9-3-07(D)(2)(b).
[247] Rossi & DiGiulio, *supra*, at 46 (Ex. 1 at 46).
[248] *Id*. at 11, 19, 23, 33, 40.

Ohio's inadequate mechanical integrity testing violates Section 1425 standards and EPA should implement a program that ensures adequate and periodic testing. We recommend EPA follows California's regulations and require a Part 2 test once per year to ensure ongoing mechanical integrity.[249]

G. Ohio's Rules Fail to Provide a Periodic Review or an Expiration of the Permit Term

Ohio's program does not provide for any periodic review or expiration of the permit terms. The permitting agency and the public should have the opportunity to review the permit and all changes since the permit was issued after some period of time, such as a permit expiration or renewal period.[250] Changes in the field and in the regulations are constant, and these changes may include updates to well integrity requirements, updates to fault and seismicity data, newly discovered underground water sources, and updated waste storage and handling protocols. Not requiring periodic review of permits prevents both the agency and the public from updating the permit to take necessary action to protect public health and the environment. Accordingly, other states conduct a period of review for each underground injection well permit to determine compliance with current regulations and to determine if changes need to be made.[251] EPA's minimum regulations require a Class II permit to be reviewed at least once every 5 years to determine whether it should be modified, revoked and reissued, or terminated.[252] EPA should therefore find that Ohio's program fails to meet the minimum federal standard by failing to provide an expiration of the permit term.

H. EPA Must Take Action to Implement a Permitting Program that Complies with the SDWA

Petitioners request that EPA initiate the rulemaking process to revoke Ohio's primacy over its Class II well program because ODNR's Class II rules and permitting program do not represent an effective program to prevent underground injection that

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[249] Cal. Code. Regs. tit. 14 § 1724.10.2(b)(1).

[250] Virtually all other environmental permits require an expiration and renewal period. *See, e.g.,* 33 U.S.C. § 1344(e)(2) (describing a 5-year term for Clean Water Act Section 404 permits).

[251] *See, e.g.,* Cal. Code. Regs. tit. 14 at § 1724.6(d) (providing for review once every three years).

[252] 40 C.F.R. § 144.36(a).

endangers drinking water sources.[253] ODNR's fixed radius area of review has been shown to be ineffective at preventing overpressurization and out of zone migration issues, endangering USDWs. Ohio's rules also continue to allow injection into Ohio shale formations, a practice that has been shown to cause out of zone migration of waste. Moreover, the permitting process fails to address important risks in siting, handling, and disposal of oil and gas waste in Class II wells, such ensuring the location of all potential conduits, identifying important geological details, regular characterization of the waste being disposed of, and adequate testing to ensure the integrity of the well. Therefore, EPA must implement a program in Ohio that complies with the SDWA and protects USDWs.

VIII. Ohio's Class II Program Does Not Allow the Public a Meaningful Opportunity to Participate in the Permitting Process

Ohio's program prevents the impacted public from participating in Class II permitting decisions in any meaningful manner. Federal regulations and EPA guidance are clear that "the degree to which [a state program] assures the public an opportunity to participate in major regulatory decisions" is an essential factor in determining whether a state program "represents an effective program to prevent underground injection which endangers drinking water sources." [254] This factor is completely missing from Ohio's program.

Fundamentally, Ohio's program prevents meaningful public involvement in major regulatory decisions by (A) using a two-permit process that lacks (B) adequate public notice; (C) a draft permit process; and (D) an accessible route to administrative or judicial review.

In addition to this overarching failure, Ohio's program lacks the majority of elements EPA considers when determining whether a program assures the public an opportunity to participate in major regulatory decisions.[255] Specifically, Ohio's Class II Program lacks the elements related to (1) public notice because its method of giving notice of permit applications is inadequate to bring the matter to the attention of

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[253] *See* 42 U.S.C. § 300h-4(a).

[254] *See* U.S. Env't Prot. Agency, *Guidance for State Submissions*, *supra*, at 13, 18 (Ex. 3 at 13, 18); 42 U.S.C. § 300h-4.

[255] *See* U.S. Env't Prot. Agency, *Guidance for State Submissions*, *supra*, at 18 (Ex. 3 at 18).

interested parties, including impacted communities; (2) public hearings because ODNR denies public hearings even when there is a significant public interest, and (3) response to public comments because Ohio's rules do not require ODNR to respond to public comments on permit applications.

Without any meaningful public participation opportunities, Ohio's program lacks rigor and robs the public of its ability to protect their underground drinking water sources. ODNR does not thoroughly test applications against citizen concerns, nor does the agency incorporate local knowledge of infrastructure, geography, and water use into permitting decisions. As evidenced by EPA guidance and federal regulations, these sources of information are critical to protecting underground sources of drinking water and a fundamental part of what constitutes an "effective program" under the SDWA. EPA must revoke the state's primacy under Section 1425 until Ohio demonstrates it will meet minimum public participation standards.

A. ODNR's Two-Permit Process Prevents Meaningful Public Involvement in Major Regulatory Decisions

ODNR uses a two-permit system to authorize Class II injection wells.[256] First, ODNR reviews the application for a permit to drill ("PTD"). ODNR publicly notices this application once it is complete and provides a 30-day comment window. ODNR does not issue a draft PTD or publicly notice the issued PTD. Following the well's construction, the project proponent then submits an application for a permit to inject ("PTI").[257] ODNR does not publicly notice applications for PTIs or issued PTIs. ODNR also does not issue draft PTIs. Final PTIs can be appealed to the Oil and Gas Commission, while final PTDs cannot.[258]

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[256] *See Athens Cty. Fracking Action Network v. Simmers*, No. 16AP–133, 2016-Ohio-5388, 2016 WL 4382674, at ¶ 13 (Ohio Ct. App. Aug. 16, 2016).

[257] *See id.* A plain reading of the rules and statutes included in Ohio's program does not illuminate this bifurcated process. Instead, impacted communities became aware of its existence through a court decision in 2016, following their attempt to challenge a permit to drill a Class II well in Athens County, Ohio.

[258] *Id.* ¶¶ 14-15. Ohio's Class II program's public notice provisions apply to a "permit for a Class II disposal well." However, ODNR has expressed that the public notice provisions apply solely to the permit to drill a Class II well, and ODNR has never publicly-noticed a permit to inject. *See* Letter from George Banzinger on Primacy of Ohio Department of Natural Resources for Class II Injection Wells to

The absence of a public comment period on PTIs defies EPA guidance that **each** permit application should include a comment period, and a final action on a permit application should include a response to comments.[259] Ohio's failure to provide public notice of the final issuance of both the PTD and PTI also differs dramatically from federal regulations for EPA-run programs, which mandate notice of the final permit decision to each person who submitted comments or requested notice.[260]

Ohio's two-permit system also makes it practically impossible for impacted residents to access meaningful administrative or judicial review of an issued permit. The lack of an accessible route to review reduces the weight ODNR must give citizen concerns. It also differs significantly from program requirements under Section 1422, which provide the right of appeal to any person who filed comments or participated in a public hearing.[261]

As stated above, PTDs cannot be appealed to the Oil and Gas Commission.[262] While PTIs can be, the lack of public notice for both the PTI application and the issued PTI makes mounting an appeal within the required 30-day window nearly impossible.[263] Moreover, because ODNR only issues a PTI *after* well construction, appealing a PTI does not allow for meaningful review of ODNR's siting and construction decisions—which at that point have already been authorized by the PTD. This is alarming given the primary concerns regarding a well's impacts on underground sources of drinking water and public health and safety often relate to siting and construction.

ODNR's two-permit system for authorizing Class II wells prevents the public from having any meaningful opportunity to participate in permitting decisions for Class II wells. As a result, Ohio's program completely lacks the public participation factor EPA relies upon to determine the "effectiveness" of a State program.

Michael Regan, Administrator, U.S. Env't Prot. Agency 2 (Oct 1, 2022) (hereinafter "Banzinger Letter"), attached as Exhibit 18.

[259] U.S. Env't Prot. Agency, *Guidance for State Submissions*, *supra*, at 18-19 (Ex. 3 at 18-19).

[260] 40 C.F.R. § 124.15(a).

[261] *Id*. § 124.15(a)(2).

[262] *See Athens Cty. Fracking Action Network*, No. 16AP–133, 2016 WL 4382674, at ¶ 13.

[263] *See* Ohio Rev. Code Ann. § 1509.36 (providing a 30-day window for appeals to the Oil and Gas Commission).

Accordingly, EPA should revoke Ohio's primacy and implement its own program that provides for meaningful public participation in the permitting process.

B. Ohio's Notice Requirements Are Inadequate

ODNR's notice process is inadequate. EPA guidance states that an adequate notice should "provide an adequate description of the proposed action" and must "identify where an interested party may obtain additional information. This location should be reasonably accessible and convenient for interested persons."[264] ODNR's notices generally provide minimal information about the proposed injection well, and generally do not identify where interested parties may obtain additional information (for example, the application, appendices to the application, or other supplemental materials) without going through a lengthy public records process. There is also no way for an interested party to receive anything other than the notice itself on an accessible online database.[265]

Ohio's program also does not require the preparation of a draft permit, with associated notice and comment, depriving Ohioans of a critical opportunity for public involvement. This is a significant departure from EPA-run programs, which require preparation of a draft permit once an application is complete.[266] Issues for comment often arise once an interested party sees how the state addresses potential problems in an actual permit document. Without a draft permit, commenters lack access to critical information, and ODNR misses the opportunity to test the permit against public concern and local knowledge of water resources prior to issuing a final permit. Ohio's program is less rigorous than federally run programs as a result, giving Ohioans fewer protections despite the high waste burden in their communities.

Therefore, EPA should revoke ODNR's authority to implement its Class II program because of its failure to provide adequate public notice regarding the permitting of Class II wells.

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[264] U.S. Env't Prot. Agency, *Guidance for State Submissions*, *supra*, at 19 (Ex. 3 at 19).
[265] *See* Ohio Admin. Code 1501:9-3-05(E)(3)(b) (providing no option to request more information on an application beyond the notice of application).
[266] *See* 40 CFR § 124.6(a) (requiring the preparation of a draft permit prior to issuance of a final permit), *see also id*. § 124.10(e) (requiring public notice when a draft permit has been prepared).

C. Ohio' Rules Fail to Provide the Public an Opportunity for a Public Hearing

Ohio's regulations do not clearly establish who can request, and when ODNR will grant, a "public meeting," nor do they specify the procedures for that meeting. EPA guidance instructs that state programs "should provide opportunity for a public hearing if the Director finds, based upon requests, a significant degree of public interest."[267] Similarly, for federal programs, the agency must hold a public hearing whenever they find "on the basis of requests, a significant degree of public interest" in a draft permit.[268] Furthermore, under federal programs, "any interested person … may request a public hearing."[269]

A plain reading of Ohio's rules indicates that anyone who sees the notice of the permit application published in a local newspaper has the right to request a public meeting.[270] However, ODNR has only allowed a small subset of people—owners of property or wells nearby and local government authorities—to request a public meeting.[271] In a meeting on the current Class II rules when they were still in draft form, ODNR explicitly stated its position that only this small subset of people can request a public meeting. ODNR's interpretation goes against the plain text of the regulation, fails to meet the minimum standards in EPA guidance, and differs drastically from the requirements for federal programs.

There could be many situations where there is significant public interest in a proposed injection well and many requests for a public hearing from the impacted public, but neither the landowners living immediately next to the wells nor the local government want to get involved or to request a public meeting. Under ODNR's

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[267] U.S. Env't Prot. Agency, *Guidance for State Submissions*, *supra*, at 19 (Ex. 3 at 19).
[268] 40 CFR 124.12(a).
[269] *Id*. § 124.11.
[270] Ohio Admin. Code 1501:9-3-05(E)(3)(c)(ii) ("Before the end of the public comment period as established in this rule, any person receiving notification in paragraph (E)(3)(b) of this rule may request a public meeting. The division will hold a meeting, at a location and in a format to be determined by the chief.") Paragraph (E)(3)(b) states that the applicant must (i) provide notice of application by hand delivery or certified mail to people who own wells or property near the proposed injection well and the local governmental authority where the well is located; and (ii) publish the notice in a newspaper of general circulation.
[271] Banzinger Letter, *supra*, at 1 (Ex. 18 at 1).

interpretation of its rules, there would be no public hearing, despite the number of requests indicating a high degree of public interest. ODNR's interpretation also precludes renters living on property nearby a proposed well from requesting a public meeting.[272]

Already, ODNR routinely ignores the numerous requests for public hearings by communities nearby injection wells. Buckeye Environmental Network organized a Citizen's Tribunal in April 2021 to learn more about the ways injection wells impact communities.[273] ODNR's refusal to hear and respond to citizen concerns was a primary concern, including ODNR's refusal to hold public hearings. Portage County residents Lori Bobbi and Gwen Fisher describe in their testimony at the Citizen's Tribunal how—despite immense outcry from the local community—ODNR refused to hold a public hearing on the applications for seven injection wells in their community.[274] Testimony by Tom Ratinne of Belmont County similarly describes ODNR's failure to hold a public hearing on injection wells proposed by Omni Energy despite a high volume of requests, including requests from adjacent landowners and county commissioners.[275]

Ohio's regulations also fail to provide for a public hearing, as EPA defines the term. Federal regulations require that a "public hearing" allow any person to submit oral or written statements and data concerning the proposed action.[276] The agency must also make a tape recording or written transcript of the hearing available to the public.[277] Ohio's rules do not include a process for a public hearing that meets these minimum standards because they only provide for a "public meeting," which ODNR has interpreted to mean an informational meeting that it can hold at any time, including

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[272] *See* Ohio Admin. Code 1501:9-3-05(E)(3)(b)(i)(B).

[273] The recording of the tribunal is available at https://www.youtube.com/playlist?list=PLNbrnMgTntHlRaxFoBMndc12JQ5DPRJaA.

[274] Buckeye Env't Network Ohio, *BET 2021 Lorri Bobbi*, YouTube (Sep. 27, 2022) https://www.youtube.com/watch?v=xQgK3XaLiwA (hereinafter "Lorri Bobbi Testimony"); Buckeye Env't Network Ohio, *BET 2021 Gwen Fisher*, YouTube (Sep. 27, 2022) https://www.youtube.com/watch?v=25A2Dj4ZNEU (hereinafter "Gwen Fisher Testimony"). ODNR held an informational meeting 9 months after the permits had been issued, at a location over 30 miles from the wells' location. Lorri Bobbi Testimony, *supra*.

[275] Buckeye Env't Network Ohio, *BET 2021 Tom Ratinne*, YouTube (Sep. 27, 2022), https://www.youtube.com/watch?v=nS9PRDAx__8&t=7s (hereinafter "Tom Ratinne Testimony").

[276] 40 C.F.R. § 124.12(c).

[277] *Id*. § 124.12(d).

after the proposed action has become a final one.[278] The rules also do not require the creation of recordings or transcripts, and in practice ODNR has not made recordings or transcripts of those meetings it has held. Accordingly, Ohio provides no opportunity for a "public hearing" as EPA describes the term in federal regulations.

EPA must not allow Ohio to continue to subvert the public participation processes required by the SDWA. EPA should revoke Ohio's primacy over its Class II program and implement a program that gives impacted communities a real opportunity to obtain a public hearing on Class II well applications and draft permits.

D. Ohio's Program Fails to Require Responses to Public Comments

Agency response to public comments is important to explain whether or how the public's participation affected an agency's final decision. An agency's response to comments can inform members of an impacted community about the actions an agency did or did not take to evaluate and address the concerns, information, and data presented during the public comment period. Responses to comments also inform the public about an agency's decision-making process, strengthening the public's ability to provide effective input on future actions.

EPA guidance for Section 1425 programs states that final actions on permit applications "should contain a 'response to comments' which summarizes the substantive comments received and the disposition of the comments."[279] Ohio's program contradicts this instruction by limiting the circumstances under which ODNR must respond to comment. Ohio leaves complete discretion to the Chief of ODNR to determine which comments will receive a response—and requires no response if the Chief "determines no deficiency exists or if the comments are outside the jurisdiction of Chapter 1509 of the Revised Code or division 1501:9 of the Administrative Code."

The rules also only require a response to comments made by those receiving notice under Ohio Admin. Code 9-3-05(E)(3)(b), which only explicitly names a small subset of the population—well owners and operators in the area of review, nearby

[278] *See* Lori Babbi Testimony, *supra*; Gwen Fisher Testimony, *supra*.
[279] U.S. EPA, *Guidance for State Submissions*, *supra*, at 19 (Ex. 3 at 19).

property owners, and a selection of local government officials.[280] There is no justification for restricting responses to comments to specific people receiving the notification required by part (E)(3)(b) of the rule. Allowing the Chief to not respond to substantive comments from the public is in direct conflict with EPA guidance, which clearly contemplates a response to every substantive comment.

In addition, EPA guidance instructs that responses to comments should "summarize[] the substantive comments received and the disposition of the comments."[281] For EPA-run programs, the Director must specify any provisions in the final permit that the agency changed and the reasons for the change, as well as describe and respond to all significant comments made during the comment period.[282] However, Ohio's rules allow the Chief to respond to comments "in a manner to be determined by the chief," without any further explanation. Thus, Ohio's rules give ODNR wide discretion to cursorily respond, refuse to engage with the comment in any meaningful way, or to simply state that permit terms and conditions address all legal and technical deficiencies raised, without providing any specification. Such a response is clearly unacceptable under EPA guidance yet written into Ohio law.

In practice, ODNR routinely ignores comments identifying legal and technical deficiencies—abusing the wide discretion the rules grant to it and rendering the public participation process largely meaningless.[283] Tom Ratinne, a resident of Belmont County, testified at the Citizen's Tribunal:

> In the months we have been dealing with it, we have seen how ineffective, and may I use the word corrupt, the Ohio Department of Natural Resources seems to be. Numerous comments were sent to them. Many of them were hand-delivered, expressing the objections of the citizens of

[280] As discussed in section VIII.C. of this Petition, the provision in Ohio's rules regarding public hearings also cites Ohio Admin. Code 9-3-05(E)(3)(6). A plain reading of Ohio Admin. Code 9-3-05(E)(3)(6) should include those receiving notice by local newspaper. However, at least in the public hearing context, ODNR clearly interprets language of Ohio Admin. Code 9-3-05(E)(3)(6) to only include those explicitly named in the rule, not those receiving notice under the newspaper provision.

[281] U.S. Env't Prot. Agency, *Guidance for State Submissions*, *supra*, at 19 (Ex. 3 at 19).

[282] 40 CFR § 124.17(a).

[283] ODNR's recent revisions to its rules do not contain any additional requirements that would address the concerns and issues identified at the citizens' hearing.

> Richmond Township and Belmont County. ODNR saw nothing relevant in these objections, we were told.[284]

Mr. Ratinne's testimony provides one example of a wid-spread sentiment throughout injection well-impacted communities.[285]

Ohio's failed public feedback process has left impacted communities disillusioned with their government and feeling that they are powerless to impact decisions regarding Class II disposal wells. Left unremedied, this dynamic can lead to reduced participation in decision making by those who stand to be most impacted, significantly reducing the efficacy of a Class II program. Already, ODNR's failure to incorporate public comments into decision making has contributed to the program's inability to protect USDWs.

E. EPA Must Take Action to Implement a Permitting Program that Provides for Meaningful Public Participation

Petitioners request that EPA initiates a rulemaking process to revoke Ohio's primacy over the Class II well program because ODNR's Class II rules do not provide for meaningful public participation in its permitting process. ODNR's bifurcated permitting process does not allow for public notice and comment on the only permit that is appealable, and at least a significant portion of the public is not provided an opportunity for a public hearing. In addition, ODNR is not required to respond to substantive comments, and in practice has continually failed to do so. Ohio's public participation procedures fall well short of what is required for its program to "represent[] an effective program to prevent underground injection which endangers drinking water sources." EPA must revoke the state's primacy to regulate Class II

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[284] Tom Ratinne Testimony, *supra*.

[285] *See, e.g.*, Lorri Babbi Testimony, *supra* ("Over the years, my experience with ODNR is that they are dismissive of public concerns and that they defend and protect any and all actions of the oil and gas industry."); Gwen Fischer Testimony (describing "the fact that nobody was actually listening to what the citizens had to say about their concerns" and nobody answering their questions as "typical" of her experience with ODNR); Buckeye Env't Network Ohio, *BET 2021 Ted Auch*, YouTube (Sep. 27, 2022), https://www.youtube.com/watch?v=FHDmFMpExT8&t=9s ("[T]hese Class II wells are not proposals because the world proposals implies that something … might not happen") (hereinafter "Ted Auch Testimony").

injection wells, and implement a program that provides meaningful public participation opportunities.

IX. EPA Must Revoke Ohio's Primacy to Fulfill its Obligations Under Environmental Justice Executive Orders and Title VI of the Civil Rights Act

While EPA granted Ohio primacy over the state's Class II program, EPA remains the agency with ultimate regulatory authority over Class II injection wells under the SDWA. Executive orders mandate that every federal agency, including EPA, addresses environmental injustice that falls within its regulatory authority. This mandate also applies to state agencies implementing federal permitting programs, including ODNR. In addition, Title VI of the Civil Rights Act prohibits state agencies receiving federal funding from discriminating against any person on the basis of race, color, or national origin. ODNR receives federal funding to carry out its Class II program and is thus subject to this requirement.[286]

Ohio's Class II injection well program fails to meet fundamental requirements of environmental justice executive orders and Title VI of the Civil Rights Act by failing to: (A) identify and address the disproportionate impacts shouldered by low-income and disadvantaged communities in Ohio from Class II development; and (B) provide any language access services.

Because EPA is the ultimate regulatory authority over Class II injection wells, EPA must address these deficiencies by revoking Ohio's primacy to administer the Class II injection well program and implement a program that includes environmental justice procedures consistent with Executive Orders 12898, 13390, and 14008, and Title VI of the Civil Rights Act.

A. Ohio Has Failed to Identify and Address the Disproportionate Impacts Shouldered by Low-Income and Disadvantaged Communities from Class II Development

Executive Order 12898, issued under the authority of the Title VI Civil Rights Act, requires that:

[286] *See* U.S. EPA, Underground Injection Control Grants, available at: https://www.epa.gov/uic/underground-injection-control-grants#how_allocated

> Each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States . . .[287]

Further, Executive Order 14008, issued by President Biden in 2021, states that "[a]gencies shall make achieving environmental justice part of their missions by developing programs, policies, and activities to address the disproportionately high and adverse human health, environmental, climate-related and other cumulative impacts on disadvantaged communities . . ."[288] Finally, Executive Order 13390, signed in 2021, states that it is the policy of the executive branch to "prioritize both environmental justice and the creation of … well-paying union jobs."[289] In order to achieve these directives, both state and federal agencies implementing federal permits programs are required to conduct an environmental justice analysis and consider environmental justice issues in permitting decisions.[290] The EPA is bound by executive orders to the same degree it is bound by statute, so it is obligated to enforce these executive orders.[291]

EPA defines environmental justice as "the ***fair treatment*** and ***meaningful involvement*** of all people regardless of race, color, national origin or income with respect to the development, implementation and enforcement of environmental laws,

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[287] Exec. Order No. 12898, 59 Fed. Reg. 7629, 7629 (Feb. 11, 1994).
[288] Exec. Order No. 14008, 86 Fed. Reg. 7619, 7629 (Jan. 27, 2021).
[289] Exec. Order No. 13990, 86 Fed. Reg. 7037, 7037 (Jan. 20, 2021).
[290] *See In re Prairie State Generating Co.*, 13 E.A.D. 1, 95-96 (EAB 2006); *In re Knauf*, 8 E.A.D. 121, 37-38 (EAB 1999).
[291] *See, e.g.*, *Sherley v. Sebelius*, 689 F.3d 776, 784 (D.C. Cir. 2012) ("NIH may not simply disregard an Executive Order. To the contrary, as an agency under the direction of the executive branch, it must implement the President's policy directives to the extent permitted by law."); *Am. Fed'n of Gov't Emps., AFL-CIO (AFGE), Council 147 v. Fed. Lab. Rels. Auth.*, 204 F.3d 1272, 1275 (9th Cir. 2000) ("There is also no question that the Order is mandatory and that agencies failing to obey the Order are answerable to the President."); Elena Kagan, *Presidential Administration*, 114 Harv. L. Rev. 2245, 2384 (2001) ("Presidential administration as most recently practiced--including, most controversially, the use of directive authority over executive branch agencies—comports with law . . . because, contrary to prevailing wisdom, Congress generally has declined to preclude the President from controlling administration in this manner.").

regulations and policies."[292] Fair treatment means that "no group of people should bear a disproportionate burden of environmental harms and risks, including those resulting from the negative environmental consequences of industrial, governmental and commercial operations or programs and policies."[293] Meaningful involvement means that:

> (1) potentially affected populations have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health; (2) the public's contribution can influence the regulatory Agency's decision; (3) the concerns of all participants involved will be considered in the decision-making process; and (4) the rule-writers and decision-makers seek out and facilitate the involvement of those potentially affected.[294]

Ohio's Class II program violates these Executive Orders by: (1) causing the disproportionate siting of injection wells in low-income communities; (2) subjecting low-income communities living near injection wells to serious harms; (3) failing to conduct any environmental justice review—any process by which the agency identifies and addresses disproportionate burden or adverse impacts on disadvantaged communities; and (4) preventing meaningful involvement of low-income and disadvantaged communities.

1. Ohio's program results in the disproportionate siting of injection wells in low-income counties

Ohio permits Class II wells almost exclusively in low-income communities, forcing them to bear the burden of Class II wells and their associated environmental harms and risks. The State's weak permitting regime and lack of enforcement action exacerbates these harms.

When evaluating whether low-income populations are impacted by a permitting decision, EPA has identified a number of sources that may be used, including U.S.

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[292] U.S. Env't Prot. Agency, *Guidance on Considering Environmental Justice During the Development of Regulatory Actions* 4 (2015) (emphasis in original), attached as Exhibit 16.
[293] *Id.*
[294] *Id.*

Census Bureau data.[295] While the federal poverty level is an acceptable measurement of "low-income" in determining whether environmental justice issues exist, EPA's guidance notes that "low-income" may be characterized more broadly to include families whose income is above the poverty threshold but still below the average household income for the United States.[296] Moreover, EPA has long recognized the importance of considering state and regional income data when determining whether a low-income population exists.[297] In addition, EPA guidance recognizes socioeconomic characteristics such as educational attainment and baseline health status as useful for characterizing low-income populations.[298]

Ohio has 227 active Class II Brine Injection wells and 247 total permitted wells.[299] Over 40% of Ohio's Class II wells are located in six counties (Trumbull, Ashtabula, Portage, Stark, Washington, and Meigs) where poverty rates are generally higher and median household incomes lower than the state and national average.[300] Approximately 81% of Ohio's Class II wells are located in Ohio's 32 Appalachian counties—where the average per capita incomes are significantly less than the national and state average.[301]

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[295] U.S. Env't Prot. Agency, *Technical Guidance for Assessing Environmental Justice in Regulatory Analysis* 7 (2016), attached as Exhibit 17.
[296] *Id*. at 8.
[297] U.S. Env't Prot. Agency, *Final Guidance for Incorporating Environmental Justice Concerns in EPA's NEPA Compliance Analysis* 17 (1998), https://www.epa.gov/environmentaljustice/epa-final-guidance-incorporating-ej-concerns-epas-nepa-compliance-analysis.
[298] *See id*. at 17-18.
[299] Ohio Dep't Nat. Res. Div. Oil & Gas Res. Mgmt., *Injection Well Data Sheet Revised 6/13/22* 25 (2022), attached as Exhibit 19.
[300] *See id.*
[301] *See id.*

Poverty Rate of Counties with High Level of Class II Wells

Compared to Ohio & U.S. Poverty Rate[302]

	United States	Ohio	Trumbull County	Ashtabula County	Portage County	Stark County	Washington County	Meigs County
Population	331,449,281	11,780,017	201,335	97,337	162,382	373,834	59,423	22,049
Wells		247	19	17	16	16	15	14
Median Household Income	$67,521	$58,116	$47,799	$47,925	$59,485	$55,045	$51,808	$43,445
Poverty Rate	11.4%	12.6%	15.8%	16.5%	9.9%	13.2%	13.4%	18.8%

In a 2018 peer-reviewed study, Yale researchers found an inverse association between injection wells and median incomes in Ohio after adjusting for other sociodemographic and geographic variables. Specifically, they found that the odds of a census block group containing an injection well increased by 13-17% for every $10,000 decrease in median income.[303] The authors wrote, "our findings suggest a pattern of environmental injustice, in which block groups of lower median income could have a

[302] *See id*.; U.S. Census Bureau, *QuickFacts: United States; Ohio*, https://www.census.gov/quickfacts/fact/table/US,OH/PST045221 (last visited Oct. 10, 2022); U.S. Census Bureau, *Quick Facts: Trumbull County, Ohio; Ashtabula County, Ohio; Portage County, Ohio; Stark County, Ohio; Washingotn County, Ohio; Meigs County, Ohio*, https://www.census.gov/quickfacts/fact/table/trumbullcountyohio,ashtabulacountyohio,portagecountyohio,starkcountyohio,washingtoncountyohio,meigscountyohio/PST045221 (last visited Oct. 10, 2022); FracTracker All., *Ohio Quarterly Utica Oil and Gas Production Along with Quarterly Class II Injection Well Volumes*, ArcGIS (Sep. 21, 2021), https://www.arcgis.com/home/item.html?id=cfb666ebf8944ebea1b212bf62205488..

[303] Genevieve S. Silva, Joshua L. Warren, & Nicole C. Deziel, *Spatial Modeling to Identify Sociodemographic Predictors of Hydraulic Fracturing Wastewater Injection Wells in Ohio Census Block Groups*, 26 Env't Health Persp., No. 6, at 067008-1, 067008-4 (June 2018), attached as Exhibit 20.

greater likelihood of facing deleterious impacts from containing a wastewater disposal facility."[304]

Taking an even closer look, the areas immediately surrounding injection wells in Ohio are some of the poorest in the state and bear a disproportionate share of environmental harms and risks from injection wells. For example, the population within one mile of the Renshaw / Bradnan #1 well in Pierpont Township, Ashtabula County is in the state's 96th percentile for poverty rate. The population within one mile of the Whealdon #2 well in Walnut Township, Gallia County is in the 88th percentile for low-income population. The SOS D-2 well in the city of Cambridge, Guernsey County is in the 82nd percentile for low-income population.[305]

In addition, communities in Appalachian Ohio already have higher health burdens than the rest of the state.[306] Areas with higher existing health problems can be disproportionately affected even if the action at issue is not targeting an environmental justice community or would pose fewer risks to public health in another location.[307]

The mortality rate of Ohioans living in Appalachia due to heart disease, stroke, cancer, chronic obstructive pulmonary disease, injury and diabetes is significantly higher than both the national average and the Ohio average in non-Appalachian counties.[308] "Years of Life Loss" for residents of Appalachian Ohio is estimated to be 28% higher than the national rate and 16% higher than in non-Appalachian Ohio.[309] Moreover, Appalachian Ohio's health needs are under-resourced. The number of

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[304] *Id.* at 067008-7.
[305] *See* Injection Wells in Ohio Map, https://www.google.com/maps/d/u/0/viewer?ll=39.93001361431664%2C-81.85389044801178&z=11&mid=17HVoVga8YoVDfrtD6O1Gut1Y89MN7BGE (last visited Oct. 10, 2022); Env't Prot. Agency, EJScreen, https://ejscreen.epa.gov/mapper/ (last visited Oct. 10, 2022).
[306] Michele Morrone, Natalie A. Kruse, Amy E. Chadwick, *Environmental and Health Disparities in Appalachian Ohio: Perceptions and Realities*, 7 J. Health Disparities Rsch. & Prac., No. 5, at 67 (2014), attached as Exhibit 21.
[307] *See* U.S. Env't Prot. Agency, *Final Guidance for Incorporating Environmental Justice Concerns*, *supra*, at 19-23.
[308] Robert Wood Johnson Found. *et al*., *Key Findings: Appalachian Ohio* 1 (2020), attached as Exhibit 21.
[309] *Id.*

primary care physicians per 100,000 people in Appalachian Ohio is 25 percent lower than the national average, and 30 percent lower than in non-Appalachian Ohio.[310]

Death Rate of Ohioans Living in Appalachia Compared to Ohio & U.S. Death Rate[311]

Cause of Death	Percent above United States Rate	Percent above Non-Appalachian Ohio Rate
Heart disease	22%	15%
Cancer	15%	5%
Chronic Obstructive Pulmonary Disease (COPD)	35%	15%
Injury	29%	21%
Stroke	17%	8%
Diabetes	28%	8%

These compounding factors increase the risks and harms of siting Class II wells in Appalachian Ohio, forcing low-income communities to bear a disproportionate share of environmental harms and risks associated with the region's Class II development.

2. Ohio's Class II program results in serious negative impacts for low-income communities living near the injection wells

Executive Order 12898, at its core, protects low-income communities from harms to their health and their environments. However, Ohio's permitting of injection wells in low-income Ohio communities has caused serious negative impacts to their

[310] *Id.* at 4.
[311] *Id.* at 1.

groundwater and surface water, generally reduced their quality of life, and subjected communities to serious environmental and health risks. Ohio's failed enforcement program has exacerbated these harms.

a. Class II injection wells harm low-income communities

At the Citizen's Tribunal organized by Buckeye Environmental Network and Sierra Club, numerous community members spoke of the harmful impact injection wells have had on their property, surrounding environment, health, and quality of life. For example, Phillip Pegg, a former member of the Vienna Township Board of Trustees, a low-income township in Trumbull County, spoke about the water pollution caused by a spill at an injection well in his township that occurred during the unloading of oil and gas wastewater at the site. Mr. Pegg testified that ODNR failed to "put all of the drainage in place properly" or put a liner underneath the facility.[312] Families living near the injection well, such as the Hopkinsons, faced severe consequences from the spill:

> [O]ne of the first things that I did was I purchased the Hopkinsons water so that they would have water for their four children and they had something to drink. It took us some time to get ODNR to take samples of those families that were on well water in that area and to get it to Columbus to have tests done to see if the well water was even safe to drink. In the meantime, they were forced to use that [purchased] water to wash their clothes, to bathe, and everything else that they needed it for. ODNR failed, poorly.[313]

In another example, Tom Ratinne, who lives near an injection well in a low-income community in Belmont County, described the reduced quality of life and health burdens: "There is the noise of the diesel engines and the generators, the smell of the exhaust, which is totally unhealthy, there is the stress of living with these conditions. My wife wanders around the house many nights looking out of our windows to see what is happening."[314] Michelle Garman, from a low-income community in Trumbull County, described the constant fear of spills and earthquakes, the incessant hum of the

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[312] Buckeye Env't Network Ohio, *BET 2021 Phillip Pegg*, YouTube (Sep. 27, 2022), https://www.youtube.com/watch?v=14h8zchGQbs (hereinafter "Phillip Pegg Testimony").
[313] *Id.*
[314] Tom Ratinne Testimony, *supra*.

pumps day and night that gets louder for periods of the night interrupting her sleep, the strong "oily smell emanating from the facility" robbing her of "one of the few small joys in [her] day…sitting on the porch with [her] coffee," the screeching and odor of high truck traffic through the night, and the stress of knowing these relentless disturbances will continue every day for the rest of her life.[315] Ms. Garman also described how the stress of the injection well contributed to the loss of her marriage, and, she believes, the death of her son's beloved dog.[316] Michelle Garman asked, "how would you feel with a ticking time bomb 200 feet away? That's how I feel every day."[317]

Impacted communities also suffer increasingly frequent earthquakes. In 2011, the Northstar One injection well, located near Youngstown, Ohio caused a series of earthquakes. Susie Beiersdorfer, a resident of Youngstown and a former oil and gas industry worker, described feeling these earthquakes and begging ODNR to investigate the role of Northstar One. But, she said, "for many months the ODNR brushed off citizens' concerns and denied any connection between these earthquakes and injection activity." When the area suffered an earthquake on Christmas Eve of magnitude 2.7, ODNR finally shut the injection well down, but not soon enough to prevent a magnitude 3.9 earthquake a few days later, which "was felt from Canada to Kentucky."[318] ODNR has not addressed the issues that caused the Youngstown earthquakes in its revised rules, so community members continue to live in fear that nearby injection wells will cause earthquakes, and that ODNR will be slow to react just as it was in Youngstown.

b. ODNR's failed enforcement program exacerbates the negative impacts of injection wells on low-income communities

According to EPA guidance on environmental justice review, writing a regulatory action "to be enforceable is critically important to address EJ concerns that may arise as a result of program implementation issues and non-compliance."[319] Ohio's

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[315] Buckeye Env't Network Ohio, *BET 2021 Michelle Garman*, YouTube (Sep. 27, 2022). https://www.youtube.com/watch?v=vyHI_S6GS70.
[316] *Id.*
[317] *Id.*
[318] Buckeye Env't Network Ohio, *BET 2021 Susie Beiersdorfer*, YouTube (Sep. 27, 2022), https://www.youtube.com/watch?v=MsZOElIdqWI.
[319] U.S. Env't Prot. Agency, *Guidance on Considering Environmental Justice, supra*, at 11-12 (Ex. 16 at 11-12).

program fails to use enforcement to address environmental justice concerns. In fact, ODNR's refusal to take enforcement action has caused or exacerbated the negative impacts of injection wells on low-income communities.

Numerous citizens spoke about ODNR's failure to take enforcement action, and the resulting harms, in their public testimony before the Citizen's Tribunal. As Susie Beiersdorfer described, ODNR's failure to take timely enforcement allowed the North Star well to continue to cause earthquakes long after impacted communities first experienced harm. Nick Teti described enforcement problems at an injection well operated by Buckeye Brine in a low-income community in Coshocton County, explaining: "[T]he pipe used to inject the waste separated and the well became unusable. The law requires that wells in this condition be plugged after six months. The Chief of ODNR intervened and allowed this breached well to remain a pollution threat to the upper layer for over two years."[320]

In another example, Phillip Pegg described ODNR's failure to issue any fines or otherwise enforce against the KDA injection well located in a low-income community in Trumbull County. The KDA well caused a significant spill that contaminated surface water killing fish, turtles, birds, and muskrats. The well also lacked the requisite liner and drainage system, making the surface spill a threat to underground sources of drinking water.[321] Despite these egregious failings, ODNR did not pursue enforcement.

Section VI. of this petition describes in detail Ohio's failed enforcement program. As described in the examples above, Ohio is also failing to use enforcement to address environmental justice concerns, contrary to EPA guidance on environmental justice review. Ohio's program forces low-income communities to bare a disproportionate burden of the negative health consequences of Ohio's class II disposal wells by disproportionately siting these wells in low-income communities, applying lax permitting standards, and refusing to take appropriate enforcement action, contrary to Executive Order 12898.

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[320] Buckeye Env't Network Ohio, *BET 2021 Nick Teti*, YouTube (Sep. 27, 2022), https://www.youtube.com/watch?v=c6z1NG8mSNA.

[321] Phillip Pegg Testimony, *supra*.

3. Ohio's regulations do not require and ODNR does not conduct any environmental justice review in permitting Class II wells

EPA granted Ohio primacy under Section 1425 of the Safe Drinking Water Act in 1983. Yet, since the Executive Order 12898 was issued in 1994, ODNR has never conducted any kind of environmental justice review in a permit decision for a Class II well.

The Environmental Hearing Board ("EHB"), a federal adjudicatory body that considers appeals of grants of permits under federal programs, has made clear that agencies must consider environmental justice demographics in their Class II well permitting process under Executive Order 12898. In the case of *In Re: Muskegon Development Company*, the EHB held that not only did EPA have to analyze the percentage of the local population that is low income when deciding whether to grant a permit to a proposed Class II well in Michigan, but it also had to explain "whether it considered the fact that 56% of the population is low income in its permitting action and whether and how it chose to exercise its discretion under the UIC permitting program through enhanced public participation and use of its UIC regulatory omnibus authority."[322] The EHB has held similarly for other federal permitting programs.[323]

Ohio's regulations do not require the applicant to provide any demographic information to ODNR as part of its application and are silent to environmental justice review.[324] ODNR does not analyze basic environmental justice demographic information for communities surrounding proposed injection wells. Thus, ODNR fails to identify environmental justice communities, and in turn, fails to provide required enhanced public participation processes or consider how the agency might reduce the impacts of granting a permit on environmental justice communities.

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[322] *In re: Muskegon Development Company*, 2019 WL 1987188, at *13.

[323] *See, e.g., In re Prairie State Generating Co.*, 13 E.A.D. at 95 ("We have held that environmental justice issues must be considered in connection with the issuance of PSD [Prevention of Significant Deterioration] permits [under the Clean Air Act (CAA)] by both the Regions and states acting under delegated authority."); *In re AES Puerto Rico, L.P.*, 8 E.A.D. 324, 18-20 (EAB 1999), *aff'd sub nom, Sur Contra La Contaminacion v. EPA*, 202 F.3d 443 (1st Cir. 2000) (CAA PSD permit); *In re EcoEléctrica, L.P.*, 7 E.A.D. 56, 9-10 (EAB 1997) (PSD permit).

[324] *See* Ohio Admin. Code 1501:9-3-05.

4. Ohio does not allow for meaningful public involvement by impacted communities in injection well permitting

Executive Order 12898 also requires agencies to ensure the meaningful involvement of all communities impacted by permitting decisions, regardless of income level.[325] EPA has explained that to achieve meaningful public involvement, "rule-writers will likely need to go beyond the minimum requirements of standard notice and comment procedures and engage minority populations, low-income populations, tribes, and indigenous peoples early in the process."[326] Ohio's program makes no effort to identify these populations at any point during the permitting process, much less engage them. Moreover, as detailed in Section VIII.D., ODNR interprets existing rules contrary to their plain language, stripping impacted community members of opportunities for meaningful involvement.

Section VIII of this Petition describes the ways that Ohio's public participation process fails to meet EPA's *minimum* requirements for primacy. These deficiencies also constitute a clear violation of Executive Order 12898's requirement that agencies ensure the meaningful involvement of affected communities in any regulatory program they administer, which EPA has made clear sets a higher standard than the minimum requirements under the SDWA.[327]

In fact, ODNR takes an adversarial approach towards impacted communities, focused solely on ensuring that it issues all permit applications. As Ted Auch explained during his testimony at the Citizen's Hearing: "It's clear that these Class II wells are not proposals, because the word proposal implies it's something that might not happen. We don't ever see that. It's never a 'might not happen,' it's always a baked-in situation . . . ."[328]

Lori Babbi, a resident of Portage County, Ohio, described her experience of ODNR's treatment in her testimony. She and numerous community members each submitted comments on applications for seven injection wells in her county. ODNR

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[325] Exec. Order No. 12898, 59 Fed. Reg. at 7632.

[326] US EPA, *Guidance on Considering Environmental Justice, supra*, at 10 (Ex. 16 at 10).

[327] *Compare* 40 C.F.R. § 145.13(d) (discussed in Section VI.D., *supra*), *with* Exec. Order No. 12898, 59 Fed. Reg. at 7630-31 (requiring each agency to revise its program to "ensure greater public participation" for environmental justice communities.).

[328] Ted Auch Testimony, *supra*.

denied their request for a public hearing, and failed to respond to comments. However, nine months *after* issuing the permits, ODNR agreed to hold an "Open House Informational Meeting." Ms. Babbi described the intimidation and lack of respect during that process:

> The location [of the meeting] was over 30 miles from the impact zone despite ODNR's promise that the open house would be held within the area of the proposed injection well application. The notification also lacked any specific information about the injection wells in question. At the open house we were met with 14 (14!) armed guards and one canine unit lining the access walk into the building. Purses were searched before we could enter. Once the open house began the armed guards stood behind each information table and lined up at all of the entrances and exits. It clearly was an attempt to intimidate those in attendance . . . . ODNR employees were located at multiple information tables, which was a tool used to break up the crowd and prevent people from hearing the same information at the same time. Due to the size of the crowd in the large open room with no acoustics, no amplification, it was impossible to hear the answers to questions asked by each person at each table. . . . At no time were any of the specific questions about the Wyndham and Nelson township wells brought up or addressed by Mr. Tom Tomastik or his staff, even though our email invitation specifically stated that they would provide information about those wells.[329]

ODNR's inadequate public participation process, coupled with its attitude of disregard for public comments, precludes meaningful involvement by the public in its regulatory decisions in direct conflict with Executive Order 12898.

[329] Lori Babbi Testimony, *supra*.

B. ODNR is Failing to Comply with Environmental Justice Requirements and Violating Title VI of the Civil Rights Act by Not Offering Language Access Services

Title VI of the Civil Rights Act states: "No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance."[330] EPA has promulgated a regulation implementing this law that states that recipients of federal funding may not "use criteria or methods of administering its program or activity which have the effect of subjecting individuals to discrimination because of their race, color, national origin, or sex . . . ."[331] This prohibits actions by recipients of federal funds that have a "disparate impact" on protected individuals, whether or not the recipients intended to discriminate or not.[332] As the recipient of funding from EPA, ODNR is bound by this restriction.[333] ODNR's Class II injection well program is violating Title VI's prohibition on discrimination based on national origin by not providing any language access services to limited English proficiency ("LEP") individuals, and EPA must investigate and take action to rectify this violation.[334]

President Clinton issued Executive Order 13166 in August 2000 making clear that the federal government viewed programs that did not allow for the participation of LEP people as discriminating against people based on national origin in violation of Title

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[330] 42 U.S.C. § 2000d.

[331] 40 C.F.R. § 7.35(b).

[332] The Supreme Court has held that there is no private right of action to enforce 40 C.F.R. § 7.35(b), and thus plaintiffs can only file a case in federal court to enforce the prohibition on *intentional* discrimination created by 42 U.S.C. § 2000d. *See Alexander v. Sandoval*, 532 U.S. 275, 292-293 (2001). But *Sandoval* did not prohibit EPA, or any other agency, from enforcing its regulations prohibiting disparate impact discrimination. The decision only applied to individuals filing a lawsuit in federal court under Title VI.

[333] *See, e.g.*, U.S. Env't Prot. Agency, *EPA Announces Grants to Advance Clean-ups in Ohio's Lake Erie Watershed and Areas of Concern* (Nov. 19, 2019), https://www.epa.gov/newsreleases/epa-announces-grants-advance-clean-ups-ohios-lake-erie-watershed-and-areas-concern; U.S. Env't Prot. Agency, *EPA Awards $149,000 to Protect Air and Water Quality in Ohio*, (June 4, 2018), https://archive.epa.gov/epa/newsreleases/epa-awards-149000-protect-air-and-water-quality-ohio.html.

[334] 40 C.F.R. § 7.115(a) (authorizing EPA to review "any recipient's programs or activities receiving EPA assistance").

VI.[335] EPA guidance implements this Executive Order and lays out when recipients of EPA funding must create language access programs, and what those programs must contain. That document states: "Recipients are required to take reasonable steps to ensure meaningful access to their programs and activities by LEP persons."[336] The guidance makes clear that EPA or its delegated authority must take affirmative measures to minimize or eliminate communication barriers, regardless of whether LEP persons request language access services.[337]

EPA guidance establishes a four-factor test that recipients of federal funding must employ to determine what language assistance services are necessary. The four prongs of that test are:

> (1) The number or proportion of LEP persons eligible to be served or likely to be encountered by the program or grantee; (2) the frequency with which LEP individuals come in contact with the program; (3) the nature and importance of the program, activity, or service provided by the program to people's lives; and (4) the resources available to the grantee/recipient and costs.[338]

While this test gives ODNR flexibility in deciding exactly how to serve individuals with limited English proficiency, the guidance also makes clear that this flexibility "does not diminish, and should not be used to minimize, the obligation that those needs be addressed."[339]

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[335] Exec. Order 13166, 65 Fed. Reg. 50121, 50121 (Aug. 11, 2000) ("Each Federal agency shall also work to ensure that recipients of Federal financial assistance (recipients) provide meaningful access to their LEP applicants and beneficiaries. To assist the agencies with this endeavor, the Department of Justice has today issued a general guidance document (LEP Guidance), which sets forth the compliance standards that recipients must follow to ensure that the programs and activities they normally provide in English are accessible to LEP persons and thus do not discriminate on the basis of national origin in violation of title VI of the Civil Rights Act of 1964, as amended, and its implementing regulations.").

[336] Guidance to Environmental Protection Agency Financial Assistance Recipients Regarding Title VI Prohibition Against National Origin Discrimination Affecting Limited English Proficient Persons, 69 Fed. Reg. 35602, 35606 (June 25, 2004).

[337] *See id*. at 35612-13

[338] *Id.* at 35606.

[339] *Id.*

ODNR is not meeting its requirements under Title VI to provide access to its activities to limited English proficiency speakers, because it is taking almost no actions to create this access. First, EPA guidance says that agencies like ODNR "should develop" implementation plans for providing access to LEP people and to make those plans public.[340] Petitioners have found no evidence that ODNR has developed this implementation plan. The guidance does state that "recipients serving very few LEP persons and recipients with very limited resources, may choose not to develop a written LEP plan."[341] But as a statewide agency whose rules affect a large swath of the state, ODNR is serving more than a "very few" LEP persons, and it has more resources than most other entities subject to Title VI. According to the Census Bureau's latest American Communities Survey, over 793,000 Ohioans (7.2%) speak a language other than English at home, and over 277,000 (2.5%) speak English less than very well.[342]

EPA in its guidance established a "safe harbor" criterion that recipients could meet that would presumptively indicate that they are complying with Title VI. That provision requires the agency to provide "written translations of vital documents for each eligible LEP language group that constitutes five percent or 1,000, whichever is less, of the population of persons eligible to be served or likely to be affected or encountered."[343] Undoubtedly, more than 1,000 LEP people will be affected by ODNR's programs, yet ODNR seems to not have any sort of language access plan in place. Other state agencies, such as the Ohio Department of Agriculture's Division of Meat Inspection, have put such plans into place,[344] indicating that it is eminently possible and likely required for ODNR to do so as well.

ODNR has also not translated any of its written material for the Class II injection well program from English. EPA guidance on language access states that "an effective LEP plan for its particular program or activity includes the translation of vital written

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[340] *Id.* at 35611.

[341] *Id.*

[342] *DP02 Selected Social Characteristics in the United States: Ohio*, U.S. Census Bureau, https://data.census.gov/cedsci/table?tid=ACSDP5Y2020.DP02&g=0400000US39&hidePreview=true (last visited Oct. 8, 2022).

[343] Guidance to Environmental Protection Agency Financial Assistance Recipients, 69 Fed. Reg. at 35610.

[344] *Limited English Proficiency Policy Statement and Program*, Ohio Dep't Agric., https://agri.ohio.gov/divisions/meat-inspection/resources/limited-english-proficiency-plan (last visited Oct. 8, 2022).

materials into the language of each frequently-encountered LEP group eligible to be served and/or likely to be affected by the recipient's program."[345] As described above, EPA assumes an LEP group is "frequently-encountered" if more than 1,000 LEP individuals are likely to be encountered, which is very likely to be the case for the injection well regulatory program.

ODNR's website has a link to a page that describes in several languages how someone can use their browser to auto-translate ODNR webpages to their preferred language.[346] But this auto-translation service is not available on most parts of ODNR's website. For example, the webpage describing the new rules for Class II injection wells cannot be translated on either Chrome or Safari.[347] Even if it could, automated browser translators do not meet the requirements for adequate translation services imposed on ODNR by Title VI. EPA guidance states that "translators of written documents should be competent," and suggests using a certified translator or two independent translators to ensure the translation is done competently.[348] An automated translation service that translates words literally with no comprehension of the context of the language is self-evidently not competent. Because ODNR is not translating *any* of its documents or material into any other language, it is failing to meet the requirement to translate vital written material into the languages spoken by LEP residents it encounters.

Finally, ODNR is also violating language access requirements by not offering any oral interpretation services at its meetings. Petitioners have not heard of a single instance when translation service was provided at an ODNR meeting or hearing in the many decades their staff and members have been engaging with the agency. Even if ODNR has interacted infrequently with residents who are not proficient in English, it still must have the ability to offer translation services when necessary—EPA guidance states:

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[345] Guidance to Environmental Protection Agency Financial Assistance Recipients, 69 Fed. Reg. at 35609.
[346] *Browser Translation*, Ohio Dep't Nat. Res., https://ohiodnr.gov/help-center/browser-translation (last visited Oct. 8, 2022).
[347] *See New Rules - Class II Disposal Wells and Oil and Gas Waste Facilities*, Ohio Dep't Nat. Res., https://ohiodnr.gov/discover-and-learn/safety-conservation/about-ODNR/oil-gas/oil-gas-resources/new-rules-C2DW-OGWF (last visited Oct. 9, 2022).
[348] Guidance to Environmental Protection Agency Financial Assistance Recipients, 69 Fed. Reg. at 35610-11.

> [E]ven recipients that serve LEP persons on an unpredictable or infrequent basis should use this balancing analysis to determine what to do if an LEP individual seeks services under the program in question. This plan need not be intricate. It may be as simple as being prepared to use one of the commercially-available telephonic interpretation services to obtain immediate interpreter services.[349]

While this sets a minimum requirement, because Ohio has a potentially large number of LEP residents who may be impacted by injection wells, it has an obligation to go beyond simply reacting to requests for translation and affirmatively alert the public that translation service is available; the four-factor test requires greater language access efforts when there is a higher LEP population.[350] EPA guidance points out that these communities may not even know about the opportunity to comment unless outreach is conducted in their language: "In conducting this analysis, it is important to include language minority populations that are eligible for their programs or activities but may be underserved because of existing language barriers."[351] By not offering translation services at meetings, ODNR is thus not complying with EPA's guidance on how to ensure proper participation in its programs by people with limited English proficiency.

EPA's guidance on serving LEP populations is meant to alert the agency to when recipients are violating their Title VI obligation to not discriminate based on national origin. While the guidance does not lay out hard and fast requirements, ODNR's failure to adhere to the guidance at all demonstrates a Title VI violation. EPA has broad discretion in how it chooses to address violations of Title VI by agencies it funds. Its regulations implementing Title VI state: "EPA may also use any other means authorized by law to get compliance, including a referral of the matter to the Department of Justice."[352] While EPA could rectify this violation by issuing an order to ODNR to improve its language access procedures, the agency, as discussed in Section VIII above, has shown a consistent and complete disregard for public input. It would very likely

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[349] *Id.* at 35607.
[350] *Id.* ("The more frequent the contact with a particular language group, the more likely that enhanced language services in that language are needed.").
[351] *Id.* at 35606.
[352] 40 C.F.R. § 7.130(a).

not properly implement any language access requirements EPA told it to undertake. Due to ODNR's culture of disregard for the rights of the public, the only effective method EPA has to rectify ODNR's Title VI violations is to revoke ODNR's primacy to regulate Class II injection wells under the SDWA, and to take this enforcement authority upon itself.

C. EPA Must Take Action to Implement a Permitting Program that Meets Its Environmental Justice Obligations

Class II wells in Ohio, as described above, have caused disproportionately high and adverse human health and environmental effects on low-income populations. Ohio has not ensured the fair treatment of these communities or their meaningful involvement in major regulatory decisions. Petitioners alerted ODNR of its failure to carry out environmental justice obligations during ODNR's last rulemaking regarding its Class II program.[353] ODNR did not respond in any way to Petitioners' and 290 other citizens' environmental justice concerns during the comment period of the most recent rulemaking for the Class II well program, and the new rules continue to violate environmental justice requirements.[354] In addition, ODNR has made no effort to provide language access services to ensure meaningful involvement by Ohioans who are not English-proficient, shirking Title VI requirements.

Executive Orders 12898, 13390, and 14008, and Title VI obligate EPA to address the environmental injustices caused by Ohio's Class II program. Petitioners request that EPA initiate a rulemaking process to revoke Ohio's primacy over the Class II well program and implement a program that includes environmental justice review and meaningful involvement for environmental justice communities.

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[353] *See generally* Buckeye Env't Network *et al.*, *Comment on ODNR's Proposed Rules*, *supra* (Ex. 7).

[354] *See Comments on Class II Rulemaking* (2021), https://www.jcarr.state.oh.us/assets/committees/joint-committee-on-agency-rule-review/meetings/12-6-2021/files/testimony-december-6-2021-96436.pdf (290 commenters submitted a comment stating that ODNR fails to provide environmental justice review and does not provide for public participation); Ohio Dep't Nat. Res Div. Oil & Gas Res. Mgmt., *Response to Comments on Class II Disposal Well and Surface Facilities Draft Rule* (Oct. 5, 2021), attached as Exhibit 23.

X. Conclusion

As detailed in this Petition, Ohio's Class II well program contains numerous technical deficiencies that have allowed for underregulated oil and gas waste disposal which has resulted in serious consequences to human health and the environment. These consequences have included out of zone migration of waste which has polluted the environment and endangered drinking water and an exponential increase in seismic activity in the State. In addition, ODNR's failure to implement any environmental justice review has resulted the siting of wells in environmental justice communities without any meaningful involvement or any effort to address impacts to these communities from Class II injection wells. The State's public participation process is deeply flawed, resulting in a meaningless comment period and practically no right for the public to appeal a permit, causing public distrust of the Class II well permitting process throughout the state. Altogether, Ohio's Class II program fails to comply with the SDWA and Section 1425 primacy by failing to: (1) protect USDWs in its permitting and review process, (2) effectively enforce against violations, (3) provide meaningful public participation, and (4) conduct any environmental justice review in permitting and address disproportionate harms to environmental justice communities. Petitioners and other Ohio citizens and citizens groups have raised many of these concerns to the State, and still Ohio consistently fails to address them.

Therefore, pursuant to 42 U.S.C. § 300h-4(c)(2), Petitioners respectfully request, that EPA begin the rulemaking process to revoke Ohio's primacy over its Class II program due to the longstanding and systemic failures described herein.

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Ohio Brine Task Force
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Beverly Reed
Concerned Ohio River Residents
Ohio Brine Task Force
Belmont County

Susie Beiersdorfer
Ohio Community Rights Network
Mahoning County

Ted Auch
FracTracker
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Leatra Harper
Fresh Water Accountability Project

Bill Lyons
Columbus Community Bill of Rights
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Jenny Morgan
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Ashtabula County Water Watch

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Ashtabula County Farmers Union

Lorna Greicious
Ashtabula Lighthouse & Restoration Society

Dawn Hewitt, Chairperson
Green Sanctuary Committee
Washington County

Justin Thompson
Kent State Future Environmental Professionals Club

Annette McCoy, President
Trumbull County NAACP

Liz Penna
Ashtabula County NAACP

Rev. Will Pinn
State Environmental Justice Chair
Ohio State NAACP

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3	EPA Ground Water Program Guidance #19
4	PSR Fracking with "Forever Chemicals" in Ohio (Sept. 2022)
5	Review Article re: Seismicity in Appalachian Basin, OH
6	EPA Memo re: Distribution of Final Work Product from UIC Technical Workgroup (2/6/2015)
7	Public Comment Proposed Rules re: Class II Wells (11/29/2021)
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